



ADVANCED INTERNATIONAL JOURNAL  
OF BUSINESS, ENTREPRENEURSHIP  
AND SMES  
(AIJBES)

[www.gaexcellence.com/aijbess](http://www.gaexcellence.com/aijbess)



## THE BANK-SIZE GAP IN GREEN BANKING ADOPTION: A NARRATIVE REVIEW

Noor Zahirah Mohd Sidek<sup>1\*</sup>, Tasya Aspiranti<sup>2</sup>

<sup>1</sup>Department of Economics, Faculty of Business Management, Universiti Teknologi MARA, Malaysia

 [nzahirah@uitm.edu.my](mailto:nzahirah@uitm.edu.my)

 <https://orcid.org/0000-0001-5645-5790>

<sup>2</sup>Doctor of Management Program, Faculty of Economics and Business, Universitas Islam Bandung, Indonesia.

 [tasya@unisba.ac.id](mailto:tasya@unisba.ac.id)

 <https://orcid.org/0000-0002-7831-1939>

\*Corresponding Author

### Article Info:

#### Article history:

Received date: 27.07.2026

Revised date: 24.08.2026

Accepted date: 07.09.2026

Published date: 24.09.2026

#### To cite this document:

Mohd Sidek N. Z., & Aspiranti, T. (2026). The Bank-Size Gap In Green Banking Adoption: A Narrative Review. *Advanced International Journal of Business Entrepreneurship and SMEs*, 8 (29), 1704-1738.

### Abstract:

Green banking is considered the main avenue for the financial sector to support the transition to a low-carbon economy, but varying degrees of adoption among financial institutions have been noted. This study aims to understand the differences in the adoption of green banking by large and small financial institutions. The literature studied shows that larger banks tend to have more advanced sustainability strategies, better governance, more advanced environmental risk management, and more green loans when compared to small banks. The reasons for this are less studied. The aim of this study is to synthesize 12 peer-reviewed studies published from 2018 to 2026, 11 articles and 1 book chapter, and organize the studies under the pillars of bank resources, governance and stakeholder pressure, regulation and compliance, and bankable projects. Two contributions are made. The first is a Capability, Pressure, Opportunity (CPO) framework. A bank adopts green banking when the pressure it faces, the opportunities for financeable green projects, and the bank's adoption capability are aligned. These dimensions are distinct and cannot be compensated for by others. This framework is grounded in resource-based theory, institutions, and legitimacy and resource dependence theory. The second is the separation of a transparency gap (the difference in the level of sustainability disclosures by large and small banks) from a performance gap (the difference in levels of green financing and the incorporation of environmental risks in credit decisions). Disclosure-based analysis further reinforces the perception of a performance gap in banking, because green banking practices are more evident than would otherwise be the case.

**DOI:10.35631/AJBES.829099 Keywords:**Bank Size, Green Banking, Green Finance, Narrative Review,  
Sustainable Banking

© The authors (2026). This is an Open Access article distributed under the terms of the Creative Commons Attribution (CC BY NC) (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact [aijb@gaexcellence.com](mailto:aijb@gaexcellence.com).

## Introduction

As economies move towards a low-carbon future, there are new and broadened expectations for banks, beyond traditional intermediation. They are expected to introduce responsible allocation of capital, pricing of environmental risks, and support for the overall economic transition. Green banking is a response to this expectation. It comprises the inclusion of environmental factors in credit and investment decisions, the assessment of environment-related risks, the consideration of environmental factors in the development of banking products, governance and banking services, and the operation of the bank. Early efforts were largely devoted to eliminating paperwork and designing eco-friendly offices. More recently, the scope of green banking has been enlarged to incorporate green credit, environmental due diligence, sustainable investment, climate risk management, and sustainability disclosure (Bukhari et al., 2020; Sharma & Choubey, 2022). Banks are crucial to this transition for a number of reasons. First, banking investment directly or indirectly finances either high carbon-intensive development or a shift to low carbon development through renewable energy and cleaner production and greater resource efficiency. The interest in green banking and its impact on firm-level environmental behaviors as well as wider sustainable development outcomes has grown rapidly both in policy and academia (Bose et al., 2018; Sarma & Roy, 2021).

Sustainable finance has grown more institutionalized, but green banking adoption is still uneven. One aspect of this unevenness has been studied much more than it has been explained. We call it the bank-size gap. It refers to the systemic differences between large and small banks regarding the adoption and institutionalization of green banking. Financial assets, staff, technological infrastructure, and governance structures are more formal, and reporting is more frequent at large banks. Large banks attract more scrutiny from regulators and institutional investors, clients and even civil society. As a result, large banks have a greater incentive to create green banking products and climate change-related governance and to disclose sustainability information. For smaller banks, the opposite is true. All of the systems, personnel training, and sustainability data acquisitions, and the increased complexity of disclosure and supervision add to their costs. This is especially true for smaller banks with constrained and undiversified portfolios, and the resulting challenges to finding bankable green projects which do not meet risk-return standards.

It has been well documented that larger companies report more on environmental issues, a point this study will not dwell on. A voluminous literature on corporate disclosure relates firm size to environmental reporting due to visibility, resource slack, and regulatory burden, and Bose et

al. (2018) use institutional theory, corporate governance, and bank size to explain green banking disclosure by Bangladeshi commercial banks. Akasumbawa et al. (2026) go one step further and incorporate size as an explicit moderator of governance on Islamic green banking disclosure. These studies demonstrate a strong correlation between size and what banks report. However, these studies do not answer if the same correlation exists for what banks invest in or how this correlation is explained.

This study will attempt to answer these questions in two ways. First, a framework for financing green projects is posited based on three independent components: the bank's capability, the bank's perceived pressure, and the density of bankable green projects within the bank's domain. The second attempts to unravel two entangled variables that are typically reported as one. The visibility gap is the difference in sustainability disclosure and reporting between large and small banks. The depth gap refers to the disparity in green financing and the integration of environmental risks into credit assessment. Different factors affect each of these gaps, therefore the two do not necessarily correlate, and a measure based on disclosure will capture the first element, but not the second.

This is not just about the disparity in total assets. Size of organization is associated with managerial ability and governance, the business model, exposure to regulation, relationships with stakeholders and opportunities for green investments that can be used. Commitment of upper management can actually create organizational responses to stakeholder pressure, and in a resource constrained environment, this cannot be assured (Bukhari et al., 2022).

Regulations can also be both facilitating and constraining for similar reasons. There is a case where first clear regulations are a strong incentive to adopt, because expectations are clear and have a standard. However, compliance has high fixed costs and is a greater burden on smaller organizations. This is especially the case in developing economies, where green taxonomies, environmental information systems, and enforcement and green projects are segmented (Chandran et al., 2025). Differences in adoption are better explained by how different internal factors and external pressures of the institutions interplay in the business environment of green financing.

The literature on green banking is growing rapidly but remains fragmented in four ways. One way is the lack of integration of concepts. Studies typically apply stakeholder, institutional, legitimacy, or governance or resource-based approaches, but do so independently and do not try to understand how these approaches interact and create different sizes of banks. Empirical studies are also fragmented by the banking system and region. Research tends to focus on commercial and Islamic banks in some Asian and emerging markets, while examining other banking systems such as cooperative banking, credit union, community banking, regional banking, and smaller banking systems. Lack of a consistent terminology is a third challenge. The terms green banking, sustainable banking, environmental finance, green finance, and sustainable finance are used interchangeably which creates analysis confusion. Fragmentation is also evident in the way impacts are measured. Implementation is measured by several indicators which include levels of disclosure, operational practices, and green banking products among others. This makes it unclear if the reported difference is a real change in the distribution of capital compared to a difference in the level of reporting. Since most studies are either conceptual or regional, knowledge about how bank size impacts the adoption of green banking is still at an early stage.

These restrictions go beyond what is published in scholarly literature. Many regulatory frameworks set sector-wide sustainability goals, with little consideration for the diverse levels of technology, finance, and organization among banks. Goals and regulations designed for the large banks' resources will increase the challenges faced by small banks. Overly generous exemptions will push small banks out of sustainable finance entirely. Taking size of banks as a control variable also creates problems in research, where it conceals the mechanisms and pathways through which participants reach the scale required for success. This approach assumes the participant banks have adequate data systems and governance structures; diverse, secure funding; and green projects that are bankable. Much of this case is complex to define and answers are more qualitative in nature. For this case, a narrative review would be most appropriate. It would allow for convergence of heterogeneous conceptual, empirical, and policy-derived evidence that are too disparate for typical synthesis, and structuring this evidence in a more thematic manner will allow for the identification of gaps, clarify mechanisms for sustaining the bank-size gap, and distinguish structural issues from those that can be resolved by innovation, regulation that is appropriate for scale, shared services, and focused capacity building.

The goal of this review is to analyze the disparities in the adoption of green banking practices among large and small institutions. It integrates the literature in a conceptual way and looks at organizational resources and technological readiness, governance and leadership, stakeholder and regulatory pressures, compliance gaps, and bankability and business models. This review employs a narrative synthesis and outlines three guiding questions instead of explicit hypotheses. The first question focuses on the mechanisms used to explain the variation among large versus small banks in terms of resources, governance, and leadership. The second question focuses on how regulatory, institutional, and market conditions affect this variation. The third question centers around the conceptual, methodological, and contextual limitations of the existing literature and what they imply for future research, policy, and practice. The review builds on and integrates the existing literature and frameworks and aims to clarify the conceptual underpinnings of the bank size divide.

After presenting the review methodology and summarizing the literature to be reviewed, the review provides the theoretical background and defines key constructs. The thematic analysis will follow and provide a synthesis of the literature, and a critical analysis will provide an appraisal of the literature. The theory, concepts, and methods will be integrated within a framework, along with recommendations, and the review will be finalized with a conclusion and a discussion of the limitations of the research.

## **Review Approach**

This paper employs a narrative structure to integrate and interpret studies focused on the bank-size gap in green banking adoption. Systematic reviews are designed to address narrow questions through systematic and replicable research. Narrative reviews provide more flexibility to incorporate different views, empirically based and conceptually based, in an area that is still taking form (Baumeister & Leary, 1997; Green et al., 2006). The desired flexibility may be appropriate in this case. Research on the adoption of green banking spans across several banking and sustainable finance subdisciplines and combines environmental economics and corporate governance as well as institutional theory. Therefore, a narrative approach is appropriate to determine common research lines, identify gaps in concepts, and apply a needed

theoretical perspective. The three main questions guide the synthesis and interpretation of the literature and help focus the synthesis. They do not provide a systematic review framework.

### ***Search Strategy and Selection***

The Boolean search strategy used in this study is presented in the next section. As indicated in the last section, the fourth part of the string shown below incorporates an explicit difference term, making the search string restrictive by design. Studies that investigate size effects but do not use this terminology will not come up in the search and the limitations presented in the paper may apply.

("bank size" OR "financial institution" OR "banking sector" OR "credit union") AND ("green banking" OR "sustainable banking" OR "eco-friendly banking" OR "environmental finance") AND ("adoption" OR "implementation" OR "acceptance" OR "integration") AND ("gap" OR "disparity" OR "difference" OR "variation").

This search includes studies on green banking that have been published between 2010 and 2026 since it is an area that started to develop in academia and policy around the same time. In this case, twelve studies that were published between 2018 and 2026, were the only studies to meet the criteria and were included in this review. The first couple of years of this search produced no studies that were relevant to this review.

From hundreds of retrieved records, studies were selected that examined the adoption of green banking, the practices of sustainable banking, environmental finance, or the discrepancies between institutions in financial sectors of varied sizes, considering factors of banking size, capacity, and governance, as well as the differences in banking regulation, stakeholder pressures, and implementation disparities. In the full-text analysis, it was decided whether each study added something novel to the discussion of the banking size gap.

Studies that focused exclusively on non-bank financial institutions and made no observations that would relate to banks or studied green finance solely in terms of instruments or investment markets, or in the absence of adoption in banking institutions, were excluded. Additional exclusions were made for conference abstracts, editorials, book reviews, notes, and non-peer-reviewed publications that were published in various languages other than English.

One inclusion criterion warrants a brief clarification. Alongside articles, peer-reviewed chapters in edited scholarly volumes were also included, and one of the twelve studies included is a chapter of this type. Riaz et al. (2023) is a bibliometric and systematic review of 44 articles indexed in Scopus that were published in an Emerald edited volume consisting of chapters that undergo editorial peer review. This level of synthesis speaks to the question posed in the review and is not available in the journal literature, so excluding it on document type would have resulted in the loss of the broadest representation of how previous literature has measured the adoption of this]. No commercially available assessment tools were used, as this was a narrative review. We instead looked for studies that contained significant conceptual, theoretical, empirical, or policy frameworks and that studied the variation in adoption across different sized institutions [Baumeister & Leary, 1997].

Twelve studies passed the evaluation. These twelve studies comprise the review and are presented in Table 2 in Appendix A along with their features. Baumeister and Leary (1997) and Green et al. (2006) are cited for review method and database coverage only. Other sources added in later sections provide theories and evidence and are not part of the corpus. The corpus was integrated thematically as opposed to statistically. Each study was read for concepts and theories that were repeated, for the driving forces and barriers of the theories, the characteristics of the organizations, regulatory frameworks, and the dynamic nature of both the stakeholders and the gap between large and small banks. Reading across the different contexts made it possible to construct a description of the bank-size gap while pointing out the questions that remain. Each study in Table 2 explains how green banking was defined and how bank size was measured and introduced into the analysis. This is the basis for the observations described in the critical discussion and the limitations.

**Table 1: Search Strategy And Selection Criteria**

| Component                             | Description                                                                                                                                                                                                                                                                                                        |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Database                              | Scopus (primary)                                                                                                                                                                                                                                                                                                   |
| Search string                         | ("bank size" OR "financial institution" OR "banking sector" OR "credit union") AND ("green banking" OR "sustainable banking" OR "eco-friendly banking" OR "environmental finance") AND ("adoption" OR "implementation" OR "acceptance" OR "integration") AND ("gap" OR "disparity" OR "difference" OR "variation") |
| Publication timeframe                 | 2010 to 2026                                                                                                                                                                                                                                                                                                       |
| Publication years of included studies | 2018 to 2026                                                                                                                                                                                                                                                                                                       |
| Date of search                        | 2 August 2026                                                                                                                                                                                                                                                                                                      |
| Document type                         | Peer-reviewed journal articles and peer-reviewed chapters in edited scholarly volumes                                                                                                                                                                                                                              |
| Language                              | English                                                                                                                                                                                                                                                                                                            |
| Inclusion criteria                    | Studies examining green banking, sustainable banking, environmental finance implementation, or adoption in banking institutions. Studies discussing bank size, organizational capacity, governance, regulation, stakeholder pressure, implementation barriers, or institutional differences.                       |
| Exclusion criteria                    | Conference abstracts, editorials, book reviews, notes, non-peer-reviewed publications, duplicate records, studies unrelated to banking adoption, and studies published in languages other than English.                                                                                                            |
| Selection approach                    | Structured narrative review involving title screening, abstract screening, full-text assessment, and thematic synthesis of conceptually relevant studies.                                                                                                                                                          |
| Final corpus                          | 12 peer-reviewed studies (11 journal articles and 1 book chapter)                                                                                                                                                                                                                                                  |

Source: Authors' Own Work

Note. The search was carried out in the database and on the date shown. The limitations discussed at the end of the paper set out what follows from that choice, and Table 2 in Appendix A lists the studies retrieved.

The sample size of 12 studies is small and therefore deserves justification and explanation. While evaluating adequacy, three issues are important. First, the search terms require a term of differentiation in every case in order to retrieve studies that actually treat the bank-size gap as the focus of inquiry, rather than all studies which include a size dimension in a model. Literature that addresses the gap in such a way is considerably young, with the earliest study in this sample dated 2018 and five studies published in 2025 and 2026. A narrative synthesis for an emerging topic strives toward conceptual saturation instead of exhaustive coverage, and the four themes in this report were described throughout the entire sample of studies prior to the latest studies being read (Baumeister & Leary, 1997). All twelve studies were read in their entirety, and other sources were sought for developing theory and context.

All this does not suggest any of the 12 studies are sufficient to constitute a larger evidence base. A sample of this size cannot afford any degree of empirical generalization and the framework developed out of it is, at best, provisional. The points and limitations presented do set out clearly what the corpus can bear.

### ***Conceptual Background***

Two issues must be addressed before analyzing the literature. This first is the definition of green banking, as the term is used to describe a number of similarly related, but distinct, concepts. The second is the grounding of green banking in theory. The existing literature draws on a variety of different theories, each explaining different aspects of adoption, and no theory provides a complete understanding of adoption. This section presents key definitions and principal theoretical frameworks in the order of their importance and establishes the context for the proposed synthesis and the integrative framework to follow.

### ***Definitions***

Early on, green banking focused on the banking sector's environmental footprint. It has since evolved to mean the incorporation of sustainability within banking, including the process of financial intermediation, banking governance, banking risk management, banking lending and banking investment, as well as bank stakeholder engagement. Based on synthesis of research in the field and a systematic review, Riaz et al. (2023) indicate that a working consensus has been reached on the definition of green banking as the incorporation of banking policies and practices, banking products, and financing within the banking sector that takes into consideration the risks and opportunities to sustainability and the environment. This definition of green banking goes beyond zero carbon transactions and banking operations in energy efficient premises. It also refers to the banking sector's financing of sustainable projects and banking activities directed to climate change, as well as banking assessments of sustainability and climate risks, due diligence, and banking investments directed to sustainability. The broader definition is indicative of increasing banking sector's role in climate change and the transition to a low carbon economy.

Although there are differences, green banking overlaps with sustainable banking, environmental finance, and green finance. Sustainable banking incorporates the environmental,

social, and governance dimensions of all banking activities. In contrast, green banking dwells exclusively on the environmental sustainability dimension. Environmental finance focuses on the financial instruments designed to support the preservation of the environment and the mitigation of climate change. Green finance has an even broader scope covering financial instruments invested in environmentally sustainable activities. Riaz et al. (2023) note that a lack of conceptual clarity in the use of these terms has resulted in a lack of comparability across studies. This review focuses on green banking for two main reasons. First, it provides a platform to discuss the environmental strategies and financing activities of banking institutions. Second, it is the concept that best captures the operational measures of banking institutions. Within that domain, this review focuses on the 'bank-size gap' in green banking adoption. The 'bank-size gap' refers to the systematic difference in the extent and effectiveness of green banking among large and small banks. The term is new and does not yet have a fixed definition. So far, the evidence published on the adoption of the practice seems to indicate a certain tendency. Based on the evidence available, it seems that large banks engage more with the practice than small banks (Aguila et al., 2026). There are differences in the extent of adoption across green loans, the management of environmental risk, sustainability reporting, the governance of the banking entity, the disclosures related to the banking entity's climate change risk, the banking entity's digital capability, and the banking entity's investment in green financial products. The 'bank-size gap' can't be attributed to bank size alone. Aguila et al. (2026) state that the 'bank-size gap' is a result of differences in access to financial and human capital, gaps in regulatory oversight and the expectations of the banking entity's stakeholders, gaps in the banking entity's learning and the institutional framework.

Since this review focuses heavily on bank size, we now give the definition for size. In this context, we see size as relative comparative scale to other banks within the same national banking system, along with accompanying capabilities, visibility, and portfolio characteristics. Rather than size being total assets, a small bank within a large banking system could be mid-sized within a small banking system, and the challenges faced and the opportunities available to the bank will depend on the bank's relative position rather than the absolute value. The different approaches employed by the studies in the corpus to define size are described in Table 2, Appendix A. When the framework refers to categories of banking institutions, these are assumed to be context specific and pertain to particular banking systems, rather than general classifications of banking institutions based on asset size, for which the current available evidence is weak.

The term 'adoption' also needs defining. Here, it is not just about the first choice to incorporate sustainability in operations. Rather it involves the long-drawn process of incorporating the necessary changes in business models, systems, and cultures to integrate environmental sustainability within the organization. Adoption is viewed along the spectrum of understanding, policy making, and adopting to the continuous improvement and sustainability reporting (Bukhari et al. 2025). It is easier to differentiate the ways in which banks of different sizes integrate green banking policies, whether it is through the extent to which banking services are provided or the banking operations themselves, if adoption is viewed in this way.

### ***Key Theories or Frameworks***

Research on green banking adoption relies on several different theoretical frameworks, which is useful for looking at the various aspects of the problem. Stakeholder theory is one of the

most utilized, and it helps broaden the focus beyond just shareholders to include regulators, customers, investors, staff, and the community and the public at large (Freeman, 1984). In this regard, green banking practices can be considered responses to increasing demand for environmental accountability and sustainable practices. Larger banks face more intense scrutiny since they are more visible, systemically more important, and more publicly accountable. As a result, larger banks have stronger obligations than smaller institutions to formalize and detail their green banking initiatives (Bukhari et al., 2025).

Institutional theory places this behavior in the context of the regulatory and normative environment. Banks undertake green initiatives for a number of strategic and competitive reasons, but more fundamentally, they do so in order to secure legitimacy. From this perspective, the driving factor of adoption can be attributed to the coercive, normative, and mimetic components of the regulation framework. This perspective is useful for understanding bank adoption of sustainability practices across different countries that are at varying levels of regulatory development (DiMaggio & Powell, 1983; Chandran et al., 2025).

For the argument being made here, the most relevant distinction offered by institutional theory is Meyer and Rowan (1977). They noted that in the face of significant external pressures, organizations adopt formal structures that they then loosely couple to the operating core, thus maintaining a ceremonial distance. The means-ends decoupling literature describes how policies can be adopted fully in the face of little to no change in end-state outcomes (Bromley & Powell, 2012). This is the direct precursor to the symbolic-versus-substantive tension discussed under Theme 2, as well as the distinction between the visibility gap and the depth gap made in the framework.

Legitimacy theory adds an additional external perspective and is found commonly in studies on environmental disclosure. It is argued that to retain their social license to operate, banks adjust their practices to align with the values of the societies in which they operate and engage in green practices (Suchman, 1995). Large banks are particularly visible, while media, investors, and regulatory scrutiny is more intensive, which suggests that larger banks face more serious consequences for failing to act legitimately and thus have a stronger incentive to adopt more formal policy and extended reporting on their environmental practices (Bose et al., 2018). As such, legitimacy theory accounts for why the bank-size gap is most evident in disclosure-based assessments of adoption. It also sounds a note of caution, given that large, visible green banking commitments may remain largely symbolic, a tension addressed under Theme 2.

Unlike externally-focused perspectives, the resource-based view examines what internal assets and capabilities enable a firm to execute a successful implementation. Organizational performance is linked to resources that are valuable, rare, hard to imitate, and irreplaceable and that the firm is able to exploit (Barney, 1991). In this context, the degree of rarity is most important. If the same climate risk infrastructure is purchased by many large banks from the same vendors, the resource-based viewpoint argues that there is no competitive advantage, and the theory does less for the capability argument than a simple resources-help argument would. From the viewpoint of green banking, it is financial resources, infrastructure, special abilities, effectiveness of governance, and the ability to learn as an organization that determine whether green banking is successfully implemented. Large banks tend to have more of all these, which gives them the ability to invest in climate risk, sustainability, digital and green banking

innovations. Aguila et al. (2026) hold that small banks lack the requisite resources to meet advanced sustainability goals or to create successful green banking products.

The theory of corporate governance expands upon the formalization of the decision-making process relating to the execution of environmental strategies. Formal board oversight, executive leadership, sustainability committees, and the management control system are some of the factors that define the focus of a company on environmental issues and the consideration of environmental issues in the company's day-to-day activities (Cadbury, 1992). There is a positive relationship between effective governance mechanisms and the quality and the extent of disclosures and implementation of green banking practices, and the relationship seems to be amplified by bank size, since large banks have more developed governance frameworks and reporting systems (Akasumbawa et al., 2026).

This sixth perspective is rarely identified as a theory. It relates the banking business model and the structure of banking markets to the primary explanation. It has a close relative in resource dependence theory whereby an organization's scope of decision-making is defined by the resources it can access in its external environment and how strongly it can influence them (Pfeffer & Salancik, 1978). On this account, the nature of a bank's financing activities is defined more by the structure of funding, market relationships, and underwriting capacity and trade-offs on the balance sheet than by environmental commitment or stakeholder pressure. This perspective also explains the banking center framework as this theory focuses the banks' primary attention outwards, to the supply of bankable projects, and to the credit market that a bank can serve. It defines this framework's third constraint because it is the only theory among the six perspectives that explains the constraints of adopting an international framework from beyond the bank.

No single theory provides the complete answer. The bank-size gap is the combination of stakeholder expectations, institutional pressures, legitimacy concerns, internal resources, the quality of governance, and regulatory constraints. Most of the disparities in the current literature are explained by this plurality, and this is the rationale for the attempt to develop an exhaustive, integrative framework. The framework places its resource condition within the resource-based view, its pressure condition within the stakeholder, institutional, and legitimacy perspective combined with the regulatory conditions in Theme 3, and its opportunity condition in resource dependence theory and from the perspective of business models and market structures. The distinction between substantive and symbolic adoption is derived from corporate governance and from the decoupling literature.

### **Thematic Review of Literature**

The synthesis presented here organizes studies by theme as opposed to studying each theme in order of appearance. Integrating studies in this way provides the opportunity to relate evidence from different backgrounds of theory, diverse contexts of research, and varying approaches of methodology. It allows cases of convergence, cases of divergence, or cases of ambiguity to become more apparent.

Four themes provide the structure for this synthesis. The first of the themes focuses on the resources, capabilities, and technologies that an organization possesses, as well as the readiness of an organization, and poses the question of the role of internal resources and capabilities of

an organization in the shaping of implementations. It answers the question of why similar forms of Virginia commitments lead to disparate operational levels. This is because capability is constructed at an absolute level, whereas the others construct it at a proportional level. The second of the themes includes the components of governance, leadership, and the pressures of stakeholders. It includes the components of corporate governance, the management commitment of a business, and the pressures of external stakeholders. Of special importance in this theme is the idea of mediation, which states that pressures of external stakeholders only influence the extension of credit with the internal governance and leadership of the business, and thus, is absorbed in the reporting.

Theme 3 looks at regulation, institutions, and compliance capacity. It looks at the role of regulation and institutions in enabling or impeding adoption. This theme is the only one which talks about cost that is external to the bank, and therefore about how the regulatory architecture may end up replicating the gap it is intended to close. Theme 4 looks at bankability, business models, and market opportunities. It looks at the role of financing structures and the availability of bankable green investments. This is the only theme in which the constraint may be fully external to the banking sector, meaning both banking capability and project supply may be gap-creating. Figure 1 presents a framework, placing the key ideas and main actors of each theme next to unresolved issues and the theory each is grounded in. This is meant to show them side by side, in order to facilitate more targeted reading of the distinctions.



**Figure 1: Synthesis Of The Four Interconnected Themes**

Source: Authors' Own Work

***Theme 1: Organizational Resources, Capabilities, and Technological Readiness***

The first of the themes looks at the uneven resources and capabilities banks have for turning green pledges into operational realities. Green banking is more encompassing than simply developing a range of eco-labeled products. It involves environmental risk assessment, climate-related data management; the design and development of sustainable products and the accompanying services; and reporting to comply with regulations and to sustainability frameworks. Everything requires capital, as well as the alignment of the firm's staff and IT resources across the lines of business. Larger banks have a competitive advantage in this respect given their ability to allocate resources across broader business lines and departments, and to fund larger technology expenditures and sustain the fixed costs of the systems required for assessment and reporting. Smaller banks, credit unions, and regional banks may well have the intent to support sustainability activities but lack the structural flexibility to incorporate it across their operational activities. Green banking, therefore, is recognized in the literature as a capability constraint, one of size rather than intent, with capacity in this sense limiting the depth and breadth of implementation, rather than the initiation of the process (Aguila et al., 2026; Riaz et al., 2023). The costs here are the bank's costs of developing its own capability.

Although the literature is largely aligned on the importance of organizational resources to the adoption of green banking, there is much less consensus on what is conveyed by the size of a bank. Some studies view larger banks as having superior IT resources, more specialized staff, and dedicated sustainability units, and more robust capability of reporting.

Others position managerial commitment and green capabilities as the mechanisms that transform resources into practices (Bukhari et Al., 2022). This distinction is important. Having an abundance of resources does not automatically result in environmental changes, and large banks do not necessarily channel their capabilities to substantial sustainability endeavors. Smaller institutions can offset being smaller to some extent through focused strategies, local knowledge, partnerships, and strong leadership. There is evidence that bank size strengthens the association between governance and environmental disclosure and thus shows something more restrictive than what it appears, it does not show that size leads to deeper implementation or better environmental outcomes (Akasumbawa et al., 2026).

Table 2 highlights a critique against much of the existing literature. The same authors commonly use bank size as a control variable or a moderator instead of exploring bank size in great detail. Thus, it is unclear what causes the observed bank size gap. Some possible explanations for the gap include finite amounts of financial capital and human capital, data, technology, and available external professionals, and the absence of fixed cost compliance with regulation in a smaller asset base. Much of the empirical studies do not distinguish these factors. Little research examines how smaller banks may overcome these limitations through shared service providers, taxonomy, public assistance, shared databases, and partnerships. Exploring these limits would help differentiate the structural obstacles to scale from capability challenges that policy and design potentially could address. Therefore, the overall argument of this review is strengthened. It is best to view the bank size gap as a disparity in multidimensional capabilities rather than a difference in total assets.

## ***Theme 2: Governance, Leadership, and Stakeholder Pressures***

The final theme concerns governance structures, senior management commitment, and stakeholder pressure. Banks experience eco-driven regulatory, investor, customer, employee, community, and competitor expectations. However, these do not generate organizational change. Internally, governance and leadership determine the next course of action. Committees of the Board, sustainability, and accountability to the environment together with environmental policies and dedicated reporting make green banking part of the strategic decision-making process. The commitment of senior management is of particular importance. Environmental goals only become real to an organization when resources are allocated, and an operational seal of approval is given. Bukhari et al. (2022), in their study of 419 branch managers in Pakistan, show that top-management commitment moderates the relationship between stakeholder pressure and adoption, which means that external pressure operates through internal management, not around it. Bukhari et al. (2025) show the same for the green capability (using the same background and source data).

When considering size, large banks tend to have more visibility due to systemic importance, international outreach, and the participation of large institutions. Large banks also tend to publish environmental policies and engage in disclosure of activities related to green banking. As noted in the case of Islamic banking, evidence suggests size might amplify the impact of corporate governance on green banking disclosure, thus indicating that, in combination with size and capacity for reporting, certain governance mechanisms might generate effects that are more noticeable (Akasumbawa et al., 2026). However, one must make a clear distinction between size, disclosure, and formal governance on the one hand, and environmental integration on the other. Smaller banks may be largely absent from the reporting systems at the national level, yet they might be more responsive to serve local clientele and communities, and large banks may develop a sophisticated narrative in the field of sustainability, while adopting no material change to their credit allocation policy or substantive financing to activities that may be harmful to the environment (Aguila et al., 2026).

A challenge of symbolic and substantive adoption persists within this theme, and it represents the issue of decoupling that institutional theory has addressed in the past (Bromley & Powell, 2012; Meyer & Rowan, 1977). Some studies utilize policies, disclosures, managerial perceptions, or self-reported engagement, which tend to favor banks with advanced communication and reporting systems. These types of measurements can easily define the bank-size divide as being attributed to differences in the disclosure of banking activities instead of discrepancies in lending practices, portfolio emissions, incorporation of environmental concerns, and financing of the transition. In addition, literature pays little attention to ownership, composition of boards, executive compensation, and the internal balance of power particularly in the way these elements relate to size. Therefore, we view governance and stakeholder pressure as conditional rather than as causal. They can play a role in encouraging adoption and can lead managers to engage in compliant or symbolic activities geared toward larger systems.

## **Theme 3: Regulation, Institutional Conditions, and Compliance Capacity**

The third theme focuses on regulatory and institutional factors related to green banking. Development of green banking is influenced by sustainable finance regulations, environmental

risk management, disclosure requirements, supervisory expectations, green taxonomies, and national development priorities. Clarity and enforceability of rules result in lower uncertainty and greater certainty for banks to incorporate the environmental factor in lending and risk management. In many environments, however, the constraints are weak, voluntary, and fragmented, particularly in emerging markets. Kartiko et al. (2024) emphasize enforcement gaps in sanctions and incentives on green banking.

More developed architecture elsewhere in the region includes the Climate Change and Principle-based Taxonomy (2021) by Bank Negara Malaysia. This provides a common framework for Malaysian banks to assess the alignment of economic activities to the climate objectives. ASEAN Taxonomy for Sustainable Finance provides a similar framework at the regional level. In more advanced economies, the European Union Taxonomy and Corporate Sustainability Reporting Directive along with the supervisory expectations of the Network for Greening the Financial System (2020) are the major references. These frameworks vary greatly in whether compliance is required, how they are enforced, and the anticipated level of technical capacity of the institutions subject to these frameworks. Weak enforcement leads adoption to be dependent on the resources of each bank, on their interpretation of the regulatory frameworks, as well as their commitment to strategic alignment, hence, the larger banks are likely to adopt those frameworks, and the smaller banks adopt them only partially or not at all. There is a direct connection between green finance and regulatory clarity. Some ambiguity remains surrounding the impacts of changes in the regulatory environment on the bank-size gap. The first position argues that as banks are required to meet more common needs and obligations, the overall disparity narrows. The second position argues that the structuring of complex regulations across banking sectors creates significant fixed costs for data collection, training, risk modeling and verification, and reporting, and thus deepens the bank-size gap. These fixed costs are external to the institution while the build costs are internal. The Basel Committee's work on proportionality acknowledges that requirements meant to apply to large banks can have a disproportionate effect on small banks. Large banks have the opportunity of scale and have more sophisticated compliance systems, while smaller banks feel the effects of sustainability regulation most. One European study provides additional evidence. Aguila et al. (2026) cite interviews with bank staff, regulators, and civil society across eight European countries. They argue that the supply of bankable green projects is crucial to the formation of regulatory measures and business models. When, on the other hand, profitability of conventional lending remains, and green opportunities do not meet the requirements of an acceptable risk-return, little will have been achieved by regulatory measures.

While the differentiated or proportional approach has been historically used in prudential banking regulation (Basel Committee on Banking Supervision, 2022), the evidence reviewed shows that, in sustainable finance, it has been used to a much lesser extent. Uniform sustainability requirements ensure consistency of sustainability requirements; however, they are based on the assumption that banks have the same financial and technical capacity. Exempting smaller banks reduces their short-term compliance costs and could also exclude them from the sustainable finance market, thus widening the gap the exemption was aiming to solve. Many other regulatory tools, including tiered disclosure requirements, simplified taxonomies, supervisory support, common data infrastructure, and targeted capacity building, merit further study. Along with cross-country studies, the goal should be to identify which regulatory tools will help narrow the implementation gap under varying institutional frameworks. The main point is that uneven adoption of regulatory tools should not be attributed

solely to smaller banks. It may also be a result of complex regulatory systems designed around the operational capacities of large banks.

#### ***Theme 4: Bankability, Business Models, and Market Opportunities***

The fourth theme looks at the interconnection of project bankability, banking business models, and the availability of green financing. Banks assess prospective projects primarily on the basis of expected returns, the borrower's ability to repay the loan, available collateral, the size of the liability, and the degree of risk and regulatory capital. Many green projects fail to meet these criteria. They feature new and unknown technologies, inaccessible or low-volume revenue streams, lengthy pay-back periods, underdeveloped or non-existent performance records, and significant reliance on public subsidies. Traditional credit assessment frameworks struggle to account for all of these. Carbon-intensive enterprises and activities, on the other hand, are often profitable and well collateralized and are sustained longstanding relationships with banks. The disparity in the uptake of green banking indicates more than just disparities among different banks. Rather, it indicates a disparity between the features of green projects and the requirements of prevailing credit practices. Aguila et al. (2026) describe the problem along the axes of bankability, business models, and the regulatory framework. They illustrate how banks engaged in a public endorsement of decarbonization continue to extend credit on the basis of traditional risk/return considerations.

Large and small banks have different ways of dealing with certain problems. Large banks can draw upon a large number of sources creating less risk for the bank and from international finance and can additionally draw on a variety of different financing techniques to support large renewable energy and infrastructure projects or be the first to develop new types of finance. Small banks use relationship lending, coupled with small local customer base deposits and limited credit processes, and draw on geographically focused clientele. These are generally the characteristics of small-bank intermediation in the larger banking literature, not of green banking. Close geographic proximity to small businesses gives smaller banks soft information about customers that large, hierarchical banks have difficulty providing (Berger & Udell, 2002; Stein, 2002), although a small banks limited capability to diversify project risk results in them being even more careful with unknown and/or unproven technologies. Therefore, large banks may be in the first position for the majority of financing for green initiatives, though smaller banks may have the relational advantages that are lost when common financing metrics are applied.

Column four of Table 2 indicates that there is a lot of diversity in banking business models. However, this diversity is overlooked in the literature. The mandates, funding gaps, customer bases, and risk portfolios of commercial banks, Islamic banks, cooperative banks, credit unions, development banks, and community banks differ significantly. Most literature focuses on formal disclosure and institution-level adoption of green projects. This tends to ignore the supply of green projects at the appropriate scale, the demand for green credit, and the use of guarantees and blended financing to make green projects bankable. An important research gap is whether public guarantees, the use of green credit lines, securitization and other forms of risk transfer, and standardized project risk assessment tools will allow banks to engage in sustainable financing. This research gap illustrates the lack of internal banking and market-based externalities that produce the bank-size gap. Bridging this gap will require changes in how banks operate and changes in the financial tools that make green activities lendable.

## Critical Discussion

Having synthesized the literature, this section moves from description to evaluation. Rather than repeating findings, this section engages with four lenses. The first is agreement, where convergent evidence suggests common explanations. The second is disagreement, where theoretical and empirical trenches pull apart. The third is gaps, which point to the conceptual, methodological, and contextual limitations. The fourth is implications, which asks what all of this means for research, policy, and practice. Using these four orientations in the literature helps understand the adoption of large versus small institutions and establishes the goals that the framework and the recommendations will address.

## Agreements in the Literature

Twelve studies were analyzed and among these two study the size of banks directly. Both of these studies show that larger banks show higher levels of adoption compared to smaller banks. In one of these studies Akasumbawa et al. (2026) show that the size and the corporate governance of Indonesian as well as Malaysian banks influence the level of disclosure of Islamic green banking. In the other study Aguila et al. (2026) show that Green lending by European banks is lacking. The other ten studies ignore the size of banks or use it as a control variable or a contextual variable, and therefore what this corpus shows has more to do with 'no contradiction' than with 'numerous confirmations'.

This same consensus applies to the reported levels and not to lending behavior. Several studies capture green lending, Sustainability disclosure, Environmental risk management, and Climate-related governance and investment in Green financial products, and in most of these studies, what the banks publish about themselves is what is captured. The framework proposed in this study argues that this measurement is one of the things that contributes to the gap. The other factors could be the financial strength of the bank and the level of governance. There is also wide agreement that, in these environments, the level of regulation and the pressure of stakeholders influence the pace and the extent of the adoption, and this is especially true in Asia, where the sustainable finance ecosystems are at an early stage of development (Bukhari et al. 2025; Chandran et al. 2025; Riaz et al. 2023).

Furthermore, the literature encapsulates green banking as more of an organizational change as opposed to a singular technological, operational, or legislative change. The implementation of green banking is the integration of multiple factors including theright governance and a long-term commitment to sustainability, environmental risk management, a sufficient digital infrastructure, and a full-fledged organizational capability. This is not a collection of fragmented sustainability programs. (Bukhari et al., 2020; Riaz et al., 2023; Sharma & Choubey, 2022). There are some valid concerns about the existing literature, because most of the cited studies focus on the larger and more centralized commercial banks. We do not know if these same mechanisms apply to community banks. There is a theory and a business case to be made with respect to size, because the position of a bank in the market could be more important than size, and better-quality governance and institutional resources may explain the adoption of green banking practices.

## Disagreements

A consensus exists among researchers that there is a gap as large as a bank. Researchers disagree extensively about the reasons behind this gap. One approach emphasizes the internal organizational capability of the banks and suggests that most of the gap can be explained by the presence of financial capital, technology, management, and good governance (Aguila et al., 2026; Akasumbawa et al., 2026). Other researchers suggest that most of the gap is attributable to the presence of external factors, such as the quality of the market, pressure from stakeholders, and the maturity of the market and the presence of an enabling policy (Bukhari et al., 2025; Chandran et al., 2025). Regulations also generate similar debates. Some of the studies position the presence of a strong regulatory framework as positively associated with the rapidness of the adoption process. Other studies argue that the introduction of new regulations results in an increasing burden of compliance, and that burden is disproportionately higher and could explain the gap between small and large institutions (Aguila et al., 2026).

These positions reflect deeper disparities in the ways adoption is defined and evaluated. Many studies assess adoption by measuring sustainability disclosure, governance structures, or self-reported practices. Comparatively few assess adoption by measuring substantive outcomes, such as changes in lending, integrating environmental risks, or financing the low-carbon transition. As such, different metrics are used to measure adoption. As a result, it is difficult to compare the findings across studies, a challenge that is all too easy to miss. There are similar challenges when considering the development of theory. As the term ‘compartmentalization’ suggests, the different theories (Stakeholder theory, Institutional theory, legitimacy, governance, and the resource-based view) have been applied independently far more than they have been integrated, and this has impaired our understanding of how the capabilities of the organization, the institutions, the governance, and the market interact to create the gap. The framework presented here seeks to address this problem.

## Gaps

Rapid expansion in green banking research has left certain gaps. First, the distribution of available evidence is uneven and limited, centering on a few developing countries and a few developed financial systems. This restricts the scope for comparative studies on various banking frameworks and institutions, creating a challenge for determining the nature and degree of bank-size gaps across different contexts. Similarly, the scope is lacking in terms of the banking sector. Commercial and Islamic banks are covered far more extensively, while the rest (e.g. community banks, cooperative banks, rural banks, development banks, and credit unions) are covered less, even though they play a significant role in the financing of local economies. A third challenge is research design. As illustrated in column five of Table 2, three of the studies are conceptual, theoretical, or normative rather than empirical, and two are literature reviews. Of the seven empirical studies, only Akasumbawa et al. (2026) and Bose et al. (2018) employ multi-year panel data, while the rest of the studies are cross-sectional in nature. The studies contribute little to understanding how green banking evolves as institutions gain experience and as expectations around sustainability become more robust. Riaz et al. (2023), when analyzing a larger corpus, have made the same observation as me.

Both conceptual and methodological limitations exist. Bank size is most frequently treated as a control or moderating variable in the absence of analysis of the complexity of mechanisms

through which scale is constructed. As a result, we have limited understanding of the combinations of technological capability, quality of governance, management, culture, financial capital, and institutional support that enable smaller banks to work around structural constraints. The available data on such interventions is also scant. This includes the use of proportionate regulation, the provision of technical assistance, the development of shared sustainability infrastructures, collaborative green finance initiatives, and partnerships between public and private sectors. Addressing these gaps will enable the construction of more robust theories and provide policymakers with the opportunity to develop evidence-based policies.

## Implications

The implications of this review are theoretical, rational, and practical. Theoretically, this review suggests that no framework is sufficient to address the bank-size gap. What is necessary is the integration of stakeholder, institutional, legitimacy, and resource-based views under the corporate governance umbrella. This would allow the author to address internal factors in the context of external institutions. This would push the current approach of explaining adoptions in isolation and move the field toward understanding the adoption of systems and institutions as a constructive and dynamic process. It would also encourage the use of comparative, longitudinal, and mixed methods to address not only if adoptions differ in banks, but also how and why they change over time. The next section will present a framework as well as some propositions.

The practical implications are in line with some of the recommendations, which will be presented in detail instead of being summarized here. The key point is that closing the bank-size gap will require more than just policy adjustments. The solutions differ as to which of the constraints they alleviate. The consequences go beyond the performance of institutions. For all banks to contribute to sustainable development and the low-carbon transition, this gap must close. It will require concerted efforts by regulators, banking groups, and policymakers.

## *An Integrated Framework for the Bank-Size Gap*

The synthesis and the critical discussion converge on the same problem. Each theoretical tradition explains a part of the bank-size gap and none of them explains the whole, and the four themes describe forces that clearly interact without specifying how. This section responds by setting out what we call the capability, pressure, and opportunity framework. It holds that green banking adoption rests on three conditions that have to be satisfied together, and that governance quality determines how much of the resulting adoption is real.

We state the theoretical pillars, as a framework built on multiple traditions can, without warning, seem like an arbitrary listing. Capability depth is a resource-based theory, based on the argument that performance is a function of resources that the organization can deploy (Barney, 1991). Pressure salience is an institutional theory and also a legitimacy theory, integrating the coercive, normative, and mimetic aspects of institutional theory and the stakeholder and legitimacy theory of banks' responses to external demands (DiMaggio & Powell, 1983; Freeman, 1984; Suchman, 1995). Opportunity density is a resource dependence theory, since the freedom of action of a bank is dependent on the conditions in the external environment as opposed to the internal conditions of the bank (Pfeffer & Salancik, 1978).

Governance enters through corporate governance theory and the decoupling literature. The unique aspect of this integration is not the use of these theories, but the way they are integrated. The tripartite structure is neither novel nor should it be presented as such. Ability, motivation, and opportunity are argued to combine non-additively in the AMO account of work performance (Appelbaum et al., 2000), and capability, opportunity, and motivation are shown to be the same in the COM-B model of behavior (Michie et al., 2011). In both models, the question surrounding the combination of the three components remains unanswered. What our framework does is built upon the heritage of the tripartite structure and the combination question, while what Michie and others add are models that focus primarily on definitions of behavior through the framework of psychology and health rather than finance.

The first contribution of our model is the measure of opportunity density. In small banks, not only is opportunity less, but the opportunity is distributed differently based on the costs associated with originating and monitoring a deal. Consequently, the same market presents different opportunities to banks of varying sizes. The second is the distinction between a visibility gap and a depth gap, which brings the separation of earlier categorical arguments in line with different conditions. With this, the two gaps can move in the opposite direction.

Governance must be considered as its own unique fourth element rather than as one of the three conditions. Its formal position must be explained. Governance does not create adoption. It separates adoption and defines how much of the response generated by capability, pressure, and opportunity is expressed as a reallocation of credit instead of as a report. Banking size, lastly, does not appear as a cause in the framework at all. It appears as a summary variable that correlates with all three of the conditions to diverse extents. Due to this, studies of adoption measurement that are performed in different ways tend to generate very diverse opinions regarding how important size is. Figure 2 illustrates the structure.

### *Three Conditions*

**Capability depth.** The first criterion is what a bank can actually do. It encompasses financial capacity, expertise, and the availability and accessibility of streams of environmental data, as well as the capability to develop and sustain risk-modelling systems and draws on the resource-based view of Theme 1. The approach assumes that capability is lumpy, and this assumption is flagged rather than presented as a finding of the review. A climate risk model, a taxonomy mapping, or a sustainability unit costs broadly the same to build whether the balance sheet behind it is small or very large, so a bank must clear an absolute threshold rather than a proportional one. Supervisory work on proportionality relies on the same assumption, acknowledging that fixed compliance and infrastructure costs weigh more heavily on smaller banks (Basel Committee on Banking Supervision, 2022), even though we do not know of any published estimates of the cost of green banking infrastructure. Therefore, capability is expected to increase with size at the lower end of the distribution and to level off once the threshold is crossed. Based on this assumption, the framework predicts that the adoption gap will be the largest between very small and mid-size institutions and the smallest between large and very large institutions. A single size coefficient estimated across the whole distribution will conceal this pattern.

**Pressure salience.** The second condition is whether or not someone is looking and what it will cost the bank if they are. This integrates the stakeholder, institutional and legitimacy

explanations in the conceptual background along with the regulatory conditions in Theme 3. Pressure salience has little to do with the level of regulation. Two banks may have to abide by the same rulebook but may face substantially different levels of effective pressure depending on how much each supervisory unit focuses on Systemically Important Banks, how much media coverage each bank receives, and how often each bank's shares change hands at the proxy voting stage. A community bank may be subject to the same written requirement as a national bank but may face lower pressure for non-compliance as well as less potential visibility surrounding its failure. Pressure will increase with greater visibility which, in turn, will increase with greater size. It is unclear if the relationship will be truly convex, so that pressure would increase at a greater rate than the increase in visibility. Everything that follows will be independent of that assumption. Of the four configurations that follow and with the assumption of Proposition 2, this relationship, more than any other, is the most likely to cause small banks to adopt superficially while large banks adopt substantially.

**Opportunity density.** The third condition asks how many financeable green projects within the bank's reachable market exist at a size, tenor, and risk profile that are in line with the bank's balance sheet. It extends the bankability argument found in Theme 4. The important aspect of this is the two-way deal size filtering on opportunity. The large bank is efficient in utility-scale renewable energy and inefficient in performing small efficiency retrofits for a family firm, where the costs of origination and monitoring diminish the profit margin. The reverse is true for a small bank, which is able to underwrite a small firm retrofit and is too small to hold a stake in a wind farm. Therefore, opportunity density is not the same for small banks as it is for large banks and is likely differently distributed. Some of the explained gap comes from the fact that measurement of adoption is typically found in the large bank's opportunities, in large individual deals and public deal portfolios, as opposed to where small banks' opportunities are. Governance connects with all three conditions, as opposed to being adjacent. Strong governance with oversight of the board, and executive and operational responsibility, with clear escalation pathways, allows capability, market pressures, and available opportunities to be converted to crediting changes. In their absence, the three conditions generate activity, but it is used for reporting rather than reallocation, and opportunities that are identified are not converted to credit. Therefore, the quality of governance is what determines the extent of adoption that is meaningful, and Theme 2 suggests it does this largely independent of size.

Two constructs and one comparison are the basis of the propositions below, and each needs to be clearly expressed. The primary outcome of adoption depth is how much environmental criteria impact credit allocation and risk decisions, versus how much a bank formalizes policies or discloses activities. The substantive share is a derivative measure that is the proportion of adoption that a bank actually undertakes that represents a shift rather than a reporting exercise. The bank-size gap is a between-group comparison that is not a feature of any one bank, and the groups across which it will be considered are named with the propositions. Propositions 1, 3, and 4 are articulated in terms of adoption depth and the substantive share. Propositions 2 and 5 are articulated in terms of gaps and are framed as between-group differences.

### *How the Conditions Combine*

The framework presumes that the three components interact in a conjunctural manner. This means that the three conditions are necessary, and none, in isolation, are sufficient, and so adoption will not occur if any of the three conditions are absent. In this context, we would say

that the conditions combine rather than accumulate. If conditions accumulate, it could mean that a shortfall in a particular condition could be made up by an excess in another condition, so that a bank that scores low in opportunity could make up for this by investing in capability. However, the concept of combination precludes this. A bank with deep capability and great demand will not lend more if there are no green financeable projects in its purview, and a bank with several such projects will not finance them if it is unable to assess the risk and/or if it is certain that nothing will happen if they remain unfinanced. In the absence of great external pressure and/or green investment opportunities, deep capability will not lead to adoption. The statement above focuses on the interaction of the three components rather than on the main effects of the conditions, and it also suggests that the three components will not trade off against each other.

This assumption provides a preliminary account of the contradictions reported above. Let us consider four of the examples. High capability and high pressure (and low opportunity) result in the "European case," as described by Aguila et al. (2026), where significant banks face challenges, but still lend to highly carbon-intensive firms, because the threshold for green deals is high. High capability and low pressure (and moderate opportunity) result in the "Indonesian case" described by Kartiko et al. (2024), where legal provisions exist, sanctions are absent, and it is a voluntary decision of firms to adopt the provisions. Low capability and high-pressure result in "symbolic compliance (or doing things to look like one is complying), at a cost, with no substance," our interpretation of what smaller banks have reported in the literature when they are subject to the same requirements, as opposed to any corpus study that makes a claim to the contrary. Low pressure and high opportunity result in a "missed market," the most visible example being the demand for green credit by small and medium-sized enterprises, which, once again, is our interpretation, as the phenomenon remains unstudied.

Four narrative examples cannot choose between functional forms, and no such choice is intended in this paper. In order to assess the assumption, we must rely on the configurational and necessary-condition approaches, since both are appropriate for the identification of conjunctural causation (Dul, 2016; Ragin, 2008).

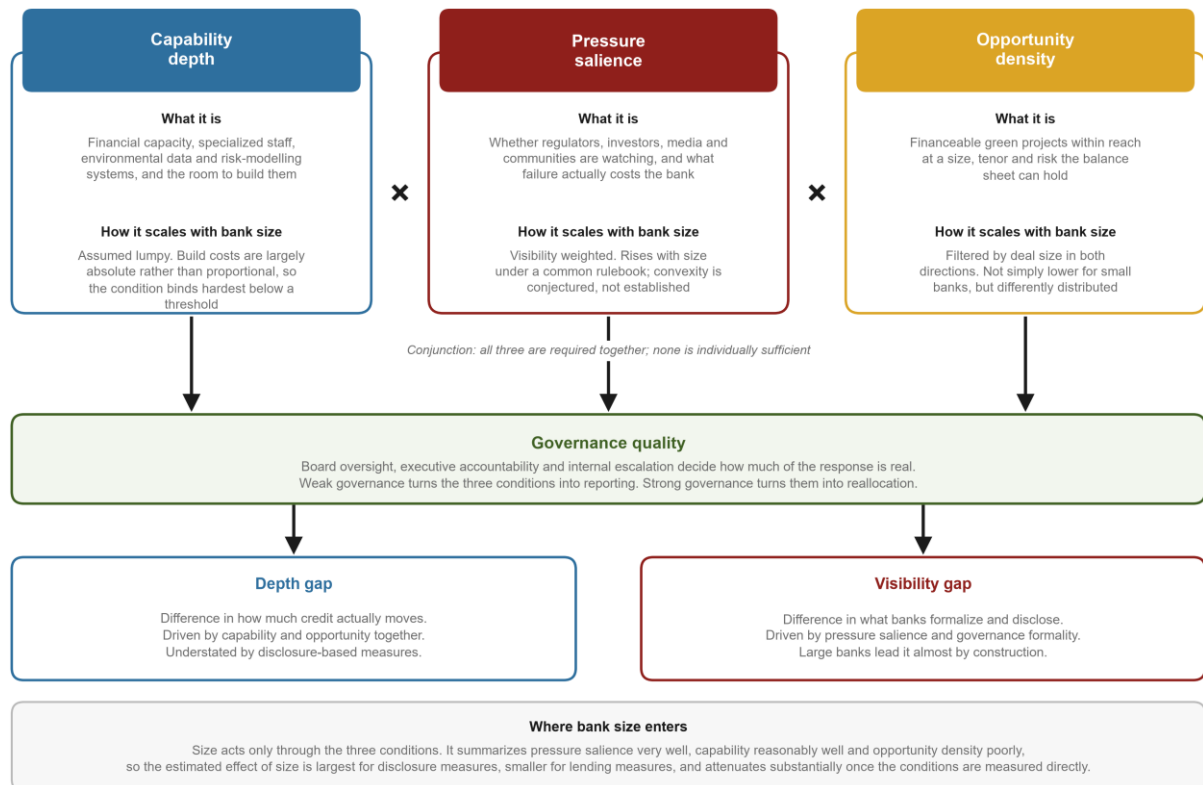
The framework separates the bank-size gap into two gaps that are often reported as one. Each of these gaps has its own definition. The visibility gap is the disparity between large banks and small banks in the things they formalize and disclose, which is to say the disparity in sustainability reporting. It is predominately caused by the salience of pressure and the formality of governance. Large banks almost lead this by default. The depth gap is the disparity in the real amount of credit that moves, which is to say the disparity in the volumes of green financing and the extent to which environmental risk is integrated in lending and in risk assessment. This is a joint effect of capability and opportunity.

Two regulators do not always need to travel in the same direction. A regulator that increases disclosure requirements may increase the visibility gap, leaving the depth gap unchanged. This is exactly what the friction between symbolic and substantive adoption in Theme 2 anticipates. Separating them explains why in disclosure-based measures, the size gap appears to be wider than in lending-based measures. It also suggests that part of the consensus that was previously reported is measurement related and is not actually about the banks. The distinction sharpens decoupling, rather than replacing it. What the decoupling literature argues is that in formal adoption and subsequent operational practice, there can be a separation. What the framework

provides is that the two gaps have distinct drivers. The visibility gap is driven by the salience of governance formality, whilst the depth gap is driven by capability and opportunity. Because of this, they may move in opposite directions, which decoupling as it is commonly described.

Size only fits into the three of the framework's conditions. Size summarizes capability, pressure salience, and opportunity density poorly, and the framework expects the impact of size to change accordingly. Size is expected to be largest in studies based on disclosure measures, be smaller in studies based on lending measures, and will substantially decline when capability and pressure are inserted directly. Size mediates the outcome through the framework conditions, and this does not claim that the reported size effects are spurious. In the absence of studies that have integrated the databases, this hypothesis is testable given the existing data. The Bank-level financial data from Orbis Bank Focus, coupled with structural data and sustainability and governance indicators from the LSEG or similar ESG database, the now mandatory climate-related disclosures in the EU's Pillar 3, and (where available) credit-register data on the composition of lending, all provide the database required to evaluate the prediction. This prediction provides a theory for the pattern of results seen in the studies reviewed in this paper and does not claim any of the results reviewed were inaccurate.

Figure 2 combines the different sections as follows. The three components appear as parallel cards at the top showing their elements and how they vary with the size of the bank, with the conjunction operator between the components indicating that all three are required simultaneously and in their absence none of the components is sufficient. All three components are directed to the full-width governance band below, across which the partition is made. Weak governance converts capacity, pressure, and opportunity into reporting, and strong governance converts them into reallocation. From this band, the Figure separates into two outcome boxes, the depth gap and the visibility gap, each box labeled with the conditions that drive it. The panel at the bottom indicates where bank size enters, which is only via the three components and never directly on adoption.



**Figure 2: The Capability, Pressure And Opportunity Framework**

Source: Authors' Own Work

### *Propositions and Scope*

Five propositions follow from the framework and can be taken directly into empirical work.

**Proposition 1.** The effect of capability on adoption depth is conditional on a threshold set by the fixed cost of environmental risk infrastructure. The marginal effect of size on adoption depth is therefore largest among smaller institutions and declines as size rises. Since the corpus contains few very small institutions, the proposition extrapolates beyond the observed range, as the scope conditions below make clear.

**Proposition 2.** Uniform regulation raises pressure salience more for visible institutions than for less visible ones and so widens the visibility gap. Its effect on the depth gap is indeterminate, because the same requirement imposes a fixed compliance cost that degrades the capability of smaller institutions while the added pressure raises their incentive to adopt. The depth gap widens or narrows according to which of the two effects dominates. Only where the requirement is disclosure-only, or where the fixed cost is subsidised, should the depth gap be left broadly intact.

**Proposition 3.** Capability, pressure, and opportunity are jointly necessary and individually insufficient, so that banks scoring low on any one condition should not appear among institutions showing deep substantive adoption. It would be disconfirmed by the identification

of a substantial group of banks that are demonstrably weak on one condition and are nonetheless reallocating credit at levels comparable to institutions strong on all three. Interaction-based and necessary-condition designs are the appropriate tests.

**Proposition 4.** Governance quality determines the substantive share of adoption, that is the proportion taking the form of reallocated credit rather than of reporting, and it does so independently of bank size.

**Proposition 5.** Since opportunity density is filtered by deal size, adoption measures anchored on large transactions and formal disclosure overstate the bank-size gap relative to measures anchored on portfolio composition within each bank's reachable market. Two dimensions define the reachable market, namely the bank's geographic lending footprint and the loan-size band its balance sheet and single-name concentration limits allow it to hold.

None of the three conditions has yet been measured in any of the literature, and until that happens, these propositions will remain untestable. That said, some candidate measures are available. The depth of capability might be approximated by sustainability and environmental-risk staff per unit of assets, the presence of an internal climate risk model, or spending on environmental data services. Pressure salience might be approximated by supervisory designation or systemic-importance status, the number of analyst or media mentions, or the equity held by institutional investors with climate policies. Of the three, opportunity density is the most difficult to approximate. One potential proxy is the number of green-eligible projects within a bank's reachable market at ticket sizes less than the bank's single-name concentration limit. This proxy could be used in conjunction with local data on renewable energy and building-retrofit investments on a per capita basis as a preliminary proxy. These examples are meant to make the propositions testable, and not to advocate a particular instrument. The important thing is that each of the three conditions contains at least one proxy that can be used to test the framework.

Three elements are associated with the framework. It is comparative and ideal-typical, describing how classes of institution differ and predicting the behavior of any particular bank. Those classes are of two kinds. By scale, and always relative to the national banking system in which they operate, they are small, medium and large. By business model they are profit-oriented commercial banks, cooperative and community institutions, and development banks. Hence, the propositions are group-level comparative statements and are testable at this level. It would be a refutation of Proposition 1 if a finding occurred that very small and medium sized institutions diverged no more in their adoption depth than large and very large institutions.

The framework assumes profit-oriented, lending-driven institutions, so development banks that operate under an explicit policy mandate would be facing a pressure condition of a different kind, and thus, including them would necessitate the framework to be extended rather than just applied. It is finally built upon twelve studies confined to a small number of countries, on which basis it is best to consider the propositions as hypotheses to be tested as opposed to already existing findings. Given the reasons stated, the propositions are deliberately expressed in a way that will make them testable at the group level. The first and foremost thing to investigate, therefore, is whether the framework will maintain its validity outside the boundaries where it was created, and in particular in banking systems where cooperative and community institutions constitute a substantial portion of credit.

## Recommendations and Future Directions

### *Recommendations for Practice*

Closing the gap between the sizes of banks requires more than adhering to sustainability standards, and the framework outlined previously suggests where most of the work should be done first. Since the three conditions are conjunctural, ameliorating a condition that is not binding brings very little benefit, and so the practical question is which condition binds. Although three questions may not be sufficient for answering this, for practical purposes they settle it well enough. Does the bank have staff, systems, and data to assess environmental risk at all, or would it have to build them from scratch? Does anybody outside the bank notice what it does and does anything follow if the bank does nothing? Are there any green projects that the bank can finance within its lending capacity? A bank that answers no to the first question has a capability constraint. A bank that answers no to the second question does not have a capability constraint, and in that case capability improvement will generate better reporting rather than additional lending.

When capability is the limiting condition, small and medium sized banks generally can benefit the most from a pragmatic, phased approach that considers their available resources. A first step may envision the development of a firm-wide sustainability policy, the incorporation of environmental risk assessments into the credit evaluation process, the strengthening of job-related sustainability skills, the development of sustainability-related expertise within the institution, and the deployment of digital tools to assist the bank in better managing and reporting environmental data. Cloning the machinery of a large commercial bank's sustainability practice should not be the goal. The appropriate aim should be to develop capability within the context of the clientele, the market niche, and the strategic aspirations of the bank (Aguila et al., 2026).

Collaboration should be prioritized and the framework helps sort the options by the condition each address. Smaller banks can create partnerships with development finance institutions and universities who can help with access to technical climate risk and finance tools through their expertise and access to climate finance. Developing these partnerships relieves the capability constraint. Similar constraints can be relieved with sector-wide partnerships or initiatives that have standardized environmental reporting, harmonized environmental due diligence, and common databases of climate information. Other partnerships or instruments relieve the opportunity constraint. These include aggregation of small transactions into larger portfolios, standardized assessment templates for small green loans, and guarantee schemes that, once local barriers to new and innovative technologies are addressed, can make green technologies bankable. They are the most important instruments when the constraint is the business pipeline rather than capacity, and they are the most lacking in capacity building efforts. None of this can happen without a clear mandate and overall support from the board and management toward the governance of the institution, given that the main challenge faced is the absence of the will to change the way credit is extended in line with the improvements in sustainability reporting. (Bukhari et al. 2025, Riaz et al. 2023).

### ***Recommendations for Policy or Organizational Use***

Policy design should take into account the varying financial, technological, and personnel resources of banks. Uniform requirements based on the assumption that large banks and small banks have simultaneous ability to meet complex sustainability requirements may worsen the asymmetries that already exist. Therefore, regulators may want to consider tailored approaches in which the environmental goals remain constant, while there is flexibility in the reporting, compliance, and technical standards based on the institutions' abilities. An approach of this nature encourages greater participation, while maintaining the same level of rigor. Further supports for compliance and more consistent implementation would include technical assistance, standardized environmental risk assessments, supervisory guidance, and sector-based sustainability taxonomies (Aguila et al., 2026; Chandran et al., 2025).

This type of approach to regulation is not a novel approach for prudential regulation. Capital and disclosure requirements are typically introduced in a staged manner based on the size of the bank, the status of the listing, or the bank's systemic importance (Basel Committee on Banking Supervision, 2022). The main question to be resolved here is what requirements should scale with the bank's resources and what requirements should remain constant. For example, the environmental objectives and the scope and quality of the taxonomy should remain. The integrity of the taxonomy and the objectives would be undermined by dilution of coverage and the quality of the taxonomy. Potentially, the frequency and granularity of reports, the assurance requirements, the sophistication of modeling, and compliance timelines could all potentially scale. We do not suggest an affluence ladder approach, nor do we suggest asset thresholds. Evidence gathered herein is not sufficient to warrant calibration, and we strongly oppose making calibration proposals in the absence of evidence.

Here is one warning that is directly related to the framework and is against most contemporary policies. Disclosure requirements elevate the pressure and salience for the institutions they are focused on, thus creating a disparity for institutions that are more visible. Therefore, reforms on the disclosure side are projected to widen the visibility gap and leave the depth gap largely unchanged, leading to an overall improvement in the sector's environmental sustaining profile due to reporting rather than lending. For reforms on the depth gap, mechanisms, and opportunities need to be addressed. Other limitations of supply-side efforts are obstacles to demand. Hallunovi and Uku (2025) interviewed 350 members of the public in Albania and found that there was a strong belief among the respondents of the potential of green banking, and a moderate level of prior knowledge of green banking, indicating that reform needs to address level of informed demand of the banking services first.

An appropriate policy ecosystem is as important as the rules themselves. credit guarantees, blended finance, green investment funds, and partnerships between the public and private sectors comprise some of the tools that reduce perceived risk of financing and improve the case for sustainable investment. National reporting standards, centralized climate-risk databases, and targeted capacity building programs would help reduce disparities for institutions of all sizes. While external measures of this nature are important, banks should enhance these efforts by addressing sustainability in strategic planning, performance assessments, and risk management. Green banking should become a long-term strategic goal of the organization, rather than a regulatory burden (Hallunovi & Uku, 2025; Riaz et al., 2023).

## Future Research Directions

The main emphasis should be integration. As it stands, studies apply stakeholder theory, institutional theory, legitimacy theory, corporate governance theory, and the resource-based view in a disjointed manner, which leads to fragmented descriptions of the bank-size gap. The framework presented here is one effort at integration and should be considered preliminary. Research should focus on the framework's propositions, sharpen the three conditions, and explore the interplay of organizational resources, governance quality, stakeholder demands, institutional environments, and market conditions in various banking environments. Research of this nature would substantiate our knowledge of how banking and financial systems adapt to sustainability, and why there are discrepancies in the size of the organizations (Bukhari et al., 2025; Chandran et al., 2025).

To design empirical research on the lines of sustainability to help fill the gaps in focus on methods, geographies, and sectors, longitudinal studies are required to understand the evolution of green banking. Cross-country studies could also help understand disparate adoption of green banking and how regulatory frameworks, institutions, and quality, as well as the characteristics of financial systems, drive such discrepancies. Of greater importance are community banks, cooperative banks, rural financial institutions, credit unions, and development banks, among others. Measurement also needs to focus on parameters other than sustainability disclosures. Green banking and sustainability research will help better articulate the existing gaps and help strengthen the knowledge base with respect to the challenges and the effectiveness of green banking initiatives and climate-related practices and policies, integration of climate risk, and development of related banking capabilities (Aguila et al., 2026; Riaz et al., 2023).

## Conclusion and Limitations

This final section draws the review together and sets out its limitations.

## Conclusion

This narrative synthesis examines the bank-size gap in green banking through a four-level framework of organizational resources and technological readiness, governance and stakeholder pressure, regulation and compliance, and bankability and business models. In combination, these levels indicate that the gap in the adoption of green banking cannot be attributed to size of the bank in question. Size overlaps many other complexities of an organization and the market that determines environmental sustainability, such as a bank's governance, lending, and risk management. Factors such as governance, technological, and financial resources also contribute to a bank's ability to implement green banking practices. Smaller banks have less capacity and resources and pay higher compliance costs than larger banks (Aguila et al., 2026; Bukhari et al., 2025).

The review also indicated that the literature is both conceptually and empirically disjointed, despite its growth. The different definitions of green banking and of sustainable banking and of environmental finance, along with the application of different theories and the usage of different adoption indicators, make them almost impossible to compare across texts (Riaz et al., 2023). Much of the available evidence is also unevenly located across countries and banking sectors, and it is focused on the banking sectors of a select group of emerging

economies, especially on the commercial and Islamic banks. Therefore, the existing literature can at best describe some of the institutional contexts and conditions that relate to placement of the bank-size gap. Integrating the literature under broad themes enables convergence across the different levels of explanation, divergence, and the gaps that remain unexplained.

Two additions follow and go beyond the broad finding that large banks possess greater green banking capacity. The first is the capability, pressure, and opportunity framework. It states that combined capability, pressure, and opportunity create the condition for adoption, with governance determining how far adoption will extend to credit decisions. Each of the three conditions is grounded in a resource-based view, institutional and legitimacy theory, and resource dependence theory, respectively. The interaction of these theories is of great importance to the framework. Deal-size filtering of opportunity density holds no equivalent in existing tripartite models of behavior.

The second addition distinguishes the visibility gap in disclosure from the depth gap in financing. Because they respond to different stimuli, they can move in opposite directions. An indicator based on reporting will capture progress that has not materialized through lending. The two contributions are summarized in twelve propositions and, together, provide a more comprehensive view of bank size. It is the sum of numerous structural and market-based conditions rather than a stand-alone organizational attribute. Gapping the divide will consequently require several actors across the sustainable finance ecosystem.

The review addresses several unresolved conceptual problems and methodological limitations and proposes some suggestions for future work that is both theoretical and empirical. As green banking systems begin to take shape in the context of more advanced climate policies and ongoing reform of the financial sector, the development of banking systems to support financial resilience and sustainable goals will become increasingly important.

## Limitations

Some caveats apply. Firstly, the search was primarily done in Scopus. While it has a wide coverage of peer-reviewed research in the fields of business, finance, economics and sustainability, a single database will miss publications indexed in Web of Science, Dimensions, Google Scholar and specialized sustainability collections, and recent, regional and discipline specific publications may not have been captured. The search string is a second constraint but more importantly, as each record must contain an explicit difference term, this constrains the search to studies which examine size effects and therefore will miss a large proportion of relevant empirical work, so the studies in this collection are best understood as studies which explicitly address the gap, rather than all studies which relate to the gap.

The fourth review presented publications for the years 2010 to 2026. This range captures the development of the area of green banking in research, however this means it does not include studies which could have provided context for the area from the existing research on environmental finance and the corporate sector's responsibility to the environment, and in the end, no studies which were published before 2018 fulfilled the criteria for inclusion, leaving an eight-year gap.

Limitations to the size of the corpus constrain what can be claimed. Twelve studies reflect the recent focus on the bank-size gap as an explicit area of interest, and the reasons for treating that number as workable are outlined in the review approach above. It is still a small evidence base. Two of twelve studies examine bank size directly, five offer secondary (rather than primary) evidence, and no quantitative synthesis is attempted. Nothing should be interpreted as an empirically derived generalization concerning banking systems in the aggregate. The framework is an interpretation constructed from the corpus rather than a finding exclusively derived from it, and the conclusions need to be reassessed as the research progresses.

Coverage is uneven across banking sectors and geographical regions. The literature focuses predominantly on commercial banks, and more recently on Islamic banks, while the other types, such as cooperative banks, community banks, credit unions, regional banks, and development banks, are still under-researched. Most of the empirical studies are concentrated in a few developing countries, which restricts the extent to which the results can be generalized across different regulatory and institutional contexts. The conclusions presented should not be interpreted as equally applicable to all banking systems. Reviews with a broader geographical scope and a more diverse representation of various banking models would help determine if the bank-size gap is context-dependent (Chandran et al., 2025; Riaz et al., 2023).

Distribution of citations (as evidence) is another limitation, and one that impinges on the proposed framework. Several sources merge to form the synthesis. In this case, Aguila et al (2026) synthesizes Theme 4 and one of the four configurations discussed above, and appears 16 times in the framework, whereas Riaz et al (2023) is cited ten times (even though it is a review, and therefore not primary research). Three of the twelve studies come from a single research program that were published in one journal (Bukhari et al., 2020, 2022, 2025), and two of those three studies report the same survey of 419 Pakistani branch managers, so the corpus is less independent than a count of twelve. A framework that cites part of the evidence to support the framework cannot be considered independently corroborated, and the propositions must be read accordingly.

Another constraint is the conceptual confusion in the literature. Although it is easily recognized that Green Banking, Sustainable Banking, Green Finance, Sustainable Finance, and Environmental Finance are different concepts, they are used interchangeably. The measurement of these concepts ranges from disclosures to governance, from the management of environmental risks to the development of environmental behaviors in the organization. The lack of consistent concepts and measures makes it difficult to make comparisons and also makes the development of cumulative theory more challenging. The attempt to integrate these concepts was made. However, the synthesis contains the inconsistencies of the sources that it draws on.

Lastly, narrative review is an interpretive method. Unlike systematic reviews and meta-analyses, it aims for conceptual integration instead of statistical integration, and relies on the researcher's judgement to identify, synthesize, and interpret different and diverse sources of evidence (Baumeister & Leary, 1997; Green et al., 2006). It is useful for a new and fragmented field and involves some degree of subjectivity for both what is selected and for the reading of it. The results and the interpretation should be considered an integrated view, rather than a set of final integrative conclusions. Systematic reviews, bibliometrics, and meta-analysis can be

leveraged to verify the propositions made in the present study against more systematically and extensively derived evidence.

---

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Acknowledgements:</b>               | The authors would like to express their sincere appreciation to Universiti Teknologi MARA Cawangan Kedah and to Universitas Islam Bandung for the institutional support that made this collaboration possible, and to colleagues at both faculties who provided constructive discussions and insightful feedback during the preparation of this manuscript.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Funding Statement:</b>              | This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Conflict of Interest Statement:</b> | The authors declare that there are no known conflicts of interest or competing financial interests that could have appeared to influence the work reported in this paper.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Ethics Statement:</b>               | This study did not involve any human participants, animals, or sensitive data requiring ethical approval. The authors confirm that the research was conducted in accordance with accepted academic integrity and ethical publishing standards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Author Contribution Statement:</b>  | Both authors contributed significantly to the development of this manuscript. Noor Zahirah Mohd Sidek was responsible for conceptualization, the review design and literature search, the thematic synthesis, development of the conceptual framework, and drafting of the manuscript. Tasya Aspiranti contributed to the conceptual framing, the interpretation of the evidence, and critical revision of the manuscript. Both authors read and approved the final version prior to submission.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>AI Declaration:</b>                 | <p>During the preparation of this manuscript the authors used a generative AI assistant, Claude (Anthropic). Its use went further than language editing, and it is set out here in full. The assistant was used to draft and redraft substantial parts of the text, including passages in the Introduction, the Conceptual Background, the Thematic Review of Literature, the Critical Discussion, the integrated framework, the Recommendations, and the Conclusion. It was also used to organise the structure of the paper, to build Table 1 and Table 2, to generate Figure 1 and Figure 2 from content specified by the authors, and to check the manuscript for consistency of language and cross-referencing. The capability, pressure and opportunity framework was developed through repeated exchanges between the authors and the assistant, with the authors setting the argument and judging each version.</p> <p>The research decisions remained with the authors. The authors set the research question, designed and ran the database search, selected the twelve studies that make up the corpus, read those studies, and determined what the review claims. The authors reviewed every passage the assistant produced, corrected where it was inaccurate or overstated, and checked the in-text citations and the reference list against the original publications. Generative AI is not an author of this work and is not credited as one. The authors accept full responsibility for the content of the manuscript, for the accuracy of its references, and for the integrity of the research reported.</p> |

---

## References

- Aguila, N., Haufe, P., Baioni, R., Fichtner, J., Schairer, S., Urban, J., & Wullweber, J. (2026). The green banking gap: How bankability, business models, and regulations challenge banks' decarbonisation. *Competition & Change*. Advance online publication. <https://doi.org/10.1177/10245294261431901>
- Akasumbawa, M. D. D., Qoyum, A., & Ardiansyah, M. (2026). Does corporate governance influence Islamic green banking disclosure? The moderating role of bank size. *International Journal of Islamic Finance and Sustainable Development*, 18(1), 86–106. <https://doi.org/10.55188/ijifsd.v18i1.1194>
- Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. L. (2000). *Manufacturing advantage: Why high-performance work systems pay off*. Cornell University Press.
- Bank Negara Malaysia. (2021). Climate change and principle-based taxonomy. Bank Negara Malaysia. <https://www.bnm.gov.my/documents/20124/938039/Climate+Change+and+Principle-based+Taxonomy.pdf>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120. <https://doi.org/10.1177/014920639101700108>
- Basel Committee on Banking Supervision. (2022). High-level considerations on proportionality. Bank for International Settlements. <https://www.bis.org/bcbs/publ/d534.htm>
- Baumeister, R. F., & Leary, M. R. (1997). Writing narrative literature reviews. *Review of General Psychology*, 1(3), 311–320. <https://doi.org/10.1037/1089-2680.1.3.311>
- Berger, A. N., & Udell, G. F. (2002). Small business credit availability and relationship lending: The importance of bank organisational structure. *The Economic Journal*, 112(477), F32-F53. <https://doi.org/10.1111/1468-0297.00682>
- Bose, S., Khan, H. Z., Rashid, A., & Islam, S. (2018). What drives green banking disclosure? An institutional and corporate governance perspective. *Asia Pacific Journal of Management*, 35(2), 501–527. <https://doi.org/10.1007/s10490-017-9528-x>
- Bromley, P., & Powell, W. W. (2012). From smoke and mirrors to walking the talk: Decoupling in the contemporary world. *Academy of Management Annals*, 6(1), 483-530. <https://doi.org/10.5465/19416520.2012.684462>
- Bukhari, S. A. A., Bukhari, S. N. Z., Hashim, F., & Amran, A. (2025). A stakeholder approach toward green banking adoption and green capability. *International Journal of Ethics and Systems*. Advance online publication. <https://doi.org/10.1108/IJOES-01-2025-0013>
- Bukhari, S. A. A., Hashim, F., & Amran, A. (2020). Green banking: A road map for adoption. *International Journal of Ethics and Systems*, 36(3), 371–385. <https://doi.org/10.1108/IJOES-11-2019-0177>
- Bukhari, S. A. A., Hashim, F., & Amran, A. (2022). Pathways towards green banking adoption: Moderating role of top management commitment. *International Journal of Ethics and Systems*, 38(2), 286–315. <https://doi.org/10.1108/IJOES-05-2021-0110>
- Cadbury, A. (1992). Report of the Committee on the Financial Aspects of Corporate Governance. Gee.
- Chandran, R., Chandran, M. C. S., Achuthan, K., & Sahib, P. R. (2025). Theoretical perspectives on green banking adoption in India: Regulatory uncertainty, institutional barriers, and policy solutions. *Discover Sustainability*, 6(1), Article 581. <https://doi.org/10.1007/s43621-025-01406-3>

- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147-160. <https://doi.org/10.2307/2095101>
- Dul, J. (2016). Necessary condition analysis (NCA): Logic and methodology of “necessary but not sufficient” causality. *Organizational Research Methods*, 19(1), 10-52. <https://doi.org/10.1177/1094428115584005>
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- Green, B. N., Johnson, C. D., & Adams, A. (2006). Writing narrative literature reviews for peer-reviewed journals: Secrets of the trade. *Journal of Chiropractic Medicine*, 5(3), 101–117. [https://doi.org/10.1016/S0899-3467\(07\)60142-6](https://doi.org/10.1016/S0899-3467(07)60142-6)
- Hallunovi, A., & Uku, S. (2025). The impact of green bank governance on sustainable economic development. *Corporate Governance and Sustainability Review*, 9(4), 33–44. <https://doi.org/10.22495/cgsrv9i4p3>
- Kartiko, N. D., Indradewi, A. A., & Sugianto, F. S. (2024). The urgency of green banking regulations in Indonesia in the implementation of sustainable development. *Administrative and Environmental Law Review*, 5(2), 135–154. <https://doi.org/10.25041/aclr.v5i2.3604>
- Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340-363. <https://doi.org/10.1086/226550>
- Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, 6, Article 42. <https://doi.org/10.1186/1748-5908-6-42>
- Network for Greening the Financial System. (2020). Guide for supervisors: Integrating climate-related and environmental risks into prudential supervision. NGFS. <https://www.ngfs.net/en/guide-supervisors-integrating-climate-related-and-environmental-risks-prudential-supervision>
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. Harper & Row.
- Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond*. University of Chicago Press.
- Riaz, A., Riaz, N., Raza, H., & Mirza, F. (2023). Green banking practices: A bibliometric analysis and systematic literature review. In *Entrepreneurship and Green Finance Practices: Avenues for Sustainable Business Start-ups in Asia* (pp. 299–317). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-80455-678-820231016>
- Sarma, P., & Roy, A. (2021). A scientometric analysis of literature on green banking (1995–March 2019). *Journal of Sustainable Finance & Investment*, 11(2), 143–162. <https://doi.org/10.1080/20430795.2020.1711500>
- Sharma, M., & Choubey, A. (2022). Green banking initiatives: A qualitative study on Indian banking sector. *Environment, Development and Sustainability*, 24(1), 293–319. <https://doi.org/10.1007/s10668-021-01426-9>
- Stein, J. C. (2002). Information production and capital allocation: Decentralized versus hierarchical firms. *The Journal of Finance*, 57(5), 1891-1921. <https://doi.org/10.1111/0022-1082.00483>
- Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3), 571-610. <https://doi.org/10.5465/amr.1995.9508080331>

## Appendix A

Table 2: Characteristics Of The Twelve Included Studies

| Study                    | Outlet and document type                                                              | Country or region                                                                                                  | Bank type(s) covered                                                                                                  | Research design        | Sample and period                                                                       | How adoption is operationalised                                        | Bank size, measure and role                                                      | Theoretical lens                                                  | Reported finding on bank size                                                                                                                        |
|--------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aguila et al. (2026)     | Competition & Change, journal article (advance online)                                | Europe, with interviewees in Belgium, France, Germany, Luxembourg, the Netherlands, Switzerland, the UK and the US | Commercial banks, including seven G-SIBs, together with non-bank financial institutions, regulators and civil society | Qualitative empirical  | 88 semi-structured interviews, including 21 bank staff across 11 banks. Cross-sectional | Interview accounts of green lending and decarbonisation practice       | Not formally measured. Large and smaller institutions are compared qualitatively | Business model and market structure, political economy of banking | Green lending is constrained by bankability, business models and regulation. Well-resourced large banks continue lending to carbon-intensive clients |
| Akasumbawa et al. (2026) | International Journal of Islamic Finance and Sustainable Development, journal article | Indonesia and Malaysia                                                                                             | Islamic banks                                                                                                         | Quantitative empirical | 13 Indonesian and 8 Malaysian Islamic banks, 2009 to 2024. Panel, fixed effects         | Islamic Green Banking Disclosure Index constructed by the authors      | Explicit moderator of the governance-disclosure relationship                     | Corporate governance, maqasid al-Shari'ah                         | Bank size strengthens the effect of corporate governance on green banking disclosure                                                                 |
| Bose et al. (2018)       | Asia Pacific Journal of Management, journal article                                   | Bangladesh                                                                                                         | Commercial banks                                                                                                      | Quantitative empirical | Commercial banks, 2007 to 2014. Panel content analysis of annual reports                | Green banking disclosure index coded from annual reports               | Included as a firm-level control among the determinants of disclosure            | Institutional theory, corporate governance                        | Central-bank guidance issued in 2011 raised disclosure. Governance and institutional factors drive disclosure                                        |
| Bukhari et al. (2020)    | International Journal of Ethics and Systems, journal article                          | Pakistan, conceptual                                                                                               | Not applicable                                                                                                        | Conceptual             | Not applicable                                                                          | Not measured. Proposes an ESG-based roadmap of green banking practices | Not applicable                                                                   | Stakeholder theory, ESG                                           | No size analysis. The roadmap is offered as applicable at any stage of adoption                                                                      |
| Bukhari et al. (2022)    | International Journal of Ethics and Systems, journal article                          | Pakistan                                                                                                           | Commercial banks, branch level                                                                                        | Quantitative empirical | Survey of 419 branch managers, cross-sectional, PLS-SEM                                 | Self-reported green banking adoption at branch level                   | Not measured                                                                     | Stakeholder theory, corporate environmental ethics                | No size finding. Top-management commitment moderates the effect of stakeholder pressure on adoption                                                  |
| Bukhari et al.           | International                                                                         | Pakistan                                                                                                           | Commercial                                                                                                            | Quantitative           | Survey of 419                                                                           | Self-reported                                                          | Not measured                                                                     | Stakeholder                                                       | No size finding.                                                                                                                                     |

|                        |                                                                 |                        |                                           |                                      |                                                                                        |                                                                    |                |                                                    |                                                                                                                                       |
|------------------------|-----------------------------------------------------------------|------------------------|-------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| (2025)                 | Journal of Ethics and Systems, journal article (advance online) |                        | banks, branch level                       | empirical                            | branch managers, cross-sectional, PLS-SEM. Same evidence base as Bukhari et al. (2022) | green banking adoption                                             |                | theory, institutional theory                       | Green capability moderates the effect of stakeholder pressure, and community pressure is not significant                              |
| Chandran et al. (2025) | Discover Sustainability, journal article                        | India                  | Banking sector generally                  | Theoretical / conceptual             | Not applicable                                                                         | Not applicable                                                     | Not applicable | Institutional theory, regulatory perspectives      | No size analysis. Regulatory uncertainty and institutional barriers are identified as the binding constraints                         |
| Hallunovi & Uku (2025) | Corporate Governance and Sustainability Review, journal article | Albania                | Not bank-level, general public            | Quantitative empirical (survey)      | 350 general-population respondents, cross-sectional                                    | Public awareness of, and stated demand for, green banking products | Not applicable | Corporate governance, sustainable development      | No bank-size evidence. Moderate public awareness at 42 per cent, with cost, knowledge and regulation reported as barriers             |
| Kartiko et al. (2024)  | Administrative and Environmental Law Review, journal article    | Indonesia              | All banks within the regulatory perimeter | Normative legal analysis             | Statutory and conceptual approach, no sample                                           | Not applicable                                                     | Not applicable | Legal and regulatory analysis                      | No size analysis. Weak sanctions and enforcement leave green banking dependent on voluntary initiative                                |
| Riaz et al. (2023)     | Emerald edited volume, peer-reviewed book chapter               | Global (Scopus corpus) | All bank types                            | Review (bibliometric and systematic) | 44 Scopus-indexed articles, PRISMA protocol, VOSviewer                                 | Not measured. Maps how prior work measures adoption                | Not applicable | Multiple lenses mapped across the prior literature | No primary size finding. Reports that 82 per cent of the prior literature is survey-based and that terminology is used inconsistently |
| Sarma & Roy (2021)     | Journal of Sustainable Finance & Investment, journal article    | Global                 | All bank types                            | Review (scientometric)               | Green banking literature, 1995 to March 2019                                           | Not measured. Maps the structure of the literature                 | Not applicable | Six dimensions identified across the literature    | No primary size finding. The literature clusters into conceptual, legal, model, stakeholder, green                                    |

|                         |                                                              |       |                                        |                       |                                                                                |                                                                 |              |                                                                                  |                                                                                               |
|-------------------------|--------------------------------------------------------------|-------|----------------------------------------|-----------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                         |                                                              |       |                                        |                       |                                                                                |                                                                 |              |                                                                                  | performance and financial dimensions                                                          |
| Sharma & Choubey (2022) | Environment, Development and Sustainability, journal article | India | 12 public and private commercial banks | Qualitative empirical | 36 semi-structured interviews with middle and senior managers, cross-sectional | Green product development, green CSR and green internal process | Not measured | Conceptual model of green banking initiatives, green brand image and green trust | No size analysis. Green initiatives are found to strengthen green brand image and green trust |

Source: Authors' Own Work

Note. "Not applicable" indicates that the study design does not admit the field. Conceptual, normative and review entries have no sample, no adoption measure and no size variable, and that is itself part of what the table is intended to disclose. Two of the twelve studies analyse bank size directly. Three are conceptual, theoretical or normative and two are reviews of prior literature, so five of the twelve supply secondary rather than primary evidence. Bukhari et al. (2022) and Bukhari et al. (2025) report the same survey of 419 branch managers.