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Green financing: A systematic literature review and future research direction

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Abstract
This study systematically reviews the existing literature on green financing to map the intellectual structure, identify key research clusters, and propose future research agendas based on a comprehensive dataset of 204 articles published between 2019 and 2025. This paper employs a Systematic Literature Review (SLR) approach. Data were extracted from the Scopus database, resulting in 204 peer-reviewed articles. The analysis integrates bibliometric insights and thematic synthesis to identify dominant research streams, geographic distributions, and methodological trends. The review identifies five major research streams: (1) green financing and environmental performance; (2) green bonds and financial innovation; (3) the role of green financing in renewable energy transition; (4) green financing in developing and emerging economies; and (5) ESG integration and corporate sustainability. This review synthesizes a large, contemporary dataset to provide a comprehensive framework linking macro-level policies to micro-level financial practices. It offers a robust roadmap for future research, particularly emphasizing digitalization, climate risk, and social justice dimensions.

Keywords: Green financing; systematic literature review; sustainable development; ESG; renewable energy

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Abstrak

Studi ini secara sistematis meninjau literatur yang ada tentang pembiayaan hijau untuk memetakan struktur intelektual, mengidentifikasi kelompok penelitian utama, dan mengusulkan agenda penelitian masa depan berdasarkan kumpulan data komprehensif dari 204 artikel yang diterbitkan antara tahun 2019 dan 2025. Makalah ini menggunakan pendekatan Tinjauan Literatur Sistematis (SLR). Data diekstrak dari basis data Scopus, menghasilkan 204 artikel yang ditinjau sejawat. Analisis ini mengintegrasikan wawasan bibliometrik dan sintesis tematik untuk mengidentifikasi aliran penelitian dominan, distribusi geografis, dan tren metodologis. Tinjauan ini mengidentifikasi lima aliran penelitian utama: (1) pembiayaan hijau dan kinerja lingkungan; (2) obligasi hijau dan inovasi keuangan; (3) peran pembiayaan hijau dalam transisi energi terbarukan; (4) pembiayaan hijau di negara berkembang dan negara-negara berkembang; dan (5) integrasi ESG dan keberlanjutan perusahaan. Tinjauan ini mensintesis kumpulan data kontemporer yang besar untuk menyediakan kerangka kerja komprehensif yang menghubungkan kebijakan tingkat makro dengan praktik keuangan tingkat mikro. Ini menawarkan peta jalan yang kuat untuk penelitian masa depan, khususnya menekankan dimensi digitalisasi, risiko iklim, dan keadilan sosial.

Kata Kunci: pembiayaan hijau; tinjauan pustaka sistematis; pembangunan berkelanjutan; ESG; energi terbarukan

1. Introduction

Green financing has emerged as a critical mechanism for aligning financial flows with climate and sustainability objectives in response to escalating environmental challenges (Pandey, 2025). The global community has witnessed unprecedented ecological degradation, rising carbon emissions, and intensifying climate-related risks, prompting urgent calls for transformative action across economic sectors. In this context, financial systems have been recognized as pivotal actors capable of redirecting capital toward environmentally sustainable activities. Green financing encompasses a range of financial instruments and practices—including green bonds, green loans, green banking, and ESG-linked products—designed to fund projects that deliver positive environmental outcomes while maintaining economic viability (Hridhya et al., 2025; Oktrivina, Effendi, et al., 2025). Following the landmark Paris Agreement in 2015 and the adoption of the United Nations Sustainable Development Goals (SDGs), governments, financial institutions, and corporations have increasingly embraced these instruments to support the transition toward a low-carbon, climate-resilient economy (Devender et al., 2025; Randa, 2026). The growing urgency of climate action has positioned green financing not merely as an alternative investment approach but as a fundamental component of global sustainability strategies.

A corresponding surge in academic inquiry across disciplines has accompanied the proliferation of green financing initiatives. Scholars from finance, economics, environmental management, and policy studies have contributed to a rapidly expanding body of literature examining various dimensions of green financing. Research has explored the effectiveness of green bonds in mobilizing capital for renewable energy projects (Ning et al., 2023; Taghizadeh-Hesary & Yoshino, 2020), the impact of green banking practices on environmental performance (Oktrivina, Sumail, et al., 2025;

Thapliyal, Gupta, Kumari, et al., 2025; Zhang et al., 2022), and the role of green financing in facilitating energy transitions (Qi et al., 2023; Zheng et al., 2025). Additionally, studies have examined the relationship between green financing and corporate ESG performance (Habib & Khan, 2025; Ye & Tian, 2025), as well as the unique challenges developing economies face in accessing green capital (Frimpong Henneh & Awunyo-Vitor, 2026; Shah et al., 2025). This diversity of research reflects the multidimensional nature of green financing and its relevance across geographic, institutional, and sectoral contexts.

Despite the rapid growth and diversification of the green financing literature, existing reviews have often been constrained by limited scope, focusing predominantly on specific instruments, such as green bonds, or particular geographic contexts, such as China. While these focused reviews have provided valuable insights, they have not captured the full breadth and complexity of the field as it has evolved over the past decade. A comprehensive synthesis that integrates findings across different instruments, regions, methodologies, and thematic areas remains conspicuously absent from the literature. Moreover, the field is currently at a critical juncture where new dimensions—such as climate policy uncertainty (Khlif & Toumi, 2026; Toumi, 2026), digital finance integration (Hou et al., 2024; Zia et al., 2024), and the social implications of green transitions (Pienaah, 2025; Saha et al., 2022)—are emerging as central concerns. These developments signal the need for an updated, holistic review that maps the intellectual landscape of green financing research and identifies trajectories for future inquiry.

The absence of a comprehensive synthesis presents several limitations for the advancement of knowledge in this domain. First, fragmented understanding across research streams may hinder the development of integrated theoretical frameworks that can account for the interplay between macro-level policies, institutional mechanisms, and micro-level outcomes. Second, without a clear map of the field, scholars may inadvertently overlook important methodological innovations or emerging themes that could inform their own research. Third, policymakers and practitioners seeking evidence-based guidance may struggle to navigate a dispersed literature to identify best practices and effective interventions. Addressing these gaps requires a systematic review that not only aggregates existing findings but also identifies patterns, contradictions, and unexplored territories within the green financing literature.

To address these gaps, this study conducts a systematic literature review of green financing research based on a comprehensive dataset of 204 peer-reviewed articles extracted from the Scopus database, covering the period from 2019 to 2026. This temporal scope captures the most recent and rapidly evolving phase of green financing scholarship, including post-Paris Agreement developments and contemporary concerns such as the COVID-19 pandemic's impact on sustainable finance and the growing focus on climate policy uncertainty. The dataset encompasses diverse geographic contexts, methodological approaches, and thematic foci, enabling a robust and nuanced synthesis of the field. By employing thematic analysis alongside bibliometric insights, this review aims to provide a comprehensive mapping of the intellectual structure of green financing research.

Guided by the identified gaps and the richness of the available data, this study addresses three primary research questions. RQ1: What are the publication trends, geographic distributions, and methodological patterns in green financing research? RQ2: What are the dominant thematic clusters in the literature? RQ3: What are the key research gaps, and what directions should future research take? By answering these questions, this review contributes to the literature in three significant ways. First, it provides an integrated framework that synthesizes fragmented research streams into a coherent

conceptual model linking drivers, mechanisms, and outcomes of green financing. Second, it offers a systematic assessment of the field's development, highlighting areas of consensus, contention, and omission. Third, it proposes a forward-looking research agenda that identifies priority areas for future inquiry, thereby serving as a valuable resource for scholars, policymakers, and practitioners seeking to advance the theory and practice of green financing in the pursuit of sustainable development.

2. Material and methods

This study employs a systematic literature review (SLR) to map and synthesize the existing research on green financing comprehensively. To ensure transparency, rigor, and reproducibility, the review follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, which provide a standardized framework for conducting and reporting systematic reviews (Hijriyah et al., 2023)). The PRISMA protocol was applied across four stages: identification, screening, eligibility, and inclusion, as illustrated in Table 1. This methodological approach enables a systematic and auditable process for selecting relevant studies and synthesizing their findings.

2.1 PRISMA Flow: Identification

The initial identification stage involved defining the search strategy and retrieving potential articles from the academic database. The Scopus database was selected as the primary data source due to its comprehensive coverage of peer-reviewed journals across the social sciences, environmental sciences, economics, and finance disciplines. The search was conducted in January 2026 and covered the period from 2019 to 2026, capturing the most recent and rapidly evolving phase of green financing research following the Paris Agreement and the intensification of global climate commitments. The search strategy employed the following keywords and Boolean operators applied to article titles, abstracts, and keywords: Search keywords: TITLE-ABS-KEY ("green financing" OR "green finance" OR "green bond" OR "sustainable finance"). This search yielded an initial pool of 487 articles. No language or document type restrictions were applied at this stage to ensure maximum coverage.

2.2 PRISMA Flow: Screening

In the screening stage, duplicate records were identified and removed. A manual review of the initial 487 articles revealed **38 duplicate records**, resulting in **449 unique articles** proceeding to the next stage. Subsequently, the screening of titles and abstracts was conducted to assess relevance to the review objectives. Articles were screened based on their explicit focus on green financing as a central theme, rather than as a peripheral or incidental topic. During this phase, the following types of records were excluded:

- Conference proceedings and book chapters (non-peer-reviewed)
- Non-English publications
- Articles where green financing was mentioned only briefly without substantive analysis

This screening process resulted in the exclusion of **189 articles**, leaving **260 articles** eligible for full-text review.

2.2. PRISMA Flow: Eligibility

The eligibility stage involved a thorough full-text review of the remaining 260 articles against predefined inclusion and exclusion criteria. The following inclusion criteria were applied:

- Document type: Peer-reviewed journal articles only (original research, systematic reviews, and conceptual papers)
- Language: English
- Relevance: Articles with clear empirical or theoretical contributions to green financing, including studies on green bonds, green banking, ESG integration, renewable energy financing, and related topics
- Accessibility: Full text available for review

The following exclusion criteria were applied:

- Articles where green financing was a peripheral or secondary topic (e.g., studies focused primarily on corporate social responsibility with a brief mention of green finance)
- Editorials, commentaries, and opinion pieces without original analysis
- Duplicate records are not identified in the screening stage

After applying these criteria, 56 articles were excluded during the full-text review, leaving a final dataset of 204 articles that met all inclusion criteria. The primary reasons for exclusion at this stage included insufficient focus on green financing (n = 31), unavailability of full text (n = 12), and non-peer-reviewed status not identified earlier (n = 13).

2.3. PRISMA Flow: Included

The final dataset comprised **204 peer-reviewed articles** published between 2019 and 2026. These articles form the basis for all subsequent analysis and synthesis in this review. A summary of the PRISMA flow process is presented below:

Table 1. PRISMA flow summary

Stage	Description	Number of Records
Identification	Records identified through Scopus database search	487
	Duplicates removed	(38)
Screening	Records screened by title and abstract	449
	Records excluded during screening	(189)
Eligibility	Full-text articles assessed for eligibility	260
	Articles excluded during full-text review	(56)
Included	Articles included in the systematic review	204

2.4. Data Analysis

The analysis of the 204 articles included in this study used a combination of bibliometric and thematic analysis techniques to address the research questions thoroughly.

Bibliometric Analysis

A descriptive bibliometric analysis was conducted in Microsoft Excel, with manual coding. Key aspects systematically coded for each article included publication year, source title (journal), author affiliations and countries, research methodology (quantitative, qualitative, mixed-methods, conceptual), and geographic focus. This approach facilitated the identification of publication trends, the most prolific journals and countries, prevailing methodological approaches, and the geographic distribution within the literature.

Thematic Analysis

Thematic analysis was employed to identify, analyze, and synthesize the core themes and research streams within the green financing literature. Following the inductive coding approach recommended by Braun and Clarke (2006), the analysis unfolded in several phases. Initially, each article's abstract, keywords, and full text (when necessary) were reviewed to develop familiarity with the content. Next, preliminary codes were generated to capture key concepts, variables, and findings. These codes were then organized into potential themes based on conceptual similarity and recurring patterns. Subsequently, themes were reviewed and refined to ensure both coherence and distinctiveness. Ultimately, each theme was defined and named, leading to the identification of five dominant thematic clusters that structure the findings of this review. This thematic synthesis offers a nuanced understanding of the intellectual framework of green financing research and serves as the foundation for the conceptual framework presented in the discussion section.

3. Results

This chapter presents the findings of the systematic literature review based on the 204 articles selected through the PRISMA protocol. The results are organized to answer the three research questions: (1) publication trends, geographic distributions, and methodological patterns; (2) dominant thematic clusters; and (3) research gaps and future directions. The discussion integrates these findings to construct a comprehensive conceptual framework that maps the intellectual structure of green financing research.

3.1 Descriptive results

The annual distribution of publications (Figure 1) shows a clear upward trend, highlighting growing academic interest in green financing. Beginning with a modest total of six articles between 2019 and 2021, the volume has steadily increased, with a significant surge from 2022 onward. The peak observed in 2025, with 44 articles, indicates that the field has entered an accelerated growth phase, likely driven by global climate commitments, policy advancements, and the expansion of green financial markets. The partial count for 2026, reflecting 13 articles as of early 2026, suggests that this upward trend is set to continue.

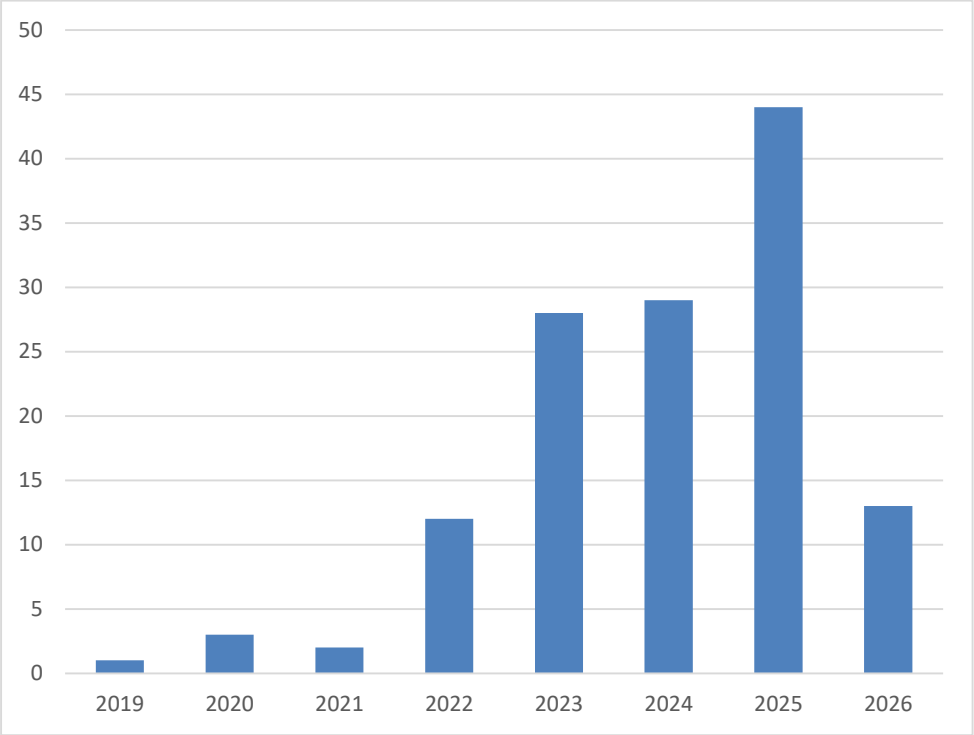

Figure 1. Number of articles per year (2019–2026)

Geographic Distribution

The geographic distribution of green financing research reveals a pronounced concentration in certain countries and regions, while others remain significantly underrepresented. Table 1 summarizes the geographic focus of the 204 reviewed articles, categorized by primary country or region. Where studies covered multiple countries or adopted a cross-regional perspective, they are counted under "Multi-country / Comparative."

As shown in Table 1, China holds the largest share of the dataset, accounting for approximately 38%. This reflects its proactive experimentation with green finance policies, such as the establishment of green finance pilot zones, alongside its position as the world's largest green bond market. Research from China frequently employs quasi-experimental methods (e.g., difference-in-differences) to assess the impacts of policies on ESG performance, carbon emissions, and renewable energy development (Qi et al., 2023; Ye & Tian, 2025).

India and the ASEAN region together represent a substantial body of research, driven by the rapid expansion of green banking in South Asia (Chen & Ma, 2021; Thapliyal, Gupta, Jindal, et al., 2025) and the emergence of innovative financial instruments such as green sukuk in Indonesia and Malaysia (Alam et al., 2023; Hermala et al., 2025). These studies often explore the tensions between economic development aspirations and environmental sustainability in emerging markets.

In contrast, Africa and Latin America remain relatively underrepresented in the literature, despite their significant vulnerability to climate change and the urgent need for green investment. Existing studies from these regions primarily focus on barriers to green financing, community-based approaches, and the role of international climate funds (Frimpong Henneh & Awunyo-Vitor, 2026; Rodriguez et al., 2025). This low

representation highlights a notable research gap, particularly given the growing renewable energy potential in these areas and the challenges associated with mobilizing private capital.

Comparative and multi-country studies constitute a distinct segment of the literature, often examining disparities between developed and developing economies (Ali et al., 2025; Ogwu et al., 2025) or analyzing groups such as the BRICS, G7, or ASEAN. These works enhance our understanding of how institutional context influences the effectiveness of green financing policies. Overall, the geographic distribution of research underscores the necessity for more diverse regional coverage, particularly in Latin America, the Middle East, and Sub-Saharan Africa, to better inform context-sensitive policy and practice (see Table 2).

Table 2. Geographic distribution of green financing research

Region / Country	Number of Articles	Representative Focus Areas
China	78	Green finance pilot zones, ESG performance, renewable energy, carbon emissions, industrial policy
India	23	Green banking practices, electric vehicle manufacturing, tourism sector, renewable energy financing
ASEAN (Indonesia, Malaysia, Vietnam, Thailand, etc.)	19	Green banking, green sukuk, renewable energy projects, policy frameworks
Africa (Ghana, Nigeria, Senegal, etc.)	12	Community-based financing, energy access, barriers to green finance, climate policy
G7 / OECD (US, UK, Germany, etc.)	16	Comparative studies, green bond markets, policy effectiveness, ESG integration
Other Asia (Pakistan, Bangladesh, etc.)	14	Green banking, transportation sector, sustainable development goals (SDGs)
Europe (non-G7)	8	Green financing strategies, energy efficiency, climate policy uncertainty
Multi-country / Comparative	24	Cross-country comparisons (e.g., BRICS, MINT, N-11, developed vs. developing)
Middle East / Central Asia	5	Green financing in Kazakhstan, Russia, Türkiye, Palestine
Latin America	4	Green bonds in Peru, ESG in Colombia, renewable energy financing
Oceania / Pacific	1	General regional perspective

Note: Numbers reflect primary geographic focus; studies with multiple foci are counted in the most relevant category or under multi-country.

Methodological patterns

The literature is predominantly characterized by quantitative methods, with panel data regressions, generalized method of moments (GMM), difference-in-differences (DiD), and autoregressive distributed lag (ARDL) models being the most frequently employed

approaches. This trend underscores a field that is largely empirical and focused on causal inference. While qualitative and mixed-methods studies have historically been less common, they have increased in frequency in recent years, especially in case studies (Nguyen et al., 2023; Shah et al., 2025) and stakeholder analyses. The emergence of multiple bibliometric and systematic reviews (Pitaloka et al., 2024; Uwuigbe et al., 2024) indicates the field's maturation and the increasing need for synthesis.

3.2 Thematic analysis

Through an inductive coding process applied to the 204 included articles, five dominant thematic clusters emerged. These themes represent the major research streams within the green financing literature and collectively capture the field's intellectual structure. They span from the micro-level analysis of firm behavior to macro-level policy evaluations, and from developed economies to emerging markets, reflecting the breadth and complexity of green financing research.

Theme 1: Green financing and environmental performance

The first and most extensively developed theme concerns the relationship between green financing and environmental performance. Studies in this cluster investigate whether and how green financial instruments—green bonds, green loans, and green banking practices—translate into measurable improvements in environmental outcomes, such as reductions in carbon emissions, increased energy efficiency, and improved overall environmental quality. A consistent finding across multiple studies is that green financing reduces carbon emissions and enhances environmental performance, yet the magnitude of this effect is highly context-dependent. For instance, Thapliyal et al. (2025) and Zhang et al. (2022) demonstrate that green banking practices significantly improve banks' environmental performance, with green financing acting as a critical mediator. Yang et al. (2022) further show that green financing, when combined with clean energy deployment and green economic practices, jointly enhances sustainable performance across industries in G7 countries (Yang et al., 2022). Muchiri et al. (2025) add that higher levels of environmental expenditure amplify the effectiveness of green bonds in reducing emissions (Muchiri et al., 2025). At the same time, studies such as that of Frimpong Henneh and Awunyo-Vitor (2026) serve as a cautionary reminder. In Ghana, green financing did not automatically yield inclusive growth or environmental gains, suggesting that complementary policies and institutional readiness are essential to translating green capital into tangible outcomes (Frimpong Henneh & Awunyo-Vitor, 2026).

Theme 2: Green bonds and financial innovation

A second major theme centers on green bonds and financial innovation. As the most prominent green financing instrument, green bonds have attracted considerable scholarly attention, with research examining their market development, pricing dynamics (the so-called "greenium"), issuance patterns, and their role in funding renewable energy and low-carbon infrastructure. Taghizadeh-Hesary and Yoshino (2020) propose innovative mechanisms, such as spillover tax schemes and green credit guarantee schemes, to address persistent financing gaps that impede renewable energy projects (Taghizadeh-Hesary & Yoshino, 2020; Yoshino et al., 2021). Ning et al. (2023) provide a global perspective, confirming that green bonds stimulate energy efficiency investment and economic growth while also highlighting the importance of dedicated green banks in

leveraging both public and private funds (Ning et al., 2023). Sun et al. (2025) find that green bond issuance boosts renewable energy capacity in Chinese provinces and generates positive spatial spillover effects beyond immediate project boundaries (Sun et al., 2025). Wang et al. (2023) contribute a nuanced understanding by analyzing the interplay between green bonds, geopolitical risk, and oil price volatility, revealing that green bonds can serve as a hedge against uncertainty (Wang et al., 2023). More recently, the literature has expanded to include alternative instruments such as green sukuk, as reviewed by Alam et al. (2023), who identify both opportunities and challenges for Islamic green financing in Southeast Asia (Alam et al., 2023). Across these studies, a recurring insight is that while green bonds have matured into a mainstream instrument, persistent challenges—including standardization, verification, and the risk of greenwashing—require continued attention and innovation.

Theme 3: Renewable energy transition and energy efficiency

A third thematic cluster links green financing to renewable energy transition and energy efficiency improvements, both of which are essential for achieving decarbonization goals. Research in this area examines how green finance influences renewable energy capacity, energy consumption patterns, and the broader structural shift away from fossil fuels. Qi et al. (2023) find that green financing, together with renewable energy use, significantly reduces greenhouse gas emissions in China, emphasizing the importance of sustained investment. Zheng et al. (2025) use provincial data to show that green financing accelerates renewable energy growth, with research and development investment and economic resilience acting as positive moderators. Wang et al. (2022) extend the analysis to the E7 economies, demonstrating that green financing drives renewable energy dependence and energy transition. However, the magnitude of the effect varies across countries depending on market conditions and institutional factors. Du et al. (2023) highlight the moderating roles of energy governance, environmental regulation, and market reforms, showing that the effectiveness of green financing for clean energy transition is contingent on the broader policy and institutional environment. Adding further nuance, Kassi and Li (2025) identify nonlinear relationships—U-shaped and inverted U-shaped—between green finance and renewable energy capacities in different Chinese regions, underscoring that the impact may only become pronounced after certain thresholds are crossed (Kassi & Li, 2025). Collectively, these studies suggest that green financing is a critical enabler of renewable energy expansion. However, its success depends heavily on the quality of governance and regulatory frameworks, as well as the maturity of energy markets.

Theme 4: Green financing in developing and emerging economies

The fourth theme addresses the unique opportunities and challenges of green financing in developing and emerging economies. This body of research recognizes that the contexts of low- and middle-income countries—characterized by limited institutional capacity, weak regulatory frameworks, high transaction costs, and the imperative to simultaneously pursue economic development and poverty reduction—shape the adoption and effectiveness of green finance in ways distinct from those in advanced economies. Frimpong Henneh and Awunyo-Vitor (2026) find that, in Ghana, green financing has not yet contributed to inclusive growth, highlighting mismatches between funding mechanisms and local development priorities. Shah et al. (2025) identify regulatory, financial, and institutional barriers to green financing in Pakistan's transportation sector and call for a coordinated national green finance strategy. Idris et al.

(2024) compare Malaysia and Indonesia, showing that while governments play a central role in promoting green finance, barriers such as limited engagement of small and medium enterprises and policy inconsistencies persist.

In contrast, Pienaah (2025) offers a grassroots perspective by examining community-based green financing through Village Savings and Loan Associations in Ghana's Community Resource Management Areas, demonstrating that informal financial mechanisms can effectively support conservation when aligned with local social structures (Pienaah, 2025). Sreenu (2025) assesses India's tourism sector and finds that green bonds have a significant positive effect on long-term sustainability (Sreenu, 2025). However, short-term impacts are negligible, highlighting the need for patient capital. Yeboah et al. (2025) examine a broader set of African countries and show that environmental taxes and green foreign direct investment significantly reduce CO_2 emissions while enhancing energy efficiency, suggesting that well-designed fiscal instruments can complement green financing (Yeboah et al., 2025). Across these studies, a consensus emerges that while green financing is expanding in developing economies, its impact is often constrained by institutional weaknesses and the absence of a supportive policy ecosystem; context-sensitive approaches that align financial mechanisms with local development priorities are therefore essential.

Theme 5: ESG integration, corporate social responsibility, and firm performance

The fifth and final thematic cluster focuses on the integration of environmental, social, and governance (ESG) factors, corporate social responsibility (CSR), and firm performance (Alay et al., 2024; Cui & Wu, 2025; Das et al., 2024; Habib & Khan, 2025; Ye & Tian, 2025; Zhen & Rahman, 2024). This stream reflects the growing recognition that non-financial performance metrics are increasingly central to investment decisions and corporate strategy, and that green financing and ESG practices are mutually reinforcing. Ye and Tian (2025) use a quasi-natural experiment in China to show that green financing pilot zones improve firms' ESG performance, with stronger effects observed in state-owned enterprises and financially constrained firms. Habib et al. (2025) find a positive and significant link between ESG disclosure and green financing, with competitive edge in financing costs moderating the relationship. Alay et al. (2024) demonstrate that green business ethics and green financing influence sustainable business performance in Türkiye, with CSR acting as a mediator. Cui and Wu (2025) introduce a Green Finance Performance Index and find that ESG disclosure mediates the relationship between green financing and firm value, accounting for approximately 35 percent of the variability. Zhen and Rahman (2024) find that environmental management accounting and green financing enhance ESG performance in emerging economies, with sustainable production acting as a mediating factor. At the same time, Das et al. (2024) raise concerns about greenwashing, finding that while green financing promotes environmental sustainability in India, the adoption of sustainable technologies may be undermined by such practices, underscoring the need for stronger verification and transparency. Collectively, these studies underscore that ESG performance and green financing are intertwined in a virtuous cycle: strong ESG profiles improve access to green capital, and green financing, in turn, incentivizes better ESG practices. However, the integrity of this relationship depends on credible disclosure and robust regulatory oversight to prevent symbolic compliance.

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Table 4. Integrated conceptual framework of green financing

Drivers (Antecedents)	Mechanisms (Green Financing Instruments)	Outcomes (Impacts)
Regulatory and Policy Drivers	**Debt-Based Instruments**	**Environmental Outcomes**
Carbon pricing and carbon taxes	Green bonds	CO_2 emission reduction
Environmental regulations	Green loans and green credit	Renewable energy capacity expansion
Green taxonomy and standards	Green sukuk (Islamic green bonds)	Energy efficiency improvements
Central bank policies (e.g., collateral frameworks)	Climate funds	Reduced ecological footprint
Government subsidies and incentives		Improved environmental quality
Market and Institutional Drivers	**Equity-Based Instruments**	**Economic Outcomes**
Investor demand for sustainable assets	ESG investments	Firm financial performance (ROA, Tobin's Q)
Stakeholder pressure (customers, communities)	Green venture capital	Green innovation and R&D investment
Financial sector development	Green equity funds	Economic growth (GDP)
Institutional quality and governance		Financial stability
Technological Drivers	**Banking-Based Instruments**	**Social Outcomes**
FinTech and digital platforms	Green banking practices	Energy access and affordability
Blockchain and distributed ledger technologies	Green deposits	Job creation in green sectors
Green technology innovation	Green mortgages	Inclusive growth and poverty reduction
Big data and AI for ESG assessment		Gender equality and social inclusion
Behavioral and Social Drivers	**Innovative and Hybrid Mechanisms**	**Institutional Outcomes**
Environmental awareness and culture	Carbon finance and emissions trading	Enhanced ESG performance
Pro-environmental behavior	Community-based financing (e.g., VSLAs)	Improved corporate transparency and disclosure
Green business ethics	Green credit guarantee schemes	Strengthened regulatory frameworks
	Public-private partnerships	

Moderating Factors

The relationships between drivers, mechanisms, and outcomes are not direct but are systematically moderated by contextual factors that shape the effectiveness of green financing. Four categories of moderators emerge from the literature: First, institutional

quality refers to the strength of governance structures, regulatory enforcement, corruption control, and the rule of law. Studies consistently find that green financing is more effective in contexts with strong institutions, where funds are channeled efficiently, and environmental compliance is enforced. In contrast, weak institutional environments can lead to misallocation of green capital and undermine intended environmental outcomes.

Second, policy and economic uncertainty encompasses climate policy uncertainty, economic policy uncertainty, and geopolitical risk. Recent studies suggest that uncertainty can have ambivalent effects: while some firms may delay green investments, others may issue green bonds to hedge against risk. The interaction between uncertainty and green financing remains an emerging area of inquiry. Third, market conditions include the maturity of financial markets, liquidity in green bonds, interest rate environments, and the availability of complementary financial infrastructure. Well-developed markets facilitate the scaling of green instruments, while underdeveloped markets may limit access to green capital, particularly for small and medium enterprises. Finally, socio-cultural factors involve environmental awareness, social capital, community participation, and cultural attitudes toward sustainability. These factors influence both the demand side (investor and consumer preferences for green products) and the supply side (financial institutions' willingness to develop green products). Community-based financing models, for instance, rely heavily on social trust and collective action.

4. Discussion

The systematic synthesis of 204 articles on green financing provides a comprehensive overview of the field. Yet, a critical examination of the literature reveals several recurring weaknesses and limitations that warrant careful consideration. These limitations, evident from the abstracts and methodological approaches of the reviewed studies, span conceptual, methodological, contextual, and data-related dimensions. Recognizing these shortcomings is essential not only for interpreting the existing evidence but also for charting a more rigorous and impactful research agenda.

4.1 Methodological

A significant proportion of the reviewed studies rely on quantitative methods that, while rigorous in their own right, often suffer from limitations that constrain the validity and generalizability of their findings. One of the most pervasive issues is the heavy reliance on single-country data, particularly from China. Studies such as Liang et al. (2023), Qi et al. (2023), and Li et al. (2023) provide valuable insights into the Chinese context. Yet, their findings are often treated as universally applicable, despite China's unique institutional, policy, and market characteristics. The predominance of Chinese data raises concerns about the external validity of many conclusions, especially when they are extrapolated to countries with different regulatory frameworks, levels of financial development, and environmental priorities.

Another methodological shortcoming is the widespread use of cross-sectional or short-panel designs, which are ill-suited to capturing the dynamic and often delayed effects of green financing (Kassi & Li, 2025; Ye & Tian, 2025; Zheng et al., 2025). Studies that employ difference-in-differences or event-study methodologies, such as Ye and Tian (2025) and Xue and Yun (2024), offer stronger causal identification. Still, they remain limited by their reliance on short post-policy windows. The long-term impacts of green

financing—particularly on outcomes such as technological innovation, structural economic change, and social inclusion—remain poorly understood because few studies adopt sufficiently long time horizons. Moreover, the frequent use of aggregated data at provincial or national levels masks heterogeneity within countries and across sectors, a limitation acknowledged by Zheng et al. (2025) and Kassi and Li (2025), who note that sub-regional variations are often substantial.

Endogeneity is a further concern that cuts across many quantitative studies. Green financing decisions are often endogenous to firm performance, environmental performance, and even policy environments. Yet not all studies employ identification strategies that convincingly address reverse causality and omitted-variable bias. While some researchers have used instrumental variables, propensity score matching, or quasi-experimental designs, many articles rely on ordinary least squares or basic panel regressions without rigorous endogeneity controls. This limits the confidence with which causal claims can be made, a point that is often acknowledged in the limitations sections of the reviewed articles.

4.2 Conceptual

A significant conceptual weakness evident in the literature is the lack of a unified and consistently applied definition of green financing. This term encompasses a wide range of financial instruments—such as green bonds, green loans, green banking, carbon finance, and ESG investments—often without clear distinctions among them. This conceptual ambiguity complicates the comparison of findings across studies and hampers the meaningful aggregation of evidence. For example, studies that use green bonds as a proxy for green financing (Muchiri et al., 2025; Ning et al., 2023) may capture only a limited portion of green financial flows, potentially overlooking contributions from green credit or community-based mechanisms. On the other hand, studies with broader definitions risk conflating instruments that have different risk profiles, maturity structures, and channels of impact. This definitional ambiguity also extends to outcome measurement. Environmental performance is often measured using indicators like carbon dioxide emissions or energy intensity; however, these metrics fail to capture the full range of environmental impacts, such as biodiversity conservation, water quality, or circular economy outcomes. Similarly, social outcomes, when they are considered, are frequently reduced to basic indicators like employment or energy access, with little emphasis on distributional effects, gender equity, or community well-being. While studies such as Saha et al. (2022) and Pienaah (2025) provide notable exceptions, they remain outliers in a body of literature that is largely focused on environmental and economic outcomes at the expense of social dimensions (Pienaah, 2025; Saha et al., 2022).

4.3 Geographic and contextual

Despite the inclusion of studies from a growing number of countries, the geographic coverage of green financing research remains highly uneven. China accounts for nearly 40 percent of the reviewed articles, while Africa, Latin America, the Middle East, and Central Asia are severely underrepresented. This geographic concentration has significant implications for the generalizability of findings. The institutional, regulatory, and market conditions that shape green financing in China—a country with strong state intervention, rapid economic growth, and a unique political economy—are not easily transferable to other developing contexts. Studies from India, Bangladesh, and Southeast Asia offer some counterbalance. Still, the relative silence on regions such as Sub-Saharan

Africa and Latin America means that the literature provides limited guidance to policymakers and practitioners in these climate-vulnerable areas.

Moreover, even within the studies that do examine multiple countries, the comparative dimension is often superficial. Many cross-country studies include country dummies or run separate regressions without engaging deeply with the institutional and cultural factors that may explain cross-national differences. The work of Ali et al. (2025) and Ogwu et al. (2025) represents attempts to compare developed and developing economies systematically, yet such efforts remain rare. Consequently, the literature offers limited insights into how the effectiveness of green financing varies across different institutional contexts and what policy lessons can be transferred from one setting to another.

4.4 Data limitations and measurement issues

Data availability and quality pose persistent challenges for empirical research on green financing. Many studies rely on proprietary or limited-access datasets that are not replicable or publicly available, raising concerns about transparency and reproducibility. Even when data are drawn from sources such as the World Bank, central banks, or commercial databases, the coverage is often restricted to formal financial instruments and large firms, leaving small and medium enterprises, informal sectors, and community-based initiatives largely invisible. This data gap is particularly acute in developing economies, where green financing may take forms that are not captured by conventional financial statistics.

Measurement issues also plague the operationalization of key constructs. Green financing is often measured by the volume of green bond issuance or the number of green loans. Still, such measures do not account for the actual use of proceeds, the funding's additionality, or the environmental outcomes achieved. Studies that attempt to link green financing to environmental performance often lack access to project-level data, forcing them to rely on aggregated outcomes that factors beyond the green financing intervention may influence. The challenge of attribution is compounded by the fact that green financing is often one component of a broader package of environmental policies, making it difficult to isolate its distinct contribution. As noted by Das et al. (2024), the presence of greenwashing—where funds are labeled green but do not lead to genuine environmental benefits—further complicates measurement and may bias empirical results.

4.5 Limited attention to micro-foundations and behavioral dynamics

The literature is predominantly macro- or meso-level in orientation, focusing on countries, provinces, industries, or listed firms. This macro focus leaves the micro-foundations of green financing—the decision-making processes of individual investors, households, and entrepreneurs—relatively underexplored (Lee & Hussain, 2023; Tsou et al., 2025). Exceptions include Tsou et al. (2025), who examine gamification and consumer intentions, and Lee and Hussain (2023), who analyze household-level socioeconomic determinants, highlighting the potential for behavioral and psychological insights, but such studies remain scarce. Understanding how information, risk perceptions, social norms, and trust shape the demand for and effectiveness of green financing is crucial for designing interventions that resonate with end-users, yet this area remains a significant gap.

Similarly, the literature pays limited attention to the intermediaries and institutional actors that facilitate green financing. While banks and financial institutions

are often the objects of analysis (e.g., Thapliyal et al., 2025; Chen et al., 2022), the internal organizational processes, incentive structures, and capacity constraints that shape their engagement with green finance are seldom examined in depth. Qualitative and mixed-methods studies that could illuminate these dynamics are underrepresented, as noted in the methodological overview. Collectively, these limitations have important implications for both the scholarly understanding of green financing and the policy recommendations derived from it. First, the methodological weaknesses—particularly the reliance on single-country data and cross-sectional designs—suggest that many findings should be treated as provisional and context-specific rather than universally applicable. Policymakers in countries with different institutional environments cannot simply adopt the strategies that appear effective in China or the G7 without careful contextual adaptation.

Second, the conceptual and definitional ambiguities hinder the accumulation of knowledge. Without consistent definitions and measurement frameworks, it is difficult to synthesize evidence, compare results across studies, or build cumulative theory. The field would benefit from greater attention to developing shared conceptual frameworks and validated measurement instruments that distinguish between different types of green financing and their distinct channels of impact. Third, the geographic and contextual narrowness of the literature means that the voices and experiences of many regions—particularly those most vulnerable to climate change—are underrepresented. This not only limits the relevance of research for these regions but also deprives the global community of potentially valuable lessons from diverse contexts. Future research must deliberately expand its geographic coverage and engage more deeply with comparative institutional analysis.

Fourth, the data and measurement limitations call for greater investment in the collection and sharing of granular, project-level data on green financing, as well as the development of innovative methods for tracking the use of proceeds and verifying environmental outcomes. Without such improvements, empirical claims about the effectiveness of green financing will remain subject to considerable uncertainty. Finally, the relative neglect of micro-foundations and behavioral dynamics suggests an opportunity to enrich the literature by drawing on insights from behavioral economics, psychology, and organizational studies. A deeper understanding of how individuals and organizations actually engage with green financing—and what factors shape their decisions—could lead to more effective policy and program design.

5. Future research agenda

The critical analysis of the green financing literature reveals several interconnected limitations that collectively constrain the field's ability to generate robust, generalizable, and actionable knowledge. Addressing these weaknesses requires a deliberate and multifaceted research agenda that moves beyond replication of existing approaches toward innovation in conceptualization, methodology, geographic coverage, and thematic scope. This section outlines specific directions through which scholars can advance the field toward greater rigor, relevance, and impact.

5.1. Methodological rigor and causal inference

The predominance of single-country studies and cross-sectional designs has limited the field's capacity to establish causal relationships and to understand the temporal dynamics of green financing effects. Future research should prioritize the use of quasi-experimental

methods that exploit natural experiments, policy discontinuities, and exogenous shocks to identify causal effects with greater confidence. The proliferation of green finance pilot zones in China, for instance, has provided valuable opportunities for difference-in-differences designs, as demonstrated by Ye and Tian (2025) and Xue and Yun (2024). Similar policy experiments in other countries—such as the European Union's Green Deal Investment Plan, the United States' Inflation Reduction Act, and emerging green taxonomy frameworks in Southeast Asia and Africa—offer rich settings for comparative quasi-experimental research that can test the external validity of findings across different institutional contexts.

Longitudinal studies that track green financing interventions over extended time horizons are urgently needed to capture the delayed and cumulative effects that characterize investments in renewable energy, energy efficiency, and sustainable infrastructure. Many green projects have payback periods that extend well beyond the typical three- to five-year windows used in existing panel studies. Scholars should design research that follows cohorts of green financing recipients over a decade or more, employing methods such as difference-in-differences with staggered treatment timing, event study designs, and synthetic control methods. Such long-term perspectives are essential for understanding whether early-stage green investments yield sustained environmental and economic benefits or whether their effects dissipate over time.

Addressing endogeneity concerns more systematically is another priority. Future research should adopt identification strategies that go beyond basic fixed effects models. Instrumental variable approaches that leverage plausibly exogenous variation—such as regulatory changes, natural disasters that shift policy priorities, or technological breakthroughs that alter the cost-effectiveness of green projects—can help disentangle causal relationships from confounding factors. Additionally, the use of structural equation modeling and path analysis can illuminate the complex causal chains through which green financing influences intermediate outcomes before affecting final environmental and economic results. Researchers should also consider the potential for nonlinear relationships and threshold effects, as suggested by Kassi and Li (2025), rather than assuming linearity in the relationship between green financing and its outcomes.

5.2. Developing conceptual clarity and standardized measurement

The field currently suffers from a proliferation of definitions and measurement approaches that impede comparability across studies and the accumulation of knowledge. A foundational priority for future research is the development and adoption of a unified conceptual framework that clearly delineates the boundaries of green financing and distinguishes among its various instruments, channels, and intended outcomes. Such a framework should differentiate between debt-based instruments (green bonds, green loans), equity-based instruments (ESG funds, green venture capital), banking-based practices (green credit allocation, green deposits), and innovative mechanisms (carbon finance, community-based funds). Clear definitions would enable more precise theorizing about the mechanisms through which different instruments generate impacts and would facilitate more meaningful cross-study comparisons.

Alongside conceptual clarity, there is a pressing need for standardized measurement protocols that enhance the reliability and validity of empirical research. Scholars and practitioners should collaborate to develop and validate measurement instruments for key constructs such as green financing intensity, environmental performance, and social outcomes. For environmental outcomes, indicators should extend beyond carbon emissions to include biodiversity impacts, water and soil quality,

circular economy metrics, and ecosystem services. For social outcomes, measures should capture distributional effects, gender equity, community well-being, and the quality of employment created by green projects. The development of publicly available, validated scales and indices would enable researchers to build cumulatively on one another's work and would facilitate meta-analysis and systematic synthesis.

The challenge of greenwashing—where funds labeled as green do not lead to genuine environmental benefits—requires particular attention in future measurement efforts. Researchers should develop and validate indicators of green financing authenticity that can distinguish between substantive and symbolic engagement with sustainability. This might include tracking the alignment of funded projects with established green taxonomies, verifying the additionality of green investments, and monitoring post-investment environmental outcomes. The integration of third-party verification data and the use of satellite imagery, remote sensing, and other emerging technologies could provide more objective measures of environmental outcomes than self-reported corporate disclosures alone.

5.3. Expanding geographic coverage and deepening comparative analysis

The geographic concentration of green financing research in China, India, and a handful of other countries represents a significant limitation that future scholarship must address. Researchers should deliberately expand the geographic scope of inquiry to include underrepresented regions such as Sub-Saharan Africa, Latin America, the Middle East, and Central Asia. These regions face unique climate vulnerabilities and development challenges that shape the demand for and effectiveness of green financing in ways that may differ substantially from the contexts that have dominated the literature to date. Studies in these regions should not merely replicate findings from elsewhere but should engage with local institutional realities, cultural contexts, and development priorities to generate contextually grounded knowledge.

Comparative research that systematically examines green financing across multiple countries or regions is equally important. Future studies should move beyond the inclusion of country dummies or separate single-country regressions toward theoretically informed comparative analysis that explicitly tests how institutional factors—such as regulatory quality, rule of law, political stability, and financial market development—moderate the effectiveness of green financing. Qualitative comparative analysis, nested case study designs, and multi-level modeling offer methodological approaches that can illuminate how contextual conditions shape outcomes. Such research would enable the development of contingent theories of green financing that specify the conditions under which particular instruments are likely to be effective, thereby providing more nuanced guidance for policymakers and practitioners.

5.4. Integrating micro-foundations and behavioral perspectives

The macro- and meso-level focus of existing research has left the micro-foundations of green financing—the decision-making processes of individuals, households, entrepreneurs, and organizational actors—largely unexplored. Future research should delve into these micro-level dynamics to understand the cognitive, psychological, and social factors that shape engagement with green financing. Behavioral economics offers a rich set of concepts and methods that can illuminate how heuristics, biases, social norms, and framing influence both the supply of and demand for green financial products. For instance, research could examine how information presentation affects investors' willingness to allocate funds to green bonds, how trust in financial institutions mediates

the uptake of green loans among small businesses, and how peer effects influence household adoption of green mortgages.

The role of financial literacy and environmental awareness in shaping green financing decisions warrants particular attention. Studies such as Lee and Hussain (2023) have begun to explore these relationships at the household level, but much remains to be understood about how education, knowledge, and values interact to influence the adoption of green financial products. Future research should employ experimental and quasi-experimental designs to test the effectiveness of information campaigns, financial education programs, and behavioral nudges in increasing uptake of green financing among diverse populations.

Organizational and institutional micro-foundations also merit deeper investigation. Within financial institutions, how do internal incentive structures, organizational culture, and individual discretion shape the allocation of green credit? What factors enable or constrain the development of green banking capabilities within commercial banks? Qualitative research employing interviews, ethnographic observation, and organizational case studies can illuminate these internal dynamics, complementing the predominantly quantitative approaches that have dominated the literature. Such research would provide valuable insights for designing capacity-building interventions and aligning organizational incentives with sustainability objectives.

5.4. Emerging themes

Several emerging themes identified in the thematic analysis—digital finance, climate policy uncertainty, social dimensions, and greenwashing—offer fertile ground for future research that can address significant gaps in the literature while engaging with pressing real-world concerns.

1. Digital green finance represents one of the most promising frontiers for innovation. While studies such as Hou et al. (2024) and Zia et al. (2024) have begun to explore the intersection of fintech and green finance, there remains a significant gap in understanding how digital platforms, blockchain, artificial intelligence, and big data analytics can address persistent challenges in green financing. Future research should investigate how digital technologies can enhance transparency and traceability in green bond markets, reduce transaction costs for small-scale green projects, and enable new forms of community-based financing through crowdfunding and peer-to-peer lending. The potential for smart contracts and distributed ledger technologies to verify the use of green proceeds and automate impact reporting warrants rigorous empirical investigation. At the same time, researchers should examine the risks and unintended consequences of digitalization, including digital exclusion, data privacy concerns, and the potential for new forms of greenwashing enabled by opaque algorithms.
2. Climate policy uncertainty has emerged as a significant concern in recent studies such as Toumi (2026) and Khlif and Toumi (2026), yet its implications for green financing remain underexplored. Future research should examine how uncertainty about future carbon pricing, environmental regulations, and climate policy trajectories affects the pricing, availability, and effectiveness of green financing. Do firms use green bonds as a hedge against policy uncertainty, and if so, under what conditions? How does policy uncertainty affect the risk assessment and lending decisions of financial institutions? Comparative research across countries with varying levels of policy stability could provide insights into how

institutional design can mitigate the dampening effects of uncertainty on green investment.

3. Social dimensions of green financing have received comparatively little attention relative to environmental and economic outcomes. Future research should prioritize the study of how green financing affects social equity, inclusive development, and community well-being. This includes examining the employment effects of green investments—not only the quantity of jobs created but also their quality, distribution, and accessibility to marginalized groups. Research should also explore how green financing can be designed to support a just transition that does not disproportionately burden vulnerable communities. Studies such as Saha et al. (2022) on gender inclusivity and Pienaah (2025) on community-based financing offer models for this type of research, but much more work is needed across diverse geographic contexts.
4. Greenwashing and authenticity constitute a critical area for future inquiry given the rapid growth of green financial markets and the risks that symbolic compliance poses to market integrity. Researchers should develop methods for detecting greenwashing and for distinguishing between substantive and superficial green financing practices. This might involve analyzing the alignment between stated green intentions and actual investment patterns, tracking the environmental outcomes of green projects over time, and examining the corporate governance practices that support or undermine authentic green finance. Research should also investigate the regulatory and market mechanisms—such as mandatory disclosure requirements, third-party verification, and certification schemes—that are most effective in preventing greenwashing and maintaining investor confidence.

5. Conclusion

This systematic literature review synthesizes green financing research from 204 peer-reviewed articles published between 2019 and 2026. Utilizing the PRISMA framework and a combination of bibliometric analysis with thematic synthesis, the review maps the intellectual landscape of this expanding field and identifies its achievements and limitations. Key contributions include a consolidated overview of the field's development, an integrated conceptual framework, and a rigorous research agenda addressing knowledge gaps. The analysis shows that green financing research has grown significantly, with publications increasing from a few in 2019 to 44 in 2025, driven by rising policy interest in climate finance. Most studies are concentrated in China, followed by India and the ASEAN region, raising questions about the generalizability of findings. Methodologically, the field leans toward quantitative approaches, while qualitative and mixed-methods approaches remain underrepresented.

The thematic analysis identified five key research streams in the field of green financing scholarship. The first theme explores the relationship between green financing and environmental performance, noting that while green instruments generally reduce carbon emissions and improve quality, their effectiveness varies by context and is influenced by policies and institutions. The second theme focuses on green bonds and financial innovation, highlighting the growth of green bond markets and mechanisms like green credit guarantees. The third theme connects green financing to renewable energy and energy efficiency, emphasizing its role in clean energy deployment and its shaping

by governance and regulatory frameworks. The fourth theme discusses the unique challenges in developing economies, where green finance is expanding but constrained by institutional weaknesses and policy uncertainty. The fifth theme examines the relationship among ESG factors, corporate social responsibility, and firm performance, noting both the mutual reinforcement and the risk of greenwashing.

An integrated conceptual framework is proposed that organizes the literature into drivers (regulatory, market, technological, behavioral), mechanisms (debt-based, equity-based, banking-based, innovative), and outcomes (environmental, economic, social, institutional). It also identifies moderating factors—institutional quality, policy uncertainty, market conditions, and socio-cultural factors—that affect the effectiveness of green financing. This framework helps understand the complexities of green financing and guides future research.

A critical examination of the literature reveals several weaknesses that hinder the generation of robust and actionable knowledge in the field of green financing. Methodologically, reliance on single-country data, particularly from China, limits external validity, while cross-sectional and short-panel designs restrict causal inference and long-term understanding. Conceptually, inconsistent definitions and measurement standards impede comparability across studies. The underrepresentation of regions like Africa, Latin America, and the Middle East restricts relevant guidance for policymakers in climate-vulnerable areas. Data limitations, including restricted access to project-level data and the absence of validated indicators, further weaken empirical claims. Additionally, the literature's focus on macro- and meso-levels has largely neglected the decision-making processes at the individual and household levels.

To address these issues, this review proposes a future research agenda organized around six priorities: 1) enhance methodological rigor with quasi-experimental designs and longitudinal studies; 2) develop unified frameworks for conceptual clarity; 3) expand geographic coverage with comparative analyses in underrepresented regions; 4) incorporate micro-foundations by examining social and psychological factors influencing green finance; 5) investigate emerging themes like digital green finance and social dimensions; and 6) embrace methodological pluralism for richer insights. Given the urgency of the climate crisis, studying green financing is crucial for informing decisions that shape environmental, economic, and social outcomes. This review synthesizes existing evidence, assesses strengths and weaknesses, and outlines a path forward for scholars to deepen theoretical foundations, enhance methodological rigor, and increase the relevance of research to policy and practice. By following these directions, researchers can help build a financial system that addresses both investor interests and the needs of our planet.

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