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Literature Review: Links Between Green Finance (Bonds, Loans, Investment) and Corporate ESG

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Abstract

In the context of globalization, green finance is a mechanism for supporting the transition to a sustainable economy by directing financial resources toward environmentally responsible enterprises. Using various green finance instruments, individuals and organizations can participate in sustainability efforts. Environmental, social, and governance (ESG) disclosure serves as a framework for improving business sustainability and enhancing awareness related to environmental, social, and governance practices. This study examines the relationship between categories of green finance such as green bonds, green loans, green investment and ESG implementation within companies. The SPIDER methodology (Sample, Phenomenon of Interest, Design, Evaluation, and Research type) was applied, utilizing literature searches in Scopus, Proquest, and Plos One, resulting in 19,340 articles. Following classification and relevance assessment, 15 articles were included in the review, consisting of studies published from 2022 to 2024. Among these fifteen articles, several identify a notable association between green finance and ESG across different organizations. Green bonds are associated with positive effects on ESG performance. Green loans have been observed to encourage the development of environmentally focused financial products. Green investment is described as realized through research and development activities, which contribute to innovations in environmentally friendly products and promote transparency in corporate ESG practices.

Keywords: green finance, green bonds, green loans, green investment, ESG

Introduction

The term "Green Finance" has seen increased usage in recent years. At the annual meetings of the International Monetary Fund (IMF) and the World Bank in Bali in October 2018, "green financing" was included as a discussion topic at a seminar. This event, held at the Nusa Dua Hotel in Bali, carried the theme "Green Finance Promotes Sustainable Development." Minister of Finance Sri Mulyani Indrawati participated as one of the speakers. Over the past three decades, debt capital markets have expanded globally, notably in Europe, Latin America, and Asia.

Sustainable development is considered a key approach for societal advancement. Environmental issues are increasingly relevant to businesses of all types, with banking having a notable role due to its influence on economic growth and national development (Sharma & Choubey, 2022). Economic development can sometimes conflict with environmental sustainability. Currently, the global economy faces two primary issues: environmental impact and financial liquidity. As a result, alternative financing methods may be required to address these challenges.

The shift toward environmentally sustainable economic development involves allocating more resources to low-carbon production, energy efficiency, and infrastructure enhancements. According to Shershneva & Kondyukova (2020), implementing a banking system that supports environmental initiatives is necessary to fund projects, particularly those related to energy efficiency and renewable energy.

Capital market debt is often used for national development and large-scale projects. Increasingly, it funds environmentally focused initiatives, known as green finance, supporting sustainability and nature conservation. In Indonesia, green financing refers to loans or schemes for eco-friendly businesses, aligning banking activities with environmental regulations.

Green Financing is an initiative aligned with the Sustainable Development Goals (SDGs), specifically supporting the implementation of all 17 SDGs. One relevant objective is promoting decent work and economic growth (SDG number 8). Financial Services Institutions play a role by offering employment opportunities within communities. Besides job creation, these institutions are responsible for upholding the rights and obligations of workers to promote their well-being. These efforts can impact national unemployment levels and may contribute to a decrease in poverty rates. Furthermore, by creating employment, Financial Services Institutions may enhance competition within the sector and support overall economic development, contributing toward a sustainable economy.

Green finance refers to financial products and services that encourage investment in environmentally friendly projects. There are various types of green finance instruments used to support green initiatives , including:

1. Green Bonds are fixed - income securities specifically designed to raise funds for climate-friendly projects such as renewable energy, energy efficiency, or sustainable agriculture. Investors who purchase green bonds are essentially funding projects that benefit the environment.
2. Green loans are loans provided to finance green projects or initiatives. These loans can be used for various purposes, such as energy-efficient upgrades, renewable energy installations, or sustainable building projects. They often come with lower interest rates to incentivize borrowers to invest in green initiatives.
3. Green investment is an investment fund dedicated to supporting companies and projects focused on environmental sustainability. These funds pool money from many investors and are managed by investment managers with expertise in green investing.
4. Green mortgages are home loans that offer favorable terms to borrowers who purchase energy-efficient homes or undertake green renovations to their properties. These green mortgages often have lower interest rates and additional incentives for homeowners to invest in sustainability.
5. Green insurance offers protection against environmental risks and promotes sustainable practices. For example, companies that adopt green practices and technologies can benefit from lower insurance premiums and coverage for climate-related damage .

Disclosure of non-financial information, including ESG factors, draws stakeholder attention (Buallay, 2019). Stakeholders may interpret sustainability disclosures as related to financial performance. ESG disclosures serve as a communication channel between companies and stakeholders, providing information on company performance (Melinda & Wardhani, 2020). Warapsari & Suaryana (2016) state that company performance is an indicator used to assess the company.

This literature review explores how green finance such as green bonds, loans, and investments relates to companies' environmental, social, and governance (ESG) factors. It evaluates the connection between green financial tools and ESG considerations, which are key to sustainable progress in social, economic, and environmental areas. The growing recognition of the need for an eco-friendly economy highlights the importance of shifting economic growth models toward sustainability.

METHOD

This study adopts a literature review methodology. A literature review involves systematically searching, reading, and analyzing various journals, books, and other published sources relevant to the research topic in order to produce a comprehensive paper addressing a specific issue (Marzali, 2016). The literature review is structured using the SPIDER tool, which Methley (2014) identifies as applicable to qualitative, mixed-methods, or other types of research. SPIDER stands for Sample, Phenomenon of Interest, Design, Evaluation, and Research type. In this study, the SPIDER framework encompasses green finance and ESG as the sample; green investment, green bonds, green finance, and environmental, social, and governance as the phenomena of interest; secondary data as the design; corporate finance and governance policy as the evaluation criterion; and both quantitative and qualitative research conducted between 2022 and 2024 as the research type.

The keywords employed in the literature search include "green finance," "green finance ESG," and "environmental social governance". Articles were selected based on specific inclusion criteria: publication within the last ten years (2014–2024), availability in either Indonesian or English, classification as original research articles, a focus on green finance and ESG as research subjects, and accessibility in full-text format. Research articles were sourced from open-access platforms such as Google Scholar, ProQuest, and Scopus.

Data collection was conducted using Harzing's Publish or Perish software with the keyword "green finance environment social governance." After storing the data, VOSviewer software was used for further analysis, including network visualization, overlay visualization, and density visualization, by mapping data from the bibliography and text data.

RESULTS AND DISCUSSION

Literature Review Results

A comprehensive literature search was conducted using Google Scholar (yielding 12,000 articles), Proquest (7,052 articles), and Scopus (288 articles). Following a thorough evaluation process, 15 articles meeting the inclusion criteria were selected from an initial pool of 19,340 clinical and research publications dated between 2022 and 2024. The results are as follows:

Table 1. Literature Review Table

Author, Year, Title, Journal	Design and Methods	Research result
Jinyu Chen, Yan Yang, Ran Liu, Yuan Geng, Xiaohang Ren; 2023; Green bond issuance and corporate ESG performance: the perspective of internal attention and external supervision, Humanities, Social Science Communications	The research is quantitative using the staggered Difference-in-Difference (DID) model.	Research indicates that green bond issuance enhances corporate ESG performance, mainly through internal focus and external oversight. This effect is stronger in larger firms, those receiving more government subsidies, and companies with environmentally experienced executives. Green bond issuance also appears to increase corporate valuations.
Shanshan Wang and Derek Wang; 2022; Exploring the Relationship Between ESG Performance and Green Bond Issuance; Frontiers in public health	Quantitative and with a panel data approach, the technique used is purposive sampling. The measuring instrument used is Used is a scoring scale.	The results indicate that ESG practices are associated with a higher probability of green bond issuance by listed companies, as well as an increase in the volume of such bonds issued. This association is observed across various dimensions of sustainability practices. The study also finds that the inclusion of ESG performance factors is linked to a negative impact on financial performance during green bond issuance.
Kunto Adi Wicaksono; 2023; The Impact of Green Bond Issuance and ESG Performance on Firm Profitability: Evidence From Listed Companies In China, South Korea And	This study uses the Difference-in-Difference (DID) model and panel data to investigate the impact of green bond issuance and	This study finds that green bond issuance does not significantly affect ROA or ROE. However, ESG performance (esg_1t) positively influences ROE at the 10% significance level, while green bond issuance (green_bond) negatively impacts company ESG performance.

Author, Year, Title, Journal	Design and Methods	Research result
Thailand; Horizons-IMWI Repository	ESG performance on corporate profitability.	
Md. Bokhtiar Hasan, Md. Mamunur Rashid, Md. Naiem Hossain, Mir Mahmudur Rahman and Md. Ruhul Amin; 2023; Using green and ESG assets to achieve post-COVID-19 environmental sustainability; Emerald Publishing	This research design uses quantitative research on portfolio strategies.	Findings – The study reports that lower volatility spikes occur between green bonds and ESG stocks in both stable and unstable periods, such as during COVID-19 and the Russo-Ukrainian War. Additionally, hedging costs are reduced during both normal conditions and economic downturns. Allocating a significant proportion of investments to green bonds is associated with increased hedging effectiveness between S&P green bonds (GB) and the S&P 500 ESG. Practical implications – These results may inform investment strategies and policy decisions aimed at supporting environmental sustainability in the post-COVID context.
Kunming Li, Linxing Huang, Jinshan Zhang, Zhencheng Huang and Liting Fang; 2023; Can ESG Performance Alleviate the Constraints of Green Financing for Chinese Enterprises; MDPI - Sustainability	Quantitative with panel data of manufacturing industry	Empirical results show that listed companies currently face greater challenges to green financing. Overall corporate ESG performance is conducive to mitigating barriers to green financing, but the role of ESG sub-performance is limited. At the same time, there are regional and scale differences in the mitigating impact of corporate ESG performance on green financing constraints.
Changjiang Zhang, Sihan Zhang, Yue Zhang, Yuqi Yang, and Kai Lan; 2024; Does Green Finance Policy Contribute to ESG Disclosure of Listed Companies? A Quasi-Natural Experiment from China; Sage Journals	This study uses the (DID) model and tests the impact of ESG disclosure from companies.	The findings of this study demonstrate a positive correlation between the implementation of the Guidelines and ESG disclosures among listed companies. Furthermore, the analysis reveals that the Guidelines exert a particularly significant positive influence on the quality of ESG disclosures for companies operating within highly polluting sectors, state-owned enterprises, and regions characterized by elevated economic growth.
Hongfeng Zhang, Shuying Wei; 2023; Green finance improves enterprises' environmental, social and governance performance: A two-dimensional perspective based on external financing capability and internal technological innovation; Plos One	The research method used is quantitative with difference-in-differences (DID).	The results indicate that (1) the GFPZ policy is associated with improved environmental, social, and governance (ESG) performance in companies, primarily through enhanced external financing capacity and increased levels of green technology innovation. (2) The impact of the GFPZ policy on ESG performance varies among companies depending on their equity characteristics and internal control levels. (3) Green financing is linked to greater corporate social responsibility and may contribute to

Author, Year, Title, Journal	Design and Methods	Research result
		improved environmental governance in regions where these companies operate.
Lanlan Liu, Guomin Song; 2023; Green finance and the synergy of ESGGI performance of Chinese companies: Does green concern matter?; Plos One	Entropy method and pairwise coordination degree model	The findings indicate an inverted U-shaped link between green finance and ESGGI performance synergy. Government and media attention to environmental issues can moderate this effect. Additionally, green finance has a stronger impact on ESGGI performance synergy in BUMN, HPE, and HTE sectors.
Zhao Chen, Ling Hu, Xin He, Ziming Liu, Danni Chen and Weirui Wang; 2022; Green Financial Reform and Corporate ESG Performance in China : Empirical Evidence from the Green Financial Reform and Innovation Pilot Zone; Journal of Environmental Research and Public Health	Quantitative, the research model uses Different in Different	The results show that the contribution of green finance reforms to ESG scores is primarily driven by social responsibility scores. The adjustment effect analysis shows that for large companies in the GFPZ, the above impacts are stronger, but there is no significant difference between heavily polluting and non-polluting companies in the GFPZ. The extensive analysis shows that improving ESG scores of companies in the GFPZ contributes not only to their environmental performance but also to their financial performance.
Akinchan Buddhodev Sinha and Arindam Sinha; 2022; Green Finance and ESG: Compliance of Global Stock Exchanges; The IUP Applied Finance	Quantitative with Chi-square Test	The study revealed significant differences in compliance and non-compliance with respect to market variables covered by sustainability-related indices, the sustainability bond listing segment, and the ESG reporting required by listing rules. However, it should be noted that the analysis only focused on three parameters. Other parameters, such as the Annual Stability Report, Written Guidelines on ESG Reporting, and others, are also important in analyzing the performance of sustainable green finance. Furthermore, many countries have adopted various green financial products and have taken numerous initiatives in this direction. Therefore, based on these facts, it can be concluded that even if some stock exchanges do not comply with the parameters considered for the research study, this does not mean that necessary initiatives towards sustainable green finance are not supported.
Xingshuai Wang, Ehsan Elahi, and Zainab Khalid; 2022; Do Green Finance Policies Foster Environmental, Social, and Governance	Quantitative, the research model uses Different in Different	The study revealed that green finance policies significantly improve companies' ESG, but the impact varies across companies. These policies have encouraged companies to develop and adopt environmentally friendly products and technologies. The results are heterogeneous.

Author, Year, Title, Journal	Design and Methods	Research result
Performance of Corporate?; International Journal of Environmental Research and Public Health		
Azwani Aulia, Fiona Febriyanti, Lita Permata Umi; 2023; Trend Analysis of ESG Disclosure on Green Finance Performance in Indonesia, Malaysia & Singapore Exchanges; Accounting Journal	This study uses a quantitative method with secondary data using multivariate analysis with the Structural Equation Modeling-Partial Least Square (SEM-PLS) approach.	The research revealed that the main challenge in implementing green investment is the lack of incentives from the government and stakeholders. Addressing the challenges of sustainable finance requires policy tools from various ministries and relevant institutions.
Yuanyuan Li, Yindan Zhang and Yasir Ahmed Solang; 2023; Assessing ESG Factors and Policies of Green Finance Investment Decisions for Sustainable Development in China Using the Fuzzy AHP and Fuzzy DEMATEL; MDPI-Sustainability	Fuzzy analytical hierarchy process (AHP) and fuzzy decision-making evaluation (DEMATEL) techniques.	The fuzzy AHP method shows that environmental factors are the most significant factors in green finance investment decisions in China, followed by governance and social factors. The results of the fuzzy DEMATEL method show that supporting green finance innovation and development is the highest priority, followed by encouraging social responsibility and community involvement and developing and enforcing environmental regulations.
Chen Anqi, Ong Tze San, Ridzwana Mohd Said, Soh Weini; 2023; The Impact of Green R&D Investment on Corporate Performance and ESG Evaluation ; International Journal of Academic Research in Accounting, Finance and Management Sciences	Quantitative with the Structural Equation Modeling-Partial Least Square (SEM-PLS) approach.	This study reveals a positive correlation between corporate performance and ESG evaluation, indicating that superior corporate performance contributes to achieving sustainable development goals and fulfilling social responsibilities. Second, environmentally friendly research and development investment significantly moderates corporate performance and ESG evaluation, thus enhancing the application of sustainable development theory.
Xiaokai Meng, and Ghulam Muhammad Shaikh; 2023; Evaluating Environmental, Social, and Governance Criteria and Green Finance Investment Strategies Using Fuzzy AHP and Fuzzy ALERT; MDPI-Sustainability	This study uses the fuzzy analytical hierarchy process (AHP) method to assess and rank ESG criteria and sub-criteria and the fuzzy weighted aggregate sum product (WASPAS) assessment method.	The Fuzzy AHP method identifies environmental, governance, and social impact as key criteria for green finance investments, with climate change mitigation, community engagement, and risk management as leading sub-criteria. The WASPAS fuzzy method ranks green bonds as the top investment strategy, ahead of ESG integration and renewable energy funds. Banks and financial institutions prefer green bonds for their environmental and societal benefits.

DISCUSSION

The Theory of the Relationship Between Green Finance and Environmental, Social, and Governance (ESG)

1. **Legitimacy Theory**

Legitimacy theory suggests that ESG disclosure responds to pressures from institutional and public stakeholders. These pressures, stemming from diverse economic and social interests, drive companies to manage their legitimacy through effective information disclosure (Dawkins & Fraas, 2011; Akerlof, 1970). The theory is based on a social contract between companies and stakeholders, with ESG disclosure serving as a strategic response to maintain legitimacy, adapt to sustainability requirements, and comply with regulations. Mandatory ESG disclosure can have legal consequences if not followed, while voluntary disclosure helps build a positive public image and stakeholder trust. New guidelines aim to improve environmental information sharing and mandatory disclosure systems, facilitating the effectiveness of legitimacy management. Ultimately, ESG disclosure acts as a signaling tool, demonstrating a company's environmental, social responsibility, and sustainable practices to stakeholders, aiding informed decision-making (Spence, 1973).

2. **Signaling Theory**

Signaling theory elucidates how green finance policies promote ESG disclosure among listed companies through three principal mechanisms. First, such policies position ESG disclosure as a signaling tool, enabling companies to communicate their strong ESG performance to the market, which in turn elicits market responses and can generate additional returns (Barnett & Salomon, 2012). Second, green finance initiatives foster signaling interactions among listed firms, lowering the costs for organizations with less-developed ESG disclosures to align with those exhibiting higher standards, ultimately elevating overall ESG disclosure quality within capital markets. Finally, these policies establish disciplinary frameworks for non-compliant disclosures, thereby creating a "bottom-line" signal that incentivizes companies to prioritize ESG compliance and enhances the overall consistency of ESG disclosures (Bhandari & Javakhadze, 2017).

3. **Stakeholder Theory**

According to stakeholder theory, a company's main aim is to address the interests of all stakeholders. This theory highlights both social and business ethics in corporate operations (Chen & Xie, 2022). ESG performance serves as an indicator of a company's engagement in environmentally responsible activities and offers insights for stakeholders when considering sustainability-related decisions. Stakeholder theory identifies shareholders, employees, suppliers, customers, financial institutions, governments, and communities as company stakeholders (Abrudan et al., 2021). Jayaraman et al. (2023) states that stakeholder concerns regarding environmental issues and pollution can motivate companies to adopt environmentally friendly innovations. Chouaibi et al. (2021) finds that participation in ESG activities may strengthen relationships with stakeholders such as shareholders, customers, and communities. Additionally, with the rapid progress of the digital economy and information technology, external stakeholders are becoming more influential in corporate affairs. Media outlets focus on environmental topics and serve dual roles as information disseminators and contributors to corporate governance in the digital economy, acting as key channels through which stakeholders can gather information about companies.

According to stakeholder theory, companies aiming for long-term viability and success are expected to meet their stakeholders' needs. Research indicates that fulfilling corporate social responsibility (CSR) can enhance financial performance and firm value (Soundarrajan & Vivek, 2016). Environmental, social, and governance (ESG) investment has gained widespread attention across sectors due to increasing focus on green development and sustainable growth. Studies suggest a positive association between high ESG levels and company value, while lower ESG performance may be linked to reduced value. With limited investor attention, ESG scores can influence investors' assessments, and companies with strong ESG commitments may receive favourable ratings. Higher ESG scores might also help companies secure financing at lower costs by gaining the trust of financial institutions. As a result, stakeholders may encourage companies to adopt socially and environmentally responsible practices that potentially improve ESG scores and advance both corporate and investor interests. While research notes several challenges in advancing green finance reforms in China, many experts acknowledge perceived positive effects of these reforms. However, current literature rarely examines the relationship between the establishment of green finance reform and innovation pilot zones and corporate ESG investments.

4. Institutional Theory

According to institutional theory, institutions serve to constrain and influence organizational behavior. Furthermore, as an institutional arrangement to support the transformation of the economy toward a more environmentally friendly direction, green finance will undoubtedly impact the behavior of micro-enterprises. Green finance policies can effectively address information asymmetry related to ESG factors in capital markets. By doing so, they help mitigate market failures in ESG investment decision-making, encourage the development of a standardized ESG disclosure framework, and guide listed companies in implementing consistent ESG disclosure practices. The origins of institutional research can be linked to the "bureaucratic conformity" perspective within the new institutionalist theory framework. This perspective highlights that organizations comply with institutional rules to gain legitimacy through obligatory, imitative, and normative isomorphism (DiMaggio & Powell, 1983).

5. Corporate Social Responsibility Theory

A company's ESG (environmental, social, and governance) performance has become a major focus for investors, customers, and regulators as sustainable development gains prominence (Liu et al., 2019). Research increasingly examines the links between corporate profitability, ESG ratings, and the impact of environmentally friendly R&D investments—key strategies for sustainability. Sustainability and corporate social responsibility theories highlight the importance of balancing economic, social, and environmental objectives for long-term growth (Alam et al., 2019; Al Mamun et al., 2022). Strong corporate performance is reflected by profitability, growth, and a commitment to social and environmental priorities. Investments in green R&D signal dedication to both sustainability and corporate social responsibility (Ren et al., 2023). Social responsibility theory asserts that organisations are accountable for fulfilling societal expectations and addressing social challenges, emphasising both their impact on and responses to society (Jiang et al., 2023). Within this framework, investments in environmentally sustainable research and development are regarded as mechanisms through which companies can fulfil their environmental responsibilities (Kraus et al., 2020).

6. Sustainability Theory

Research indicates that companies contribute to technological innovation in the green sector by investing in green research and development (R&D), which enhances environmental performance and improves ESG ratings (Carnini et al., 2022; Yang & Han, 2023). Increased investment in green R&D is closely linked to better environmental metrics and helps firms develop eco-friendly products and services, thereby boosting competitiveness, customer satisfaction, and financial and ESG outcomes (Nguyen et al., 2021; Jiang & Fu, 2019). According to sustainability theory, businesses should balance economic growth with environmental preservation and social responsibility.

The Connection Between Green Finance (Bonds) and Environmental, Social, and Governance (ESG)

Green finance represents an innovative financial policy framework that incorporates a range of eco-oriented financial instruments, including green credit (Zhou et al., 2020). By aligning environmental protection with economic imperatives, green finance promotes economic decarbonization and supports efforts to reduce carbon emissions (Al Mamun et al., 2022). Within this context, green bonds constitute a cornerstone of the evolving green financial system. Research on environmental, social, and corporate governance (ESG)—a central aspect of sustainability discourse—has expanded significantly in recent years, focusing on both the determinants and consequences of ESG performance. The adoption of robust ESG practices can enhance a corporation's reputation and market valuation, while simultaneously facilitating environmentally sustainable production and broader social sustainability objectives (Eliwa et al., 2021). Fundamentally, the objective of green finance is to channel investment into activities that prioritize energy efficiency and environmental stewardship (Duan et al., 2023). The sector encompasses various instruments such as green bonds, green credit, and other forms of sustainable financing. Empirical evidence suggests that green financial policies have the potential to advance ESG outcomes.

Within green finance, green bonds play a dominant role (Y. Wang & Taghizadeh-Hesary, 2023). These securities are specifically designed to fund climate change mitigation and sustainable development initiatives. Green bonds combine traditional bond attributes with environmental objectives, making them integral to the green finance architecture. Fueled by regulatory encouragement toward green bond issuance, the market for these instruments has grown rapidly. For corporations, investing in green bonds (GBI) serves both as a means of securing capital and as a direct response to external environmental accountability pressures. Studies indicate that GBI functions as a credible signal of a firm's commitment to sustainable development (Flammer, 2021), with issuers often demonstrating reduced carbon emissions and improved environmental ratings (Flammer, 2021). Investors may also perceive announcements of green bond issuance as indicative of a positive shift in ESG profiles, leading to favorable market reactions (Tang & Zhang, 2020). Despite strong correlations between GBI and ESG performance, the mechanisms underlying this relationship remain insufficiently explored.

The literature posits that more sustainable resource utilization within firms yields clear economic benefits. Companies implementing comprehensive environmental management systems benefit from lower debt financing costs relative to their peers (Halim & Nanok Soenarno, 2018). Further, organizations exhibiting high levels of corporate social responsibility (CSR) can obtain financing at reduced costs, thereby expanding their investor base as reflected in enhanced market valuations. ESG strategies have evolved from CSR as part of the broader development of corporate sustainability frameworks, with superior sustainability performance correlating with reduced equity capital expenses and providing greater opportunities for green bond issuance among firms with exemplary ESG credentials.

Concerning the environmental dimension of ESG, some argue that environmental regulations introduce additional operational costs that may suppress profitability and efficiency. Conversely, Porter's hypothesis contends that well-structured, stringent regulations spur innovation, improve efficiency, and ultimately bolster revenue (Xie et al., 2019). Empirical studies confirm that rigorous environmental standards are associated with higher market valuations (Dowell et al., 2000), especially among high-growth industrial enterprises where profitability positively tracks with environmental performance. Accordingly, strong environmental performance enhances the likelihood of green bond issuance, while environmentally detrimental activities inhibit access to such financing.

The Impact of Green Bond Issuance on ESG Performance

ESG considerations have become integral to assessments of organizational commitment to sustainability principles. Recent scholarship has increasingly examined the nexus between ESG performance and key corporate outcomes such as financial returns, share price movements, and overall enterprise value. Notably, the environmental pillar of ESG is most closely linked to issues of climate change and ecological projects.

Green bonds facilitate more efficient allocation of capital toward environmentally responsible projects, broaden external fundraising avenues for companies, increase the pool of accessible investment funds, and contribute to reducing financing costs. They also support optimization of corporate debt structures and enhance long-term funding stability. By issuing green bonds, firms are incentivized to undertake environmentally beneficial initiatives which, in turn, positively influence their ESG performance.

Stakeholder theory underscores maximizing stakeholder value as a core corporate objective and highlights the importance of ethical and socially conscious business operations (Z. Chen & Xie, 2022). ESG performance thus emerges as a key indicator guiding stakeholder decisions about sustainability. Prior research has identified various factors—including sound corporate governance and board effectiveness—that positively affect ESG outcomes (Jo & Harjoto, 2011). Importantly, achieving superior ESG results necessitates substantial resource commitment.

Green finance is pivotal in directing resources effectively towards environmental initiatives, supporting progress toward ESG targets (Bhutta et al., 2022). As green finance matures, the prominence of green bonds in addressing climate change and advancing ESG agendas continues to grow (W. Jiang et al., 2023). However, stakeholder responses to green bonds are mixed: some regard green bond issuance as a source of uncertainty and respond skeptically (Lebelle et al., 2020), while others view it as a sign of increased transparency and trustworthiness (Tang & Zhang, 2020). Motivations for green bond issuance are interpreted through both signaling and greenwashing lenses; whereas the signaling perspective regards these instruments as authentic declarations of commitment to sustainability, the greenwashing viewpoint raises concerns about superficial or opportunistic behavior (Flammer, 2021).

The prevailing body of research supports the notion that green bonds represent a meaningful commitment to environmental objectives (García et al., 2023). Evidence demonstrates their effectiveness in reducing carbon footprints, enhancing environmental ratings, raising regional environmental quality, and easing financial barriers for green innovation. Building on this foundation, it is posited that green bonds contribute positively to ESG performance by signaling dedication to sustainability, attracting long-term investors, and reinforcing corporate reputation and competitive advantage (Flammer, 2021; Zheng et al., 2023). Additionally, green bonds impose enhanced internal and external oversight, obliging issuers to adhere to higher standards due to requirements for third-party verification and certification (Flammer, 2021). Non-compliance can prompt corrective actions or revocation of certifications. Consequently, green bond issuance motivates companies to intensify ESG efforts and fulfill environmental responsibilities to stakeholders (Tang & Zhang, 2020).

Recent studies provide empirical support for these assertions. For example, S. Wang & Wang (2022) found that higher ESG standards encourage Chinese public companies to issue green bonds, though strong financial performance may have a contrary effect. Research by Cheng et al. (2023) further demonstrates that ESG disclosure scores and brand reputation exert a substantial positive influence on international green bond issuance, suggesting that ESG considerations are instrumental to the success of such offerings.

The Relationship Between Green Finance (Loans) and Environmental, Social, and Governance (ESG)

The use of green finance loans provides a framework for the regulation of issuers, certifiers, investors, and other stakeholders in green financial products. It is also associated with an increase in ESG disclosures among listed companies, facilitated by the introduction of standardized ESG evaluation criteria, tighter system enforcement, higher penalties for non-compliance, and stronger oversight to support complete, timely, and accurate public disclosure (Liu & Anbumozhi, 2009). Second, green finance policies encourage listed companies to increase the "environmental isomorphism" in ESG disclosures, thereby putting pressure and motivation on them to legitimize their ESG disclosures. Suchman, (1995) defines organisational legitimacy as stakeholders' perceptions of whether a company's actions align with social expectations. Companies that do not meet these standards may struggle to succeed or survive. ESG disclosure is essential for green investors, who depend on this information from listed companies to make informed decisions about investing in environmentally responsible securities.

A company's ESG performance can influence how easy it is to secure green finance loans, usually in two ways. One way is through how the company manages its capital structure to impact overall corporate value. Wang & Yang (2022) indicates that ESG performance can reduce a company's financial burden, increase market attention, contribute to positive signaling, and potentially enhance market value. Companies with strong ESG performance may receive broader social recognition by increasing their moral capital, which can improve their access to financial support. In contrast, events that lower ESG performance can result in higher funding costs and pressure, as well as negatively affect market value. For companies experiencing financing constraints related to pollution, increasing environmental protection expenditure, undertaking social responsibility, and improving governance may help raise market value and facilitate greater financial capital input, thus lowering barriers to green finance. Additionally, ESG factors may attract capital inflows by affecting the company's credit rating. Li et al. (2017) indicates that increasing the transparency and accountability of corporate ESG performance disclosures may improve stakeholder trust and could contribute to reducing operational risk. As a result, companies may consider incorporating ESG performance into their development strategies to manage uncertainty and strengthen their ability to withstand risks by addressing environmental and social responsibilities. Potential outcomes include higher credit ratings, improved brand reputation, greater influence, expanded financing options, lower financing costs, and increased capital inflows.

Government oversight is essential for ensuring that listed companies provide credible ESG disclosures and comply with regulations. These regulations support the growth of green credit and investment by promoting transparency in the securities market. Accurate ESG information enables financial institutions and investors to assess risks, make informed decisions, and invest responsibly in green securities and stocks (Broadstock et al., 2019). Therefore, green finance policies can effectively regulate issuers, certifiers, investors, and other participants in green financial products. They also directly encourage improvements in ESG disclosure in listed companies through the establishment of unified ESG evaluation standards, stricter system enforcement, increased penalties for non-compliant disclosures, and enhanced oversight to ensure appropriate, comprehensive, timely, and accurate public disclosure (Liu & Anbumozhi, 2009). Second, green finance policies encourage listed companies to increase the "environmental isomorphism" in ESG disclosures, thus putting pressure and motivation on them to legitimize their ESG disclosures. Suchman (1995) argues that organizational legitimacy refers to stakeholders' perceptions and perceptions.

Leading companies not only have well-managed assets and strong market rankings, but also demonstrate self-discipline in complying with legal disclosure requirements. To achieve this, governments must strengthen oversight and management, assign responsibilities to administrative and supervisory authorities, trading platforms, and other market intermediaries in accordance with the law, and effectively allocate resources from public institutions. Furthermore, ensuring companies can comprehensively release ESG-related information accurately and completely is crucial, thereby improving the quality of ESG disclosure. A robust ESG disclosure framework will yield numerous benefits, including increased company value and greater social impact. Joint multi-departmental oversight offers the advantage of avoiding reliance on a single regulatory body and enabling comprehensive oversight of various aspects of information disclosure by listed companies. This approach ensures comprehensive government oversight, facilitates compliance with system requirements, and encourages effective ESG disclosure.

The Relationship Between Green Finance (Investment) and Environmental, Social, and Governance (ESG)

Green investment aims to promote environmentally sustainable product and technology innovation to minimize adverse environmental impacts (Alam et al., 2019). Research indicates a positive correlation between green research and development (R&D) expenditure and corporate performance (Sarfraz et al., 2020). Increased investment in environmentally friendly R&D can enhance market share, revenue, and profitability by driving improved product quality and innovation (Zeng & Jiang, 2023). This approach reflects the philosophy of sustainable development as it enhances corporate performance. Furthermore, social responsibility theory elucidates how green investment can influence ESG outcomes and assessments. The theory posits that companies bear responsibilities toward customers, suppliers, employees, communities, and the environment (Kraus et al., 2020). Allocating resources to eco-friendly R&D is viewed as a socially responsible strategy that meets stakeholder expectations, enhances environmental performance, and improves the social impact of products. Empirical evidence demonstrates that organizations engaged in sustainable R&D increase sales and market share by elevating product quality and safety, fostering customer trust and loyalty, and achieving favourable ESG evaluations that strengthen their social reputation.

The concept of "sustainable development" encompasses various interpretations but fundamentally refers to development that satisfies present needs without compromising those of future generations. Mensah (2019) asserts that sustainable development necessitates balancing economic growth, environmental conservation, and social welfare. According to Kumar et al. (2022), investing in environmentally responsible projects positions green finance as an essential tool supporting sustainable development. Ozili (2022) further describes green finance through a spectrum of financial products and services—including green bonds, loans, and insurance—designed to facilitate sustainable investments. The overarching objective is to channel private capital into ventures yielding both financial returns and positive environmental and societal impacts.

Green finance plays a pivotal role in addressing climate change by funding the transition toward a low-carbon economy. The strategic alliance between sustainable development and green finance is characterized by the targeted allocation of resources to initiatives prioritizing social and environmental responsibility. This collaboration underscores sustainable development by integrating economic progress with environmental stewardship and community well-being (Bali Swain & Yang-Wallentin, 2020). Achieving equilibrium between current and future needs highlights the value of economic activity for intergenerational sustainability. The intersection between green finance and sustainable development also encompasses inclusive growth, job creation, strengthened community participation, and ethical corporate conduct. This synergy addresses social inequality and environmental degradation while promoting resilience in social and economic systems, thereby advancing global economic prosperity, environmental sustainability, and social equity within legal and international frameworks (Sampedro, 2021).

Academic inquiry has increasingly focused on the relationship between green R&D investment and ESG evaluation, particularly regarding how green R&D initiatives drive innovation and sustainability across environmental dimensions (Alam et al., 2019). Investments in green R&D not only mitigate environmental risks and elevate ecological performance but also demonstrate corporate commitment to stakeholders and wider societal advancement. Social responsibility theory suggests that such investments positively impact ESG evaluation specifically within environmental and social metrics by enhancing a firm's environmental standing, advancing social welfare, and cultivating robust stakeholder relations.

Saha et al. (2020) find that when sustainability becomes a core corporate strategy and green R&D forms part of strategic decision-making, the positive effects on company performance and ESG ratings are amplified. Long-term objectives and strategic orientation facilitate efficient implementation of green R&D expenditures and improvements at both the environmental and social levels (Xu et al., 2021). As evidenced by Taliento et al. (2019), green R&D investments substantially contribute to profitability; however, Liu et al. (2019) note that their impact varies across industries and regulatory environments. Sectors subject to strict environmental regulations reap greater benefits from green R&D, whereas highly competitive or less environmentally sensitive industries derive smaller gains. For harmonious economic, environmental, and societal progress, it is imperative that companies consider their broader impacts alongside growth objectives (Chen et al., 2019).

Several studies investigate how ESG transparency and disclosure affect firm value and investment. For instance, Yu et al. (2018) examine whether the extent of ESG disclosure influences firm value, finding that increased transparency reduces information asymmetry and agency costs, ultimately benefiting publicly traded firms. Their findings indicate that comprehensive ESG disclosure positively impacts valuation metrics such as Tobin's Q. Moreover, firms with significant assets, strong liquidity, intensive R&D activity, low insider ownership, and consistent financial success are likelier to prioritize ESG activities.

ESG factors and green finance are integral to corporate performance and value creation, fostering growth, cost efficiency, risk mitigation, productivity enhancements, and optimal capital allocation. However, given the complexity and multifaceted nature of ESG and green finance, their assessment requires a systematic, comprehensive approach, rigorous evaluation, and methodologies that address ambiguity in stakeholder preferences. Recognizing the significance of ESG criteria in the communication and execution of green finance strategies, it is essential to identify and thoroughly assess these standards.

Analysis with Harzing's Publish and Perish

Researchers conducted an analysis using Harzing's publish or perish criteria using the keyword "green finance, environment, and social governance" through semantic scholar search. The citation metrics results are as follows:

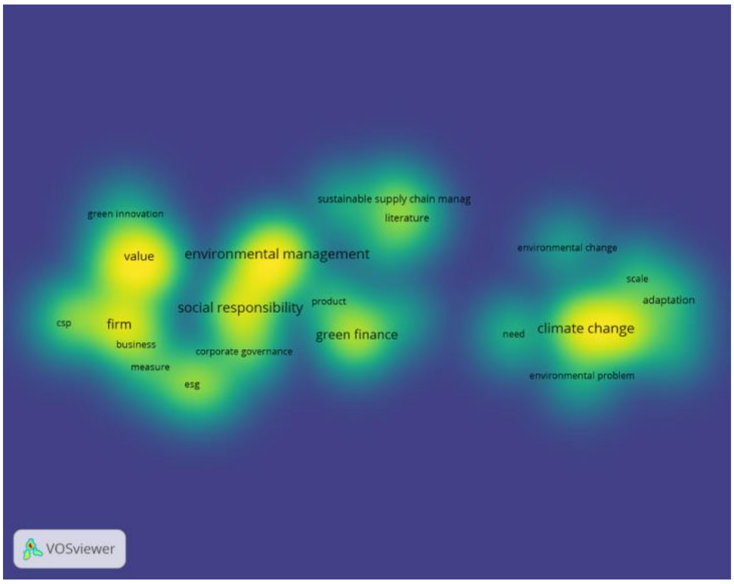
Table 2. Metric Data and Search Results

No	Description	Results
1	Publication years	1989-2024
2	Citation years	35
3	Papers	424

4	Citations	5807
5	Cites/year	165.91
6	Cites/paper	13.70
7	CItes/author	3018.67
8	Papers/authors	249.79
9	Authors/paper	2.29
10	h-index	32
11	g-index	72
12	hI, norm	22
13	hI,annual	0.63
14	hA, index	15

According to the data in Table 2, the earliest publication year is 1989 and the most recent publication year is 2024. Citation years span a total of 35 years from 1989 to 2024. A total of 424 documents were collected, with 5,807 citations calculated across all selected results. The average number of citations per year is 165.91, while the average number of citations per document is 13.70. There are an average of 2.29 authors per document, and an average of 249.79 citations per author. The h-index for research related to green finance and environmental social governance is 32, indicating the cumulative impact based on the number of citations received by these works.

VOSviewer Analysis via Density Visualization



The visualization results in Figure 1 indicate the density among research themes with the keywords green finance and environmental social governance. The visualization results in Figure 1 show the relationship between various themes with green finance and environmental social governance. The relationship between green finance and environmental social governance consists of 37 themes or terms related to these keywords. The bold yellow color symbolizes the density of research themes, signifying the high frequency of research on environmental social and governance, climate change, firm, value, and green finance, or the relationship between themes. For example, the themes on environmental management, value, firm, climate change, social responsibility, and value. A lighter density color indicates a high frequency of research. Variables with a dimmer color have the potential for future research related to green finance environmental problems, sustainable supply chain management, and ESG simultaneously. These results indicate that the themes of green finance and ESG are recommended for further research.

Conclusion

The conclusion of the literature review, as outlined in the objectives, is to evaluate and analyse the relationship between various forms of green finance and ESG. Green bonds, a form of green finance, are found to have a significant positive impact on ESG, while their influence on financial performance appears to be significantly negative. Green loans can effectively motivate organisations to develop environmentally responsible financial products and foster direct improvements in ESG disclosures by supporting the creation of integrated, comprehensive, and accountable ESG evaluation standards. Green finance, as derived from a company's financial structure, encompasses environmentally conscious product outcomes, loan arrangements, debt mechanisms, and green investments aimed at advancing sustainable development, reducing carbon emissions, and promoting inclusive corporate management. Moreover, green investment, another form of green finance, is undertaken by companies through research and development activities, resulting in innovative environmentally friendly products and enhanced corporate ESG transparency.

Green finance policies are crucial for companies to actively participate in environmental governance. Research shows that green finance policies significantly improve corporate ESG and encourage companies to develop and adopt environmentally friendly products and technologies. However, further studies on the impact of green finance policies on companies at various levels of environmental regulation show differences. Companies in regions with stricter environmental regulations are more vulnerable to green finance in the form of green loans. Identifying factors influencing corporate ESG accountability and disclosure is necessary. Internal company factors identified as influencing ESG include financial performance, research and development (R&D), environmentally friendly investment decisions, resource allocation, and environmentally friendly digital transformation.

Suggestion

This literature review provides a practical and theoretical overview of the use of environmentally friendly financial systems to improve corporate ESG performance. For corporate management, the results of this study suggest that Indonesian companies should reconsider their plans to use green bonds to finance environmentally friendly projects and perhaps consider other financial instruments that could benefit corporate finance. The government needs to make concrete efforts to develop and promote green finance in Indonesia so that the use of green bonds can benefit both companies and investors. For ESG investors, the results of this study can be used as a consideration before making investment decisions regarding how to ensure a company is truly committed to environmental sustainability. Investors may also consider investing in the company.

BIBLIOGRAPHY

Abrudan, L.-C., Matei, M.-C., & Abrudan, M.-M. (2021). Towards Sustainable Finance: Conceptualizing Future Generations as Stakeholders. Sustainability , 13 (24), 13717. https://doi.org/10.3390/su132413717

Akerlof, G. A. (1970). The market for "'lemons'": Quality uncertainty and the market mechanism. Quarterly Journal of Economics , 84 (488).

Al Mamun, M., Boubaker, S., & Nguyen, D. K. (2022). Green finance and decarbonization: Evidence from around the world. Finance Research Letters , 46 , 102807. https://doi.org/10.1016/j.frl.2022.102807

Alam, M.S., Atif, M., Chien-Chi, C., & Soytaş, U. (2019). Does corporate R&D investment affect firm environmental performance? Evidence from G-6 countries. Energy Economics , 78 (C), 401–411.

Bali Swain, R., & Yang-Wallentin, F. (2020). Achieving sustainable development goals: Predictions and strategies. Int. J. Sustain. Dev. World Ecol , 27 , 96–106.

Barnett, M. L., & Salomon, R. M. (2012). Does it pay to be really good ? Addressing the shape of the relationship between social and financial performance. Strategic Management Journal , 33 (11), 1304–1320.

Bhandari, A., & Javakhadze, D. (2017). Corporate social responsibility and capital allocation efficiency , . Journal of Corporate Finance , 43 , 354–377.

Bhutta, US, Tariq, A., Farrukh, M., Raza, A., & Iqbal, M.K. (2022). Green bonds for sustainable development: Review of literature on development and impact of green bonds. Technological Forecasting and Social Change , 175 , 121378. https://doi.org/10.1016/j.techfore.2021.121378

Broadstock, D.C., Managi, S. , M.R., & Tzeremes, N.G. (2019). Does doing "“good”" always translate into doing ""well""? An eco-efficiency perspective. Business Strategy and the Environment , 28 (6), 1199–1217.

Buallay, A. (2019). Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. Management of Environmental Quality: An International Journal , 30 (1), 98–115. https://doi.org/10.1108/MEQ-12-2017-0149

Carnini Pulino, S., Ciaburri, M., Magnanelli, B. S. , & Nasta, L. (2022). Does ESG disclosure influence firm performance? Sustainability , 14 (13), 2071–1050.

Chen, X., Wang, X., & Zhou, M. (2019). Firms' green R&D cooperation behavior in a supply chain : Technological spillover, power and coordination. International Journal of Production Economics , 218(C) , 118–134.

Chen, Z., & Xie, G. (2022). ESG disclosure and financial performance: Moderating role of ESG investors. International Review of Financial Analysis , 83 , 102291. https://doi.org/10.1016/j.irfa.2022.102291

Cheng, L.T.W., Sharma, P., & Broadstock, D.C. (2023). Interactive effects of brand reputation and ESG on green bond issues: A sustainable development perspective. Business Strategy and the Environment , 32 (1), 570–586. https://doi.org/10.1002/bse.3161

Chouaibi, S., Rossi, M., Siggia, D., & Chouaibi, J. (2021). Exploring the Moderating Role of Social and Ethical Practices in the Relationship between Environmental Disclosure and Financial Performance: Evidence from ESG Companies. Sustainability , 14 (1), 209. https://doi.org/10.3390/su14010209

Dawkins, C., & Fraas, J. W. (2011). Coming clean: The impact of environmental performance and visibility on corporate climate change disclosure. Journal of Business Ethics , 100 (2), 303–322.

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. https://doi.org/10.2307/2095101

Dowell, G., Hart, S., & Yeung, B. (2000). Do Corporate Global Environmental Standards Create or Destroy Market Value? Management Science , 46 (8), 1059–1074. https://doi.org/10.1287/mnsc.46.8.1059.12030

Duan, X., Xiao, Y., Ren, X., Taghizadeh-Hesary, F., & Duan, K. (2023). Dynamic spillover between traditional energy markets and emerging green markets: Implications for sustainable development. Resources Policy , 82 , 103483. https://doi.org/10.1016/j.resourpol.2023.103483

Eliwa, Y., Aboud, A., & Saleh, A. (2021). ESG practices and the cost of debt: Evidence from EU countries. Critical Perspectives on Accounting , 79 , 102097. https://doi.org/10.1016/j.cpa.2019.102097

Flammer, C. (2021). Corporate green bonds. Journal of Financial Economics , 142 (2), 499–516. https://doi.org/10.1016/j.jfineco.2021.01.010

Halim, S., & Nanok Soenarno, Y. (2018). The Costs and Benefits of Reducing Complex Disclosures. Journal of Finance and Accounting , 6 (1), 9–14. https://doi.org/10.12691/jfa-6-1-2

Jayaraman, K., Jayashree, S., & Dorasamy, M. (2023). The Effects of Green Innovations in Organizations: Influence of Stakeholders. Sustainability , 15 (2), 1133. https://doi.org/10.3390/su15021133

Jiang, C., & Fu, Q. (2019). A Win-win outcome between corporate environmental performance and corporate value: From the perspective of stakeholders. Sustainability , 11(3) , 18.

Jiang, W., Dong, L., & Chen, Y. (2023). Time-frequency connectedness among traditional/new energy, green finance, and ESG in pre- and post-Russia-Ukraine war periods. Resources Policy , 83 , 103618. https://doi.org/10.1016/j.resourpol.2023.103618

Jo, H., & Harjoto, M.A. (2011). Corporate Governance and Firm Value: The Impact of Corporate Social Responsibility. Journal of Business Ethics , 103 (3), 351–383. https://doi.org/10.1007/s10551-011-0869-y

Kraus, S., Rehman, S.U., & Sendra Garcia, F.J. (2020). Corporate social responsibility and environmental performance: the mediating role of environmental strategy and green innovation. Technological Forecasting & Social Change , 160(C) (120262).

Kumar, L., Nadeem, F., Sloan, M., Restle-Steinert, Deitch, M.J., Ali Naqvi, S., Kumar, A., & Sassanelli, C. (2022). Fostering Green Finance for Sustainable Development: A Focus on Textile and Leather Small Medium Enterprises in Pakistan. sustainability , 14 (11908).

Lebelle, M., Lajili Jarjir, S., & Sassi, S. (2020). Corporate Green Bond Issues: An International Evidence. Journal of Risk and Financial Management , 13 (2), 25. https://doi.org/10.3390/jrfm13020025

Li, Y., Gong, M., & Zhang, X. (2017). The Impact of Environmental, Social, and Governance Disclosure on Firm Value: The Role of CEO Power. Br. Accounts , 50 , 60–75.

Liu, T., Zhang, Y., & Liang, D. (2019). Can ownership structure improve environmental performance in Chinese manufacturing firms? The moderating effect of financial performance . Journal of Cleaner Production , 225 , 58–71.

Liu, X., & Anbumozhi, V. (2009). Determinant factors of corporate environmental information disclosure: An empirical study of Chinese listed companies. Journal of Cleaner Production , 17 (6), 593–600.

Melinda, A., & Wardhani, R. (2020). The Effect of Environmental, Social, Governance, and Controversies on Firms' Value: Evidence from Asia (pp. 147–173). https://doi.org/10.1108/S1571-038620200000027011

Mensah, J. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. Cogent Soc. Sci , 5 (1653531).

Nguyen, T.H., Elmagrhi, M.H., Ntim, C.G., & Wu, Y. (2021). Environmental performance, sustainability, governance and financial performance: Evidence from heavily polluting industries in China. Business Strategy and the Environment , 30(5) (2313–2331).

Ozili, P. K. (2022). Green finance research around the world: A review of literature. Int. J. Green Econ , 16 , 56–75.

Ren, S., Huang, M., Liu, D., & Yan, J. (2023). Understanding the Impact of Mandatory CSR Disclosure on Green Innovation: Evidence from Chinese Listed Firms. British Journal of Management , 34 (2), 576–594. https://doi.org/10.1111/1467-8551.12609

Saha, R., Shashi, Cerchione, R., Singh, R., & Dahiya, R. (2020). Effect of ethical leadership and corporate social responsibility on firm performance: A systematic review. Corporate Social Responsibility and Environmental Management , 27 (2), 409–429.

Sampedro, R. (2021). The Sustainable Development Goals (SDG). Carreteras , 4 , 8–16.

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

Shershneva, E.G., & Kondyukova, E.S. (2020). Green Banking as a Progressive Format of Financial Activity in Transition to Sustainable Economy. IOP Conference Series: Materials Science and Engineering , 753 (7), 072003. https://doi.org/10.1088/1757-899X/753/7/072003

Soundarrajan, P., & Vivek, N. (2016). Green finance for sustainable green economic growth in India. Agricultural Economics (Zemědělská Ekonomika) , 62 (1), 35–44. https://doi.org/10.17221/174/2014-AGRICECON

Spence, M. (1973). Job market signaling. Quarterly Journal of Economics , 87 (3), 355–306.

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. Academy of Management Review , 20 (3), 571–610.

Taliento, M., Favino, C., & Netti, A. (2019). Impact of environmental, social, and governance information on economic performance: Evidence of a corporate ' sustainability advantage' from Europe. Sustainability , 11(6) (1738).

Tang, D.Y., & Zhang, Y. (2020). Do shareholders benefit from green bonds? Journal of Corporate Finance , 61 , 101427. https://doi.org/10.1016/j.jcorpfin.2018.12.001
Wang, B., & Yang, M. (2022). A Study on the Mechanism of ESG Performance on Corporate Value Empirical Evidence from A-share Listed Companies in China. Soft Sci , 36 , 78–84.
Wang, S., & Wang, D. (2022). Exploring the relationship between ESG performance and green bond issuance. Frontiers in Public Health , 10 (897577).
Wang, Y., & Taghizadeh-Hesary, F. (2023). Green bonds markets and renewable energy development: Policy integration for achieving carbon neutrality. Energy Economics , 123 , 106725. https://doi.org/10.1016/j.eneco.2023.106725
Warapsari, AU, & Suaryana, A. (2016). The Effect of Managerial and Institutional Ownership on Firm Value with Debt Policy as an Intervening Variable. E-Journal of Accounting, Udayana University , 16 (3), 2288–2315.
Xie, J., Nozawa, W., Yagi, M., Fujii, H., & Managi, S. (2019). Do environmental, social, and governance activities improve corporate financial performance? Business Strategy and the Environment , 28 (2), 286–300. https://doi.org/10.1002/bse.2224
Xu, J., Liu, F., & Shang, Y. (2021). R&D investment, ESG performance and green innovation performance : evidence from China. Kybernetes , 50 (3), 737–756.
Yang, O. S., & Han, J. H. (2023). Assessing the effect of corporate ESG management on corporate financial & market performance and export. Sustainability , 15(3) (2316).
Yu, E. P., Guo, C. Q., & Luu, B. V. (2018). Environmental, social and governance transparency and firm value. Bus. Strategy. Environ . , 27 , 987–1004.
Zeng, L., & Jiang, X. (2023). ESG and Corporate Performance: Evidence from Agriculture and Forestry Listed Companies. Sustainability , 15 (8), 1–18.
Zheng, J., Jiang, Y., Cui, Y., & Shen, Y. (2023). Green bond issuance and corporate ESG performance: Steps toward green and low-carbon development. Research in International Business and Finance , 66 , 102007. https://doi.org/10.1016/j.ribaf.2023.102007
Zhou, X., Tang, X., & Zhang, R. (2020). Impact of green finance on economic development and environmental quality: a study based on provincial panel data from China. Environmental Science and Pollution Research , 27 (16), 19915–19932. https://doi.org/10.1007/s11356-020-08383-2