

FROM ETHICAL CONSIDERATION TO FINANCIAL DETERMINANT: A SYSTEMATIC LITERATURE REVIEW OF ESG IN SUSTAINABLE FINANCE

Dian Puji Rahayu¹, Najmudin²

¹²Department of Economic Management, Jenderal Soedirman University, Indonesia

*Email corresponding author: dian.puji.r@mhs.unsoed.ac.id

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Abstract

This study systematically reviews the literature on ESG in sustainable finance to examine how ESG has been conceptualized, measured, and evaluated in financial management research, and to identify theoretical, methodological, and empirical gaps for future inquiry. A systematic literature review was conducted following the PRISMA 2020 guideline. The search was performed in Scopus for the period 2016–2026 using predefined ESG and sustainable finance keywords. From 1,591 records identified, screening and eligibility assessment resulted in 28 final studies. Methodological quality was assessed using the Mixed Methods Appraisal Tool (MMAT), and the evidence was synthesized through thematic and narrative synthesis supported by framework-based logic. The review shows that ESG is conceptualized as a disclosure mechanism, risk signal, governance device, investment criterion, and value-creation driver. Empirical findings suggest that ESG contributes to financing efficiency, cost of capital reduction, equity financing, banking stability, portfolio resilience, and green innovation; however, these effects remain context-dependent and vary by ESG measurement, country, industry, method, and time horizon. ESG has become a central construct in sustainable finance, yet the evidence remains fragmented. This review contributes by integrating dispersed findings and proposing future research on causal mechanisms, disaggregated ESG dimensions, and underexplored financial contexts.

Keywords: Sustainable Finance, ESG, Financial Performance, Systematic Literature Review, Firm Value

INTRODUCTION

The corporate financial landscape is undergoing a fundamental shift from a paradigm centered on maximizing shareholder value within a narrow financial horizon to a capital allocation paradigm that increasingly internalizes non-financial risks, stakeholder preferences, and the long-term consequences of investment, funding, and governance decisions. In this context, Environmental, Social, and Governance (ESG) is no longer positioned as an additional ethical attribute, but rather as economic information that can affect the cost of capital, access to financing, asset valuation, portfolio risk, and sustainability of company performance. The corporate finance literature shows that ESG and CSR have become central issues in corporate finance research because they both relate to agency conflicts, reputation, disclosure, ownership structures, investment decisions, and the company's relationship with the capital market (Gillan et al., 2021). Sustainable finance expands the function of the financial system from mere capital intermediation to a mechanism for directing funds to companies and projects that are able to generate economic value while supporting the transition to a low-carbon and sustainable economy (Schoenmaker & Schramade, 2018). This urgency is even stronger because empirical evidence shows the ESG–financial performance relationship is less likely to be negative in most previous studies (Friede et al., 2015), meanwhile, asset pricing research shows that carbon risk and investor preference for green assets are starting to be reflected in returns and asset prices (Bolton & Kacperczyk, 2021; Pástor et al., 2021). However, the literature is also not fully convergent: ESG can be understood as

a signal of fundamental quality, investor preference, risk mitigation instrument, or value creation mechanism, and the trade-off between returns, risks, and levels of sustainability is still a theoretical and empirical debate (Pedersen et al., 2021). Therefore, a systematic literature review on ESG and sustainable finance is relevant because it can map how the literature conceptualizes, measures, and evaluates ESG in financial decisions, as well as identifying gaps that are important for the development of financial theory and for managerial practices, investors, financial institutions, and policymakers in designing a more resilient and long-term oriented financial system.

In the field of Financial Management, ESG in sustainable finance can be understood as the systematic integration of environmental, social, and governance factors into investment decisions, funding, financial intermediation, risk management, asset valuation, and corporate governance to generate long-term financial value while supporting sustainability goals. Unlike CSR which emphasizes social responsibility and corporate legitimacy, ESG is developing as more measurable and relevant economic information for investors, creditors, banks, asset managers, and regulators in assessing risks, opportunities, and company quality (Gillan et al., 2021). Sustainable finance itself has a broader scope because it not only includes the use of ESG scores or disclosures, but also includes green finance, climate finance, responsible investment, impact investing, green bonds, sustainable banking, and transition finance as a mechanism for allocating capital towards more sustainable economic activities (Schoenmaker & Schramade, 2018). Thus, ESG is an evaluative framework, while sustainable finance is an arena of financial decisions where ESG is used to direct capital, assess sustainability risks, and shape investment preferences. The environmental dimension includes issues of carbon emissions, energy efficiency, pollution, biodiversity, and climate risks; The social dimension includes labour, human rights, inclusion, community, and stakeholder relations; Meanwhile, the governance dimension includes board structure, transparency, accountability, shareholder protection, and quality of supervision. In the financial literature, ESG can be measured through ESG scores, ESG ratings, ESG disclosures, ESG risk exposure, ESG performance, or pillars E, S, and G separately, so that measurement differences often result in empirical findings that are not fully convergent. The relevance of this concept to ESG and sustainable finance studies lies in its ability to explain how non-financial factors affect the cost of capital, firm value, credit rating, stock return, portfolio performance, bank stability, financing efficiency, and green innovation, while expanding financial theory from traditional risk-return models to frameworks that include sustainability preferences, climate risk, stakeholder value, and long-term value creation (Pástor et al., 2021; Pedersen et al., 2021).

The research gap in the ESG literature in sustainable finance emerges in four main layers. First, the literature is still fragmented because ESG is studied in relatively separate domains, such as corporate finance, banking, asset pricing, portfolio management, green bonds, and sustainable investment; as a result, ESG has not always been clearly positioned whether as a risk factor, a signal of company quality, investor preferences, governance mechanisms, or a source of value creation, although corporate finance research shows that ESG/CSR has become an important issue in explaining corporate risk, performance, and value (Gillan et al., 2021). Second, the empirical findings are still inconsistent: some evidence suggests the ESG–financial performance relationship tends to be positive or at least not negative, but other studies find weak, insignificant, or context-dependent effects, especially when ESG is associated with returns, short-term profitability, and portfolio performance (Friede et al., 2015). Third, the literature is still limited by specific country, industry, and method contexts, and is highly dependent on ESG scores or ESG ratings that are not always consistent between providers; This issue is important because differences in ESG ratings can arise due to differences in scope, measurement, and weighting between rating agencies (Berg et al., 2022). Fourth, theoretical integration is still limited because stakeholder theory, agency theory, signaling theory, risk management theory, and modern portfolio theory are often used partially, while frameworks that link ESG, financial decisions, risk, investor preferences, capital allocation, and sustainability outcomes in an integrated manner are still not well established; for example, the ESG-efficient frontier model has begun to explain the trade-offs between portfolio performance and ESG levels, but its integration with the corporate finance, banking, and sustainable financial

intermediation literature is still limited (Pedersen et al., 2021). Therefore, systematic literature review is needed to map and integrate the scattered literature, explain the sources of inconsistencies in findings, evaluate variations in contexts and methods, and build a more coherent research agenda for the development of Financial Management theory and practice.

This study aims to systematically review the academic literature on Environmental, Social, and Governance (ESG) in sustainable finance by examining how ESG has been conceptualized, measured, and empirically evaluated in financial management research. Specifically, this review seeks to identify the dominant conceptualizations of ESG, classify the measurement approaches used in prior studies, synthesize empirical evidence on the role of ESG in advancing sustainable finance outcomes, analyze variations across countries, industries, research designs, and financial contexts, and identify theoretical, methodological, and empirical gaps to develop a future research agenda.

LITERATURE REVIEW

Environmental, Social, and Governance (ESG) has emerged as a fundamental concept in Sustainable Finance, reflecting how firms incorporate environmental responsibility, social considerations, and governance quality into their business strategies. ESG integration is increasingly viewed as a strategic tool to enhance long-term sustainability and financial performance (Gillan et al., 2021). This perspective is supported by stakeholder theory, which emphasizes that firms addressing stakeholder interests are more likely to achieve sustainable success (Freeman, 2010), and legitimacy theory, which suggests that organizations adopt ESG practices to align with societal expectations (Suchman, 1995).

A large body of empirical research has examined the relationship between ESG and financial performance. Friede et al. (2015) provide aggregated evidence from more than 2,000 studies, showing that the majority report a positive relationship between ESG and financial performance. Similarly, Velte (2017) finds that ESG performance positively affects accounting-based financial indicators. More recent studies highlight that ESG enhances firm resilience, particularly during economic shocks. For example, Broadstock et al. (2021) show that firms with higher ESG performance experienced lower financial risk during the COVID-19 crisis. In addition to financial performance, ESG is closely associated with firm value and risk. Firms with strong ESG performance tend to have better transparency, lower information asymmetry, and higher investor confidence, which ultimately increases firm value (Eccles et al., 2014). Furthermore, ESG practices are considered an effective mechanism for risk mitigation, reducing exposure to environmental, social, and governance-related risks (Fatemi et al., 2018). Despite the growing body of literature, previous studies often produce mixed and fragmented findings. Some inconsistencies arise due to differences in measurement, industry context, and geographical focus (Gillan et al., 2021). Moreover, many studies examine ESG components separately rather than as an integrated framework within Sustainable Finance. Therefore, a systematic synthesis of recent literature is necessary to provide a clearer understanding of ESG as a financial determinant.

RESEARCH METHODS

Review methodology dan reporting guideline

This review was conducted and reported following the PRISMA 2020 guidelines to ensure that the study identification, screening, eligibility, and inclusion processes were transparent, systematic, and replicable. (Page et al., 2021). The systematic literature review approach was chosen because the topic of ESG in sustainable finance in Financial Management is developing rapidly, spread across various domains such as corporate finance, banking, asset pricing, portfolio management, green finance, and sustainable investment, and shows conceptual, methodological, and empirical variations that require structured mapping. The scope of this review is focused on academic articles that discuss how Environmental, Social, and Governance factors are conceptualized, measured, and evaluated in the context of sustainable finance, including their

implications for financial performance, cost of capital, access to financing, financial institution stability, capital market returns, portfolio performance, and green innovation. By following the PRISMA 2020 logic, this approach allows researchers to explicitly document the search strategy, inclusion-exclusion criteria, selection process, quality evaluation, data extraction, and synthesis of findings so that the review results have methodological accountability and can serve as a strong foundation for theory development and future research agendas.

Protocol Registration

Prior to the literature search, a review protocol was developed to ensure methodological transparency and reduce the risk of arbitrary decisions during the review process. The protocol specified the research questions, databases to be searched, search strings, eligibility criteria, title–abstract and full-text screening procedures, data extraction form, quality appraisal approach, and synthesis strategy. Although the protocol was not registered in an external registry, all key methodological decisions were established before the identification and selection of studies, thereby supporting the consistency, auditability, and replicability of the review process. This a priori protocol served as the methodological guide for conducting the systematic literature review and ensured that the review procedures remained aligned with the objectives of the study.

Formulation of Research Question

The research question was formulated using the PICO framework, which is appropriate for systematic literature reviews in management studies because it enables the review to capture a broad phenomenon, clarify the focal concept, and situate the analysis within a specific contextual domain rather than requiring experimental comparison. In this review, Population/Phenomenon/Domain refers to the academic literature on firms, investors, financial institutions, capital markets, banking institutions, and other actors involved in ESG-related financial decision-making; Intervention/Concept refers to Environmental, Social, and Governance (ESG) factors, including ESG ratings, ESG disclosure, ESG performance, ESG risk, ESG integration, and ESG-related practices; Comparison/Context refers to the sustainable finance domain, including green finance, responsible investment, climate finance, sustainable banking, green bonds, ESG-integrated portfolios, and related financial mechanisms; and Outcome refers to the ways in which ESG contributes to financial and sustainability-related outcomes, such as firm value, cost of capital, financing efficiency, banking stability, stock returns, portfolio performance, green innovation, and long-term value creation. Based on this framework, the main research question guiding this systematic literature review is: *How has the academic literature conceptualized, measured, and evaluated the role of Environmental, Social, and Governance (ESG) factors in advancing sustainable finance, and what theoretical, methodological, and empirical gaps remain for future research?*

Search Strategy

The literature search was conducted in Scopus for the period 2016–2026 to identify peer-reviewed journal articles examining the intersection between Environmental, Social, and Governance (ESG) and sustainable finance. Scopus was selected as the primary database because it provides broad coverage of high-quality journals in Economics, Econometrics and Finance and Business, Management and Accounting, which are the most relevant subject areas for this systematic literature review. The search strategy was developed around two core keyword groups: first, terms representing ESG, including “ESG,” “environmental social governance,” “environmental, social and governance,” “environmental, social, and governance,” “environmental-social-governance,” and “ESG performance”; second, terms representing sustainable finance, including “sustainable finance,” “green finance,” and “climate finance.” Boolean operators were used to combine synonyms within each concept using OR, while the ESG and sustainable finance concepts were connected using AND to ensure that retrieved articles addressed both domains simultaneously.

To improve search sensitivity and reduce the risk of omitting relevant studies, synonym and variant terms were included to capture differences in punctuation, spelling, and phrase construction, particularly for “environmental social governance,” “environmental, social and governance,” “environmental, social, and governance,” and “environmental-social-governance.” The search was restricted to English-language, final publication stage, journal articles, with the source type limited to journals and the document type limited to article. The subject areas were restricted to Economics, Econometrics and Finance and Business, Management and Accounting to ensure disciplinary relevance to Management and Finance. Additional keyword filters used in Scopus included Sustainable Finance, ESG, Sustainable Development, Sustainability, and Finance, while the open access filter was set to All Open Access. Grey literature, conference papers, editorials, book chapters, and non-journal outputs were excluded to maintain the academic quality and comparability of the review corpus. Where relevant, backward and forward citation tracking may be used as a supplementary strategy to identify influential studies not captured by the database query, but the core dataset of this review was derived from the Scopus search.

Screening Process

The screening and study selection process was carried out in stages following the PRISMA 2020 flow diagram, with the support of Mixed Methods Appraisal Tool (MMAT) initial screening questions on the assessment of titles, abstracts, and full text to ensure conceptual relevance, clarity of research objectives, adequacy of data/methods, and feasibility of articles to be analyzed in SLR. At the identification stage, a search through Scopus yielded 1,591 records; No duplicates were removed ($n = 0$), while 1,383 records were removed through the Automation Tools as not meeting the initial criteria, so 208 records went to the screening stage. Of the 208 records filtered by title and abstract, 28 records were issued, and 180 reports were sought for retrieval; Of these, 129 reports were not successfully obtained, so 51 full-text reports were assessed as feasibility. At the full-text eligibility assessment stage, articles were excluded due to methodological ($n = 7$), conceptualization/non-empirical ($n = 5$), and other reasons such as secondary relevance, focus limitations, or coverage inconsistencies ($n = 11$), resulting in 28 studies being included in the final review and synthesis. The total number of articles at each stage of selection is documented in the PRISMA flow diagram to ensure transparency, replicability, and auditability of the study selection process.

Eligibility Criteria

The eligibility criteria were established prior to the screening process to ensure that the included studies were directly relevant to ESG in Sustainable Finance within the field of Financial Management. Studies were included if they explicitly examined Environmental, Social, and Governance (ESG) or related constructs, such as ESG performance, ESG disclosure, ESG rating, ESG score, ESG risk, or ESG integration, within financial contexts, including corporate finance, investment, capital markets, banking, financial institutions, portfolio management, green finance, climate finance, responsible investment, sustainable investment, sustainable banking, green bonds, or other sustainable financial instruments. Eligible studies had to be empirical journal articles, written in English, published as final articles, located within the subject areas of Economics, Econometrics and Finance or Business, Management and Accounting, and provide sufficient methodological information for quality appraisal and data extraction. Studies were excluded if they did not explicitly address ESG, were not situated in a finance or sustainable finance context, discussed CSR or sustainability without an ESG–finance linkage, were conceptual or theoretical papers, reviews, bibliometric studies, meta-analyses, editorials, book chapters, conference papers, policy reports, grey literature, non-English publications, unavailable full texts, or studies lacking sufficient empirical and methodological information. Eligibility Criteria are shown in Table 1 below.

Table 1 Inclusion and Exclusion Criteria

Criterion	Inclusion Criteria	Exclusion Criteria
Main topic	Studies explicitly addressing ESG, ESG performance, ESG disclosure, ESG rating, ESG score, ESG risk, or ESG integration	Studies not explicitly addressing ESG or only discussing CSR/sustainability in general
Research context	Studies situated in sustainable finance, green finance, climate finance, responsible investment, sustainable investment, green bonds, sustainable banking, or portfolio management	Studies unrelated to finance, investment, banking, capital markets, financial institutions, or sustainable finance
Disciplinary scope	Studies relevant to financial management, corporate finance, banking, asset pricing, capital markets, portfolio management, or financial institutions	Studies primarily focused on non-financial fields such as supply chain, HRM, tourism, education, engineering, or environmental policy
Document type	Peer-reviewed journal articles	Review papers, bibliometric studies, meta-analyses, editorials, commentaries, book chapters, conference papers, reports, theses, or dissertations
Study design	Empirical quantitative, qualitative, or mixed-method studies suitable for methodological appraisal	Conceptual, purely theoretical, policy essays, or studies without a clear empirical design
Language	English	Non-English
Publication stage	Final publication	Preprints, incomplete documents, or non-final publications
Source type	Journal	Books, proceedings, reports, websites, or grey literature
Full-text availability	Full text available and assessable	Full text unavailable or only appendix/supplementary material available
Suitability for extraction	Studies reporting sufficient information on aims, design, context, population/sample, key variables, outcomes, findings, and limitations	Studies lacking sufficient methodological or empirical information for data extraction and quality appraisal

Risk of bias and Methodological Quality

The strength of evidence was assessed using a weight-of-evidence approach to ensure that the review did not merely summarize prior studies but also evaluated the reliability and interpretive value of their findings. Evidence strength was judged by considering six criteria: methodological quality, based on the MMAT appraisal; appropriateness of research design, including whether the design was suitable for addressing the stated research objective and minimizing bias; sample adequacy, including sample size, data coverage, observation period, and unit of analysis; consistency of findings across studies examining similar ESG–sustainable finance relationships; contextual relevance, particularly the alignment of country, industry, market, and institutional setting with the review question; and theoretical contribution, including the extent to which the

study advanced understanding of ESG as a risk factor, governance mechanism, investment criterion, disclosure practice, or value-creation driver in sustainable finance. Studies with strong methodological rigor, appropriate empirical design, adequate and transparent data, consistent findings, high contextual relevance, and clear theoretical contribution were treated as providing high confidence in evidence. Studies with some methodological limitations, narrower samples, context-specific findings, or limited theoretical development were interpreted as providing moderate confidence in evidence, while studies with weak design alignment, limited data transparency, inconsistent or underdeveloped findings, or marginal relevance to ESG in sustainable finance were assigned low confidence in evidence. This assessment allowed the synthesis to differentiate between robust, emerging, and tentative evidence, thereby strengthening the credibility of the conclusions and supporting a more nuanced interpretation of how ESG has been conceptualized, measured, and evaluated in sustainable finance research.

Data Extraction

Data were extracted using a standardized extraction form developed prior to the synthesis stage to ensure consistency, transparency, and comparability across the included studies. The extraction form captured the following information: author, year of publication, journal, country or geographical setting, research context, theoretical foundation, research method, sample characteristics, variables or constructs, measurement approach, analytical technique, key findings, reported limitations, quality appraisal score or judgement, and contribution to the review question. These items were selected to enable the review to examine not only what prior studies found, but also how ESG in sustainable finance has been conceptualized, measured, and empirically evaluated within Financial Management research. Data extraction was conducted independently by two reviewers, and the extracted information was subsequently compared to identify discrepancies in interpretation, coding, or classification. Any disagreements were resolved through discussion and verification against the full text of the articles, thereby improving coding consistency, minimizing reviewer bias, and enhancing the reliability of the evidence synthesis.

Data Synthesis

The extracted data were synthesized using a combined thematic synthesis, TCCM framework (Theory–Context–Characteristics–Method), and antecedent–mechanism–outcome (AMO) logic to provide a structured and analytically meaningful interpretation of the literature. First, the included studies were grouped thematically according to their substantive focus, including ESG performance and corporate financial outcomes, ESG disclosure and cost of capital, green finance and ESG improvement, ESG integration in banking, ESG-related portfolio performance, green bonds, sustainable investment, and ESG-driven innovation. Second, the studies were mapped using the TCCM framework by identifying the theories employed, the geographical and institutional contexts examined, the key constructs and variables analyzed, and the methodological designs and analytical techniques used. Third, an AMO perspective was applied to explain how ESG-related antecedents, such as ESG ratings, ESG disclosure, green finance policies, institutional ownership, digital finance, and sustainable investment practices, influence financial and sustainability-related outcomes through mechanisms such as financing constraints, green innovation, investor confidence, risk reduction, stock liquidity, and governance quality. Given the heterogeneity of study designs, samples, ESG measures, and outcome variables, a meta-analysis was not appropriate; therefore, the review relied on narrative synthesis supported by cautious vote-counting to indicate whether findings were positive, negative, insignificant, or mixed across comparable studies. The synthesis results are presented through summary tables, thematic narratives, and an integrative conceptual framework that explains how ESG factors contribute to sustainable finance outcomes in Financial Management research.

RESULTS AND DISCUSSION

Study Selection

The study selection process followed the PRISMA 2020 flow diagram. The initial Scopus search identified 1,591 records, with no duplicate records removed ($n = 0$); however, 1,383 records

were excluded before screening through automation tools because they did not meet the initial search filters and eligibility parameters. Consequently, 208 records were screened based on title and abstract, of which 28 records were excluded for lack of relevance to ESG in sustainable finance. A total of 180 reports were sought for retrieval, but 129 reports could not be retrieved, leaving 51 full-text reports assessed for eligibility. At the full-text stage, studies were excluded because of methodological ineligibility ($n = 7$), conceptual or non-empirical orientation ($n = 5$), and other reasons such as secondary relevance, insufficient alignment with the review scope, or incomplete suitability for extraction ($n = 11$), resulting in 28 studies included in the final review. The entire series is shown in Figure 1 below.

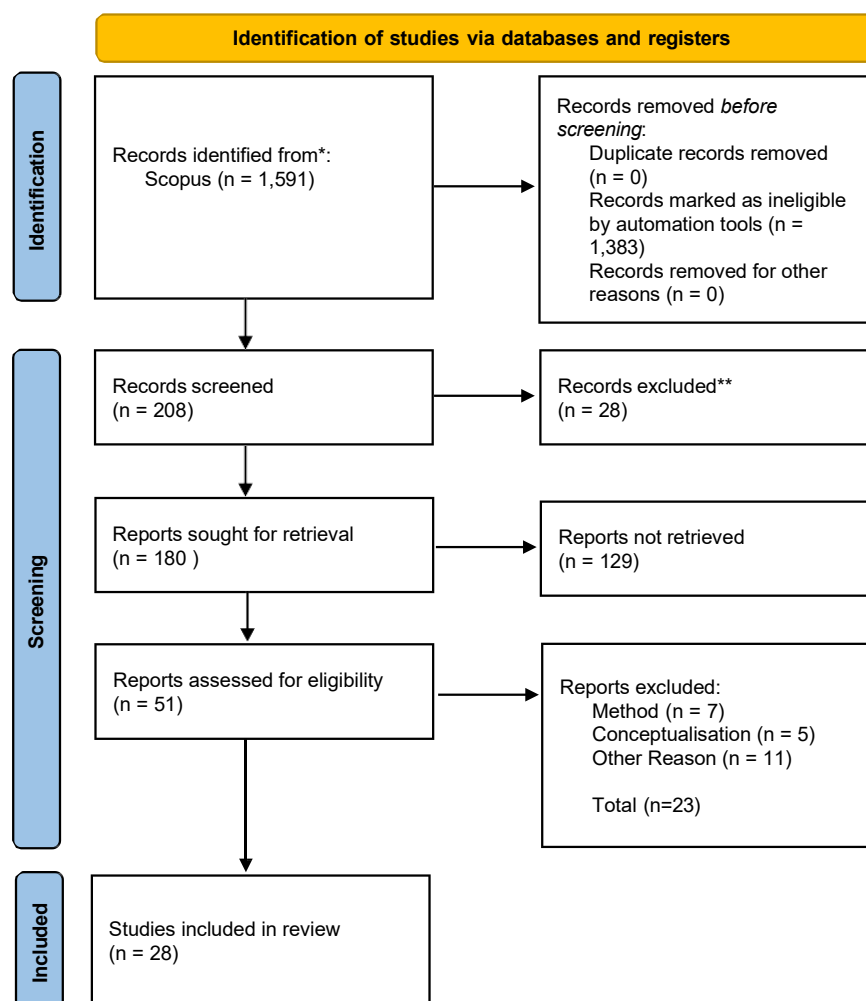


Figure 1 The Result of PRISMA Diagram Flow

General Characteristics of Included Studies

The final corpus of 28 studies shows that research on ESG in sustainable finance has expanded rapidly, particularly after 2022, indicating that the topic has moved from an emerging niche into a central research stream in financial management. The publication distribution is concentrated in recent years, with studies appearing between 2022 and 2026, and the largest cluster emerging in 2025, reflecting intensified academic interest following the acceleration of ESG regulation, sustainable investment practices, and green finance policy development. The journals are dispersed across finance, economics, business, management, banking, and sustainability-oriented outlets, suggesting that the field is multidisciplinary but still strongly anchored in financial

management. Geographically, the literature is dominated by emerging and developing market contexts, especially China, Indonesia, Thailand, Malaysia, Jordan, South Africa, Poland, the UAE, and East Africa, alongside cross-regional or global samples covering mutual funds, banking, equity markets, and fixed income portfolios. In terms of industry and context, the studies focus mainly on listed firms, banks, mutual funds, green bonds, fixed income portfolios, SMEs, ESG funds, and heavy-polluting industries, showing that ESG is examined both at firm level and market/institutional level. Methodologically, the literature is strongly quantitative, with frequent use of panel regression, System GMM, fixed effects models, DID, SEM/PLS-SEM, event study, portfolio analysis, DEA, and connectedness models, while qualitative and mixed-method approaches remain limited. The dominant theoretical lenses include stakeholder theory, agency theory, signaling theory, legitimacy theory, resource-based view, modern portfolio theory, efficient market hypothesis, and sustainable finance theory, although many studies use theory implicitly rather than as an integrated explanatory framework. Overall, the studies included in Table 2 show that ESG in sustainable finance has evolved from a broad sustainability discourse to a more empirically testable financial phenomenon, involving the cost of capital, financing efficiency, equity financing, bank stability, portfolio performance, stock returns, green innovation, and sustainable corporate performance.

Critical Appraisal of Included Studies

The critical appraisal indicates that the included studies generally provide a moderate to strong evidence base, although the strength of evidence varies across methodological designs. Based on the MMAT-informed appraisal and weight-of-evidence assessment, 16 studies can be classified as high quality, 12 studies as moderate quality, and no included study as low quality, since articles with substantial methodological ineligibility were excluded during the full-text eligibility stage. High-quality studies are typically characterized by large samples, longitudinal or panel data, robust analytical strategies such as System GMM, DID, fixed effects, portfolio modelling, or multiple robustness checks, and clear alignment between research questions, variables, and methods. Moderate-quality studies are generally relevant and empirically useful but often rely on narrower country contexts, survey-based or cross-sectional data, limited time coverage, self-reported measures, or less extensive robustness testing. Common methodological limitations include potential endogeneity, dependence on ESG ratings or disclosure indices from specific data providers, limited cross-country comparability, short observation windows, possible common method bias in survey-based studies, and insufficient separation of environmental, social, and governance pillars. These quality patterns suggest that the review findings should be interpreted as credible but context-sensitive: stronger confidence can be placed on findings supported by longitudinal, multi-country, or quasi-experimental designs, whereas survey-based and single-country findings should be treated as emerging evidence requiring further validation.

Table 2 Summary of Included Studies and Key Findings

No.	Author	Research Aim	Research Design	Research Location	Population/research subject	Treatment	Outcome	Key findings	Limitations of the study
1	Kuanova et al. (2024)	Develop recommendations for sustainable finance development in Kazakhstan based on international experience.	Analytical review; comparative policy analysis.	Kazakhstan; comparison with several countries/regions.	Public policies, regulatory frameworks, and sustainable finance models in several countries.	Praktik sustainable finance and ESG-based investment regulation.	Recommendations for the implementation of sustainable finance in Kazakhstan.	International practices can be adapted to strengthen ESG-based investment regulations and sustainable finance in Kazakhstan.	Not based on firm-level empirical data; more emphasis is placed on policy analysis and the national context.
2	Bosone et al. (2022)	Testing the influence of women's presence in decision-making positions on financial performance and sustainable finance.	Empirical quantitative based on company data.	Europe.	European companies with Bloomberg data.	Female presence/female directors and gender equality indicators.	Company financial performance and share of sustainable investments.	Improving gender equality has a positive impact on financial performance and sustainable investments.	Limited to European companies and Bloomberg data; ESG measurements/ratings still depend on the data provider's methodology.
3	Pongphanich et al. (2026)	Testing the impact of digital finance on ESG performance, with financing constraints and green innovation as mediators.	Quantitative; data panels; multiple regression; mediation/moderation analysis.	Thailand.	523 companies listed on the Stock Exchange of Thailand for the period 2018–2024; 3,320 firm-year observations.	Digital finance; financing constraints; green innovation; family ownership.	Corporate ESG performance.	Digital finance improves ESG performance by reducing financing constraints and increasing green innovation; the effect is stronger for family-owned firms.	Generalization is limited to Thai listed companies; digital finance measurements are still based on aggregate indices; other mediators have not been tested.
4	Rammerstorfer & Weinmayer (2025)	Developing and testing the efficiency of socially responsible investment in portfolio management.	Quantitative; multi-directional efficiency analysis; modeling portfolio.	United States and Europe.	US and European public equities over >10 years; 41,932 firm observations; 180 portfolios; nearly 4,000 rebalancings.	ESG integration in efficiency evaluation and asset allocation.	Financial performance and social performance of the portfolio.	Integrating ESG into efficiency evaluation improves financial and social performance; efficiency-based allocation strategies outperform common screening and benchmarks.	Limited to US/European public equities; results depend on efficiency model specifications and portfolio strategy.
5	Jafar et al. (2024)	Testing the effect of ESG disclosure on cost of equity and moderation of board structures.	Quantitative; OLS; moderated regression analysis; subgroup analysis; lagged ESG models.	Indonesia.	215 non-financial companies on the IDX that published sustainability reports; 309 observations in 2017, 2021, and 2022.	ESG disclosure; board independence; board size; female commissioners.	Cost of equity.	ESG disclosure lowers the cost of equity; board structure mitigates risk and weakens the negative effect of ESG disclosure on the cost of equity.	Limited to non-financial companies that publish sustainability reports and within a certain observation period.
6	Helliar et al. (2025)	Analyze mutual funds' exposure to environmental, social, and governance risks separately.	Quantitative; fund-level empirical analysis; regression/univariate analysis.	Global/international mutual fund market.	18.648 investment funds.	Asset allocation, fund characteristics, manager tenure, and E/S/G risk exposure.	Environmental, social, and governance risk exposures.	Investments in technology and financial sectors and herding behavior support environmental strategies, but not necessarily social/governance; managers with long tenures tend to be less sustainability-focused.	Focusing on risk exposure, not actual sustainability impact; potential limitations of ESG risk measurement from fund data.
7	Pyka et al. (2025)	Assessing the impact of ESG activities on the profitability and financial stability of global commercial banks.	Quantitative; panel regression.	Global; 62 countries.	384 commercial banks periode 2012–2021 dengan data Refinitiv Eikon.	ESG activities and dimensions E, S, G.	Bank profitability; ROA; ROE; financial stability/Z-score.	ESG has a significant but low impact on profitability; social and governance are positively related to stability; the environmental pillar shows a negative relationship across several metrics.	ESG data is aggregated and therefore cannot identify specific ESG activities; the sample is limited to banks with Refinitiv data.
8	Fakhrunnas et al. (2025)	Testing the impact of ESG implementation on banking performance and comparing Islamic	Quantitative; data panels; two-step system GMM.	Emerging and developing countries.	179 banks from 29 countries for the period 2016–2022.	ESG implementation; ESG pillars; Islamic bank status.	Banking profitability/performance.	ESG increases bank profitability in general, but ESG commitment decreases Islamic bank profitability; environmental pillar is positive in both Islamic and	Limited to banks in developing/emerging markets; results are sensitive to ESG measures and banking

		and conventional banks.						conventional banks; governance is not significant.	model characteristics.
9	Xiao et al. (2023)	Examining the role of ESG rating dispersion in portfolio decisions and asset pricing in the Chinese market.	Quantitative; portfolio sorts; factor models; panel regression; fixed effects; IV-TSLS.	China.	Companies/stocks in the Chinese capital market.	ESG rating dispersion.	Expected stock return/future stock return.	ESG rating dispersion has negative predictive power on returns; low-dispersion portfolios outperform; the mechanism is explained by institutional investor demand and belief dispersion.	Limited to the Chinese market; results may be influenced by rating provider characteristics and China's institutional context.
10	Vyletelka (2024)	Testing the relationship between ESG score divergence and excess stock returns in European stock markets.	Quantitative; portfolio analysis; Fama-French factor adjustment.	Europe.	851 European stocks from 17 countries and 9 sectors for the period January 2015–May 2022.	ESG score divergence/uncertainty	Excess stock returns.	The return difference between portfolios with high and low ESG divergence disappears after adjusting for Fama-French factors; the effect is not sector/country specific.	A deeper decomposition of the ESG score divergence components is needed; limited to European stocks and specific periods.
11	Janda et al. (2022)	Estimating green bond premium in China's secondary market.	Quantitative; matching green bonds with conventional bonds; fixed-effects estimation.	China.	Green bonds and conventional counterpart bonds in China's secondary market.	Green bond labels; PBOC/CBI certification; issuer ESG rating.	Green bond yield premium.	There is an average green bond yield premium of 1.8 bps; investors are more accepting of low yields for PBOC-certified green bonds; ESG-rated issuers are valued higher.	Limited to China's secondary market; yield depends on bond matching quality and certification type.
12	MARASHDEH & KHATAYBEH (2024)	Testing the impact of green finance on sustainable performance of banks in Jordan.	Quantitative; questionnaire survey; SPSS; SmartPLS/SEM.	Jordan.	25 banks in Jordan; 292 respondents; March–April 2024 data.	Green finance; environmental, social, economic aspects.	Sustainable performance bank.	Green finance has a positive impact on bank sustainable performance; environmental, social, and economic aspects also have a significant positive impact.	Limited to Jordanian banks; the data collection period was only two months so it does not capture long-term trends.
13	Pyka & Nocoń (2024)	Exploring changes in ESG risk management in the Polish banking sector.	Mixed/descriptive; literature study; desk research; questionnaire survey; case studies; observation; synthesis.	Poland.	Polish commercial banking sector and bank representatives.	ESG risk awareness and ESG risk management practices.	Integration of ESG risk into bank risk management systems.	Polish banks are becoming increasingly aware of ESG risks and are starting to incorporate them into their risk management; qualitative methods are still dominant, although quantitative methods are gaining	Focus on the Polish context; many findings are survey/perception-based and descriptive.

								recognition.	
14	Ramada et al. (2026)	Testing the influence of green finance and ESG practices on multidimensional corporate performance.	Quantitative; structured surveys; structural equation modeling.	United Arab Emirates.	Finance and sustainability managers in companies listed on the Abu Dhabi Securities Exchange and Dubai Financial Market; 167 valid responses.	Green finance and ESG practices.	Efficiency, effectiveness, sustainability, and customer satisfaction.	Green finance and ESG practices have a positive impact on all performance dimensions; the combined effect is strongest on sustainability and customer satisfaction..	Survey-based and self-reported data; limited to UAE-listed firms and survey period May 2025.
15	Sanctuary et al. (2025)	Testing whether green funds portfolios differ from conventional funds under SFDR Articles 8 and 9.	Quantitative; non-metric multidimensional scaling of fund holdings.	European Market.	6,888 equity funds and 24,549 assets/securities as of March 2023.	Classification of SFDR Article 8 and 9 as green funds.	Differences in portfolio composition of green and conventional funds.	Green funds portfolios are generally similar to conventional funds; the only clear difference is in energy sector funds; indicating potential greenwashing and regulatory limitations.	Single-period snapshot; focus on holdings composition, not non-portfolio engagement or impact.
16	Ishak et al. (2024)	Testing the effect of green policy announcements on stock returns of heavy-polluting companies and ESG adopters in Malaysia.	Quantitative; market-model event study.	Malaysia.	251 heavy-polluter companies for the period 9 October 2009–29 October 2021.	Green policy announcement; ESG status of adopters.	Stock returns/abnormal returns.	Investors had mixed reactions to the green policy announcement; there were positive/negative effects on ESG adopters in chemical & construction, metal & mining, and travel & leisure.	Event study captures short-term market reactions; limited to heavy-polluting industries in Malaysia.
17	Al-Issa et al. (2022)	Testing the influence of ESG/CSR engagement on marketing expenses and firm value.	Quantitative; panel regression.	United States of America.	S&P 500 Companies.	ESG engagement and CSR disclosure/commitment.	Marketing expenses and firm value.	Companies with higher CSR engagement incur lower marketing expenses and have higher firm value; social engagement and board attributes increase firm value.	Limited to large US companies; potential causality issues and reliance on ESG/CSR disclosure data.

18	Miljenović & Ban (2025)	Analyzing the impact of ESG implementation on credit ratings and financial performance.	Quantitative; Spearman rank correlation and Pearson correlation.	Large company/corporate context across industries.	Large companies/corporations with ESG ratings, credit ratings, and net profit margin growth.	ESG rating, environmental rating, governance rating.	Credit rating and net profit margin growth.	ESG ratings are positively correlated with credit ratings, driven primarily by governance factors; ESG implementation does not impact short-term profitability.	The analysis needs to be extended to other rating agencies such as S&P and Fitch; the effect of ESG on financial performance needs to be observed over a long-term horizon.
19	Awaluddin & Bulutoding (2026)	Comparing the performance and risk of ESG-integrated fixed income portfolios with conventional bond portfolios.	Quantitative; portfolio performance analysis; Sharpe Ratio; Sortino Ratio; Value-at-Risk.	Global fixed income market.	Bloomberg MSCI Global Green Bond Index and Bloomberg Global Aggregate Bond Index for the period 2018–2025.	ESG-integrated fixed income portfolio.	Risk-adjusted returns, volatility, downside risk, VaR.	ESG portfolios generate slightly lower nominal returns, but lower volatility and downside risk; Sharpe and Sortino are better; ESG improves resilience without a material return penalty.	Using an aggregate global bond index so that it can cover the heterogeneity of regions, issuer types, and ESG dimensions.
20	Li et al. (2025)	Examining the relationship between ESG and corporate financial risk on corporate financing efficiency in China.	Quantitative; DEA models; entity-fixed effects regression; robustness test.	China.	400 Chinese companies listed on Shanghai and Shenzhen A-share exchanges for the period 2013–2022.	ESG performance and corporate financial risk.	Corporate financing efficiency.	ESG is positively related to corporate financing efficiency; corporate financial risk has a negative impact on financing efficiency.	Limited to Chinese A-share companies; results depend on the DEA measure and ESG/CFR variables used.
21	Kato et al. (2024)	Testing the impact of sustainable finance solutions on the long-term sustainability of SMEs.	Mixed-methods; panel data; multiple regression using SPSS 29.0.	East Africa.	150 private venture capital companies that support SMEs.	Access to sustainable finance, government engagement, and policy frameworks.	Long-term sustainability SMEs; productivity; growth.	Access to sustainable finance, government involvement, and policy frameworks explain 14.7% of SMEs' long-term sustainability success; the results support increased productivity and growth of SMEs.	The scope of the study is limited; the field of sustainable finance for SMEs is still relatively new, so generalization of findings needs to be done with caution.
22	Vongpatchim et al. (2025)	Examining how internal and external information management promotes a company's sustainable financial	Quantitative; secondary data; Structural Equation Modelling.	Thailand.	300 corporate reports and Datastream data of companies listed on the Stock Exchange of Thailand.	Internal information management, external information, economic trends, and ESG factors.	Sustainable financial stability.	Internal and external information have a significant positive impact on financial stability; high ESG performance reduces regulatory risk and increases investor confidence.	Limited to Thai companies and secondary data; results are highly dependent on the quality of corporate reports and the

		stability.							variables used in the SEM model.
23	Jellouli (2025)	Examining the diversification benefits and systemic risk dynamics of sustainable digital technology assets, particularly AI and FinTech.	Quantitative; quantile–frequency connectedness framework; portfolio optimization.	Global financial markets.	ESG tech assets, sustainable AI indices, ESG FinTech stocks, broad ESG indices, and traditional benchmarks for the 2018–2025 period.	ESG-themed technology assets; sustainable AI; ESG FinTech; connectedness-minimizing portfolios.	Diversification benefits; systemic risk; spillovers; risk-adjusted returns.	Sustainable AI indices act as short-term shock transmitters during bullish regimes, while ESG FinTech stocks and broad ESG indices act as shock absorbers during downturns; connectedness-minimizing portfolios outperform variance/correlation-based approaches.	Focus on relatively new ESG digital assets; results may be sensitive to index selection, crisis periods, and connectedness methods.
24	de Amaral & Parrondo (2025)	Testing the integration of climate change risk factors in asset portfolio optimization and evaluating the trade-off between profitability and sustainability.	Quantitative; genetic algorithms; Markowitz portfolio selection model; portfolio optimization.	The market context of asset portfolios, with an emphasis on climate metrics and sustainable investing.	Portfolio assets analyzed using sustainability index, GHG intensity, and carbon intensity.	Integration of climate risk factors, GHG intensity, carbon intensity, and sustainability index in portfolio optimization.	Portfolio performance; profitability; sustainability; volatility.	Maximizing sustainability can reduce short-term profitability, but a balanced approach between profitability and sustainability can increase long-term profitability.	Further sectoral testing is needed; the impact of various sustainability criteria has not been fully explored.
25	Liu (2023)	Examining the impact of ESG ratings on the quantity and quality of green innovation in new energy companies.	Quantitative; staggered Difference-in-Differences.	China.	A-share listed new energy enterprises periode 2010–2021.	ESG ratings of SynTao Green Finance as an exogenous shock.	Number of green patents and quality of green innovation.	ESG ratings increase the number and quality of green patents; the effect is stronger for state-owned enterprises, large companies, and companies with high levels of digitalization; the	Limited to new energy companies in China; results rely on ESG ratings data and patent-based green innovation measures.

								mechanism occurs through reduced financial constraints, agency risk, and increased R&D.	
26	Wang et al. (2025)	Testing the influence of green finance reform and innovation pilot zone policies on corporate ESG.	Quantitative; multi-period Difference-in-Differences; robustness tests.	China.	1.300 listed companies.	Green finance reform and innovation pilot zone policies.	Corporate ESG level.	The GFPZ policy improves corporate ESG; its primary mechanisms are green technological innovation and increased stock liquidity.	Focusing on green finance policies in China, generalizations to other countries require consideration of institutional differences and policy design.
27	Zairin et al. (2025)	Examining the relationship between institutional ownership, ESG performance, and financial outcomes in listed companies.	Quantitative; empirical analysis of listed companies.	Indonesia.	705 non-financial companies listed on the Indonesia Stock Exchange in 2022.	Institutional ownership and ESG performance.	Financial outcomes; ESG performance.	Institutional ownership has no significant effect on ESG performance; ESG performance is positively related to financial performance; ESG does not moderate the relationship between institutional ownership and financial outcomes.	The data is only one year old, and Indonesia's ESG disclosure context is still largely voluntary; results may be influenced by regulations and firm-level characteristics.
28	Sthembiso Msomi (2025)	Testing the relationship between ESG performance and equity financing in non-financial companies.	Quantitative; System GMM and Fixed Effects Model.	South Africa.	60 JSE-listed non-financial companies; 420 firm-year observations for the period 2015–2023.	ESG performance; environmental score; social score; governance score.	Equity financing.	ESG performance is a key factor in equity financing decisions; social scores consistently have a positive effect, governance is significant in the dynamic model, and environmental scores are positive in System GMM.	Limited to JSE non-financial companies; results between models are not entirely consistent, particularly for environmental scores.

Thematic Findings

The thematic synthesis identified five major themes in the literature: (1) ESG and corporate financial outcomes, (2) ESG and banking or financial institutions, (3) ESG in capital markets and green finance instruments, (4) ESG-integrated portfolio and asset management, and (5) ESG, green finance policy, and sustainability transition mechanisms.

Theme 1: ESG and corporate financial outcomes is supported by eight studies and is dominated by listed-firm contexts in Indonesia, China, the UAE, South Africa, the United States, Europe, and large corporate samples. These studies commonly draw on stakeholder theory, agency theory, signaling theory, and corporate finance perspectives, using panel regression, System GMM, OLS, SEM, correlation analysis, and fixed effects models. The main variables include ESG disclosure, ESG performance, ESG ratings, board structure, institutional ownership, female presence, firm value, credit rating, cost of equity, financial performance, equity financing, and corporate financing efficiency. The evidence generally suggests that ESG improves access to capital, reduces perceived risk, enhances financing efficiency, supports equity financing, and may lower cost of equity. However, findings are not fully uniform: some studies report limited or insignificant effects of institutional ownership on ESG, and others suggest that ESG may not generate immediate short-term profitability gains. Conceptually, this theme positions ESG as a financial information mechanism that affects capital allocation, investor confidence, risk perception, and long-term value creation.

Theme 2: ESG and banking or financial institutions includes four studies, mainly covering global commercial banks, Islamic and conventional banks in emerging and developing countries, Jordanian banks, and the Polish banking sector. The dominant theoretical perspectives involve sustainable banking, risk management, stakeholder theory, and financial intermediation theory. Methods include panel regression, System GMM, PLS-SEM, survey analysis, and descriptive/mixed-method appraisal of ESG risk management. The key constructs include ESG activities, green finance, ESG implementation, ESG risk management, profitability, ROA, ROE, Z-score, sustainable performance, and risk exposure. The findings indicate that ESG can enhance financial stability and sustainable performance, although its effect on profitability is mixed and sometimes negative in the short term, especially when ESG implementation creates additional compliance or transition costs. This theme shows that ESG in banking should not be interpreted only as a profitability driver, but also as a resilience, risk governance, and financial stability mechanism.

Theme 3: ESG in capital markets and green finance instruments is supported by four studies focusing on China, Europe, and Malaysia. These studies are grounded in asset pricing, efficient market hypothesis, sustainable finance theory, and investor preference perspectives. The dominant methods include portfolio sorts, factor models, Fama-French adjustment, event study methodology, matching methods, and fixed effects estimation. The main variables include ESG rating dispersion, ESG score uncertainty, green bond label, green bond premium, green policy announcements, ESG adopter status, expected stock return, excess return, abnormal return, and bond yield premium. Findings are mixed: ESG rating dispersion predicts lower expected returns in China, ESG score divergence does not remain significant after risk-factor adjustment in Europe, green bonds show evidence of yield premium in China, and Malaysian investors show heterogeneous reactions to green policy announcements. This theme suggests that capital markets partially price ESG-related information, but the pricing effect depends heavily on market maturity, information quality, investor awareness, and regulatory credibility.

Theme 4: ESG-integrated portfolio and asset management contains six studies covering socially responsible investments, mutual funds, SFDR-classified funds, fixed income portfolios, sustainable AI/FinTech assets, and algorithmic portfolio optimization. The dominant theoretical foundations are modern portfolio theory, ESG-efficient frontier logic, sustainable investing theory,

connectedness theory, and risk-return trade-off perspectives. The studies use multi-directional efficiency analysis, portfolio optimization, fund-level empirical modelling, non-metric multidimensional scaling, Sharpe and Sortino ratios, Value-at-Risk, quantile-frequency connectedness, and genetic algorithms. The key variables include ESG integration, ESG risk exposure, sustainable fund classification, ESG fixed income portfolios, sustainable digital assets, climate metrics, GHG intensity, carbon intensity, financial performance, downside risk, systemic connectedness, and portfolio sustainability. Overall, the evidence suggests that ESG integration can improve risk-adjusted performance, downside protection, or social performance, but green-labelled funds do not always differ materially from conventional funds. Conceptually, this theme highlights a central tension in sustainable finance: ESG may improve portfolio resilience and sustainability alignment, yet labelling and portfolio holdings do not always guarantee genuine capital reallocation.

Theme 5: ESG, green finance policy, and sustainability transition mechanisms includes six studies covering Kazakhstan, Thailand, East Africa, China, and firm-level sustainability contexts. These studies use sustainable finance theory, stakeholder theory, agency theory, signaling theory, resource-based view, and policy-oriented transition perspectives. The methods include comparative policy review, multiple regression, SEM, DID, and panel-based empirical analysis. The main variables include green finance policy, digital finance, sustainable finance solutions, ESG ratings, financing constraints, green innovation, stock liquidity, R&D, sustainable financial stability, SME sustainability, and corporate ESG level. Findings consistently show that green finance and ESG-related mechanisms can improve ESG performance, green innovation, financial stability, and long-term sustainability, often through mediating channels such as reduced financing constraints, higher R&D, stronger liquidity, better information environments, and improved stakeholder confidence. This theme provides the clearest mechanism-oriented evidence, showing that ESG does not influence sustainable finance outcomes in isolation, but through institutional, financial, technological, and innovation-related pathways.

Taken together, the thematic findings suggest that ESG in sustainable finance is not a single linear relationship but a multidimensional financial phenomenon operating through corporate financing, banking stability, market pricing, portfolio allocation, and sustainability transition mechanisms. The literature is broadly supportive of ESG's relevance for sustainable finance, but the strength and direction of effects depend on context, measurement approach, time horizon, and the specific ESG dimension being examined.

Discussion

The principal findings of this systematic literature review indicate that the literature on ESG in sustainable finance has conceptualized ESG not as a single construct, but as a multidimensional financial mechanism that operates through disclosure, rating, risk exposure, governance quality, investment screening, portfolio allocation, and green finance policy. Across the reviewed studies, ESG is most frequently evaluated as a determinant of financial outcomes, including cost of equity, financing efficiency, equity financing, credit rating, bank profitability and stability, stock returns, portfolio performance, and green innovation. This directly answers the research question by showing that ESG has been conceptualized as both a risk-management device and a value-creation mechanism, measured through ESG scores, ESG disclosure, ESG ratings, ESG pillars, ESG risk exposure, and green finance proxies, and evaluated across firm-level, bank-level, portfolio-level, and market-level outcomes. For example, studies show that ESG disclosure can reduce cost of equity, ESG performance can improve corporate financing efficiency, and ESG scores can influence equity financing decisions, although the strength of these effects varies across institutional settings and model specifications (Jafar et al., 2024; Li et al., 2025; Sthembiso Msomi, 2025).

A central interpretation of these findings is that ESG matters in sustainable finance because it reshapes how financial actors assess information, risk, and long-term value. ESG disclosure, ratings, and performance indicators reduce information asymmetry, strengthen investor confidence, and provide signals about the firm's capacity to manage non-financial risks. This explains why ESG is often associated with lower financing frictions, better access to equity, improved credit perception, and stronger financing efficiency. However, the evidence also suggests that ESG does not automatically generate superior short-term financial performance. In banking, for instance, ESG activities may improve resilience and stability while simultaneously imposing implementation costs that weaken profitability in the short run. This pattern is important because it challenges the simplistic assumption that ESG is always financially beneficial; rather, ESG appears to generate value through a temporal trade-off between short-term cost absorption and long-term risk reduction (Fakhrunnas et al., 2025; Pyka et al., 2025).

The review also demonstrates that ESG-related outcomes are highly contingent on context, measurement, and the specific ESG dimension being examined. Studies on capital markets and portfolio management show that ESG information is priced unevenly: ESG rating dispersion predicts expected returns in China, but ESG score divergence loses explanatory power after factor adjustment in European markets; green bonds show evidence of a yield premium in China, while green funds under SFDR classifications are often not substantially different from conventional funds in their holdings. These findings support the view that ESG effects are not universal, but depend on market maturity, investor awareness, regulatory credibility, rating quality, and the degree to which ESG information is financially material. This challenges earlier interpretations of sustainable finance that treat ESG integration as a homogeneous investment strategy and instead suggests that ESG must be examined as a context-sensitive financial signal (Janda et al., 2022; Sanctuary et al., 2025; Vyletelka, 2024; Xiao et al., 2023).

The findings further suggest that ESG contributes to sustainable finance not only through direct financial effects but also through mediating mechanisms such as green innovation, reduced financing constraints, improved stock liquidity, stronger R&D investment, lower agency risk, and enhanced stakeholder trust. This mechanism-based interpretation is especially visible in studies on digital finance, green finance policy, and ESG ratings, where ESG-related interventions improve sustainability outcomes by changing firms' access to capital, innovation incentives, and market visibility. This is theoretically significant because it shifts the discussion from whether ESG "works" to how ESG works. In this sense, ESG should be theorized not merely as an explanatory variable, but as part of a broader financial transformation process that links institutional pressure, market discipline, corporate governance, and sustainable capital allocation (H. Liu & Xu, 2024; Pongphanich et al., 2026; Wang et al., 2025).

These findings both support and extend prior literature. They support the stakeholder and signaling perspectives by showing that ESG practices can enhance legitimacy, reduce information asymmetry, and improve investor perceptions. They also align with agency theory by suggesting that ESG disclosure and governance mechanisms may reduce opportunistic behavior and strengthen monitoring. At the same time, the evidence challenges overly optimistic versions of stakeholder theory by showing that ESG benefits are conditional rather than automatic. The mixed results on profitability, stock returns, and fund differentiation indicate that ESG may create financial value only when supported by credible disclosure, strong governance, robust regulation, and investor recognition. Therefore, the theoretical contribution of this review lies in integrating fragmented perspectives into a more nuanced view: ESG in sustainable finance should be understood as a contingent, multi-level mechanism linking corporate behavior, financial intermediation, capital market pricing, and sustainability-oriented value creation.

For the development of financial management theory, this review implies that traditional

models of firm value, cost of capital, capital structure, and portfolio choice need to incorporate non-financial risk, sustainability preferences, and institutional legitimacy more explicitly. ESG evidence cannot be fully explained by conventional risk–return logic alone because investors may price ESG both as financial materiality and as sustainability preference. Similarly, corporate finance theory needs to account for how ESG affects access to capital, creditworthiness, equity financing, and long-term resilience through both market-based and governance-based channels. The review therefore advances the field by positioning ESG in sustainable finance as an integrative construct that connects stakeholder theory, agency theory, signaling theory, resource-based view, modern portfolio theory, and sustainable finance theory. This integrative perspective provides a stronger basis for future research to move beyond isolated ESG–performance tests and toward more theoretically grounded models of how ESG transforms financial decision-making and capital allocation.

CONCLUSION

This systematic literature review concludes that ESG in sustainable finance has evolved from a normative sustainability concern into a central construct in financial management research, shaping how firms, investors, banks, and capital markets evaluate risk, allocate capital, and pursue long-term value creation. The reviewed literature shows that ESG has been conceptualized in multiple ways: as a disclosure mechanism, risk signal, governance device, investment criterion, portfolio attribute, and driver of green innovation and financial resilience. Empirical evidence generally supports the relevance of ESG for sustainable finance outcomes, particularly in relation to financing efficiency, cost of capital, equity financing, banking stability, portfolio resilience, and green innovation; however, these effects are not uniform and depend on measurement choices, institutional context, industry characteristics, time horizon, and the specific ESG dimension examined.

Implications

Theoretically, this review contributes by integrating fragmented ESG research across corporate finance, banking, asset pricing, portfolio management, and green finance into a more coherent understanding of ESG as a multi-level financial mechanism rather than a single explanatory variable. It suggests that ESG should be theorized through an integrated lens combining stakeholder theory, agency theory, signaling theory, risk management theory, and modern portfolio theory. Practically, the findings imply that managers, investors, banks, and policymakers should treat ESG not as a symbolic compliance tool, but as a strategic financial capability that can influence capital access, risk assessment, market valuation, and long-term resilience when supported by credible disclosure, robust governance, and reliable measurement.

Limitations

This systematic literature review has several limitations that should be acknowledged while preserving its contribution. First, the review relied primarily on Scopus, meaning that relevant studies indexed only in other databases such as Web of Science, EBSCO, ProQuest, or specialized finance repositories may have been excluded. Second, although the search string was designed to capture studies on ESG in sustainable finance, articles using adjacent terms such as responsible investment, impact investing, sustainable banking, green bonds, climate risk, or transition finance without explicitly using the selected keywords may not have been retrieved. Third, the inclusion criteria were limited to English-language final journal articles published during 2016–2026, which may exclude earlier foundational works, non-English studies, policy reports, conference papers, and other grey literature that could provide relevant conceptual or regulatory insights. Fourth, although the review used MMAT-informed appraisal and a weight-of-evidence logic, quality assessment still

involved interpretive judgement, particularly because the included studies varied in design, sample size, data transparency, ESG measurement, and reporting quality. Fifth, the heterogeneity of methods, contexts, variables, and outcomes made meta-analysis inappropriate, requiring the use of narrative and thematic synthesis, which is useful for integrating diverse evidence but cannot estimate pooled effect sizes. Finally, the evidence base remains dominated by listed firms, banks, capital markets, and portfolio studies, while SMEs, non-bank financial institutions, frontier markets, Islamic finance, and transition finance remain relatively underexplored. These limitations open opportunities for future research to expand database coverage, test broader search strategies, use longer observation periods, compare ESG measures across providers, apply stronger causal designs, and develop more context-sensitive theoretical frameworks for ESG in sustainable finance.

Future Research

Future research should move beyond simple ESG–performance associations and develop stronger causal designs, longitudinal evidence, cross-country comparisons, and industry-sensitive analyses. Greater attention is needed to the mechanisms through which ESG affects financial outcomes, including financing constraints, investor confidence, green innovation, agency risk, stock liquidity, and regulatory pressure. Future studies should also disaggregate ESG into its environmental, social, and governance pillars, compare ESG rating providers, examine underexplored contexts such as SMEs, Islamic finance, frontier markets, and transition finance, and build integrative theoretical frameworks that connect firm-level ESG practices with market-level capital allocation and system-level sustainable finance transformation.

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