

GREEN FINANCE AND SDGS IN INDIAN BANKING: EXAMINING THE MEDIATING ROLE OF CORPORATE SUSTAINABLE DEVELOPMENT

NAVJOT SINGH MIGLANI

HUMAN RESOURCES, CHANDIGARH UNIVERSITY, INDIA

e-mail: shelly2109@gmail.com

AALIYA ASHRAF

UNIVERSITY SCHOOL OF BUSINESS, CHANDIGARH UNIVERSITY, INDIA

e-mail: aaliya123ashraf@gmail.com

RAMONA BIRAU

*UNIVERSITY OF CRAIOVA, "EUGENIU CARADA" DOCTORAL SCHOOL OF ECONOMIC
SCIENCES, CRAIOVA, Romania*

e-mail: ramona.f.birau@gmail.com

VIRGIL POPESCU

*UNIVERSITY OF CRAIOVA, FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION,
CRAIOVA, ROMANIA*

e-mail: virgil.popescu@vilaro.ro

ROXANA-MIHAELA NIOATA (CHIREAC)

*UNIVERSITY OF CRAIOVA, "EUGENIU CARADA" DOCTORAL SCHOOL OF ECONOMIC
SCIENCES, CRAIOVA, ROMANIA*

e-mail: roxananioata06@gmail.com

GABRIELA ANA MARIA LUPU (FILIP)

*UNIVERSITY OF CRAIOVA, "EUGENIU CARADA" DOCTORAL SCHOOL OF ECONOMIC
SCIENCES, CRAIOVA, ROMANIA*

e-mail: Lupuanamariagabriela@yahoo.com

Abstract

This research investigates the connection between green finance and the Sustainable Development Goals, focusing specifically on how Corporate Sustainable Development (CSD) mediates this relationship in the Indian banking industry. The study utilized purposive sampling, collecting data from 300 employees of well-known private sector banks located in Delhi. Structural Equation Modeling (SEM) was used to evaluate the proposed hypotheses using SmartPLS software. Based on the responses provided by the respondents, it was found that Green Finance such as Green Credit, Green Insurance, Green Investment, and Green Securities have a significant effect on the CSD of the Corporates; however, the direct impact of Green Finance on the SDGs is very limited. That being said, the CSD has been found to have a strong and significant relationship with the SDGs, and it partially mediates the relationship between Green Finance and the SDGs. Therefore, the results indicate that banks are critical players in promoting sustainability by directing financial resources to environmentally responsible activities. In conclusion, the findings of this study add to the existing research on this topic by providing empirical evidence from an emerging economy, which may assist in integrating sustainability into financial decision making.

Keywords: *Green Finance, Sustainable Development Goals (SDGs), Corporate Sustainable Development (CSD), Banking Sector, ESG, Structural Equation Modeling.*

1.Introduction

As climate change becomes increasingly serious, we need to completely change the way we handle money. Green finance will be crucial if we want to meet the United Nations' Sustainable Development Goals (SDGs) by 2030. In 2024, green finance (which includes things such as credit, bonds, insurance, and securities for environmentally-friendly projects) mobilized \$622 billion globally, and helped decrease carbon intensity, by directing funds to renewable energy and energy efficiency projects (UNEP, 2025). In emerging markets, however, companies that directly link their operations to the SDGs do so through actions (such as Corporate Sustainable Development or CSD) that incorporate ESG elements into their businesses but there is little empirical evidence to validate this.

The tension in India is clear; although it is the world's third-leading emitter, the government intends on reaching a net-zero goal by 2070 while continuing to sustain 7% GDP growth throughout. The banking system is an important industry with 250 lakh crore worth of assets (60% of which fund corporations) is critical, as the amount of green lending through this system increased by 35% year on year and is projected to total ₹3.3 lakh crores by the end of 2025. Private banks are the leaders in this space (HDFC, ICICI, and Axis), and with the implementation of the Reserve Bank of India's 2021 Green Deposits Framework and 2024 ESG disclosures, there have been green bond issuances amounting to ₹1.2 lakh crore, all in support of the Paris Agreement and the reduction of 33% of carbon intensity within the Indian economy between 2005 and 2019. Private banks are leading this space, such as ICICI, which issued ₹10,000 crores worth of green bonds to finance renewable energy projects and Axis Bank, which has financed solar energy projects that will reduce CO₂ emissions by 5 million tons per year.

Challenges persist even when momentum builds-although green finance has had the most significant impact on corporate sustainability disclosures (for example, private sector banks report ESG data at a 40% increase), the impacts of these finances will ultimately depend on how the banks implement them operationally. Employee awareness of the SDGs (sustainable development goals) and green products lags behind, with 55% of employees reporting they do not see the link between green products and the SDGs, leading to a situation where “greenwashing” occurs. Research studies indicate that one way green finance reduces emissions is through providing financing for innovation and new products; however, the subcontinental level analysis of green finance-mostly using macroeconomic studies-limits the understanding of how green finance may mediate the relationship between financing, emissions, and sustainable development in India, as do the macro studies on the use of green finance to stimulate innovation.

2.Literature Review

Since the Industrial Revolution, the financial sector has played an important role in helping people develop and improve their quality of life worldwide (Meo & Karim, 2022). The financial sector has not previously considered the impact that financial allocations have on the ecosystem or, therefore, how their environmental and social problems have worsened over the years. Over time, the impact of pollution and climate change has become increasingly greater, biodiversity has become less widespread in nature, and the natural environment has been corrupted (Scholtens, 2017). Traditional financial systems are based on a very limited set of values and do not include social and environmental considerations. Therefore, they can't help to achieve the SDGs (Fullwiler, 2016). The financial sector is essential for the development of new types of financial innovation, including: benefit corporations, crowdfunding, and social impact bonds, which create positive environmental and social impacts (Shiller, 2013).

Over the past decade, there has been increased media attention on environmental issues and global climate change, as well as on the critical importance of both the urgency of maturing green finance and the need to increase the funds allocated to investments in green projects (Li et al., 2020). Green finance has its origins in the formation of the concept between 1998 and 2002,

although it did not reach maturity until later (see Zhou and Xu, 2022). As a result, green finance is a relatively new concept that has not yet established a single agreed definition. This lack of agreement is mainly due to the existence of several factors that contribute to the fact that many countries have developed multiple definitions of green finance (Gilchrist et al., 2021). These factors include cultural differences in the types of solutions prioritized to address both environmental issues and economic issues, as well as the differing stages of economic development across countries. Furthermore, over the years, the development of the concept of green finance has evolved from the concept of environmental finance. Even though both green finance and environmental finance aim to minimize environmental damage caused by both humans and nature, their definitions differ, as environmental finance encompasses achieving these goals through the use of market-based environmental policy instruments (Bhatnagar and Sharma, 2022).

Green finance topics have become increasingly relevant and highly relevant to the financial field, according to the bibliometric analysis conducted by Zhang, Zhang and Managi (2019). Green finance has three main types of concepts (Lee and Lee, 2022). Firstly, environmental finance relates to financial services that are primarily concerned with addressing environmental issues (Cowan, 1999; Gray, 2002; Salazar, 1998). Secondly, innovative financial products that aim to prevent and reduce environmental risks form a key part of green finance (Labatt and White, 2002). Green finance is a new financial system designed to create awareness of ecology in terms of society and promote the use of environmentally friendly financial instruments and investments (He et al., 2019; Hu et al., 2021; Liu et al., 2019). Wang and Zhi (2016) identified environmental protection as the main feature that distinguishes green finance from traditional finance, which usually does not generate environmental benefits. Green finance also has a narrower scope than sustainable finance, as green finance is limited to one of the three pillars of sustainable growth (environmentally), while sustainable finance includes all three pillars (Ziolo et al., 2019). According to Bakry et al. (2023), the main purpose of green finance is to mitigate climate change by improving environmental quality using financial means. At the same time, Srivastava et al. (2022) argued that green finance is essential in achieving sustainable economic development by guiding the allocation of financial resources. Furthermore, the authors indicate that green finance itself does not have a direct impact on the environment, as the quality of the environment has improved as a result of the financial support provided through green finance to various organizations (Zhou et al., 2020).

Green finance has been shown to help support green economies. A study by Xu et al. (2023) showed that green finance can accelerate a region's green economic growth rate through the issuance of green bonds. This is particularly true for the agricultural sector, where green bond financing is able to create new jobs, reduce carbon emissions, and provide greater welfare. Zhao et al. (2022) also demonstrated this relationship through their research, which found an increase in economic growth due to the use of green bond financing policies. Zhou et al. (2020) found, using an environmental Kuznets curve model, that green finance ultimately creates wealth and reduces environmental damage in China.

According to Srivastava et al. (2022), and Wang and Zhi (2016), green financial products support environmental protection and sustainable use of resources. Meo and Karim (2022) also found through their analysis of countries with the ten largest economies, that the overall results of their study support the conclusion that green finance is used to reduce carbon emissions. Green finance is there for effectively minimizing damage to the environment, and is an attractive investment strategy. Li, Faridi, and Nazar (2023) also supported the idea that green finance's contribution to improving the quality of the environment, by reducing greenhouse gas emissions, is evident in most of the countries reviewed in their study. Finally, Gilchrist et al. (2021) also concluded that environmentally sound business practices will positively impact the value of shareholders and non-financial stakeholders.

According to Taghizadeh-Hesary & Yoshino (2019), there is both a direct and indirect correlation of SDG stogreen finance and how green energy project investments can help achieve the SDGs. Furthermore, through further collaboration between sustainable resources, environmentally sound practices, and the economy as it relates to the implementation of green finance, the SDGs can also be achieved (Jiakui et al., 2023).

Numerous studies have documented a strong correlation between green finance and sustainable development outcomes. Evidence indicates that investments in green finance can substantially reduce carbon emissions, improve energy efficiency, and boost green innovation within sectors. Research has also shown that funding environmentally friendly projects results in environmental and economic improvements. Furthermore, green finance plays a key role in facilitating corporate green innovation by reducing financial barriers to investing in clean technology and sustainable practices (Liu et al., 2025). Therefore, these studies' findings highlight the need to align financial systems with environmental policies and innovation to facilitate greater progress towards the SDGs.

Firstly, there is a trend towards integrating Environmental, Social and Governance (ESG) structures into SDG targets. Organisations are attempting to align their sustainability reporting and investment strategies with the global development agenda (Zairis et al., 2024). Secondly, policy and regulation also play a role in advancing green finance. Examples of government actions that can help to scale up sustainable investments and align them with SDG objectives include green taxonomies, carbon pricing mechanisms, and incentives for financial institutions (Fu et al., 2023).

Thirdly, green finance has emerged as a way to promote technological innovations in various areas, including renewable energy, sustainable manufacturing and low-carbon infrastructure (Liu et al., 2025). Finally, there has been an increase in bibliometric studies evaluating green finance literature, with a corresponding increase in publications demonstrating worldwide interest in sustainability and climate finance (Jaishree & Murthy, 2025).

3. Research Gaps

The amount of scholarly work that has been done on green finance and sustainable development is rapidly growing, however, many areas still require further investigation. One such area is the role of countries that are just now building their economies, specifically places like India, which are often overlooked in terms of green finance and its impact on sustainability.

First, while there are a large number of studies that have looked at the relationship between green finance and sustainability, there is virtually no research done on understanding how green finance affects the SDG's through Corporate Sustainable Development (CSD). Current research mostly has adopted a direct relationships approach, which fails to explain how financial resources are used to achieve sustainability results through firm level sustainability actions.

The third area where current literature falls short, is that there is little connection between previously tested theories (e.g., Stakeholder and Agency Theory) as they relate to the relationship between green finance, corporate actions, and meeting the SDGs. Therefore, only a small number of articles examine these variables using a theoretical lens (i.e., stakeholder pressures or institutional forces), and therefore most findings are descriptive in nature.

Lastly, there are few empirical studies on how green finance affects firm performance at the micro-level (e.g., employee or manager). Although India has become a leader in implementing sustainable finance and adopting ESG practices, research examining this issue has mostly come from a macro perspective (i.e., multi-country) and therefore does not describe the characteristics or perspectives of individual firms within the banking sector.

Fourthly, previous work has only looked at aspects of green finance separately; however, there are many different types of green finance (e.g., green credit, green investments, and so on). Therefore, one area that would benefit from increased investigation is the ways that each type of

financial instrument aides in corporations achieving sustainability and the SDGs (Sustainable Development Goals).

Finally, current research suffers from minimal utilization of advanced analytic approaches (e.g., Structural Equation Modeling (SEM)) to analyse the relations between variables in more complex ways. Additionally, varying measurement approaches across studies around green finance, corporate sustainability and the SDGs make comparisons across studies difficult at best.

At last, there has been a lack of quality research in the study of indirect pathways and conditional relationships connecting financial systems and sustainable results. A comprehensive understanding of how green finance projects are implemented in organizations to fulfill greater developmental objectives has been constrained by the lack of mediation-type models.

4.Hypotheses Development

Green Finance and Sustainable Development Goals (SDGs)

Stakeholder Theory indicates that financial institutions have to align their work with society's broader interests, such as environmental sustainability and social welfare. Green finance products (including green credit, green investment options, green securities, and green insurance) allow banks to use capital for projects with a focus on equity toward the environment. This means that when banks provide green products to customers or offer financing for environmentally responsible projects, it supports the fulfillment of the Sustainable Development Goals (SDGs) in terms of climate change, clean energy, and sustainable economic growth. By using Institutional Theory as a lens, increased regulatory keys, sustainability mandates, and the global framework of the (SDGs) place pressure on financial institutions to engage in green financing practices. As a result, these institutions are encouraged by these institutional pressures and therefore support sustainable initiatives. Consequently, this helps achieve measurable progress toward sustainable development goals.

Thus, it is hypothesized that:

H1: Green finance has a significant positive impact on Sustainable Development Goals (SDGs).

H1a: Green credit has a significant positive impact on SDGs.

H1b: Green investment has a significant positive impact on SDGs.

H1c: Green securities have a significant positive impact on SDGs.

H1d: Green insurance has a significant positive impact on SDGs.

Green Finance and Corporate Sustainable Development (CSD)

Firms use sustainable practices to meet the needs of their stakeholders as identified through Stakeholder Theory. Green finance provides financial resources and incentives to companies wanting to invest in socially and environmentally responsible practices. By providing access to green financial instruments, the cost of capital for sustainable projects decreases and encourages firms to consider ESG factors in their business practices, ultimately supporting corporate sustainability.

As per Institutional Theory, organizations experience coercive (regulatory), normative (industry norms), and mimetic (competitive) pressures that encourage them to conform to the sustainability norm. Through prioritizing green financing, financial institutions create an institutional environment that rewards corporations for taking on sustainable practices, allowing those corporations to secure funding and maintain legitimacy.

Thus, it is hypothesized that:

H2: Green finance has a significant positive impact on Corporate Sustainable Development (CSD).

H2a: Green credit has a significant positive impact on Corporate Sustainable Development (CSD).

H2b: Green investment has a significant positive impact on CSD.

H2c: Green securities have a significant positive impact on CSD.

H2d: Green insurance has a significant positive impact on CSD.

Corporate Sustainable Development (CSD) and Sustainable Development Goals

According to Stakeholder Theory, businesses can better contribute to achieving social and environmental objectives by focusing on ESG values when creating their strategy. By aligning a business's goals with sustainable development principles, companies can facilitate progress toward achieving the SDGs by producing products responsibly, utilizing resources efficiently, and including all members of society in production activities.

Institutional Theory, on the other hand, posits that companies adopt sustainability practices in order to gain legitimacy and adhere to international standards and norms. Companies begin to adopt the sustainable development practices of other successful companies, which leads to the systematic and measurable way that firms contribute to the SDGs in a complementary fashion with their sustainability performance at a firm level and their contribution to building and improving communities, regions, and nations at large.

Thus, it is hypothesized that:

H3: Corporate Sustainable Development (CSD) has a significant positive impact on Sustainable Development Goals (SDGs).

Mediating Role of Corporate Sustainable Development

The connection between corporate sustainable development as a mediating factor in the relationship between green finance and SDG results can be described both from a stakeholder theory perspective and an institutional theory perspective. Although green finance offers the funding and external motivation for sustainability, there is no direct connection between the funding available for firms through green finance and the ultimate achievement of sustainability goals unless/ without firms properly applying the funds received to support executing sustainable practices. Corporate sustainable development links together the financial inputs received through bank loans, capital market financing, etc., and the ultimate realization of sustainability outcomes.

From an institutional theory perspective, financial institutions create pressures on corporations, as well as incentives to take action; however, the actual execution of taking action on those pressures by utilizing available funds to financially support and sustain practices occurs at the firm level. Thus, corporate sustainable development acts as a means of bridging the connection between accessing green finance, such as bank loans, access to public equity markets, and realization of Sustainable Development Goals.

Thus, it is hypothesized that:

H4: Corporate Sustainable Development (CSD) mediates the relationship between green finance and Sustainable Development Goals (SDGs).

5. Theoretical Framework

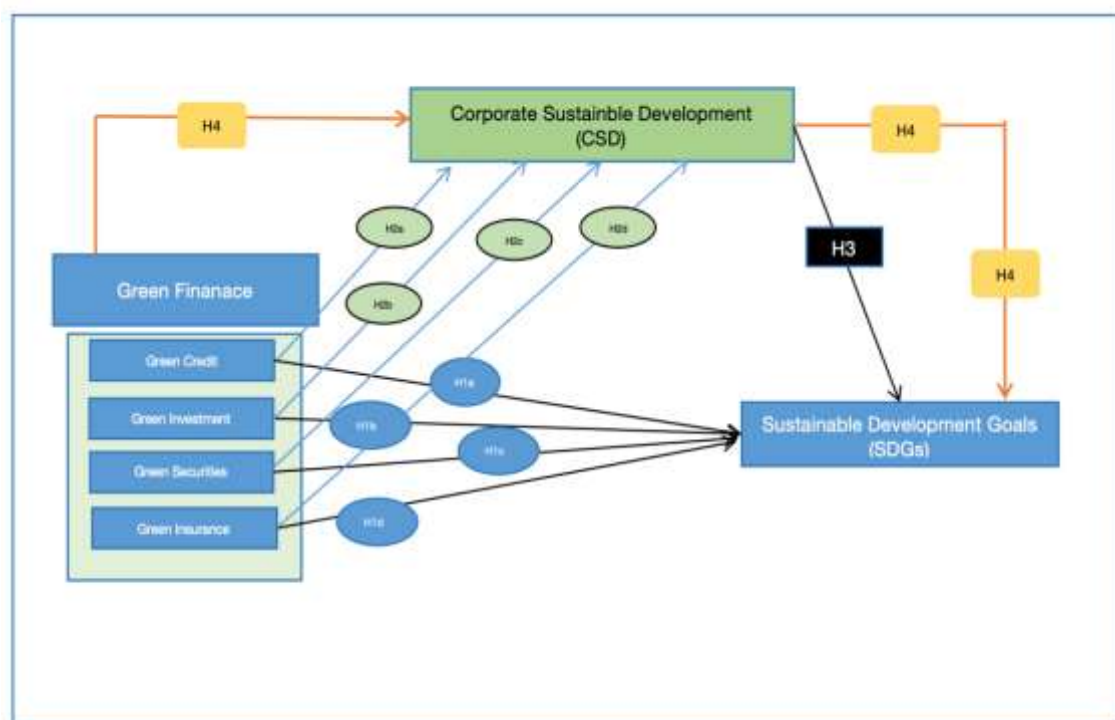
The basis of this research study is Stakeholder Theory & Institutional Theory in relation to green finance, corporate sustainable development (CSD), and the Sustainable Development Goals (SDGs). According to Stakeholder Theory, businesses must be held accountable to more than just the shareholders it has also been suggested that they must be held accountable to a much wider audience; which includes a large number of stakeholders including: society at large, all forms of regulations, and the natural environment. Based on this premise, banks have been increasingly implementing green finance practices as a way to demonstrate their commitment to responding to the expectations of their stakeholders for environmental sustainability and responsible, sustainable investments. By implementing green finance practices and/ or products into their business, as a direct response to the expectations of their stakeholders, banks encourage businesses to incorporate

sustainability into both their strategic and operational plans and as such, improve their levels of corporate sustainable development.

Institutional Theory complements this perspective by explaining how organizations are pressured to adapt sustainable practices by regulatory pressure, normative expectations, and industry norms. In India's banking sector, the increased focus on ESG norms, sustainability disclosure requirements, and policy frameworks that support green financing mechanisms are all creating an institutional pressure on banks to consider green financing. Moreover, these pressures indirectly influence corporate behavior by directing financial resources towards environmentally friendly activities and helping to achieve the Sustainable Development Goals (SDGs).

The different theories used give us a strong basis to gain an understanding of how green finance indirectly affects SDGs via corporate sustainable development mediation processes, through stakeholder driven motivations and institutional pressures, contributing to achieving sustainable benefits.

Conceptual Model



Source: Author's Original Contribution

6. Methodology

Sample and Data Description

For this research study, we examined a sample of 300 employees from the leading private sector banks in India (HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank, IndusInd Bank) with a large number of customers and are actively involved in implementing green finance initiatives and sustainability practices. Specifically, we used a purposive sampling approach for the collection of data from employees who work in areas related to green finance instruments, sustainability reporting, ESG initiatives, and other areas involved in the financial decision-making process. Each of the respondents had sufficient experience working in the relevant areas of knowledge and hands-on experience. We limited our research study geographically to Delhi as it serves as both a key financial hub and a key policy center within India, with a significant number of

bank headquarters, regulatory authority offices, and corporate offices implementing sustainability and ESG disclosures located within its boundaries. Conducting the research study in Delhi also provides a higher level of consistency in the regulatory environment for each respondent, while providing greater access to the respondents and increasing the reliability of the data collected, while avoiding the regional differences that could be attributable to conducting research in multiple metropolitan areas.

Measures

The study employed well-established and research-validated scales to measure the key constructs. **Green finance** was assessed using an adapted scale based on the framework developed by Wang et al. (2023), capturing dimensions related to the adoption and implementation of environmentally responsible financial practices. **Corporate sustainable development** was measured using a composite scale adapted from the works of Rodrigo Lozano (2015) and Tobias Hahn & Frank Kühnen (2013), which includes research-ready items reflecting environmental, social, and governance (ESG) integration within organizational practices.

Furthermore, the **achievement of Sustainable Development Goals (SDGs)** was operationalized as a multidimensional construct encompassing environmental, social, and economic dimensions, consistent with frameworks proposed by the United Nations (2015) and OECD (2017). Drawing on prior empirical studies such as Jeffrey Sachs et al. (2023) and the United Nations Development Programme (2021), SDG performance was measured using composite indicators structured around key sustainability pillars. This approach aligns with existing sustainability literature, which emphasizes the integration of environmental, social, and governance dimensions into comprehensive measurement frameworks.

Research Design and Analysis

Smart PLS 4.0 was utilized to assess the measurement model and structural model both measuring and evaluating the measurement model's measurement and structural models the discriminant validity and convergent validity of the measurement model. The convergent validity of the measurement model is defined as the comparison of items within an idea; whereas the discriminant validity of the measurement model is defined as the comparison of items across different ideas. To evaluate the structural model, the relationship between constructs was evaluated. To assess the applicability of a structural model, the relevance of a structural model, and the collinearity of a structural model were evaluated. Additionally, the effect (f^2) the predictive relevance of (Q^2) the coefficient of (R^2) of the model were evaluated.

Measurement model assessment

The measurement model was evaluated using several different criteria which can be seen in Table 1 which includes factor loadings, composite reliability (CR) and average extracted variances (AVE). According to Ramayah et al. (2018), an average factor loading generally occurs at or above 0.700. However, in lower order circumstances some researchers have been known to accept factor loadings as low as 0.400, 0.500 or 0.600. All of the conditions analyzed in Table 1 produced values that met the minimum 0.500 and 0.700 threshold of AVE and CR, respectively indicating an acceptable level of convergent validity of the measurement model. The measurement output for lower-order constructs from the SmartPLS software program is displayed in Figure 2.

Table 1. Factor loading, composite reliability and average variance extracted

	Item Code	Factor Loadings	Composite Reliability (CR)	Average Variance Extracted (AVE)
Economic Sustainability	ES1 ES2 ES3 ES4 ES5	0.637 0.827 0.813 0.607 0.734	0.782	0.509
Environmental Sustainability	ENS1 ENS2 ENS3 ENS4	0.691 0.74 0.775 0.752 0.76	0.8	0.554
Social Sustainability	SS1 SS2 SS3 SS4 SS5	0.795 0.777 0.705 0.743 0.718	0.811	0.56
Green Credit	GC1 GC2 GC3 GC4	0.795 0.833 0.824 0.789	0.826	0.657
Green Insurance	GIN1 GIN2 GIN3 GIN4	0.798 0.823 0.567 0.808	0.775	0.572
Green Investment	G11 G12 G13 G14	0.711 0.849 0.812 0.83	0.818	0.644
Green Securities	GS1 GS2 GS3 GS4	0.782 0.862 0.843 0.727	0.825	0.649

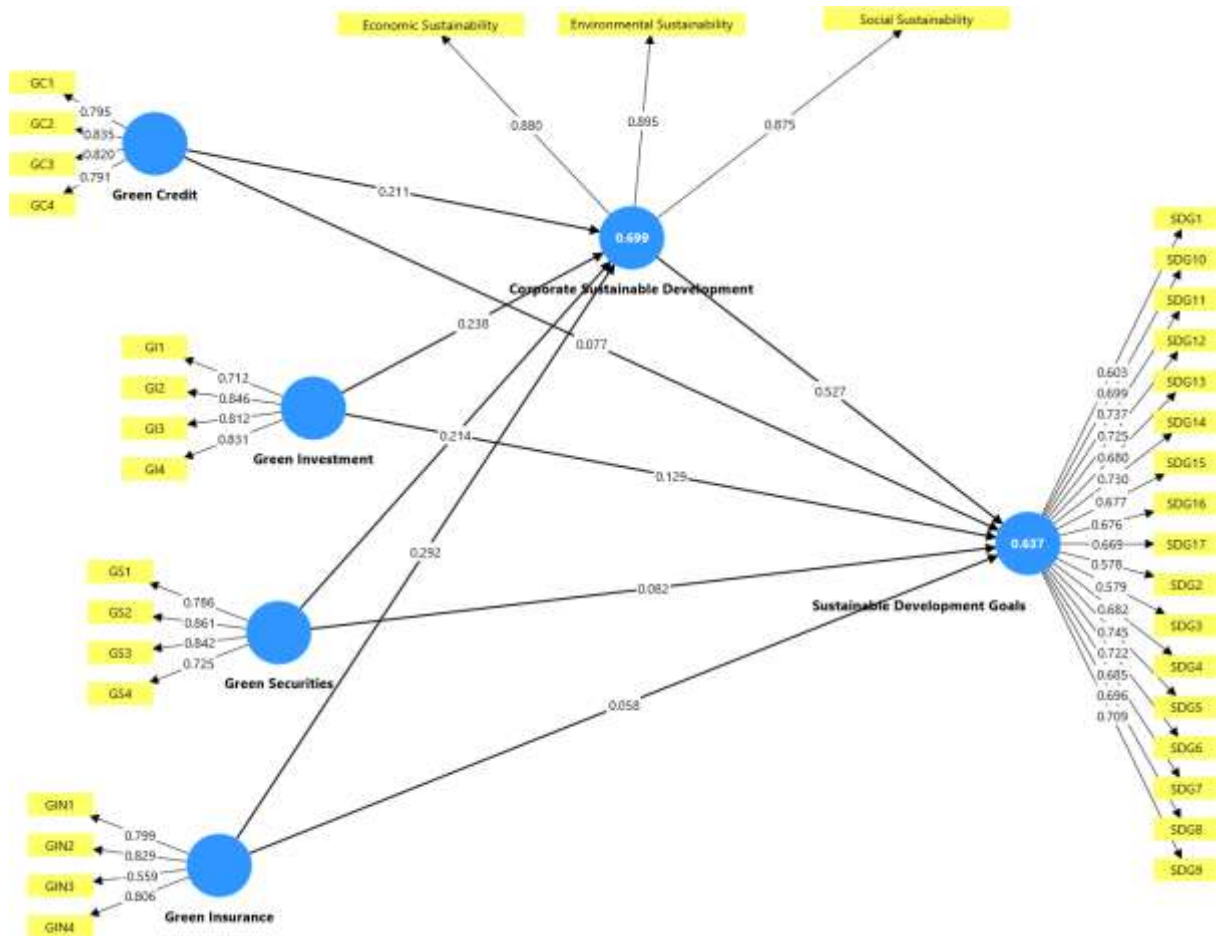
Sustainable Development Goals	SGD1	0.604	0.929	0.567
	SDG2			
	SDG3	0.707		
	SDG4	0.743		
	SDG5			
	SDG6	0.726		
	SDG7	0.681		
	SDG8			
	SDG9	0.729		
	SDG10	0.677		
	SDG11	0.676		
	SDG12	0.669		
	SDG13	0.576		
	SDG14	0.574		
	SDG15	0.677		
	SDG16	0.74		
	SDG17	0.717		
		0.682		
		0.695		
		0.715		

Henseler, Ringle and Sarstedt (2015) recommend using HTMT to test the discriminant validity of a measurement model. Kline (2011) states that a threshold of 0.85 should be established, while Gold et al. (2001) provide a higher threshold of 0.9. As shown in Table 2, the measurement model meets all criteria for discriminant validity.

Table 2 . HTMT assessment of discriminant validity

Items	ES	ENS	GC	GIN	GI	GS	SS	SDGs
Economic Sustainability								
Environmental Sustainability	0.758							
Green Credit	0.798	0.836						
Green Insurance	0.847	0.834	0.828					
Green Investment	0.808	0.855	0.829	0.883				
Green Securities	0.789	0.867	0.872	0.861	0.852			
Social Sustainability	0.853	0.835	0.705	0.749	0.743	0.734		
Sustainable Development Goals	0.817	0.823	0.73	0.756	0.76	0.743	0.759	

Figure 2. SmartPLS output of the measurement model



Structural model assessment

Variance inflation factor or VIF was calculated to determine whether the model was multicollinear or not. Multicollinearity was not an issue with this model as each of the VIF values was well below the threshold of 3.3, according to Diamantopoulos and Sigauw (2006).

Table 3. Collinearity Statistics

Items	VIF
EC1	1.296
EC2	1.901
EC3	1.798
EC4	1.155
EC5	1.499
EN1	1.453
EN2	1.563
EN3	1.693
EN4	1.636

EN5	1.547
GC1	1.682
GC2	1.928
GC3	1.79
GC4	1.624
GI1	1.366
GI2	2.054
GI3	1.857
GI4	1.81
GIN1	1.568
GIN2	1.78
GIN3	1.18
GIN4	1.595
GS1	1.682
GS2	2.113
GS3	1.963
GS4	1.469
SDG1	1.592
SDG10	2.115
SDG11	2.157
SDG12	1.969
SDG13	1.916
SDG14	2.161
SDG15	1.796
SDG16	1.836
SDG17	1.727
SDG2	1.711
SDG3	1.702
SDG4	2.045
SDG5	2.512
SDG6	2.473
SDG7	2.425

SDG8	1.909
SDG9	2.014
SS1	2.04
SS2	1.975
SS3	1.525
SS4	1.72
SS5	1.565

Only those models that have an R2 greater than 0.5 can be considered appropriate. Table 4 provides evidence that the R2 values of all the exogenous constructs of the model, which are all greater than .50, indicate that the model has strong predictive power, as noted by Hair et al. (2016). All latent variables within the model demonstrate good predictive power due to the higher Q2 values for each. Every model component was assigned an R2 value that represents its “explanatory power,” where it determines how successfully a IV explains its DV. R2 can range from 0–1 representing predictive accuracy; therefore, a model's lack of predictive accuracy is determined by the R2 value. Based on the three different levels of predictive accuracy, R2 values would be assessed as moderate, weak, or strong. Significant R2 values include .75, .50, and .25. Each exogenous construct found in Table 4 has an R2 value greater than .50, indicating that they would be considered to model well according to Hair et al. (2016).

Table 4. R- Square and Q- Predict

Dependent Variables	R-square	R-square adjusted	Q Predict
Corporate Sustainable Development	0.699	0.695	0.688
Sustainable Development Goals	0.637	0.633	0.54

Table 5. Hypothesis Testing

Hypothesis	T statistics (O/STDEV)	P values	F Square	Conclusion
Corporate Sustainable Development -> Sustainable Development Goals	8.982	0	0.231	Accepted
Green Credit -> Corporate Sustainable Development	4.182	0	0.06	Accepted
Green Credit -> Sustainable Development Goals	1.459	0	0.106	Accepted

Green Insurance -> Corporate Sustainable Development	6.435	0	0.119	Accepted
Green Insurance -> Sustainable Development Goals	1.105	0	0.24	Accepted
Green Investment -> Corporate Sustainable Development	4.671	0	0.075	Accepted
Green Investment -> Sustainable Development Goals	2.37	0	0.017	Accepted
Green Securities -> Corporate Sustainable Development	4.07	0	0.057	Accepted
Green Securities -> Sustainable Development Goals	1.544	0	0.074	Accepted

Different degrees of influence have been found to exist between components of green finance and their relationship with corporate sustainable development (CSD) and Sustainable Development Goals (SDGs) from both a direct and indirect perspective. Firstly, corporate sustainable development has a strong and statistically significant relationship with the achievement of SDGs ($T = 8.982$, $p < 0.001$, $f^2 = 0.231$) and therefore a moderately sized effect. In addition to this, it can be stated that organisations who have incorporated sustainability into their business model have made a significant contribution to achieving SDGs. The mediating role of CSD in this model has also been established. Of the dimensions of green finance, green credit has been shown to be an influential and significant factor in achieving corporate sustainable development ($T = 4.182$, $p < 0.001$, $f^2 = 0.06$), although this is a small sized effect; suggesting that companies who engage in environmentally based lending practices are likely to support their own sustainability based initiatives. However, with respect to direct impact on the SDGs, the contribution of green credit is low ($T = 1.459$, $f^2 = 0.106$). This suggests then that the main source of contribution towards the SDGs from green credit is via the indirect path through corporate sustainable development rather than the direct path.

As a result, the company's sustainable development ($T = 6.435$, $p < 0.001$, $f^2 = 0.119$) was found to have a strong and positive relationship with green insurance. The effect size, although small to moderate, shows the importance of using green insurance for mitigating risk and adopting sustainable practices. Green insurance's relationship with SDG's was also found to be weak ($T = 1.105$, $f^2 = 0.24$), indicating that its contribution to achieving SDG's is mediated predominantly through corporate sustainable development.

Green investment is both positively related to corporate sustainable development ($T = 4.671$, $p < 0.001$, $f^2 = 0.075$) and SDG's ($T = 2.37$, $p < 0.05$, $f^2 = 0.017$). Thus, although there are small effect sizes for both, it is the only dimension that provides both direct and indirect support for achieving the SDG's.

Green securities have a significant impact on corporate sustainable development ($T = 4.07$, $p < 0.001$, $f^2 = 0.057$); however, the relationship between green securities and SDG's was found to be weak ($T = 1.544$, $f^2 = 0.074$). This again indicates that financial instruments primarily contribute to SDG's through their effect on corporate sustainability.

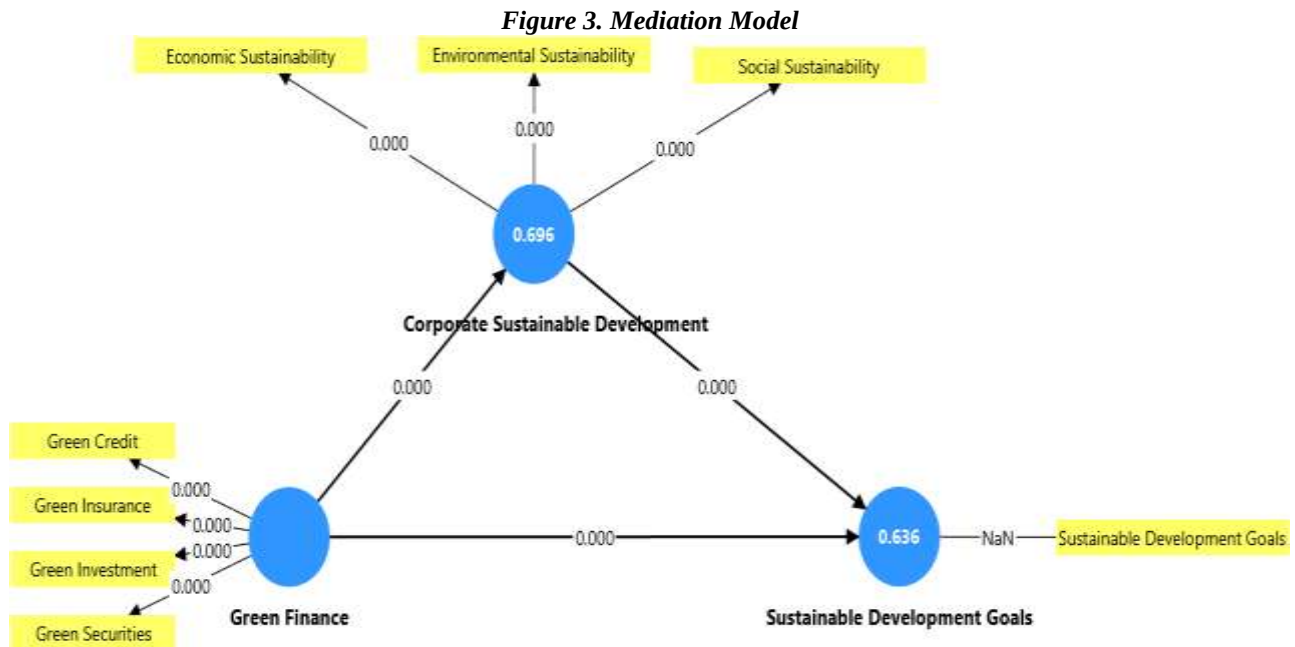
In conclusion, corporate sustainable development plays an important mediating role in converting green finance initiatives to tangible SDG outcomes. While most green finance instruments are significantly linked to corporate sustainability, and will help achieve many SDG goals, their direct impact on SDG's is limited with the exception of green investments. Therefore, it is essential for businesses to strengthen their corporate sustainability frameworks in order to maximize the benefits of green finance.

7. Mediation Analysis

According to the research cited by Hayes & Preacher (2010), if the effect size (VAF) is greater than 80% there is full mediation; between 20% to 80% there is partial mediation; and if the VAF is $\leq 20\%$, there is no evidence of mediation. It has been found that CSD can act as a mediator between GF and SDGs. In this study, the results from t-tests and p-values provide evidence that CSD serves as a partial mediator in the relationship between GF and SDGs given that this study's VAF is 59%, and the degree of indirect effect (p-value = 0.000) indicates partial mediation.

Table 6. Mediation Analysis

Hypothesis	Direct Effect	Indirect Effect	Total Effect	VAF (%)	Explanation	Result
H4- GF>CSD>SDGS	0.306	0.438	0.744	IE/TE-59%	Partial	Accepted



8. Discussion

The results reveal that financial institutions have a large impact on sustainability because of their use of green finance products. Because of the large impact of green credit, green insurance, green investment, and green securities on Corporate Sustainable Development (CSD), banks play a larger role as facilitators of sustainable business practices as they direct funding toward environmentally and socially responsible projects. This finding is consistent with the stakeholder-oriented role of banks as presented by R. Edward Freeman (1984) where banks respond to shareholders as well as regulators, customers, and society through their actions related to sustainable financing.

In India, many private banks have begun including ESG aspects into their lending, investing and risk assessment processes. This has resulted in firms being incentivised to adopt more sustainable practices when banks incorporate sustainability metrics into their credit evaluation and financial products because of the influential nature of green finance instruments on corporate sustainable development (CSD) outcomes.

Nonetheless, despite the fact that banks have no direct relationship with the UN's Sustainable Development Goals (SDG), banks use their relationships with corporates to indirectly impact these SDGs through their corporate clients. Banks mediate the allocation of financial capital and allocate financial capital in a way that impacts a company's behaviour. This information supports the theory of Institutionalism as proposed by Paul DiMaggio and Walter Powell (1983), whereby banks generate both normative and regulatory pressures on firms to comply with sustainability requirements.

Additionally, there is a direct and indirect impact from investing in green technologies (e.g. providing capital for renewable energy projects; developing green bonds), which means that banks' investment choices (i.e. providing capital) have an immediate connection to Sustainable Development Goals (SDG) as defined by the United Nations for the planetary system (2015) and promoting private funding as one of the major pathways for the successful delivery of sustainability. Therefore, this research highlights the essential role of banks as not just financial intermediaries but also as key drivers of sustainability transformation. The extent to which banks can assist in achieving SDGs will be determined by how well they incorporate sustainability into their core financial operations and the extent to which they impact the sustainable development effort of the businesses they lend to and the companies they invest in.

9.Theoretical and Managerial Implications

The relationship between green finance, CSD, and achieving SDGs has not been clearly articulated previously. The authors develop a model linking green finance to CSD both directly and through development of organization capabilities supporting organizational sustainability. This model will contribute to growing body of literature on CSD as a relevant area of green finance. This research also supports an application of Stakeholder Theory (Freeman, 1984) to current financial industry practices, as it demonstrates how banking institutions influence businesses' behaviour by establishing stakeholder expectations regarding sustainable lending practices, which may influence decision-making for loans. Furthermore, the findings suggest that green finance offers businesses opportunities to enhance their capabilities to build sustainability-oriented capabilities that may ultimately generate long-term value (RBV - Barney, 1991).

The findings of this study also support Institutional Theory (DiMaggio & Powell, 1983) in that green finance may exert institutional pressure on businesses to integrate their operations with ESG criteria.

Finally, this study also provides empirical evidence to support existing SDG literature by demonstrating that green finance as standalone does not result in positive impacts on CSD. Rather, green finance results in CSD primarily through the development of businesses' sustainability-oriented capabilities. This finding will strengthen work based on mediation models in sustainability research.

The study findings provide managers with multiple key takeaways and implications in both banking and corporate sectors (e.g. HDFC and ICICI banks). Key Insight One-Banks must implement sustainability criteria within their decision-making processes: Banks must implement ESG/Sustainability criteria into their core decision-making processes (e.g., Credit Appraisals, Investment Evaluations, Risk Assessments). Specifically this means that banks need to embed ESG criteria as part of their lending policies and aligning the financing terms of the loans with the bank's Sustainability/ESG Performance.

Key Insight Two – Corporate Sustainable Development plays a large role as a mediating factor and as such, managers need to develop their internal Sustainability capabilities instead of relying completely on External Green Financing – Corporate leaders should establish ESG practices within their organizations through the utilization of dedicated sustainability teams and continuous measurement against reporting standards developed by internationally accepted frameworks (e.g. UN) etc.

To start, managers need to make green investments a top priority as this is the only area where there is both a direct and indirect correlation to the achievement of the SDGs. Some examples of green investments would include investing in renewable energy projects, green bonds, and the financing of sustainable infrastructure.

Also, banks and corporate managers need to improve collaboration across finance/sustainability/strategy to ensure that green finance projects create measurable sustainability outcomes. The development of training and capacity-building materials is essential for assisting employees in understanding how to use various types of green finance instruments and integrate ESG into their everyday work.

Finally, managers should establish performance-based sustainability metrics which link the organization and individual KPIs with sustainability goals. Doing this will provide accountability and create an alignment of long-term financial success and achieving the SDGs.

10.Limitations and Directions for Future Research

There are limitations to this research which are important to consider. The first limitation is that this research is based only on employees within the private sector banks (e.g., HDFC Bank and ICICI Bank), therefore, the results cannot be generalized to employees working for public sector banks, cooperatives, and/or other types of financial institutions. Secondly, this study's scope is limited to Delhi (National Capital Region); hence crucial regional differences in green finance practices across the rest of India may not be captured by this study.

A third limitation of this research is that it has a cross-sectional research design which limits any ability to study changes over time or causal relationships amongst variables. Due to the use of self-reported data to measure constructs and variables in this study, there may be some level of response and subjectivity bias introduced by respondents. Another possible limitation of this study is the narrow scope of the study with respect to green finance, considering only credit, insurance, investment, and securitization as aspects of green finance, while completely overlooking emerging instruments in green finance such as green bonds or carbon financing. Lastly, this study's mediating model focuses only on corporate sustainability development; therefore, other potential mediators (e.g., regulatory support, organizational culture) are not considered.

By increasing the scope of studies into public sector banks, insurance companies and non-banking financial institutions, researchers may address these limitations and generalise their findings more widely. In addition, researchers may consider completing multi-regional or pan-India studies, capturing geographical diversity beyond Delhi.

By using longitudinal research design, researchers will be able to examine the causal, dynamic relationships between green finance, corporate sustainable development and the SDGs over time. Also, researchers can explore additional mediators/moderators (e.g., regulatory frameworks, digital transformation, organisational culture) to gain further understanding of how the involved mechanisms work.

Finally, comparative studies across countries or between developed vs. developing economies will enrich the existing literature and create more robust results. Another future research direction will allow for an evaluation of the role of evolving policy frameworks as established by institutions such as the Reserve Bank of India in determining the promotion of green finance and, ultimately, its contribution to sustainable development.

11.Conclusion

This research explored the relationships between green finance and Sustainable Development Goals (SDGs), including multiple measures used to operationalize and evaluate corporate sustainable development (CSD), in an Indian bank context. The research findings demonstrated that while there is a good level of reliability and utility in the green finance instruments (e.g., green credit, insurance, investment and/or securities) that support

environmentally and socially responsible corporate sustainability practices, their direct effect on SDGs is limited. Rather, CSD is an essential pathway for green finance to achieve SDGs.

The research affirms banks' role (e.g., HDFC Bank, ICICI Bank) in assisting sustainability through financing environmentally and socially responsible activities. Finally, the study provides evidence to support the conclusion that the utility of green finance in achieving SDGs is heavily influenced by how well it is aligned with corporate sustainability systems; therefore, there is a need for a strategic and integrated approach to sustainable finance.

12. References

1. Bakry, W., et al. (2023). Green finance and climate change mitigation. *Sustainability*. <https://doi.org/10.3390/su15032245>
2. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
3. Bhatnagar, M., & Sharma, D. (2022). Environmental finance vs green finance. *Environmental Economics*.
4. Cowan, E. (1999). Topical issues in environmental finance. *Research Paper*
5. Diamantopoulos, A., & Siguaw, J. A. (2006). Formative vs reflective indicators. *British Journal of Management*. <https://doi.org/10.1111/j.1467-8551.2006.00500.x>
6. DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited. *American Sociological Review*, 48(2), 147–160. <https://doi.org/10.2307/2095101>
7. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
8. Fu, C., Lu, L., & Pirabi, M. (2023). Advancing green finance. *Digital Economy and Sustainable Development*, 1(1), 1–15. <https://doi.org/10.1007/s44265-023-00020-3>
9. Fullwiler, S. T. (2016). The debt ratio and sustainable macroeconomic policy. *Journal of Economic Issues*, 50(2), 362–370. <https://doi.org/10.1080/00213624.2016.1176477>
10. Gilchrist, D., Yu, J., & Zhong, R. (2021). The limits of green finance. *Journal of Banking & Finance*, 125, 106089. <https://doi.org/10.1016/j.jbankfin.2021.106089>
11. Gold, A. H., et al. (2001). Knowledge management capability. *Journal of Management Information Systems*, 18(1), 185–214. <https://doi.org/10.1080/07421222.2001.11045669>
12. Gray, R. (2002). Of messiness, systems and sustainability. *Accounting, Organizations and Society*, 27(7), 687–708. [https://doi.org/10.1016/S0361-3682\(02\)00005-0](https://doi.org/10.1016/S0361-3682(02)00005-0)
13. Hair, J. F., et al. (2016). *Multivariate data analysis*.
14. Hayes, A. F., & Preacher, K. J. (2010). Mediation analysis
15. He, L., Zhang, L., Zhong, Z., Wang, D., & Wang, F. (2019). Green credit and firm performance. *Journal of Cleaner Production*, 208, 363–372. <https://doi.org/10.1016/j.jclepro.2018.10.103>
16. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). HTMT criterion. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
17. Hu, Y., Ren, S., Wang, Y., & Chen, X. (2021). Can green finance reduce emissions? *Energy Economics*, 102, 105530. <https://doi.org/10.1016/j.eneco.2021.105530>
18. Jaishree, & Murthy, S. N. D. (2025). Green finance research trends. *Discover Sustainability*, 6, 577. <https://doi.org/10.1007/s43621-025-01331-5>
19. Jiakui, C., et al. (2023). Green finance and SDGs. *Sustainability*. <https://doi.org/10.3390/su15065214>
20. Kline, R. B. (2011). *Principles and practice of SEM*. Guilford Press.
21. Labatt, S., & White, R. (2002). *Environmental finance*. Wiley.
22. Li, J., Faridi, M. R., & Nazar, R. (2023). Green finance and environmental quality. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-023-25867-1>
23. Li, X., et al. (2020). Green finance and environmental sustainability. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2020.121948>

24. Liu, M., Yaacob, M. H., Ma, Q., & Ding, S. (2025). Green finance and corporate green innovation. *SAGE Open*, 15(1), 1–12. <https://doi.org/10.1177/21582440251370800>
25. Liu, Y., et al. (2019). Green finance and environmental performance. *Journal of Environmental Management*. <https://doi.org/10.1016/j.jenvman.2019.109437>
26. Meo, M. S., & Karim, M. Z. A. (2022). Green finance and carbon emissions in top economies. *Energy Economics*, 104, 105678. <https://doi.org/10.1016/j.eneco.2021.105678>
27. OECD. (2017). *Measuring distance to SDG targets*.
28. Ramayah, T., et al. (2018). *Partial Least Squares Structural Equation Modeling*.
29. Sachs, J. D., et al. (2023). *SDG report*.
30. Salazar, J. (1998). Environmental finance: Linking markets and policies
31. Scholtens, B. (2017). Why finance should care about ecology. *Trends in Ecology & Evolution*, 32(7), 500–505. <https://doi.org/10.1016/j.tree.2017.03.013>
32. Shiller, R. J. (2013). *Finance and the good society*. Princeton University Press.
33. Srivastava, A., et al. (2022). Green finance and sustainable development. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-021-17809-4>
34. Taghizadeh-Hesary, F., & Yoshino, N. (2019). The role of green finance in achieving SDGs. *Finance Research Letters*, 31, 1–7. <https://doi.org/10.1016/j.frl.2019.04.003>
35. UNEP. (2025). *Global green finance report*.
36. United Nations Development Programme. (2021). *SDG progress report*
37. United Nations. (2015). *Transforming our world: The 2030 agenda*.
38. Wang, Y., & Zhi, Q. (2016). The role of green finance in environmental protection. *Procedia Environmental Sciences*, 31, 1–7. <https://doi.org/10.1016/j.proenv.2016.02.001>
39. Xu, X., et al. (2023). Green finance and economic growth. *Economic Modelling*. <https://doi.org/10.1016/j.econmod.2023.106205>
40. Zairis, G., Liargovas, P., & Apostolopoulos, N. (2024). Sustainable finance and ESG importance. *Sustainability*, 16(3), 1120. <https://doi.org/10.3390/su16031120>
41. Zhao, X., et al. (2022). Green finance policies and economic growth. *Journal of Environmental Management*. <https://doi.org/10.1016/j.jenvman.2022.115839>
42. Zhou, G., & Xu, K. (2022). Green finance: A systematic review. *Sustainability*. <https://doi.org/10.3390/su14042087>
43. Zhou, G., et al. (2020). Green finance and sustainable development. *Sustainability*, 12(21), 8809. <https://doi.org/10.3390/su12218809>
44. Ziolo, M., et al. (2019). Sustainable finance vs green finance. *Sustainability*, 11(11), 3026. <https://doi.org/10.3390/su11113026>