



Review

A systematic review of green finance in the banking industry: perspectives from a developing country

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Appendices

Table A1. Previous studies on green finance with sample or study area, environmental variables, and other financial and managerial variables with major findings.

No.	Study	Sample or Study area	Environmental Variables	Other financial & Managerial Variables	Major Findings
1	(Amidjaya & Widagdo, 2020)	155 observations	Sustainability reporting	corporate governance, digital banking, foreign ownership and family ownership	Corporate governance, foreign ownership, and family ownership positively impact sustainability reporting.
2	(Dörry & Schulz, 2018)	Financial institutions of Luxembourg	Green investments, sustainability-oriented financing services green capitalism		Emerging green finance profile recognises its positive impact on the small country's national branding.

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3	(R. Liu et al., 2019)	Chinese provinces	30 Energy efficiency, ecological efficiency	Per capita GDP, industrial structure, urbanization rate	Per capita GDP, industrial structure, urbanization rate, and energy efficiency on ecological efficiency are statistically significant.
4	(Yin & Xu, 2022)	China	Green finance, environmental protection	Economic growth and industrial adjustment	Green finance cannot be effectively linked to industrial structure adjustment, environmental protection, and economic development.
5	(Lindenberg, 2014)		Green finance	Financial flow Adaptation finance	Mitigation and adaptation finance is specifically related to climate change-related activities.
6	(Berensmann et al., 2020)	The G20 countries	Green investments, sustainable development	Financial system banking, capital markets, and insurance	The G20 countries face an enormous investment gap.
7	(Akomea-Frimpong et al., 2021)	46 relevant papers	Green securities, green investments, climate finance, carbon finance, green insurance, green credit, and green infrastructural bonds		Green securities, green investments, climate finance, carbon finance, green insurance, green credit, and green infrastructural bonds are the part of the key green finance products of banks.
8	(Saeed Meo & Karim, 2022)	10 countries	Green finance, co2 emission	Bear Market, bull market	The green finance has negative impact on CO ₂ emissions.
9	(R. Wang et al., 2022)	China	Ecological efficiency, green finance	FDI, regional economic development	Regional economic development is positively related to regional eco-efficiency.
10	(Debrah et al., 2022)	28 relevant studies	Green finance and green building		The green finance and green building are positively co-related.
11	(Urban & Wójcik, 2019)	Norway's list of 153 excluded companies.	Sustainability transitions, sustainable finance	Social, and governance misconduct	Investment banks do not shy away from underwriting companies that have been flagged for major environmental, social, and governance misconduct.
12	(Yuan & Gallagher, 2018)	Development banks operating in the Americas	Green finance, climate finance		Development banks where the majority of the shareholder governments have strong environmental performance in their home country.
13	(Ziolo et al., 2019)	23 OECD countries	Sustainability	Financial depth, development, vulnerability, soundness, fragility, stability	Sustainability practices in financial institutions generate sustainable economic development.

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No.	Study	Sample or Study area	Environmental Variables	Other financial & Managerial Variables	Major Findings
14	(Dikau & Volz, 2021)	135 central banks,	Climate risks	Central banks' traditional core responsibilities	Climate risks can directly affect central banks' traditional core responsibilities.
15	(Lee & Lee, 2022)	30 China's provinces	Green finance productivity and environmental protection		Green finance development significantly improves the level of green productivity.
16	(Díaz-García et al., 2015)	384 relevant articles	Green finance and eco innovation		Green finance is positively related to green innovations.
17	(Barua & Aziz, 2022)	5 emerging economies in Asia	Green finance, energy transition financing		The study outlines some challenges that emerging economies need to address in making green finance work for a sustainable energy transition.
18	(Nawaz et al., 2021)	The N-11 countries and BRICS countries	Green financing and climate change mitigation	FDI, technical corporation grants, domestic credit to the private sector	Renewable energy sources consumption, population, FDI, CO2, inflation, technical corporation grants, domestic credit to the private sector, and research and development are very significant in promoting green financing and climate change mitigation.
19	(Sarma & Roy, 2021)	178 articles	Green performance of banks	Conceptual aspect, Legal aspect, Model aspect, Stakeholder aspect, and Financial aspect.	Asia has the highest number of countries participating in research on Green Banking and has the highest number of research articles on Green Banking.
20	(Zheng, et al., 2021)	296 banking staffs of private commercial banks (PCBs) in Bangladesh,	Green financing, renewable energy, energy efficiency, waste management, alternative energy, green brick manufacturing, recycling, and recyclable product, and green establishment	Transaction costs, default culture, operational self-sufficiency, appraisal of loan applications, and accountability and transparency	PCBs are the largest contributors to direct green finance.
21	(Zhixia et al., 2018)	Annual reports of Bangladesh Bank	Sustainable banking		Bangladeshi banks are doing well in practicing sustainable banking with maintaining the specific guidelines of Bangladesh Bank.
22	(N. Liu et al., 2020)	Panel data of 30 Chinese provinces	Green economy, green finance		The coordination degree of green finance and the green economy shows strong spatial dependence.

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23	(Zheng, Siddik, Masukujjaman, & Fatema, 2021)	302 bank staffs in Bangladesh	Environmental dimension, sustainability performance	The economic and social dimension	The dimensions of green finance like social, economic, and environmental have a strong positive effect on the sustainability performances of banks.
24	(X. Zhang et al., 2022)	352 bankers in Bangladesh	Green banking activities, environmental performance, sources of green financing	Investment costs, technical obstacles, lack of capable and competent staff	Green banking helps in the achievement of the sustainable economic development.
25	(Y. Wang & Zhi, 2016)		Green finance and environmental protection		Internal contradictions exist between green finance and environmental protection.
26	(Zhou et al., 2020)	30 provinces and municipalities in China	Green finance, environmental improvement, environmental quality		Green finance has a positive effect on environment improvement.
27	(Mohd & Kaushal, 2018)	India	Environmental change, green fund, green structures, green security	Vitality limitations and money related emergency	Exploring the existing literature on green finance and the future scope of green finance in India.
28	(Hasan Himo et al., 2019)	80 investors from 15 brokerage firms in Bangladesh		Bond market, corporate debt market	There is an enormous prospect to develop a long term corporate debt market in Bangladesh.
29	(Sharma et al., 2022)	Emerging economics	Green finance, environmental protection	Return on investment, capital market, bond	The investors will not lose on risk-adjusted returns if they chose to go green.
30	(Z. Wang et al., 2022)		Green finance, environmental sustainability	Corporate social responsibility (CSR),	Environmental, Economics, and Social factors influence the multiple facets of CSR.
31	(Ngwenya & Simatele, 2020)	South Africa	Green bonds, climate finance		Green bonds have proven to be an effective climate finance mechanism globally.
32	(J. Chen et al., 2022)	322 banking employees of PCBs in Bangladesh.	Green banking, green finance, green performance		Green banking practices have significant positive effects on green financing.
33	(Al-Qudah et al., 2022)	23 UAE's banks.	Green credit policy, green lending, green loans	Nonperforming loan (NPL), return on equity, quality credit	The ratio of green loans has a negative impact on the NPL ratio, as much as the return of equity, while the quality of credit, inefficiency and the bank size have a positive impact on NPL ratio.

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No.	Study	Sample or Study area	Environmental Variables	Other financial & Managerial Variables	Major Findings
34	(H. Zhang et al., 2022)	A panel dataset of 30 Chinese provinces	Green finance, environmental performance, environmental regulation	Industrial structure and economic development level	Industrial structure, economic development level, and environmental regulations were found to positively impact the coordinated development of green finance and environmental performance.
35	(Li et al., 2022)	China	Green financing, volatility, and geopolitical risk	Investment	Green financing (in the form of green bonds) and green regulations like environmental taxes play a significant and positive role in promoting investment in renewable energy sources.
36	(Khairunnessa et al., 2021)	Financial institutions in Bangladesh	Green banking, environmental practice, environmental infrastructure, green growth	GDP, Investment	The central bank of Bangladesh played a major role in greening the financial system of the country by implementing various green policies and regulatory measures
37	(Khatun et al., 2021)	Commercial banks in Bangladesh	Green banking, sustainable development goals		Many commercial banks (private and foreign) have been practicing green banking since 2014 and have instituted green financing policies that are environmentally friendly and sustainable.



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