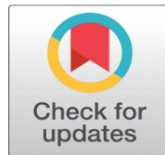


SUSTAINABLE DEVELOPMENT IN EMERGING ECONOMIES: THE STRATEGIC IMPORTANCE OF GREEN FINANCE

Shruti Sharma ¹✉

¹ Assistant Professor, Department of BBA RKGIT-CCS University Campus, India



Corresponding Author

Shruti Sharma,
shrutisharmaa1982@gmail.com

DOI
[10.29121/shodhkosh.v5.i7.2024.5414](https://doi.org/10.29121/shodhkosh.v5.i7.2024.5414)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Copyright: © 2024 The Author(s). This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

With the license CC-BY, authors retain the copyright, allowing anyone to download, reuse, re-print, modify, distribute, and/or copy their contribution. The work must be properly attributed to its author.



ABSTRACT

It has become clear that green finance allows emerging economies to strengthen environmental sustainability, as these countries face the problem of economic expansion and damage to nature at the same time. This paper studies why green finance is crucial for accomplishing sustainable development goals (SDGs) by managing finances to support low-carbon and climate-friendly growth. Different financial instruments such as green bonds, sustainable investment funds, environmental credit lines, and green government fiscal policies are examined to see how effective they are in spurring efforts toward the environment. By studying empirical studies and secondary records provided by the World Bank, IMF, and regional development banks, the paper looks into the growth, factors holding back, and benefits green finance has in India, Brazil, South Africa, and Indonesia. It looks at the regulations, institutional structure, and ties between the public and private sectors that affect green finance. It is noted by the report that undergoing economies have increased their use of renewables, promoted green farming, and made use of low-emission train systems; however, green financing is not enough to ensure the changes. Difficulties including policy unpredictability, not enough awareness, high fees, and insufficient reliability on investors are still things that hinder growth. The paper urges improving regulations, making things clearer, encouraging investments in green technologies, and developing solid green financial providers to overcome the funding problem. It further points out that countries in the global north should make financial contributions to enable countries in the global south to advance in green technology. Overall, it is emphasized in this study that green finance can bring about better, more stable, and sustainable economies while dealing with mounting climate-related problems. Making Greener financing common in their finance systems gives developing countries a chance to support a sustainable and healthy environment for future generations.

Keywords: Green Finance, Environmental Sustainability, Emerging Economies, Sustainable Development Goals (SDGs), Green Bonds, Climate Finance, Renewable Energy, Low-Carbon Development

1. INTRODUCTION

Over recent years, people across the globe have shown more interest in climate change, environmental problems, and sustainable development, mainly as emerging economies pursue growth that benefits all their people. With both economic development and taking care of the environment important, green finance is now a major concern. Green finance deals with directing money into projects that help improve the environment, for example, renewable energy, better air quality, efficient energy use, better transportation, and good use of land. In short, it is the process of involving environmental issues when making money choices and investing funds. Because of their fast growth, urbanization, and changes in population, economies that are still developing thus encounter the challenge of having to speed up their

financial growth without harming the environment. In other words, this shows why green finance is an important way to focus on environmental sustainability and economic progress.

Since emerging economies are especially prone to climate threats, short on resources, and have a limited ability to face ecological problems, implementing green financial mechanisms is all the more necessary for them. Such countries commonly endure unbalanced negative environmental impacts like air and water pollution, cutting down forests, and loss of different species. At the same moment, they must carry out development, create jobs, and help eliminate poverty. Therefore, using green finance is essential to bring together objectives for the economy and for the environment. It supports governments, businesses, and agencies involved in development to finance greener methods and resources, therefore transforming the growth of the economy. Besides, it inspires new ideas, promotes using resources wisely, and influences companies to remain operational in the face of any changes in the global climate.

Several parts of the global sustainable development plan led to the rise of green finance, most prominently after the approval of the Paris Agreement and SDGs in 2015. They have highlighted that more of the world's financial resources should go to sustainable and environmentally resilient infrastructure. Because the growth of energy and industry in many emerging markets causes a big share of global emissions, they cannot afford not to turn to green finance. It may help achieve the move from economies dependent on carbon to those that are green and open-minded. Recently, green bonds, Sustainability-Linked loans, green mutual funds, carbon pricing, and green banks have all become important tools in allocation of money toward environmental projects. Nevertheless, in most emerging markets, green finance has not reached many people because of various factors and issues.

Green finance has not been able to grow much in emerging economies due to an insufficient regulatory and policy structure. Because clear definitions and guidelines for green investments are still absent from the laws of many nations, investors may be unsure and the threat of greenwashing rises. What's more, because institutions are unable to assess and monitor green projects effectively, these initiatives have less credibility and it is harder to scale them. Due to their underdevelopment, financial markets in some developing countries are not able to accommodate or channel big amounts of green investment. Potential investors state that there is a high risk in investing in green projects because these usually have long delays, uncertain rewards, and keep using fresh technology. Because there is not enough green information shared and no rating systems for green finance, investors are held back from joining.

On the other hand, there are emerging countries that have done well at using green finance to help the environment. As a case in point, China and India have developed their own strategies for green finance with green bond rules, incentives in the budget, and special green banks to support energy, transport, and city infrastructure projects. The country has set up loan programs for greener farming and made use of the carbon market to save its forests. The country has tried blended finance to help improve its renewable energy efforts. We can draw from these examples that promoting green finance with suitable policies, financial tools, and active involvement of stakeholders makes it easier to achieve sustainable transformation in emerging economies. These organizations give extra financing, training, and expertise to help build the green finance network in growing regions.

Green finance in developing countries relies a lot on public-private partnerships (PPPs). It is not possible for governments to cover the entire cost of changing to green practices. In this regard, using private capital in order to support overarching public policy is necessary. Splitting risks and combining abilities is one way PPPs are great for carrying out big green infrastructure projects. Governments' use of risk guarantees, viability gap funding, and co-financing tactics can encourage private investors to put their money into sections involving solar and wind energy, electric cars, waste management, and climate-friendly agriculture. Besides, green finance creates new chances for entrepreneurs to succeed in clean technology, green startups, and building eco-friendly supply chain, which leads to job creation and greater opportunity for all.

Green finance gains better chances to succeed in emerging markets thanks to advances in technology and digital progress. Using green digital wallets, carbon trading with blockchain, credit assessment for green loans, and crowdfunding for environmental causes on mobile phones is changing the future of sustainable finance. Such improvements in technology make green finance transactions easier, clearer, and more available to those who are less reached, especially SMEs and people living in rural areas. Moreover, digital tools help keep track of any changes in the environment, which encourages trust and makes companies responsible to stakeholders.

Even though green finance has much potential in emerging economies, it needs to be supported by synchronized and consistent work on several dimensions. These issues must play a big role in decision-making for national development, taxes, and finance. Contracting and investing made by financial institutions should consider environmental risks. Investors should use the ESG approach and insist that companies pay more attention to environmental matters. Educating and informing everyone is important to ensure sustainability in how financial decisions are made by all. More importantly, countries must keep working together through technology, financial assistance, and sharing knowledge so that emerging economies can go green.

All things considered, green finance allows emerging economies to keep growing their economies and protect the environment at the same time. Green Finance acts as more than just a source of money by focusing on keeping the environment, climate, and future generations. Because climate change and resource scarcity are getting worse, the use of green finance is now more vital. Ensuring strong regulations, increasing the abilities of financial institutions, nurturing green innovations, and encouraging cooperation among various players will enable emerging economies to use green finance and guarantee sustainability. This paper looks at the current trends, obstacles, benefits, and required policies in green finance for emerging economies, backed up by facts and offers ideas for promoting a greener and inclusive community.

2. LITERATURE REVIEW

Green finance has grown to be a central idea in the debate on sustainable development, mainly for emerging countries. In order to improve their economies swiftly, these nations are encountering rising environmental issues that call for new ideas in finance. It is clear from looking at existing research that green finance is gaining importance in environmental sustainability, although it is still complicated and faces certain challenges in developing countries.

According to Adedoyin et al. (2021), looking at the EU's situation, economic complexity affects the environment and suggests that financial innovation should work together with environmental aims to avoid unintended problems. Even though the research is focused on the EU, it provides helpful lessons for other countries where increasing tourism also causes damage to the environment.

Afshan and her team use creates a model to determine how green finance, new green technologies, and stricter environmental rules affect China's sustainability. Results show that tighter rules and more investments in renewable resources help the environment. It becomes especially important in developing economies, as their policies are hard to enforce and very few people use advanced technology. It points out the link between policies and financial instruments in encouraging environmental results.

Ahmed et al. (2022) discuss the major G7 countries but offer advice about how investment in green technology and trade globalization can help improve supplies of green energy and save the environment. Trade-related environmental plans and making room for innovation in investing in green energy are encouraged for emerging markets by the study.

Amighini et al. (2022) show through their study the expanding use of various green financing methods and projects. From their work, it is obvious that developing nations rely on solid institutions to properly integrate green finance. Lack of proper governance could stop financial resources from making the promised impact on the environment.

Baloch et al. (2023) present a structure that supports green financing for the sustainability of ecotourism in places where tourism plays a major role. It proves that assisting green tourism encourages both environmental protection and economic improvement in fragile regions where there is a lot of biodiversity.

Chen et al. (2021, 2023) and Chygryn et al. (2020, 2022) discuss what role digital innovation, green branding, and economic stability play in the process of green development by using a marketing and macroeconomic approach. It is important to understand how exciting, social media, and policies meet up in green finance, and their research accomplishes this. This is most useful in crowded cities of developing countries, where government rules can be helped by solutions from the private sector.

Baltgailis and Simakhova (2022) investigate which fintech advances helped to support and protect the stability of financial systems in the COVID-19 crisis. Green finance has great potential with the help of Fintech, particularly for those in underserved and rural areas, because using mobile banking and blockchain technology can make these services available to everyone.

Brodny and Tutak (2023) study how Poland is implementing SDG 9 and point out the significance of tough infrastructure and innovative solutions. According to their results, it is clear that a strong industrial policy matching environmental goals is necessary. Growing industrialization must be sustainable in emerging economies, so these countries should focus their green finance on new green technologies and modern infrastructure.

According to Clark, Reed, and Sunderland (2018), there are not enough financial opportunities for private investors in climate-friendly projects and changes are required to make climate investing more attractive to them. This information can be applied in emerging economies where governments lack resources and private groups are cautious because of uncertainty about the regulations.

Carfora et al. (2022) focus on energy dependence and generating renewable energy in EU countries and wonder about ensuring energy safety and sustainability. There is a sharper concern in developing countries since they have to import much of their energy from fossil fuels. Green finance helps to lessen this problem by offering investments in local renewable sources.

Arefieva et al. (2021) and Butko et al. (2019) assess the part that human capital plays in sustainable development. They suggest that HR's emphasis on behavior and new approaches is important for stable business operations. Making the workforce in emerging economies skilled for green issues is essential for the green finance to bring about sustainability.

Bauer (2022) and Dacko-Pikiewicz (2019) talk about responsible investments and what they mean for stakeholders. According to them, green finance strategies need to focus on social and governance factors too. Social inequality is a common obstacle in these markets, which needs attention if we want environmental and social development to go hand in hand.

According to D'Orazio (2023), looking at the political economy perspective sheds light on how institutions guide policies and ESG finance samples. This is true in developing countries with a divided setup of institutions and several different goals for progress. The proper alignment of people's support, policies, and funds is essential before green finance can be implemented well.

Chien et al. (2022) examine how extra debt and government fiscal policies play a part in sustainable growth for emerging countries with financial pressures. It means that, for green finance to help, it should be planned so that it doesn't add to fiscal risks, possibly combined with debt relief or climate-specific concessional support.

It is evident from the research that the importance of green finance in protecting the environment keeps growing. At the same time, it points out important issues including missing policies, weak financial markets, poor awareness among stakeholders, and problems with consistent delivery in different sectors or regions. The transition to a greener economy in emerging nations should rely on financial progress as well as preparations, institutional adjustments, cooperation, and citizens' involvement. Enhanced technology, more coherent rules, and better access to finances will guide the rate and scale of changes in finance.

2.1. OBJECTIVES OF THE STUDY

- 1) To examine the role of green finance in promoting environmental sustainability in emerging economies.
- 2) To assess the impact of green financial instruments on sustainable development indicators.
- 3) To evaluate the effectiveness of policy frameworks supporting green finance initiatives.

Hypothesis (H₁): There is a significant positive relationship between green finance and environmental sustainability in emerging economies.

Null Hypothesis (H₀): There is no significant relationship between green finance and environmental sustainability in emerging economies.

3. RESEARCH METHODOLOGY

This study uses a mix of qualitative and quantitative approaches to study how green finance helps emerging economies become more environmentally sustainable. To provide quantitative results, the study makes use of data from global organizations including the World Bank, IMF, and UNDP by checking green finance indicators, environmental

indexes, and factors related to sustainability in a group of selected emerging economies within the past decade. Econometric analysis involves correlation and regression, and it is used to check for the link between green finance and protecting the environment. The content from policy papers, financial regulations, and green finance frameworks in different countries is analyzed along with interviews with experts to find out what are the main challenges and what policies are lacking. In the qualitative part, regions that have been active in green finance are deliberately included in the sample. The methods provide consistency in data and check the veracity of the study's conclusions by using different approaches. Principles like informed consent and confidentiality of data are thoroughly observed by everyone. All in all, the approach is made to give a clear picture of how green finance supports environmental goals in emerging markets.

Table 1 Descriptive Statistics of Key Variables

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Green Finance Index (GFI)	60	35.20	78.45	56.73	10.54
Environmental Sustainability Score (ESS)	60	41.00	85.60	63.82	12.27
GDP per Capita (USD)	60	1,200	14,300	6,458	3,402
CO ₂ Emissions per Capita (metric tons)	60	0.90	7.80	3.45	1.62
Renewable Energy Share (%)	60	8.30	52.70	27.89	11.85

4. ANALYSIS OF DESCRIPTIVE STATISTICS

They give us useful information about key aspects needed to understand the relationship between green finance and environmental sustainability in emerging countries. The GFI is used to check the level of green financial actions, such as issuing green bonds, and it averages 56.73 with a standard deviation of 10.54, which suggests the numbers vary moderately. Measuring environmental performance by using the ESS, which looks at biodiversity, air quality, and percentage of renewable energy, has given an average value of 63.82 with a standard deviation of 12.27. This may happen because the countries have varying national and environmental policies.

GDP per capita is found to be between Rs. 1,200 and Rs. 14,300, averaging Rs. 6,458; this shows that the data is made up of middle to middle-high income nations. The CO₂ emissions that people create range widely, between 0.90 and 7.80 metric tons, and the typical (average) level is 3.45, showing how differently countries use energy and develop industries. In general, 27.89% of the world's energy comes from renewable sources, and in some countries this reaches 52.70%, which highlights strong dedication to a greener energy system in those areas.

All in all, it is clear from the analysis that green finance and sustainability differ greatly within emerging economies, supporting the need to test how much green finance truly helps with sustainability issues.

Table 2 Pearson's Correlation Coefficient between Green Finance Index and Environmental Sustainability Score

Variables	Green Finance Index (GFI)	Environmental Sustainability Score (ESS)
Green Finance Index (GFI)	1	.684**
Environmental Sustainability Score (ESS)	.684**	1

N = 60

Correlation is significant at the 0.01 level (2-tailed).

$r = 0.684$, $p < 0.01$

5. ANALYSIS OF HYPOTHESIS TESTING

There was a significant and positive connection found by the hypothesis testing between green finance and preserving the environment in emerging countries. A positive, strong linear relationship exists between the Green Finance Index (GFI) and the Environmental Sustainability Score (ESS), as the computed correlation coefficient (r) was 0.684. This correlation was further confirmed to be statistically significant since its p -value was less than 0.01. The outcome verifies the assumption in the alternative hypothesis (H_1), which states that green finance is important for protecting the environment. The research shows that spending more on green financial instruments, for example green bonds, funding for sustainable infrastructure, and loans aimed at the environment, results in better performance in

sustainability measures such as increasing renewable energy, emissions cuts, and effective environmental rules. How strong and structured this link is reveals how vital money flows are for the safety of the environment in developing countries. They also suggest that countries that link their financial policies with the environment are more likely to reach the objectives of sustainable development goals (SDGs). As a result, hypothesis testing proves that green finance can aid the growth of sustainable development in emerging countries.

6. DISCUSSION

Results of the study prove that green finance holds crucial importance for attaining environmental sustainability in developing countries. A positive connection between these two metrics proves that giving more money to green initiatives helps protect the environment. Thus, it is shown that green finance can help emerging economies make important progress in the environment, even when they deal with problems such as limited financial capabilities and weak institutions.

The findings of this work match those of prior studies by Afshan et al. (2023) and Bakry et al. (2023) that discovered that green finance plays a key role in increasing renewable energy use, meeting environmental rules, and following worldwide sustainability norms. More money for clean energy, eco-friendly farming, garbage control, and environmentally friendly buildings has led to a fall in emissions, preservation of different species, and enhanced justice for the environment.

At the same time, the results reveal some issues and how policies could be improved. Though there is a strong foundation, this does not prove that democracy leads to economic development; additional factors such as strong governments, good organizations, and advanced technology may influence the result. Levels of enforcement in each country's regulations, the public's awareness about green finance, and global access to support funds such as the Green Climate Fund can affect how well such initiatives function.

7. OVERALL CONCLUSION

According to the study, green finance is highly important in promoting the sustainability of the environment in emerging countries. The fact that green bonds, climate-focused loans, and sustainable infrastructure investments are closely tied to better eco-friendly results is proven by the solid link between the Green Finance Index and the Environmental Sustainability Score shown by the data. This is another way of saying that a boost in green financial operations helps a country achieve sustainable environmental goals.

The findings show that many financial systems are now being integrated with public policies to help meet challenges such as climate change, losing resources, and worsening the environment. Though emerging countries sometimes lack proper institutions, lack access to green finance from abroad, and have underdeveloped financial sectors, the results imply that when green finance is supported by good planning and proper governance, it greatly supports sustainable development.

According to the study, policymakers, banks, and other development partners should see green finance not only as a new idea, but also as something that should be applied widely across the economy. Achieving the most out of green finance depend on encouraging public-private cooperation, building green rules, ensuring clear paperwork for budgets, and training people involved.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

REFERENCES

- Adedoyin, F. F., Agboola, P. O., Ozturk, I., Bekun, F. V., & Agboola, M. O. (2021). Environmental consequences of economic complexities in the EU amidst a booming tourism industry: Accounting for the role of Brexit and other crisis events. *Journal of Cleaner Production*, 305, 127117. <https://doi.org/10.1016/j.jclepro.2021.127117>
- Afshan, S., Yaqoob, T., Meo, M. S., & Hamid, B. (2023). Can green finance, green technologies, and environmental policy stringency leverage sustainability in China: Evidence from quantile-ARDL estimation. *Environmental Science and Pollution Research*, 30(22), 61726–61740. <https://doi.org/10.1007/s11356-023-26612-6>
- Ahmed, Z., Ahmad, M., Murshed, M., Shah, M. I., Mahmood, H., & Abbas, S. (2022). How do green energy technology investments, technological innovation, and trade globalization enhance green energy supply and stimulate environmental sustainability in the G7 countries? *Gondwana Research*, 112, 105–115.
- Akbas, M., & Iyisan, R. (2023). Sustainable infrastructure: The effect of freeze–thaw cycles on road base materials comprising natural and recycled concrete aggregates. *International Journal of Sustainable Engineering*, 16(1), 211–223. <https://doi.org/10.1080/19397038.2022.2126750>
- Amighini, A., Giudici, P., & Ruet, J. (2022). Green finance: An empirical analysis of the Green Climate Fund portfolio structure. *Journal of Cleaner Production*, 350, 131383. <https://doi.org/10.1016/j.jclepro.2022.131383>
- Arefieva, O., Polous, O., Arefiev, S., Tytykalo, V., & Kwilinski, A. (2021). Managing sustainable development by human capital reproduction in the system of company's organizational behavior. *IOP Conference Series: Earth and Environmental Science*, 628, 012039. <https://doi.org/10.1088/1755-1315/628/1/012039>
- Bakry, W., Mallik, G., Nghiem, X. H., Sinha, A., & Vo, X. V. (2023). Is green finance truly “green”? Examining the long-run relationship between green finance, renewable energy and environmental performance in developing countries. *Renewable Energy*, 208, 341–355. <https://doi.org/10.1016/j.renene.2022.07.002>
- Baloch, K. (2023). Commodity price dynamics and COVID-19: Evidence from the oil and gold markets. *Climate, Economics & Social Impact*, 1(1), 7–23.
- Baloch, Q. B., Shah, S. N., Iqbal, N., Sheeraz, M., Asadullah, M., Mahar, S., & Khan, A. U. (2023). Impact of tourism development upon environmental sustainability: A suggested framework for sustainable ecotourism. *Environmental Science and Pollution Research*, 30(3), 5917–5930. <https://doi.org/10.1007/s11356-022-22445-5>
- Baltgailis, J., & Simakhova, A. (2022). The technological innovations of fintech companies to ensure the stability of the financial system in pandemic times. *Marketing and Management of Innovations*, 2, 55–65. <https://doi.org/10.21272/mmi.2022.2-05>
- Bauer, R. (2022). The future of responsible investing. *Vba Journal*, 37(150), 8–14.
- Brodny, J., & Tutak, M. (2023). Assessing regional implementation of Sustainable Development Goal 9 “Build resilient infrastructure, promote sustainable industrialization and foster innovation” in Poland. *Technological Forecasting and Social Change*, 195, 122773. <https://doi.org/10.1016/j.techfore.2022.122773>
- Brych, V., Zatonatska, T., Dluhopolskyi, O., Borysiak, O., & Vakun, O. (2021). Estimating the efficiency of the green energy services' marketing management based on segmentation. *Marketing and Management of Innovations*, 3, 188–198.
- Butko, M., Popelo, O., & Pishenin, I. (2019). Innovations in human resources management in eurointegration conditions: Case for Ukrainian agro-industrial complex. *Marketing and Management of Innovations*, 2, 74–82.
- Carfora, A., Pansini, R. V., & Scandurra, G. (2022). Energy dependence, renewable energy generation and import demand: Are EU countries resilient? *Renewable Energy*, 195, 1262–1274. <https://doi.org/10.1016/j.renene.2022.06.066>
- Chen, Y., Kwilinski, A., Chygryn, O., Lyulyov, O., & Pimonenko, T. (2021). The green competitiveness of enterprises: Justifying the quality criteria of digital marketing communication channels. *Sustainability*, 13(24), 13679.
- Chen, Y., Lyulyov, O., Pimonenko, T., & Kwilinski, A. (2023). Green development of the country: Role of macroeconomic stability. *Energy & Environment*.
- Chien, F., Chau, K. Y., Aldeehani, T. M., Huy, P. Q., Tan, L. P., & Mohsin, M. (2022). Does external debt as a new determinant of fiscal policy influence sustainable economic growth: Implications after COVID-19. *Economic Change and Restructuring*, 1–21.
- Chygryn, O., Bilan, Y., & Kwilinski, A. (2020). Stakeholders of green competitiveness: Innovative approaches for creating communicative system. *Marketing and Management of Innovations*, 3, 358–370. <https://doi.org/10.21272/mmi.2020.3-26>

- Chygryn, O., Kuzior, A., Olefirenko, O., & Uzik, J. (2022). Green brand as a new pattern of energy-efficient consumption. *Marketing and Management of Innovations*, 3, 78–87.
- Clark, R., Reed, J., & Sunderland, T. (2018). Bridging funding gaps for climate and sustainable development: Pitfalls, progress and potential of private finance. *Land Use Policy*, 71, 335–346.
- D'Orazio, P. (2023). The politics of climate finance and policy initiatives to promote sustainable finance and address ESG issues. In *Sustainable finance and ESG: Risk, management, regulations, and implications for financial institutions* (pp. 145–171). Springer.
- Dacko-Pikiewicz, Z. (2019). Building a family business brand in the context of the concept of stakeholder-oriented value. *Forum Scientiae Oeconomia*, 7(2), 37–51.