GREEN FINANCE AND SUSTAINABLE DEVELOPMENT: A LITERATURE REVIEW

Abstract

This paper examines earlier research on green finance and its effects. It highlights the key concepts in the literature on green finance, such as strategies for advancing green financing through technology and policy, initiatives to make green investments profitable, the role of regulators and financial institutions in the green finance agenda, and challenges with green financing. There are numerous international observations regarding the challenges of green finance and potential solutions. The findings show that green finance has the potential to have a significant impact on society, the environment, and efforts to slow down climate change, but there are still many challenges to be solved, such as a lack of understanding of green finance, a lack of consistency in definitions, and a lack of policy coordination and inconsistent policies, and others for green finance. A reduction in asymmetric information through improved information management systems and more cooperation among stakeholders may pave the way for a more sustainable and long-term economic growth in India. Public awareness and financing choices have also improved.

Keywords: Literature review, green finance, green investment, sustainable development, green banks.

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I. INTRODUCTION

Green finance, also known as sustainable finance or climate finance refers to financial products, services, and investments that support environmentally sustainable and socially responsible projects and initiatives. Financial and natural resources are significant indicators that play a big role in preventing environmental degradation and fostering economic progress in the age of globalization (Usman et al., 2022a; Usman et al., 2022b; Zhang C et al., 2022). The goal of green finance is to promote a low-carbon and climate-resilient economy while addressing environmental challenges, such as climate change, biodiversity loss, pollution, and resource depletion. It plays a crucial role in mobilizing capital towards projects that have positive environmental and social impacts. Green finance can, on the one hand, support environmental governance and protection (Al Mamun et al., 2022), reallocating funds from energy- and resource-intensive industries to those with cutting-edge production conceptions and environmental technology (Falcone, 2020). Global environmental concerns have emerged as a result of rising carbon dioxide emissions (Schumacher et al., 2020). Regarding that matter, the government is making a number of attempts to raise environmental awareness, reduce economic carbonization, take climate change risks into consideration, and minimize the influence of its operating actions (Muhammad et al., 2019; Hafner et al., 2020). In response to these worries, Tolliver et al. (2020) said that in order to achieve sustainable development based on the Paris climate agreement, funds from carbon-dense investments must be transferred to sustainable green investments. The government is likewise concerned in lowering greenhouse gas emissions that cause global warming (Mahat et al., 2019). The government must reinvigorate its efforts to address these issues. However, as evidenced by numerous research, environmental protection rules can also support green finance (Cojoianu et al., 2020), and they are regionally and firm-heterogeneous in their support of green finance across China (Xu et al., 2022). Green finance refers to financial products, services, and investments that support sustainable development and environmental protection. Key components of green finance Green Bonds, Sustainable Investing, Climate Funds, Green Loans, Environmental Risk Assessment, Impact Investing, Sustainable Insurance, Corporate Sustainability Reporting. The concept's 'financial' component illustrates how capital is distributed and invested via the financial system (Berensmann et al., 2017; Weber &ElAlfy, 2019). According to Yuan and Gallagher (2018) and Urban and Wójcik (2019), the 'green' attribute mandates that financial resources be allocated to corporate governance, clean energy, green buildings, climate change, and environmental protection across all economic sectors. The growth of green finance has been driven by increasing awareness of climate change and environmental issues, as well as regulatory initiatives and consumer demands for sustainable investment options. Governments, international organizations, financial institutions, and corporations all play important roles in advancing green finance to address the urgent challenges posed by climate change and promote a more sustainable future .One hundred ninety-four (194) nations formed the Green Climate Fund (GCF) in 2010 to provide financial resources for reducing greenhouse gas emissions globally (Cui and Huang, 2018). The fund's objective was to spread the rising global acceptance of the idea by promoting and supporting green finance activities. The G-8 and G-20 summit of advanced economies has discussed the principles of the fund and green financing in general. India's low-carbon energy sector will receive US$1.5 billion in finance, according to the World Bank. By increasing renewable energy production, creating green hydrogen, and encouraging climate finance for low-carbon energy investment, the financing will assist India in promoting low-carbon energy. According to a person with knowledge of the situation, India is likely to borrow

between Rs 20,000 and Rs 22,000 crore through sovereign green bonds this fiscal year, up from Rs 16,000 crore in 2022–2023 when it first launched such papers. Rail projects are anticipated to receive around half of the green bond revenues this fiscal year, followed by initiatives in new and renewable energy (32%), housing and urban affairs (15%), environment and climate change (1%) and other projects. A $1 billion fund from the World Bank, Asian Development Bank, and SIDBI will jumpstart the EV finance industry. According to a top official at NITI Aayog, in addition to creating a $1 billion fund to finance electric cars, they are also actively in talks with US-based investors eager to participate in the payment security mechanism (PSM) for the electric buses. Green finance is essential for fostering a sustainable and resilient global economy, combating climate change, protecting the environment, and achieving inclusive and equitable development. The finance of fossil fuel operations that endanger the environment and the climate can be decreased by increasing green financing (Sachs et al., 2019a; Ozili, 2022a). By integrating environmental and social considerations into financial decision-making, green finance helps drive positive change and lays the foundation for a greener, more sustainable future. As green finance is very new in concept there are many opportunities and challenges in green finance arise from the growing recognition of the importance of addressing environmental and social issues in the financial sector. Embracing these opportunities and overcoming challenges is crucial for promoting sustainable practices and achieving a greener, more resilient global economy. Opportunities may be ,Market Growth , Innovation and Technology, Policy Support , Enhanced Risk Management Access to Capital Investor, Demand Sustainable Infrastructure , Corporate Reputation .Challenges may face by the investors are Standardization and Measurement Data availability ,Financial Returns Policy and Regulatory Uncertainty, Market Fragmentation, Green washing , Limited Expertise and Risk Perception Addressing these challenges requires collaboration among policymakers, financial institutions, investors, and regulators to develop clear and consistent frameworks for finance, improve data availability and disclosure, and promote awareness and education about sustainable finance principles. By seizing the opportunities and tackling the challenges, green finance can play a transformative role in creating a more sustainable and resilient global economy. There are two opposing viewpoints, One viewpoint claims that a fresh set of instruments should be developed and applied to evaluate potential for green financing and investment. The second viewpoint asserts that green financing and investment opportunities may be assessed using current, mainstream financial analysis methodologies. Although there is yet no proof that adapting current mainstream financial analysis tools can improve the efficiency of evaluating green finance investments and prospects, the latter viewpoint seems more tenable.

II. METHODOLOGY

This study is based on review of previous literature on green finance and sustainability. Journal publications, papers from industry practitioners, and policy reports were all used in this review. Manual selection was used to choose the articles. On Google Scholar, science direct, a thorough search was done utilizing both the article body and article abstract searches. This strategy was based on the supposition that the major green finance keywords used in the article search would appear in both the article abstract and the article's body. Green financing, green bonds, and green financing are the important words. The articles from theses and dissertations were not included in the review. The Google search engine was used once more to find further helpful practitioner white papers and policy studies.

III. LITERATURE REVIEW

Recent articles have given more emphasis to green finance, which is due to the growing number of international mechanisms being used to address the climate challenge. Significant advancements in maintaining a commitment to environmental sustainability were made with the implementation of the Paris Climate Agreement and the Sustainable Development Goals of the United Nations. Green finance involves more than just getting the best returns on your investments. This idea presents a situation in finance that involves both profit-making and enhancing human utility. A code of ethics defines the typical green finance product known as the "green bond." The bond must meet certain requirements, including how revenues are used, a thorough project review and selection process, acceptable profit management, and thorough reporting, in order to be accepted. The continued and increasing output of carbon emissions is of great worry to the entire world (Zhao et al. most of the world's Globally, the industrial, transportation, and energy supply sectors are primarily responsible for the growth in carbon emissions (Asbahi et al. 2019; Hailiang et al. 2022; Feng et al. 2022; Yumei et al. 2022). Globally coordinated calls have been made over the past ten years to ensure equitable use of natural resources in order to slow down their rapid depletion and severe implications for future generations (Anna Kapustkina, 2021). Through the growth of green financing, the installation of HSR can have a positive impact on urban green productivity (Kong,., et al., 2021).Policymakers should be encouraged to continue investing in climate finance because green finance has lower ecological footprints and seems eco-friendly (Asif Khan et al., 2021).Despite the glowing accounts of green buildings, the best financing options to fulfil the fundamental principles of this ground-breaking building model have not yet been thoroughly created, examined, and pushed within the field of construction research (Stoikov, V. et al., 2021). Green finance promotes advances in green industrial technologies, which result in reductions in energy consumption and their associated advantages (Wang et al., 2021).A new, inclusive building model based on the idea of creating structures that have a good effect on the environment and climate is emerging as a result of this occurrence (Agyekum et al., 2020). In order to reduce emissions using global standards, a bigger percentage of money is invested in green bonds. Unlike businesses in emerging nations like Malaysia, Pakistan, Indonesia, and Thailand, Japanese businesses adhere to environmental regulations. (N. Yoshino,., et al., 2020)The calls, which are in line with the Sustainable Development Goals (SDGs) of the United Nations (U.N.), are intended to address the growing environmental, climatic, and emission issues like global warming, droughts, and a heavy reliance on fossil fuels in all sectors of the global economy (Jorgenson et al., 2019). The research study found that while none of the banks entirely complied with the standards of the green/sustainable policy, Islamic banks outperformed other banks in terms of maintaining faith, intelligence, and wealth circulation. (T. Julia, & S. Kassim, 2019) Important details are revealed in order to construct the conceptual framework. Future opportunities are prompted by major finance journals' lack of attention (Zhang, D., et al., 2019). Environmental issues are crucial to corporate operations and are crucial for sustainability and income, however most organizations fail to recognize this (Al Nuaimi, A., &Nobanee, H., 2019).Regarding financial metrics and corporate governance, the carbon-efficient businesses seem "good." (S.Y. Park et al.'s 2019) Innovations that are environmentally friendly depend on green money. On the other hand, manufacturers are constrained financially by ambiguous regulations and short-term financial instruments from investors. (P. Falcone, E. Sica, & 2019,) Along with improving energy, water, and air quality, green construction also aims to increase the sustainability of buildings from an economic and social standpoint (Lopez-Behar et al.,

2019). The construction industry produces a significant amount of carbon emissions during the building, operation, and demolition processes, making it one of the top 39 percent energy consumers and contributors to global warming (WGBC, 2019; Zhang et al., 2018).The World Green Building Council (WGBC) defines green building as a comprehensive building model that significantly reduces project lifecycle costs, achieves net-zero emissions, and reduces the negative effects of residential and commercial buildings on the climate, environment, and their occupants. Additionally, green buildings are financially significant and give bankers and investors the chance to participate in a multi-trillion-dollar market. Although there are several regulatory and practical restrictions, standard project financing techniques are still used to fund green buildings, which are out of sync with their essential principles (Agliardi and Agliardi, 2019.Industries should use green financing and support reproduction of the production processes at a smaller scale to increase consumer demand for environmentally friendly goods (Mohd et al., 2018). Industrial gas emissions were significantly decreased by China's green finance policies. Fintech companies are being urged to take an active role in environmental protection programs in order to promote green consumerism (Muganyi, T., et al., 2017). To ensure that investors' funds are used as effectively as possible to improve environmental protection and sustainable development, green initiatives are necessary (Trompete, L., 2017). In both rich and developing nations, the green economy has a favourable impact on employment (Ge, Y., & Zhi, 2016).Greening financial institutions will enable more private sector participation in low-carbon, resilient infrastructure projects. This is done to make sure that financial systems accurately account for climate risk and allocate capital in accordance with goals related to combating global climate change (Meltzer, H.P., 2016).The main benefit of this research is the expansion of knowledge by highlighting for developers, investors, tenants, and regulators the critical areas of green financing and green buildings. This study improves the conceptualization of the pertinent terminology and topics to meet the aims as green finance is becoming a crucial element in achieving national and global sustainable development goals and a green economy. It also supports long-term investment ideas that have a positive impact on the environment. Green finance is different from conventional financing in that it prioritizes ethical investments that protect the environment and climate while limiting the harmful effects of energy consumption. Conventional financing does not address issues of social and environmental justice.

IV. CONCLUSION

This Study reviewed existing studies related with Green finance and sustainability. Construction players are getting involved to finance and promote the trend as green techniques quickly spread throughout the sector. The research communities' interest in establishing a connection between the idea of green finance and green buildings has grown concurrently, but the key ideas have not yet been synthesised. Numerous opportunities in the field of green finance have emerged as a result of increased funding for green initiatives and growing public awareness of the need of safeguarding the environment. To precisely describe the issues, policymakers, researchers, environmentalists, the government, investors, and financial institutions must collaborate idea of green financing. For the purpose of evaluating green projects and ensuring that investors are not duped by the term "green," an appropriate regulatory framework must be established. India should use green funding to focus on producing renewable energy, safeguarding natural resources, managing energy effectively, adopting a climate-friendly lifestyle, and other ecological challenges. Thus, it can be argued that green money will function as an efficient tool for sustainable development if it is

managed appropriately. The results demonstrate that green finance can have a positive impact. The rising popularity of green finance across all global financial sectors is a significant and noticeable similarity in more than half of the findings. Second, a thorough evaluation according to the study's findings, green financing is becoming more widely used across many different economic sectors to support sustainable development. Thirdly, more money is being spent on sustainable strategies among the service sectors to advance different areas of the economy. The manufacturing industry keeps up and is acknowledged for its efforts to transition to low-carbon efficient sources**.** The results demonstrate that green finance has the potential to significantly impact the environment, society, and efforts to mitigate climate change, but there are numerous obstacles to overcome, including a lack of knowledge about green finance, inconsistent definitions of green finance, a lack of coordination between government policies on green financing, inconsistent laws, and a lack of profitable incentives for investors and financial institutions to make climate change mitigation investments, absence of incentives for financial institutions and investors, among others. The need for greater research on green innovation and risk-return trade-offs, as well as the need to examine the causal relationship between green investment and environmental. The need to define the limits of private and public sector participation in green financing also need to look at how green finance, social finance, and digital finance interact. The necessity to research how regulations affect green enterprises and activities and last one is to investigate the potentiality for green finance in emerging nations.

V. RESEARCH GAPS

1. **Incentives and Policy Support:** Investigating the effectiveness of various policy incentives and regulatory frameworks in promoting green finance is important. This includes understanding how different financial and non-financial incentives can encourage more significant private sector participation in green projects. According to Barbu and Boitan (2019), there is a discrepancy between national legislation on green finance and a country's stance on international agreements for environmental preservation. These discrepancies need to be rectified and incorporated into the banking industry's regulatory framework.

2. **Behavioural Finance and Investor Perception:** Exploring how behavioural biases influence investment decisions in green finance is critical. Understanding how investors perceive green projects, what motivates or discourages them, and how to overcome psychological barriers could accelerate green investment.

3. **Risk Assessment:** Understanding the unique risks associated with green finance investments is essential for investors to make informed decisions. Research is needed to develop effective risk assessment frameworks that consider both environmental risks (e.g., climate change effects) and financial risks (e.g., market volatility).

4. **Impact on Social and Economic Dimensions:** While green finance focuses on environmental benefits, research should also consider potential social and economic impacts. Understanding the trade-offs and co-benefits of green projects is necessary for comprehensive decision-making.

5. **Green Financial Products and Innovation:** Exploring new financial instruments and innovative mechanisms for green finance could attract more investors and diversify funding sources for sustainable projects.

VI. LIMITATION

The study has also drawbacks Despite my best effort may be some paper are missed to review. This study based on review of previous study done on green finance as it's a new concept so many areas are not covered in previous literature and also in this study.

VII. FUTURE SCOPE OF STUDY

Green finance was already a growing and promising area, and it is likely to continue expanding in the future due to the increasing global awareness of environmental issues and the urgent need to address climate change. The complicated environmental and sustainability concerns of green financing will require the use of green solutions. It is necessary to investigate how green innovation might help increase the number of green funding and investment possibilities. Green business owners can be crucial in spotting chances for successful investments in the green sector. Future research should look at how entrepreneurs and green innovation may help to increase the number of green funding and investment choices. Future research can also use empirical analysis to look at the relationship between green funding and green innovation. Future research might examine the potential for green finance in emerging nations. Future research can also examine how the difficult institutional and policy conditions impact the growth of green finance and investment markets in underdeveloped nations. Further studies must to take into account the distinctive institutional and governmental constraints that exist in developing nations. Future research can evaluate how well-established financial analysis tools can be used to determine whether proposed green projects can be profitable and sustainable. On the trade-off between risk and anticipated return in green financing and investment, there is little research. Future research should evaluate the trade-off between predicted green return and green risk in greater detail. More studies are required to investigate the relationship between green investments and environmental change. Future research must examine whether environmental change necessitates green investments and whether a single green project expenditure is sufficient to alter environmental outcomes. Influence the relationship of environmental results to green investment finding the most accurate method to determine the relationship between environmental change and green investment? On these topics, future research may provide some clarification.

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