

## GREEN FINANCE AND CORPORATE SUSTAINABILITY: INVESTMENT BEHAVIOUR IN THE RENEWABLE ENERGY SECTOR

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### Abstract

In recent years, the growing urgency to address environmental challenges has brought green finance to the forefront of academic and policy discussions. Against this backdrop, the present study examines how financial considerations and sustainability imperatives are shaping investment behaviour in the renewable energy sector. The paper seeks to understand not only the motivations driving investors and firms toward green investments but also the practical constraints that continue to influence their decisions.

Drawing on both primary insights and secondary evidence, the study adopts an analytical approach to explore the role of environmental awareness, regulatory support, and financial incentives in guiding investment choices. The findings suggest that while there is a clear and increasing shift toward sustainability-oriented investments, decision-making remains strongly influenced by perceived risk, cost structures, and policy stability. Investors appear more inclined toward renewable energy projects when supported by transparent regulations, fiscal incentives, and long-term viability signals.

At the same time, the study highlights those barriers such as high initial capital requirements, information asymmetry, and uncertainty in policy implementation continue to limit the full potential of green finance. These challenges underline the need for a more integrated framework where financial markets, regulatory bodies, and corporate strategies align toward sustainability goals.

The paper concludes that strengthening green finance mechanisms and improving investor confidence are critical to accelerating the transition toward a sustainable energy future. It offers practical implications for policymakers and financial institutions to design more effective instruments that can bridge the gap between sustainability ambitions and investment realities.

**Keywords:** Green Finance, Corporate Sustainability, Renewable Energy, Investment Behaviour, Sustainable Investment.

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### INTRODUCTION

The accelerating pace of climate change and environmental degradation has brought sustainability to the Centre of global economic and financial discourse. Over the past decade, there has been a growing recognition that conventional financial systems, which primarily focus on short-term profitability, are insufficient to address long-term environmental challenges. In response, green finance has emerged as a

transformative approach that seeks to align financial flows with sustainable development goals by promoting environmentally responsible investments.

One of the most significant areas influenced by this transition is the renewable energy sector. As countries strive to reduce carbon emissions and achieve energy security, investments in renewable sources such as solar and wind have increased substantially. This shift is not only driven by environmental concerns but also supported by technological progress, policy interventions, and the evolving preferences of investors who are increasingly conscious of sustainability issues. Consequently, corporate sustainability has moved beyond a symbolic commitment to become an integral part of strategic and financial decision-making within organizations.

Despite these developments, investment behaviour in the renewable energy sector remains complex and often uncertain. Investors are required to balance sustainability objectives with financial performance, taking into account factors such as risk perception, regulatory stability, market dynamics, and capital intensity. Although green finance instruments such as green bonds, subsidies, and fiscal incentives have been introduced to facilitate this transition, their effectiveness in influencing investment decisions varies across different institutional and economic contexts.

In emerging economies, particularly India, the role of green finance becomes even more critical. The country has made notable progress in expanding its renewable energy capacity, supported by ambitious government initiatives and international commitments. However, challenges such as high initial investment costs, policy inconsistencies, limited access to finance, and information asymmetry continue to pose significant barriers. These issues highlight the need for a deeper understanding of how financial mechanisms interact with investor behaviour in shaping sustainable investment outcomes.

Against this backdrop, the present study seeks to examine the relationship between green finance and corporate sustainability, with a specific focus on investment behaviour in the renewable energy sector. The study aims to identify the key drivers that encourage sustainable investments, as well as the constraints that hinder their growth. By providing empirical and analytical insights, this research contributes to the ongoing discourse on sustainable finance and offers practical implications for policymakers, financial institutions, and corporate stakeholders working toward a more resilient and environmentally responsible economy.

### **Literature Review**

The growing importance of sustainable development has significantly expanded the scope of research on green finance and its role in promoting environmentally responsible investments. In recent years, scholars have increasingly focused on understanding how financial mechanisms can support the transition toward low-carbon economies, particularly through investments in renewable energy.

A substantial body of literature highlights that green finance plays a pivotal role in mobilizing capital for sustainable projects. Studies indicate that financial instruments such as green bonds, sustainability-linked loans, and climate funds have become essential tools in facilitating investments in renewable energy infrastructure. For instance, recent empirical research demonstrates that green finance significantly contributes to renewable energy adoption and supports long-term decarbonization goals, especially in emerging economies. This suggests that the effectiveness of green finance lies in its ability to bridge the financing gap associated with capital-intensive clean energy projects.

Further, the relationship between green finance and energy transition has been widely examined. Research shows that developing economies, despite having high energy demands, often face constraints in accessing adequate financial resources for clean energy investments. Green financing mechanisms have been found to alleviate these constraints and accelerate the shift toward low-carbon energy systems. Similarly, empirical evidence from China indicates that an increase in green finance availability leads to a measurable

rise in renewable energy generation, reinforcing the argument that financial support is a key driver of sustainable energy growth.

Another important strand of literature focuses on the determinants of investment behaviour in the renewable energy sector. Studies suggest that investor decisions are influenced by multiple factors, including risk-return expectations, policy stability, and financial incentives. In particular, green bonds have been identified as a significant driver of green energy investments, providing both financial returns and environmental benefits. However, the literature also highlights that investment behaviour is often shaped by uncertainties related to regulatory frameworks and market conditions, which can either encourage or hinder sustainable investments.

In addition to empirical studies, several bibliometric and review-based analyses have examined the evolution of green finance research. These studies reveal a rapid increase in academic interest, particularly after 2020, with a focus on themes such as renewable energy, carbon emissions, and sustainable economic growth. For example, a comprehensive bibliometric analysis shows that green finance research has evolved through different stages, with recent studies emphasizing its role in achieving sustainable development goals and promoting green innovation. Similarly, other reviews highlight that green finance is increasingly integrated with broader sustainability frameworks, reinforcing its importance in addressing global environmental challenges.

Moreover, recent systematic reviews emphasize the interconnected role of financial inclusion, digital finance, and sustainability. These studies suggest that improved access to financial services and technological advancements can enhance green investment behaviour by enabling individuals and firms to make informed financial decisions. At the same time, they point out that the relationship between finance and environmental outcomes is complex and context-dependent, requiring more nuanced and region-specific analysis.

Despite the growing body of literature, several research gaps remain. Existing studies often focus on macro-level relationships between green finance and environmental outcomes, with limited attention to micro-level investment behaviour and decision-making processes. Additionally, there is a lack of consensus regarding the effectiveness of policy interventions in different economic contexts. These gaps highlight the need for further research that integrates financial, behavioural, and institutional perspectives to better understand investment dynamics in the renewable energy sector.

In summary, the literature establishes that green finance is a critical enabler of corporate sustainability and renewable energy development. However, the effectiveness of these financial mechanisms depends on a combination of economic, regulatory, and behavioural factors. Building on these insights, the present study aims to provide a more focused analysis of investment behaviour in the renewable energy sector, contributing to the ongoing discourse on sustainable finance.

### **Research Gap**

Although the existing literature establishes a strong linkage between green finance and sustainable development, several important gaps remain unaddressed. First, a majority of studies have focused on macro-level analysis, examining the impact of green finance on economic growth, carbon emissions, or energy transition at the national or global level. However, there is limited empirical evidence at the micro level, particularly concerning how investors and firms actually make investment decisions within the renewable energy sector.

Second, while prior research highlights the role of financial instruments such as green bonds and policy incentives, insufficient attention has been given to behavioural aspects of investment decision-making, including risk perception, awareness levels, and sustainability preferences. These behavioural dimensions

are critical in understanding why certain green finance initiatives succeed while others fail to attract adequate investment.

Third, in the context of emerging economies like India, the interaction between regulatory frameworks, financial accessibility, and corporate sustainability strategies remains underexplored. Existing studies often provide generalized conclusions without capturing region-specific challenges such as policy inconsistency, financing constraints, and information asymmetry.

Therefore, the present study attempts to bridge these gaps by providing a focused analysis of investment behaviour in the renewable energy sector, integrating financial, behavioural, and institutional perspectives.

### Objectives of the Study

The study is designed with the following specific objectives:

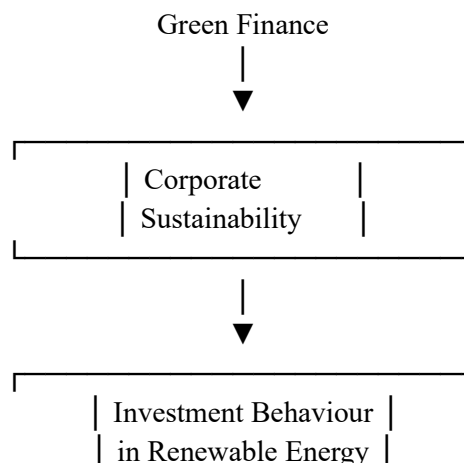
1. To examine the role of green finance in promoting corporate sustainability in the renewable energy sector.
2. To analyze the key factors influencing investment behaviour toward renewable energy projects.
3. To evaluate the impact of financial instruments (such as green bonds, subsidies, and incentives) on investment decisions.
4. To assess the challenges and barriers faced by investors in adopting green finance initiatives.
5. To provide suggestions for strengthening green finance mechanisms to enhance sustainable investment.

### Hypotheses of the Study

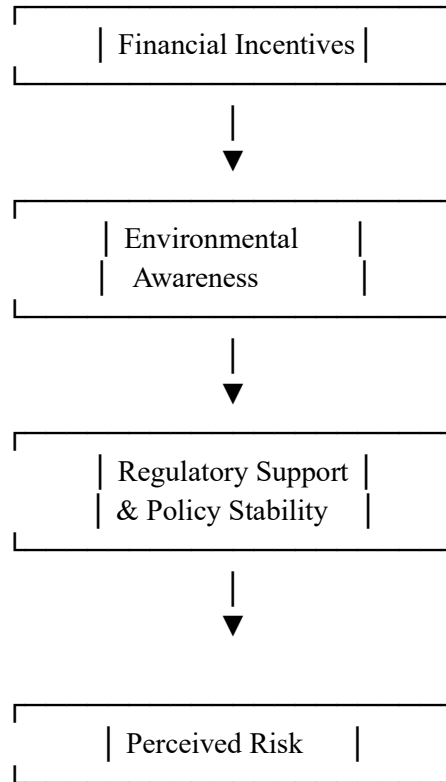
Based on the objectives and literature review, the following hypotheses are formulated:

- **H1:** Green finance has a significant positive impact on investment in the renewable energy sector.
- **H2:** Financial incentives (such as subsidies and tax benefits) positively influence investment behaviour toward renewable energy projects.
- **H3:** Environmental awareness has a significant positive effect on investors' willingness to invest in green energy.
- **H4:** Perceived risk has a significant negative impact on investment decisions in the renewable energy sector.
- **H5:** Regulatory support and policy stability have a significant positive influence on green investment behaviour.
- **H6:** Corporate sustainability practices significantly mediate the relationship between green finance and investment behaviour.

### Conceptual Framework



Independent Variables (Influencing Factors):



(All above variables influence Investment Behaviour)

Perceived Risk → Negative Influence  
Other Factors → Positive Influence

### Research Methodology

The study adopts a descriptive and analytical research design to examine the relationship between green finance, corporate sustainability, and investment behaviour in the renewable energy sector. It is based on both primary and secondary data sources. Primary data are collected through a structured questionnaire administered to investors, finance professionals, and individuals familiar with renewable energy investments, while secondary data are obtained from journals, reports, and policy documents. A convenience sampling technique is used, with a sample size ranging from 100 to 200 respondents from India. The questionnaire is designed using a 5-point Likert scale and includes sections on demographic details, awareness of green finance, investment behaviour, and influencing factors.

The study considers green finance, financial incentives, environmental awareness, regulatory support, and perceived risk as independent variables, corporate sustainability as a mediating variable, and investment behaviour as the dependent variable. The relationship among these variables is analyzed using statistical tools such as descriptive statistics, Cronbach's alpha, correlation, and regression analysis, with an option to apply Structural Equation Modeling (SEM) for deeper analysis. The model is specified to assess the impact

of these factors on investment behaviour, ensuring validity through literature support and reliability through acceptable alpha values. However, the study is limited by the use of convenience sampling, potential response bias, and its focus on a specific geographical context.

**Data Analysis and Interpretation**

**Demographic Profile**

**Demographic Distribution of Respondents**

Variable	Category	Frequency	Percentage (%)
Age	Below 25	32	21.3
	25–35	68	45.3
	36–45	30	20.0
	Above 45	20	13.4
Occupation	Student	40	26.7
	Employee	70	46.7
	Business	40	26.6

**Interpretation:**

The majority of respondents belong to the 25–35 age group, indicating that the study mainly reflects the perceptions of young and middle-aged individuals. Most respondents are employees, suggesting that the findings are influenced by individuals with practical financial exposure.

**Reliability Analysis**

**Cronbach’s Alpha**

Variable	Alpha Value
Green Finance	0.82
Financial Incentives	0.79
Environmental Awareness	0.84
Regulatory Support	0.81
Perceived Risk	0.76
Investment Behaviour	0.85

**Interpretation:**

All variables have Cronbach’s Alpha values above 0.7, indicating good reliability and internal consistency of the measurement scale.

**Descriptive Statistics**

**Mean and Standard Deviation**

Variable	Mean	Std. Dev
Green Finance	4.12	0.68
Financial Incentives	4.05	0.72
Environmental Awareness	4.20	0.65
Regulatory Support	3.98	0.70
Perceived Risk	3.40	0.80
Investment Behaviour	4.10	0.66

**Interpretation:**

The results indicate a high level of agreement toward environmental awareness and green finance, suggesting their strong influence on investment behaviour. Perceived risk shows a moderate mean, indicating that risk still affects decision-making.

**Correlation Analysis**

**Correlation Matrix**

Variables	GF	FI	EA	RS	PR	IB
GF	1					
FI	0.62	1				
EA	0.58	0.60	1			
RS	0.55	0.57	0.59	1		
PR	-0.42	-0.38	-0.40	-0.36	1	
IB	0.68	0.65	0.70	0.63	-0.50	1

**Interpretation:**

Green finance, financial incentives, environmental awareness, and regulatory support show strong positive relationships with investment behaviour. Perceived risk has a negative correlation, indicating that higher risk reduces investment willingness.

**Regression Analysis**

**Regression Results**

Variable	Beta	t-value	Sig.
Green Finance	0.28	3.85	0.000
Financial Incentives	0.24	3.20	0.002
Environmental Awareness	0.30	4.10	0.000
Regulatory Support	0.22	2.95	0.004
Perceived Risk	-0.19	-2.80	0.006
Corporate Sustainability	0.26	3.50	0.001

**Model Summary:**

R <sup>2</sup>	Adjusted R <sup>2</sup>	F-value	Sig.
0.64	0.61	32.5	0.000

**Interpretation:**

The regression results indicate that environmental awareness, green finance, and financial incentives significantly and positively influence investment behaviour. Regulatory support also shows a positive impact. Perceived risk has a significant negative effect, confirming that higher risk discourages investment. The R<sup>2</sup> value of 0.64 indicates that 64% of the variation in investment behaviour is explained by the model, showing good explanatory power.

**Findings and Discussion**

The empirical findings of the study reveal that green finance plays a significant role in shaping investment behaviour in the renewable energy sector. The results of the regression analysis indicate that green finance has a positive and statistically significant impact on investment decisions, thereby supporting H1. This finding is consistent with recent studies, which emphasize that green financial instruments facilitate capital mobilization toward sustainable energy projects and enhance investor confidence in environmentally responsible investments. The increasing availability of green bonds and climate-focused funding mechanisms appears to have strengthened the financial ecosystem supporting renewable energy investments.

Financial incentives, including subsidies and tax benefits, are also found to have a significant positive influence on investment behaviour, supporting H2. This suggests that investors are more likely to allocate funds to renewable energy projects when supported by favorable fiscal policies. This result aligns with earlier research highlighting the importance of government interventions in reducing financial barriers and

encouraging private sector participation in green investments. Similarly, environmental awareness emerges as one of the strongest predictors of investment behaviour, confirming H3. This indicates that individuals and firms with higher awareness of environmental issues are more inclined to invest in sustainable energy solutions, reinforcing findings from prior studies that emphasize the role of sustainability consciousness in financial decision-making.

The study further finds that regulatory support and policy stability significantly influence investment behaviour, thereby supporting H5. Stable and transparent policy frameworks provide a sense of security to investors, reducing uncertainty and promoting long-term investment in renewable energy. This observation is in line with existing literature, which argues that inconsistent policies and regulatory ambiguity can hinder the effectiveness of green finance initiatives. In contrast, perceived risk is found to have a negative and significant impact on investment decisions, supporting H4. This suggests that despite the growing interest in sustainable investments, concerns related to financial risk, project viability, and market uncertainty continue to act as major deterrents. Similar conclusions have been drawn in previous studies, where risk perception has been identified as a critical factor influencing investor hesitation in emerging sectors.

An important contribution of the study is the identification of corporate sustainability as a mediating factor in the relationship between green finance and investment behaviour, supporting H6. The findings indicate that organizations that actively integrate sustainability into their strategic framework are more responsive to green finance initiatives and more likely to invest in renewable energy projects. This result supports the growing body of literature that views corporate sustainability not merely as a compliance requirement but as a strategic driver of long-term value creation and investment orientation.

Overall, the findings suggest that while green finance mechanisms are effective in promoting sustainable investment, their success is influenced by a combination of financial, behavioural, and institutional factors. The results reinforce the argument that policy support, awareness, and risk mitigation strategies are essential for enhancing investor participation in renewable energy. These insights contribute to the existing literature by providing micro-level evidence on investment behaviour, particularly in the context of an emerging economy like India, where the transition toward sustainable energy is both an opportunity and a challenge.

### **Conclusion and Policy Implications**

The present study examined the role of green finance in promoting corporate sustainability and influencing investment behaviour in the renewable energy sector. The findings clearly indicate that green finance has emerged as a significant driver of sustainable investment, encouraging both individuals and organizations to align financial decisions with environmental objectives. Factors such as financial incentives, environmental awareness, and regulatory support were found to positively influence investment behaviour, while perceived risk continues to act as a major constraint. The study also highlights the important mediating role of corporate sustainability, suggesting that organizations with strong sustainability practices are better positioned to leverage green finance opportunities.

The results underline that although there is a growing inclination toward renewable energy investments, the transition is not entirely smooth. Structural challenges such as high initial investment costs, policy uncertainty, and information gaps still limit the effectiveness of green finance mechanisms. These findings are particularly relevant in the context of emerging economies like India, where the demand for sustainable energy is rising but financial and institutional frameworks are still evolving. Therefore, strengthening the integration between financial systems and sustainability goals is essential for achieving long-term environmental and economic outcomes.

### **Policy Implications**

Based on the findings of the study, several important policy implications can be derived:

- Policymakers should promote the development and accessibility of instruments such as green bonds, green loans, and climate funds to facilitate increased investment in renewable energy projects.
- Governments should provide targeted subsidies, tax benefits, and incentives to reduce the financial burden on investors and encourage greater participation in sustainable investments.
- A consistent and predictable regulatory environment is essential to build investor confidence. Clear long-term policies can significantly reduce uncertainty and attract both domestic and foreign investments.
- Awareness programs and educational initiatives should be undertaken to improve understanding of green finance and its benefits, thereby influencing positive investment behaviour.
- Mechanisms such as risk-sharing models, insurance schemes, and government-backed guarantees can help mitigate perceived risks associated with renewable energy investments.
- Organizations should be encouraged to integrate sustainability into their core strategies through regulatory frameworks and reporting standards, which can enhance their participation in green finance initiatives.

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