

## ORIGINAL PAPER

# GREEN FINANCE AND SUSTAINABLE DEVELOPMENT: EXPLORING AWARENESS, DEMOGRAPHIC INFLUENCES AND ADOPTION PATHWAY

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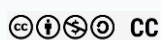
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**ABSTRACT:** *Green finance is crucial in the attainment of sustainable investment objectives that help in the fight against climate change, and the conservation of the environment. It ranges from green bonds, carbon credits, sustainability-linked loans that will be used in financing renewable energy projects, pollution control and climate change adaptation. Nevertheless, the transition from awareness to the ability to make corresponding investments regarding the support of sustainable solutions remains an issue even on the increased individual level of environmental consciousness and understanding of the role of green finance. Notably, this study pursues the following objectives: To analyses the nature of green finance or sustainable finance, to evaluate the government's role in green finance or sustainable finance, to measure the extent of green finance or sustainable finance consciousness in inducing practical change. Consequently, with the purpose of identifying the awareness of green financial instruments and the underlying restrictions concerning their dissemination, the study is designed to present recommendations for the change among the key subjects: governments, businesses, and consumers. Usually, more information on demographic characteristics and developed awareness of green finance supports research in examining the effects of several educational, occupational and income factors. In conclusion, it can be stated that the paper adds value to the current literature on green finance and potentiality, as well as how knowledge created on these subjects can be put to use in practical usable investment actions which would contribute to the improvement of environmental sustainability and combating effects of climate change.*

**KEYWORDS:** *Green Finance, Sustainable Investments, Green Bonds, Carbon Credits, Renewable Energy, Environmental Sustainability, Financial Instruments*

## PAPER CITATION:

*Fatima, R. A. L. : "Green Finance And Sustainable Development: Exploring Awareness, Demographic Influences And Adoption Pathway", International Journal of Informative & Futuristic Research (IJIFR), Vol.(13) (3), November 2025, pp. 318– 325 DOI: <https://doi.org/10.64672/IJIFR/25.11.13.03.003>*

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## 1. INTRODUCTION

Green financial defines as the type of financial activities and investments that support the non-farming activities impacting ecological background and help to develop the economy and society. The borrowing, equity, and insurance facilities provided under this have benefits as far as the environment is concerned, reduction in emissions and even conservation of biological diversity. Different types of green financial instruments which include green bonds, carbon credits, and sustainability linked financing support are being used for funding diverse projects ranging from renewable energy and energy efficiency in buildings as well as pollution control and climate change adaptation initiatives. This is according to Beintema claiming that the financial markets have the solutions to climate change and other environmental challenges.

Green finance operates with principles based on environmental policies and utilization of financial resources which include indicative mechanisms, rules and policies. Many Environmental Projects are however financed through emulation of structures like the tax credits, trading of emission, volatile carbon taxes implemented by the states as well as the relevant banking and financial systems. Besides, green bonds and climate bonds are widely floated in the market by companies and governments for the aim of financing sustainable activities. As the ESG factors are integrated into investment processes, the private sector assumes importance because premiums are investing in good environmental options. International organizations like United Nations and World Bank also play or support the promotion of green investments by providing technical and financial expertise.

The journey from awareness toward practical actions in the green finance needs messages and actions from various stakeholders in the financial chain. Knowledge of environmental threats and the importance of green finance have been raised by many methods: education, analytical reports of companies, and non-governmental organizations. But for this awareness to translate to action, sustainability has to become business as usual for financial institutions, while governments have to step up on environmental standards. Therefore, sustainability green projects require coordination and cooperation of many countries and public private partnerships. Consumers also make an effort by calling for eco-friendly products and investing in sustainable funds which help in steering the market towards steady-state economy. Finally, awareness should be complemented with practical measures, goals, appropriate policies, and call for demand in the marketplace.

## 2. SCOPE OF THE STUDY

- **Introduction to Green Finance:** This investigation will describe what green finance is as well as its significance in making sure that concerns are taken into the center and a fight against climate change embarked on.
- **Exploring Green Finance Tools:** The study will examine several instruments of green finance such as green bonds, green loans, carbon trading, etc., their workings and how these instruments are used for realization of sustainable ventures.
- **Role of Government and Regulations:** It will analyze the role of national regulations, their domestic laws, and multicounty provisions in fostering green finance as well as green investments.
- **Converting Awareness into Action:** The study will seek how the perception and awareness raised over green finance leads to action where businesses, investors, and even consumers empower the finance sector to finance sustainable ventures.
- **Measuring Success of Green Finance Projects:** It will explore the extent to which the objectives of green finance projects have been achieved relaying on the environmental benefits of projects and the self-disclosure of sustainability disclosures by companies.

### 3. REVIEW OF LITERATURE

- **Ozili (2022)** in the paper Green Finance Research around the world: A Review of Literature analysis the green finance concept around the globe. This paper highlights and identifies themes in green finance literatures which focus on strategies to make green finance better, profitability of green investments, technology utilization, policies and roles of regulators and financial institutions in green finance landscape and its challenges. Ozili also made a cross-country observation on the obstacles faced by green finance and the potential remedies to solve the issues. This study throws light on potential of green finance to transform in fostering sustainability, social wellbeing and climate change mitigations. This paper focuses further on the challenges of lack of awareness about green finance, inconsistency in definitions, absence of incentive for the investors and for institutions interested in climate change mitigations.
- **Chong et al. (2023)** in their paper on Mechanism of Green Finance Awareness on Sustainable Competitiveness of Enterprises explores the functions and role of green finance in the sustainable competitiveness of Small and Medium Sized Enterprises (SMEs) in the countries like China, Malaysia and Singapore. By using SPSS and Smart PLS-SEM software, hypothesis testing has been done and the survey included Senior Managers. The study aligns with Sustainable development goals 11 and 13, focusing on sustainable cities, communities and climate action. The study reveals that green finance awareness along with green supply chain management innovations contributes to sustainable competitiveness, which is further influenced by redundant resources and environmental turbulence. Findings also highlight how SMEs can possibly integrate green finance to achieve economic and environmental sustainability supporting the initiative of China government's double carbon for carbon peak by 2030 and carbon neutrality by 2060.
- **Braga, J. P. (2020)** in his paper titled "The green bonds market performance and the role of the public sector – literature review" shares a comprehensive overview of green bonds. Green bonds acts as an innovative financial instrument for providing the funding opportunities for sustainable projects. The review also deals with the crucial role of the public sector institutions in removing environmental uncertainty and cost reduction in green initiatives through the issue of green bonds. Although there are no significance differences between the green bonds and conventional bonds in their yield patterns, the study reveals that green bonds with better environmental reputation always have higher liquidity, demand which in turn leads to lower yields. Another major finding is that reliable green bond issue can definitely attract more long-term investors who value environmental gains and seek hedge against carbon seek fluctuations. Moreover, institutional investors are still lower shareholders of climate finance flows. The study opens the possibility to research further on the public bond performance and strategies required for public institutions to de-risk green investment avenues and attract more private capital.
- **Peter Ellinson Ceres. (2014)**, the study reveals a comprehensive guide for integrating Environmental, Social and Governance (ESG) factors in investment strategies. It highlights 10 actionable policies for asset owners and investment managers to follow sustainable practices, stressing the importance of making investment decisions with ESG criteria to improve long term returns and risk mitigations. Ceres Blueprint for Sustainable Investing advocates detailed reporting, transparency, significance of empirical data on ESG risks and their impact on returns. Furthermore, it highlights the power of education and communication between managers and trustees to ensure understanding of benefits and challenges in sustainable investments. It is important to adopt a long-term perspective, and evaluation of performance over the extended period as well as its implications of ESG factors on future investment outcomes. This blueprint aims to create a robust framework for sustainable investment adapting the evolving market dynamics and regulatory compliances which includes collaboration among the stakeholders like asset owners, investment managers and consultants.

#### 4. STATEMENT OF THE PROBLEM

The globe is exposed to climate change, resource depletion, pollution, carbon emissions and numerous environmental issues. In a wide spectrum, we see importance given to environmental issues and development of sustainable wellbeing among corporates, governments and public. But still, we can see a gap in the effective implementation of financial systems which support the environmentally sustainable initiatives.

However, there is still little understanding of how well such mechanisms like green bonds, green loans or carbon trading are being implemented and if they are resulting into meaningful environmental impact. Moreover, many stakeholders including businesses, governments and consumers still do not know or have hesitations in engaging deeply in the green finance which further limits its ability to drive the required transition.

**This study seeks solutions to the following areas:**

How adequately can green finance mechanisms be utilized?

What hampers wider adoption of green finance among stakeholders?

How knowledge on green finance be converted into practical investments leading to real environmental gains?

This study aims to explore these issues, assess the current state of green finance, and offer solutions for improving its adoption and impact.

#### 5. OBJECTIVES OF THE STUDY

- To measure the level of awareness and understanding of green finance concepts.
- To investigate the intentions to engage in green finance practices in the future.
- To identify the key educational and behavioral factors that influence attitudes and goals towards green finance.

#### 6. RESEARCH METHODOLOGY

This paper employs descriptive research methods to examine the processes of green finance and the awareness to action continuum. The study is based on the sample size of 120 respondents, and data was collected from the area of Coimbatore only. The type of sampling used is snowball sampling – this is a non-probability sampling technique where subsequent participants are sourced by the previous participants from their connections. The reason behind using this method is that the interest of the general public in green finance is very high.

The data was collected using a standardized survey with questions related to respondents' knowledge, perceptions, and experiences of green finance products such as green bonds, sustainability-linked loans, and carbon credits. Further for analysis, the demographic characteristics like age, occupation, income, field of study were also taken into account.

The statistical analysis tool utilized is the SPSS (Statistical Package for the Social Sciences). Descriptive analysis, Chi-Square Analysis, and cross tabulation were also used to determine the level of significance in the relationship between awareness of green finance and demographic variables. It guarantees analysis of all factors that would have an impact on the green financial practice's adoption, thus offering a broader perspective on the research findings.

#### 7. RESULT AND DISCUSSION

**Table 1: Demographic Profile**

| Demographics | Factors  | Frequency | Percentage (%) |
|--------------|----------|-----------|----------------|
| Age          | Under 18 | 12        | 10.0           |
|              | 18-22    | 78        | 65.0           |

|                                         |                         |    |      |
|-----------------------------------------|-------------------------|----|------|
|                                         | 23-26                   | 26 | 21.7 |
|                                         | 27 And Above            | 4  | 3.3  |
| Field Of Study                          | Commerce /Finance       | 44 | 36.7 |
|                                         | B.A / B.Sc. Courses     | 10 | 8.3  |
|                                         | Engineering /Technology | 52 | 43.3 |
|                                         | Business/Economics      | 14 | 11.7 |
| Occupation                              | Student                 | 69 | 57.5 |
|                                         | Employed                | 21 | 17.5 |
|                                         | Self-Employed           | 23 | 19.2 |
|                                         | Unemployed              | 7  | 5.8  |
|                                         | Homemaker Retired       | 69 | 57.5 |
| Annual Income                           | Nil                     | 66 | 55.0 |
|                                         | < 50,000                | 26 | 21.7 |
|                                         | 50,000 - 1,00,000       | 22 | 18.3 |
|                                         | > 1,00,000              | 6  | 5.0  |
| Source Of Knowledge About Green Finance | Blog                    | 13 | 10.8 |
|                                         | Friends & Peers         | 42 | 35.0 |
|                                         | News                    | 9  | 7.5  |
|                                         | Articles                | 26 | 21.7 |
|                                         | Internet                | 21 | 17.5 |
|                                         | Social Media            | 9  | 7.5  |

Source: Primary Data

**Table 2: Awareness level on the following instruments**

| FACTORS                     | MEAN SCORE | RANK |
|-----------------------------|------------|------|
| Green Bonds                 | 5.14       | 3    |
| Sustainability-linked loans | 5.19       | 2    |
| Carbon Credits              | 4.76       | 8    |
| Traditional bank loans      | 6.00       | 1    |
| Green Grants                | 4.91       | 7    |
| Green Insurance             | 4.02       | 9    |
| Crowdfunding                | 5.03       | 4    |
| Green Venture Capitalist    | 5.01       | 5    |
| Carbon Offset               | 4.94       | 6    |

Source: Calculated Data

The above table depicts the level of awareness among individuals on various green and traditional financial instruments. Among the various instruments listed Traditional bank loans rank first in awareness with a mean score of 6.00. In the subsequent two positions we can see Sustainability – linked loans and green bonds with the mean score of 5.19 and 5.14 respectively. Crowdfunding with mean score of 5.03 and Green Venture Capitalist with mean score of 5.01 reveals a similar awareness level and obtained 4<sup>th</sup> and 5<sup>th</sup> position. Carbon Offset, with score of 4.94 and Green Grants (4.91), and Carbon Credits (4.76) show a low awareness level. Least awareness level goes to Green Insurance with a mean score of 4.02, which ranks 9<sup>th</sup>. This distribution reflects a general familiarity with traditional financial instruments and a vast varying degree of awareness for green finance instruments.



**Null Hypothesis (Ho):** There is no significant relationship between the awareness about the term Green Finance and demographics such as field of study, Occupation, and Income.

**Alternate Hypothesis (H1):** There is a significant relationship between the awareness about the term Green Finance and demographics such as field of study, Occupation, and Income.

**Table 3: Chi-Square Analysis for testing relationship between the awareness about the term Green Finance and demographics such as field of study, Occupation and Income**

| Factor         | Chi-Square Value    | Df | P Value | Significants | Interpretation                                                                                 |
|----------------|---------------------|----|---------|--------------|------------------------------------------------------------------------------------------------|
| Field of Study | 53.942 <sup>a</sup> | 9  | .000    | Yes          | Significant association between the awareness about the term Green Finance and field of study. |
| Occupations    | 88.679 <sup>b</sup> | 9  | .000    | Yes          | Significant association between the awareness about the term Green Finance and Occupations     |
| Income         | 56.436 <sup>c</sup> | 9  | .000    | Yes          | Significant association between the awareness about the term Green Finance and income.         |

#### Chi-Square Tests

Source: Calculated Data

**Null Hypothesis (Ho):** There is no significant relationship between the primary factors influencing individuals' attitudes towards green finance and demographics such as field of study, Occupation, and Income.

**Alternate Hypothesis (H1):** There is a significant relationship between the primary factors influencing individuals' attitudes towards green finance and demographics such as field of study, Occupation, and Income.

#### Chi-Square Tests

**Table 4: Chi-Square for testing relationship between the primary factors influencing individuals' attitudes towards green finance and demographics such as field of study, Occupation, and Income**

| Factor         | Chi-Square Value    | Df | P Value | Significants | Interpretation                                                                                 |
|----------------|---------------------|----|---------|--------------|------------------------------------------------------------------------------------------------|
| Field Of Study | 44.208 <sup>a</sup> | 12 | .000    | Yes          | Significant Association Between The Awareness About The Term Green Finance And Field Of Study. |
| Occupations    | 46.582 <sup>a</sup> | 12 | .000    | Yes          | Significant Association Between The Awareness About The Term Green Finance And Occupations.    |
| Income         | 71.799 <sup>a</sup> | 12 | .000    | Yes          | Significant Association Between The Awareness About The Term Green Finance And Income.         |

Source: Calculated Data

**Null Hypothesis (Ho):** There is no significant relationship between the proportions of an individual's investment allocated to traditional and green finance and demographics such as field of study and Occupation.

**Alternate Hypothesis (H1):** There is a significant relationship between the proportions of an individual's investment allocated to traditional and green finance and demographics such as field of study and Occupation.

#### Chi-Square Tests

**Table 5: Chi-Square for testing relationship between the proportions of an individual's investment allocated to traditional and green finance and demographics such as field of study and Occupation.**

| Factor         | Chi-Square Value | Df | P Value | Significants | Interpretation                                                                                 |
|----------------|------------------|----|---------|--------------|------------------------------------------------------------------------------------------------|
| Field of Study | 24.620a          | 9  | .003    | Yes          | Significant association between the awareness about the term Green Finance and field of study. |
| Occupations    | 35.051a          | 9  | .000    | Yes          | Significant association between the awareness about the term Green Finance and Occupations.    |

*Source: Calculated Data*

## 8. RECOMMENDATIONS AND PRACTICAL IMPLICATIONS

The analysis depicts a considerable level of unrecognized green finance tools, including green bonds, sustainability-linked loans, and green venture capital across the distinct groups of the population. To address this dearth, there is therefore the need to embark on educational campaigns more especially targeting the various communal members' interest, with a focus on students and the youthful hi-tech professionals in various fields of study such as engineering and technology, among others. To enhance the people's discussion and usage of sustainable finance solutions, governments, banks, and other educational organisations should incorporate green finance as a course in universities and as the part of the continuing professional development training for the professionals.

Financial institutions can create better interfaces and tools that make the information related to green finance products easily intelligible for the prospective clients. Further, there is a need to promote green finance among businesses and other individuals if not through the imposition of penalties, then through offering of tax rebates, subsidies, or low-interest loans within the environmentally sustainable projects. More efforts should also be directed towards creating awareness using social media and websites as they are the most common sources of information for today's youth as seen in the study.

Many stakeholders are not familiar with green finance and perceive potential risks which are evident in the need for success stories in the implementation of green finance together with clear guidelines that demonstrate how green financial instruments bring real life change. Green finance must no longer be regarded as a novelty; its efficiency must be proved, and it must be advertised as an investment worth making.

## 9. CONCLUSIONS

This research has revealed a significant level of awareness and equally discovered a huge implementation deficit within the scope of green finance. This is true in the case of green finance and

products such as carbon credits, green insurance and green venture capital in which most people have low awareness in comparison to conventional financial instruments. The study also highlights some variables like the field of study, the occupation and income levels as some of the drivers of the awareness and adoption of green finance mechanisms.

These observed higher relationships between demographic factors and awareness levels suggest that there is need for more focused education to encourage people to engage in green finance. Thus, green finance's possibilities to develop into an essential driver of change for a more sustainable financial system and move towards a low-carbon economy remain underexplored because of individuals' uncertainties and misinterpretations. If these issues are addressed & if education, incentives, and access increased across stakeholders, then green finance can be used better by the stakeholders and that can bring about valuable changes to the environment to support the greater United Nations sustainability agenda.

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