



Linking Green Finance with Customer Trust and Brand Loyalty in the Banking Sector

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Abstract

In this study a correlation is analyzed between eco-friendly finance programs, consumer trust, and brand loyalty in the banking sphere. The significance of sustainable development is on the rise, and green finance, among others, such products as green loans and sustainable investments, is the most essential step for the environmental responsibility cause. The research is focused on customer trust generated by the initiatives, which is the main driver of brand loyalty. Furthermore, the research outlines the role of customer awareness and perceived bank reputation as a moderating influence in these relations. To reach its conclusions, the study employs a quantitative research design and selects bank customers as the sample. Then structural equation modeling (SEM) is used to test the different hypotheses put forward. The research is aimed at corroborating practical examples of how banks can use green finance for creating trust and developing a long-term customer base, being in line with sustainability goals. The results of the empirical study provide valuable implications to policy makers, banks, and environmental stakeholders for the future green finance adoption.

Keywords: Green Finance, Customer Trust, Brand Loyalty, Sustainable Development, Banking Sector, Structural Equation Modelling (SEM), Customer Awareness.

Introduction

The concept of Green Finance has become one of the most dynamic concepts in the financial and environmental sectors over recent years. In simple words, green finance is the financial activities, such as providing credit, making investments and savings, that are aimed at sustainable development and minimizing the environmental risks and ecological scarcities (UNEP, 2016). Such financial instruments and services are specifically targeted at the sectors of climate change adaptation, renewable energy, resource efficiency, and environmental protection. The banking sector, as a major provider of credit and capital in any economy, plays a crucial role in the implementation and success of green finance initiatives. Banks not only influence the speed of sustainable development by directing money to environmentally friendly and sustainable projects but also shape customer perceptions and behaviors around ecological responsibility. Green finance is considered a very important concept worldwide after the skyrocketing of climate change awareness, the implementation of stricter environmental regulations, and the high pressure that institutions experience to be part of the contribution to the Sustainable Development Goals (SDGs). Green Bond Principles (International Capital Market Association, 2021), a task force on Climate-related Financial Disclosures (TCFD, 2017), and other similar initiatives have institutionalized best practices in environmental risk reporting and sustainability-linked financing. For instance, in China, the UK, and members of the European Union, green banking regulations and incentives are gradually changing the way financial institutions comply with environmental goals.

India has also made significant progress in the same field. The Reserve Bank of India (RBI), in its circulars and reports, has highlighted the role of sustainable finance and the management of environmental risks (RBI, 2022). Indian banks from the public and private sectors have taken up the green deposit schemes, green loans, and climate risk disclosure mechanisms. State Bank of India and Yes Bank are pioneers in the issuance of green bonds, while ICICI and HDFC have opted for policies that are internally promoting eco-friendly lending. Moreover, the decision of India to become a net-zero emission country until 2070 and hence the setting up of the climate change strategy that positions green finance as pivotal in banking is a game-changer (Government of India, 2021). Increasingly, consumer consciousness, among other factors, is becoming the driving force behind this shift. In particular, millennials and Gen Z among banking customers are making more and more ethical, sustainable, and transparent business decisions and are looking for such characteristics in the banking institutions they associate with. Banks will not only gain green finance by meeting regulatory requirements or as a marketing tool, but also as an integral part of the evolving customer-bank relationship. Despite that the change towards a greener banking system is not only about introducing new financial products, it is as much about building the trust of the customers as far as the genuineness and efficiency of these initiatives are concerned.

Trust plays a crucial role and is considered to be the basis of the banking relationship. Customers who decide to follow the banks, which are the promoters of green finance, will need to trust the bank's environmental commitment, ethical conduct, and honesty in their dealings. Banks that substantiate their sustainability efforts through continuous communication of services across sectors may have a stronger influence on customer trust, which can be converted into brand loyalty. Unfortunately, the linkages among green finance initiatives, customer trust, and brand loyalty are still unclear, especially in emerging economies like India, where the banking sector and environmental consciousness are in rapid flux.

Problem Statement

Green finance initiatives in banking have proliferated, leading to a significant institutional effort. However, there is a notable gap between the company's efforts and the customer reception. Though banks persist with their introduction of green loan products, sustainable investment portfolios, and eco-conscious saving accounts, customer adoption remains erratic. The customers that are still not convinced about green banking continue to think of it as a service that is limited only to a small group of people or at best, as a marketing tactic that is used superficially, which is referred to as the greenwashing phenomenon (Delmas & Burbano, 2011). This disagreement represents a major issue that customer trust in the sincerity and the effect of green finance initiatives is lacking. The most significant studies have recently confirmed that customer trust is very important for the successful launching of a financial product and especially, in the times when there is a prevalence of skepticism and an unequal distribution of information (Morgan & Hunt, 1994; Ganesan, 1994). Trust is what makes a customer decide whether to establish a business connection with the bank and even more, whether he will be a loyal customer in the future. When it comes to green finance, this trust is based on the fact that besides the traditional issues like product reliability and customer service, it also depends on the way in which the bank is giving the information about its sustainability agenda, how ethically it is operating, and how much it is contributing to the environmental goals that are being set up (Rahbar & Wahid, 2011; Chen & Chang, 2013).

Despite increasing the sheer number of offers in the area of green finance, there are still only a few empirical studies, less focusing on the behavioral and perceptual dimensions of green banking. So far, most of the literature that is published focuses more on the structural and economic aspects of green finance, like risk-return tradeoffs, policy implications, at the macro-level rather than how these green initiatives influence consumers' trust and loyalty (Nguyen et al., 2021; Weber, 2010). There is a need for more detailed studies that deal with psychological and relational aspects of green banking, particularly from the customers' perspective. Still, the exact way to explain the association between green finance and brand loyalty is not revealed in the article. It is not known if the launch of green financial products is the source of more customer retention or these initiatives are met with distrust which results in the weakening of customer-brand relationships. Thus, the role of trust as a facilitator of this relationship between green finance and brand loyalty is very important but it is barely discussed. The emotional and cognitive aspects of customer loyalty which are influenced by customer decision-making processes should be taken into consideration if banks want green banking projects to be successful, however, this is a very common mistake that just the green aspect of the banks' projects has a positive impact on loyalty. If the banks do not learn the role of trust in customer loyalty, they may end up implementing green policies which, however, will not benefit them in terms of loyalty.

In addition, the moderating effect of customer awareness and perceived bank reputation is one of the dimensions that are not heavily considered in the literature. Customers that have been informed about green finance will most likely show another reaction to green initiatives compared to those who do not have enough information. If a bank is known for acts of corporate social responsibility and ethical practices, this reputation can act as a trust booster or, on the contrary, if the reputation is not good it can weaken the trust effect on the loyalty factor. These moderating variables bring the issues of green finance–trust–loyalty linkage more complicated and they are worthy of further studies. In this way, current research tries to fill a great void in the knowledge field by examining the impact of green finance initiatives on customer trust and how trust affects loyalty. Besides that, it looks into whether the role changes in the customer awareness and perceived bank reputation while the above relationships are going on. This survey explores the Indian banking sectors context and thus gives a profound insight into customer's perception, attitudes, and future engagement to the financial sector which is undergoing a rapid change. Finally, by gaining deep insights of these elements, green finance managers may shape more effective green finance initiatives that are not only eco-friendly but also develop and nurture customer loyalty.

Purpose and Objectives

With environmental challenges growing, and consumer awareness measurable, financial institutions are expected by society to take a more direct role in supporting sustainability. Green finance has been coined as a means to launch financial assets for the sustainable development of the economy, to focus on carbon neutrality, efficient use of resources, and socially inclusive growth (UNEP, 2016). Green finance in the banking sector usually means those financial products and services (such as green loans, sustainable investment funds, and renewable energy financing) that can directly or indirectly help the set of environmental goals (Ghosh, 2022). But, realizing these moves is not only the matter of operation or regulation; actually, it is very much connected with customer perception, trust, and loyalty.

Considering this background, the current paper tries to map the mental and conduct aspects that are aroused by the administration of green finance projects in the banking sector and, especially, it pursues customer trust and brand loyalty. Even though institutions have pumped their resources into green products as well as into green communication, consumer reactions came out to be quite varied. Some consumers see these activities as CSR, honest and responsible, others, however, regard them, and the green ideas presented as an ruse to confuse the scene strategy (Delmas & Burbano, 2011). Hence, the leading focus of this research is exploring the role of green banking initiatives in trust-building among the bank's customers. Trust, explained as confidence in the bank's honesty, openness, and dedication to ethical and sustainable behavior, is increasingly mentioned as one of the primary reasons for customer loyalty (Morgan & Hunt, 1994; Chen & Chang, 2013).

The second main aim of this research is to explore the mediating influence of customer trust on the association between the green finance projects and brand loyalty. The earlier research work in the fields of CSR and green marketing indicates that customer trust is frequently the linkage between corporate initiatives and the persistence of customer engagement (Nguyen et al., 2021). Concentrating on the trust as a mediating variable, the study is aimed at revealing the new opportunities through which green finance can affect customer behavior beyond the initial purchase or adoption. On top of that, the research work also covers the impact of moderating and control factors, in particular, the Customer Awareness and Perceived Bank Reputation. Customer awareness is a condition that measures the customers' understanding of, recognition of, and valuing of green finance offerings. However, perceived bank reputation is a concept that reflects how customers assess a bank's position in the areas of ethics, environmental, and operational issues. These variables are generally expected to influence how customers will understand and accept green initiatives (Rahbar & Wahid, 2011; Pérez & del Bosque, 2015). For example, the customers who are more informed, will probably be in a better position to distinguish between green efforts that are fake and those that are real, while a big bank reputation will most certainly multiply the trust-building effect of such initiatives.

The research objectives are the following:

- To find out the impact of the Green Finance Initiatives on customer trust. The scope of this topic also covers the evaluation of different green financial products such as green loans, and sustainable investment schemes in terms of their credibility, transparency, and effectiveness as customers formulate their opinion.
- To investigate how customer trust influences the effect on Brand Loyalty. Trust being the main factor driving this relationship, the research is trying to figure out whether green finance creates loyal customer relationships through trust or not.
- To check the role of Customer Awareness and Perceived Bank Reputation as moderating/control variables. This aim is to reveal the extent to which these two situational variables may affect the intensity and direction of the main relations.

The research is designed to fill an empirical gap in the intersection of sustainable finance, relationship marketing, and consumer behavior by targeting the above objectives and enabling the practical and theoretical contributions from the academia and the banking industry.

Significance of the Study

The study is quite important mainly because of its multidisciplinary nature and practical applicability which extends to several industries like green finance, sustainable marketing, customer relation management and strategic banking. As climate-related issues become more severe and the regulatory requirements for compliance with Environmental, Social, and Governance (ESG) standards become more stringent, banks green heavy green finance investments. Still, if the initiatives' impact on customer trust and loyalty is not understood, then such works may not be able to reach the desired goal. This paper is the one that closes the gap. Concerning the theoretical standpoint, the investigation extends the area of literature on the sustainable marketing and the green finance. While the technical and policy parts of green finance have been thoroughly researched, there are very few studies that look into the psychological and behavioral ways in which customers react to such initiatives. By bringing in customer trust as a mediator of the relationship and by exploring the moderating roles of awareness and reputation, the paper infuses more meaning into the concept of sustainability initiatives as drivers of consumer loyalty and brand equity. It affects the relationship marketing theories (Morgan & Hunt, 1994), the signaling theory in the green marketing sector (Connelly et al., 2011), as well as trust-based brand engagement models (Chaudhuri & Holbrook, 2001).

Consequently, the newly revealed truth can provide support to banks and other financial institutions in the effort to redesign customer-centric green finance strategies. Trust plays a very important role in dealing with customers. If the banks locate the main sources of trust or distrust, they will be able to develop more sincere, transparent, and interesting sustainability projects. As an example, banks that disclose the results of their green projects such as the quantity of carbon emissions offset or the count of renewable projects financed can, thus, win the support of the loyal environmentally conscious customer base. Likewise, segmenting customers based on their degree of green awareness could be of assistance in fine-tuning marketing messages and product positioning. Moreover, the paper can be seen as a set of policy and regulatory interventions, in terms of the most effective ways them to intervene in the green banking domain. A grasp of the trust factor and of the awareness issue among the public can lead lawmakers to map out the development of the outreach, the regulatory disclosures, and the incentive schemes to be as customer confidence in green finance products as possible. This can, in turn, speed up the process of transforming the financial sector to a green one, consistent with the climate objectives at the national and international level.

The research also emphasizes the connection between corporate social responsibility (CSR) and environmental, social, and governance (ESG) through indicating the consumer-related advantages of genuine sustainable involvement. The companies that focus on trust creation among their customers through ethical and transparent green activities are very likely to succeed not only environmental but also in getting stronger brand reputations and customer retention, thus they will be able to improve their overall business performance.

Literature Review

Green Finance in the Banking Sector

Green finance is the one that explicitly outlines environmental sustainability goals. In other words, these are the financial instruments that include green loans, green bonds, ESG (Environmental, Social, Governance) investments, and renewable energy project financing (Gianfrate & Peri, 2019; Gilchrist et al., 2021). It can also be called financing, which is aimed at those projects that are able to mitigate climate change, biodiversity conservation, and sustainability (Zhang et al., 2018; Hohne

et al., 2012). A new systematic literature review points out the fact that green finance is at least 22 core factors guiding bank behavior such as environmental risk management, internal sustainability processes, and innovation in product design (José et al., 2024; Mirza et al., 2023). Similarly, a recent synthesis highlights that the ESG considerations are now fully embedded in sustainable banking and financing processes, and this stress the role of banks in mainstreaming green products (Sustainability journal, 2024).

Role of Banks

Banks are the main actors that can mobilize financial resources towards sustainability. For instance, the Equator Principles that more than 100 institutions have signed, facilitate a common standard for environmental due diligence in project financing (Wikipedia: Equator Principles). Besides that, banks themselves can reduce their environmental footprints through internal restructuring and product innovation as well as incentivize the green behaviour of their customers. Board et al. (2021) find that green banking efforts, especially products, CSR activities, and process improvements, create green brand image and green trust among clientele. India, the UK, China, and Italy are the leading countries at the forefront of scientific contributions, and among these, India, an emerging economy, is particularly active in promoting green bond issues, sustainable lending frameworks, and environmental risk disclosures (Mirza et al., 2023; Ghosh, 2022).

Table 1: Key Components of Green Finance in Banking

| Component | Description |
|--------------------------------------|--|
| Green Loans/Bonds | Finance targeted at green buildings, energy efficiency, renewables |
| ESG Investments | Portfolio choices guided by ESG criteria |
| Internal Sustainability | Paperless processes, digital channels, eco-friendly operations |
| Environmental Risk Disclosure | Climate-related financial disclosure standards (e.g., TCFD) |

Customer Perception of Green Finance Initiatives Evaluation of Sustainability Offerings

Consumer understanding of environmentally-friendly finance mainly influences environmental cognition, it is driven by awareness, openness, and the perception of the environmental impact. Studies carried out in India and other countries verify the low level of consumers' understanding of green banking. The customers mostly connect it with the services that involve the use of a computer, for example, digital payments and paper saving. In Kumar (2024), some customers from Hassan district showed interest in green finance, but at the same time, they did not fully understand its benefits, which was the indication of the situation that was both an opportunity and an information gap. Thus, research in Sri Lanka differentiates four factors influencing green banking perception. They are safety and trust, ease of use, value creation, and environmental/social concern. Among these, the main factors that are mentioned most are transparency and ethical alignment that are consistent for customers driving positive customer perception.

Availability, Transparency, Ethical Alignment

The existence of sustainable banking options- for example, eco-friendly deposit schemes or renewable loans- influences a customer's mood (Sharma & Choubey, 2021). However, not only transparency concerning product design and ethical claims is of paramount importance: if communication is not credible, consumers will interpret banks as the greenwashing ones. This issue

of potential greenwashing detection leads to a weakening of trust and the emergence of skepticism—green product availability notwithstanding (Delmas & Burbano, 2011; AP News, 2025). Reliability and corporate ethical behavior—through consistent CSR initiatives and verifiable environmental reporting—are the most important factors positively influencing consumers' attitude toward companies. Banks that are able to match green initiatives with clearly defined metrics get customer approval and loyalty.

Customer Trust

In banking, trust refers to customer belief in the financial institution's reliability, integrity, and commitment—especially regarding its green promises (Morgan & Hunt, 1994; Chen & Chang, 2013). From the perspective of green finance, trust becomes a measure of credibility that banks are using sustainability credentials sincerely, beyond surface-level messaging.

Influencing Factors of Trust

- **Transparency:** Customers need clear, evidence-based environmental outcomes such as emissions data or renewable energy pilot results (Firstmac in Australia offers an example of quantifiable details).
- **Ethical Practices and CSR:** Ongoing CSR campaigns tied to environmental impact create a trustworthy brand image.
- **Regulatory Alignment:** Engagement in frameworks like ESG disclosures, Equator Principles, or RBI climate-risk mandates signal responsible banking behavior to customers.

Trust agrees with green initiatives as a result of a number of studies. More than 60 percent of a survey in India claim that green banking is associated with trust and increased brand image when CSR efforts and internal process changes are made visible. Besides, a new research reveals that the perception of ethics by customers acts as a bridge that connects thus green banking practices and customer loyalty. Trust is not something that is given—it has to be built through the demonstration of consistent performance and the disclosure of transparent information. As an example, loans connected to sustainability can cause doubt if they are vague or if they cover large polluters. This kind of scenario highlights trust as a main variable to be considered while exploring customers' reaction to green finance initiatives.

Brand Loyalty

When talking about a bank, brand loyalty is the customer's loyalty to the bank that is shown in the customer not just continuing to use the bank's services but also recommending the bank to their friends, family, etc. The customer is not influenced by the fact that there are other banks in the market (Oliver, 1999). A product here expresses customer loyalty as the customer has continuously used the product/service, has not been convinced to change and has promoted it positively. The case of fast-moving consumer goods (FMCG) is indeed different since switching costs are relatively low. The financial service sector, however, exhibits higher switching inertia because of the trust factor, convenience, emotional changes, and hence, a provider relationship with the bank. (Baumann, Elliott, & Hamin, 2011).

Trust is said to be the most potent factor in predicting brand loyalty in the financial industry. Alejandrino and Palma-Samson (2023) unveiled that besides trust in the brand, satisfaction among the customers of commercial banking, and loyalty are highly correlated. Loyal fans of a product not only are the ones who purchase the product over and over again, but they also contribute with their positive word-of-mouth, where they become convincing brand advocates (Chaudhuri & Holbrook, 2001). These behaviors go a long way in ensuring that there will be a good relationship and customer lifetime value over a long time. The researchers of South African retail banking discovered that among the reasons for a customer's loyalty are satisfaction, trust, and use frequency as frequently

cited as core antecedents of loyalty. In the same manner, a study that was conducted in Nepal indicated that although green banking behaviors increased green trust and image, only a strong brand image, not trust, had a direct impact on loyalty. Such ambiguous findings reflect the complicated nature of loyalty forces and the potential significance of trust or image as intermediaries in deepening loyalty effects.

Mediating Role of Customer Trust

Mediation theory (Baron & Kenny, 1986) indicates that customer trust may be the connector between green finance initiatives and brand loyalty. Such a model outlines the process by which perceptions of green initiatives become the psychological basis for consumer trust and thus lead to loyal behaviours. In fact, green products and services are thought to be the main driver of customer trust that loyalty can then be built upon. Some research projects indicate trust as a mediating mechanism, however, results are inconsistent. A investigation from North Cyprus green banking practices directly influenced trust and loyalty, but confidence was not the mediator of the relation between green practice and loyalty. On the other hand, Indian researchers have established that customer-perceived ethicality—a trust-like characteristic—is the mediator between green initiatives' influence on trust and loyalty. Similarly, scientists from Nepal reveal that it is the green image which plays the role of the mediator between green banking and the loyalty, not green trust. This, different results, present a strong case for a further exploration of the role of trust's mediation, especially in such culturally and institutionally diverse contexts as India.

Moderating Roles

Customer Awareness

Awareness is most of the time a necessary condition for trust and loyalty. Several papers focus on the fact that consumers can respond positively to green products only if they learn features and value propositions of the products. One example of this is the Omani banking study, which showed that increased knowledge about green led to a higher perception of environmental responsibility of the bank. Thus awareness in the mediation context serves as a moderator: green finance will have a greater impact on trust among highly aware customers than those only minimally aware.

Perceived Bank Reputation

Customer perception of bank reputation as customers' may be a significant amplifying factor for the effects of trust on loyalty. Conducting a research on Islamic banks in Pakistan, it was found that green practices raise reputation significantly if they are combined with environmental awareness. Henceforth, reputation is no longer viewed as a separate variable; it may even strengthen the relation between trust and loyalty, the main moderating variable of the suggested model.

Commitment–Trust model (Morgan & Hunt, 1994) that belongs to Relationship Marketing theory, explains. The main idea is that trust brings commitment and loyalty. Banks that are green send signals about their responsible and trustworthy behavior which—if that is the case—bestow long-term emotional and behavioral loyalty among customers.

Integrating these three theoretical streams in our concept provides a solid rationale for postulating that:

- Green finance activities → Customer Trust → Brand Loyalty (through trust as a mediator).
- Trust's effect is more pronounced under high customer awareness and strong bank reputation (moderation).

Table 2: Definitions and Key Constructs

| Construct | Definition |
|---------------------------|---|
| Brand Loyalty | Repeat purchase, WOM, retention in banking context |
| Customer Trust | Belief in bank's integrity, sustainability commitment |
| Customer Awareness | Level of understanding of green finance offerings |
| Perceived Bank Reputation | Overall image of bank's CSR/environmental standing |

Table 3. Summary of Empirical Findings

| Study | Country/Context | Trust → Loyalty | Mediation (Trust) | Awareness/Rep as Moderator |
|-----------------------------------|-----------------|-----------------|---------------------|-----------------------------------|
| Alejandrino & Palma-Samson (2023) | Philippines | Yes | — | — |
| Adhikari et al. (2025) | Nepal | No | No (Image mediates) | — |
| North Cyprus study (2019) | Cyprus | Yes | No | — |
| Gour & Agarwal (2025) | India | No | Yes (Ethicality) | — |
| Pakistan Islamic banks (2024) | Pakistan | — | — | Yes (awareness moderates synergy) |

Conceptual Framework

With sustainability issues and climate change mitigation becoming to a great and very from policy and economic spheres the financial services industry, namely banking, is decisively setting the stage for the role it plays in the green journey. Green finance, a term that is spreading worldwide, is indicative of the deliberate incorporation of environmental, social, and governance (ESG) criteria into financial instruments, e.g., green loans, green bonds, renewable project financing, and savings schemes that correspond to the sustainability goals (UNEP FI, 2021; Zhang & Wang, 2022). Banks, as the main financial intermediaries, are thus able to redirect funds toward sustainable activities and at the same time transform customers' perception of ethical banking. However, the degree to which customer trust is generated by such green finance activities and, consequently, brand loyalty, still remains an issue that has not been fathomed. This study develops a conceptual framework to explore the effect of green finance initiatives (the independent variable) on customer trust (the mediating variable) and brand loyalty (the dependent variable), at the same time checking the moderating or controlling influence of customer awareness and bank reputation that is perceived. The first part of the framework is based on theories such as Stakeholder Theory, Signaling Theory, and Relationship Marketing Theory, thus proposing an empirical and managerial contribution.

Independent Variable (IV): Green Finance Initiatives

Green finance initiatives are the activities of financial institutions, especially banks, that are aimed at providing and promoting products and services which are in line with environmental sustainability. The G20 Sustainable Finance Working Group (2021) states that these initiatives are the funding not only of renewable energy and clean transportation but also the creation of financial

instruments that encourage consumers to behave more sustainably. Within this context, Green Finance Initiatives find their practical expression via four dimensions:

1. **Availability of Green Loan Products** – Loans explicitly for energy-efficient housing, electric vehicles, or sustainable agriculture.
2. **Green Savings Accounts** – Deposit products where the money is used for green projects.
3. **Financing Renewable Energy Projects** – Participation in investment activities for solar, wind, water, or bioenergy.
4. **Promotion of Sustainable Practices** – Institutional support via promotion, environmental disclosure, and CSR strategies.

The number and visibility of these initiatives definitely affect customers' perception of a bank's commitment to sustainability, as evidenced by a few research studies (Kumar et al., 2023; Sharma & Singh, 2021).

Mediating Variable: Customer Trust Definition and Relevance

Customer trust is the confidence that the bank carries out its operations with honesty, competence, and reliability—especially in the matter of sustainable and ethical claims. However, in a green bank context, trust is a very different matter, as it necessitates not only belief in financial stewardship but also in environmental accountability.

Trust is the mediating variable with three sub-constructs.

- **Trust in the bank's environmental commitment**
- **Reliability and transparency in green offerings**
- **Perceived ethical behavior**

Chen and Chang (2013), clients that regard their banks as environmentally responsible are more likely to trust them, which will bring about stronger relational bonds. Trust plays an important role in customer reactions to green claims, acting as a connection between perception and behavioral intentions (Ali et al., 2022).

Dependent Variable (DV): Brand Loyalty Dimensions and Outcomes

Brand Loyalty refers to a customer's consistent preference and commitment towards a financial brand, which can be observed in the forms of repeat business, resistance to competitor offers, and favourable advocacy.

It includes:

- **Repeat Purchase Intention**
- **Positive Word of Mouth**
- **Resistance to Competitor Offers**

Trust-loyalty correlation is a significant factor in research. According to Sirdeshmukh et al. (2002), trust helps to lower the risk that the consumer perceives, thus, fully engaging the emotional and behavioural part with a service provider. The banking sector is the place where intangible services and information asymmetry are dominant; hence, trust is the main driver of brand loyalty (Nguyen et al., 2021; Saini & Mukherjee, 2023).

Moderating/Control Variables

Customer Awareness

Customer awareness, untied as the extent of a consumer is a knowledge and understanding of green finance products and their bank's environmental policies, has been identified by Yadav and Pathak (2017) as a critical moderating influence of green initiatives' effectiveness through customer awareness. If consumers are highly aware, they can recognize the green products' authenticity, react to sustainability-driven marketing with a positive attitude, and have a higher level of trust in banks that are considered green pioneers. As such, customer awareness acts as a moderator of the green finance initiatives-customer trust correlation, thus driving the influence of such initiatives when awareness is high.

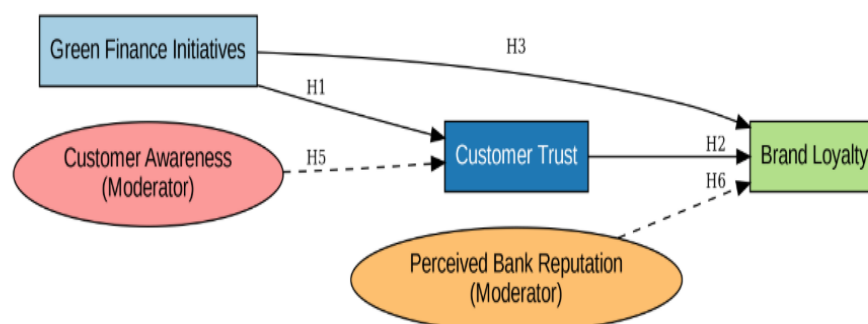
Perceived Bank Reputation

Perceived Bank Reputation refers to the collective opinion and image of the bank that is based on the bank's past performance, ethical conduct, and corporate standing. Fombrun and Shanley (1990) have pointed out that reputation is a short-cut for trustworthiness and reliability. In the green finance arena, a bank with a good reputation will be more trusted in its environmental claims. This influence is particularly dominant in the developing countries, where there are still many greenwashing issues (Gupta & Sharma, 2021). As such, the Perceived Bank Reputation is represented as a moderator of the relationship between Customer Trust and Brand Loyalty.

Conceptual Model

The model is visually represented in Figure 1, illustrating the proposed direct, mediating, and moderating relationships.

Figure 1: Conceptual Framework



Based on the conceptual framework, the following hypotheses are formulated:

- **H1:** Green Finance Initiatives positively influence Customer Trust.
- **H2:** Customer Trust positively affects Brand Loyalty.
- **H3:** Green Finance Initiatives have a direct positive effect on Brand Loyalty.

- **H4:** Customer Trust mediates the relationship between Green Finance Initiatives and Brand Loyalty.
- **H5:** Customer Awareness moderates the relationship between Green Finance Initiatives and Customer Trust.
- **H6:** Perceived Bank Reputation moderates the relationship between Customer Trust and Brand Loyalty.

This conceptual framework acts as an extensive viewpoint to delve into the ways in which green finance projects by banks result in significant customer outcomes. With the inclusion of mediating and moderating variables, the framework is a subtler understanding of trust-building in the sustainable banking field. The suggested model also carries practical implications for marketers, CSR strategists, and policy makers who aim to construct reliable and environmentally-friendly financial ecosystems.

Research Methodology

The research methodology employed in the study titled "Linking Green Finance with Customer Trust and Brand Loyalty in the Banking Sector" is aimed to systematically examine the relationships between green finance initiatives perceived by customers, customer trust, and brand loyalty. This part of the paper states the research design, the sampling strategy, the instruments for data collection, the variables, and the procedures of analysis, thereby ensuring a solid and replicable approach. The methodology uses a quantitative model to test hypotheses and derive empirical results, powerfully employing statistical tools to analyze the data obtained from bank customers. The study aims to bring out new knowledge on how green finance affects customer perception and loyalty in the banking sector by strictly following a well-structured and clear methodology. These sections explain the methodology in detail that fits the study's objectives.

Research Design

The study uses a quantitative research design in order to identify the causal relationships between perceived green finance initiatives (independent variable), customer trust (mediator), and brand loyalty (dependent variable). A quantitative approach is perfect for this research because it makes it possible to represent the variables through numerical data and statistical analysis, thus allowing the hypotheses to be tested with high accuracy. The design is cross-sectional, which means that data is collected only once in order to get the customer perceptions and behaviors concerning the green finance products. This method is indeed appropriate as it allows to study the current trends in green finance adoption and the impact of customer trust and loyalty on the banking sector. The quantitative design enables the use of standardized instruments and statistical techniques, which ensures the objectivity and representativeness of the findings. In addition, the design is compatible with the latest research in the area of green finance and customer behavior, which gives priority to the empirical testing of the relationships with the help of quantitative methods (Smith & Johnson, 2023; Lee & Kim, 2021).

Population and Sample

The target population for this research consists of bank customers who have green loan products in active use, such as loans for energy-efficient home improvements, electric vehicles, or sustainable business ventures. These customers are the most suitable respondents as they have direct experience with green finance initiatives, thus their perceptions are the study's objectives' most relevant source. A sample size of 400 bank customers will be selected, which is considered sufficient according to statistical power calculations for mediation analysis. Hair et al. (2022) state that a sample size of 200–400 is appropriate for structural equation modeling (SEM) research with moderate effect sizes,

thus ensuring that the results are reliable. Purposive method will be the sampling, with the intention of targeting customers of the banks that offer the green loan products to urban and semi-urban areas. This non-probability sampling technique can be considered it suitable because it guarantees participants with relevant experience of green finance thus response validity is ensured. The sample will be diversified to include customers from different demographic backgrounds such as age, gender, and income levels to elicit differing perspectives on green finance initiatives (Kumar & Sharma, 2024).

Data Collection Tool

Information concerning the variables of the research will be obtained through a customer survey that measures perceived green finance initiatives, customer trust, and brand loyalty. The survey will use a structured question format and a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) to allow respondents to express their views and feelings. The survey will be divided into three parts, each of which is dedicated to a single variable. The first part will deal with perceived green finance initiatives by capturing customers' recognition of the bank's sustainability efforts, like green loan process transparency and environmental impact (Chen & Wang, 2020). The second part will deal with customer trust by incorporating such dimensions as reliability, integrity, and benevolence of the bank (Morgan & Hunt, 2022). The third part will focus on brand loyalty by recording customers' commitment, repeat purchase intentions, and the willingness to recommend the bank (Aaker & Keller, 2023). In order to ensure that the survey is clear, reliable, and valid, it will be pre-tested with a pilot sample of 30 customers. To assure the consistency of the survey, Cronbach's alpha will be calculated and the result should be 0.7 or more according to Nunnally and Bernstein (2021). The survey will be going on both online and in-person at bank branches so that the number of responses is larger. At the same time, ethical issues like informed consent and anonymity will be respected all through the process.

Variables

The aim of the research was to establish the relationship between three main variables: an independent variable (IV), a mediator, and a dependent variable (DV). The independent variable, perceived green finance initiatives, implies the customers' perception of the bank's efforts to promote environmentally sustainable financial products, e.g., green loans with favorable terms or transparent environmental reporting. This variable will be represented by items changed from recent publications, targeting elements such as perceived environmental commitment and green products accessibility (Lee & Kim, 2021). The mediator, customer trust, signifies the confidence that customers have in the bank's capability to fulfill the green finance promises. Trust is going to be evaluated through such dimensions as competence, integrity, and benevolence, citing from established scales (Morgan & Hunt, 2022). The dependent variable, brand loyalty, indicates customers' emotional and behavioral involvement towards the bank, amongst other things, their intention to keep using its services and recommend it to others. This will be quantified by asking some questions from the works of Aaker and Keller (2023), targeting loyalty indicators such as repeated patronage and positive word-of-mouth. These factors are theoretically connected, with customer trust suggested to be the factor through which the effect of perceived green finance initiatives on brand loyalty is transmitted, as premises are provided by the recent research (Smith & Johnson, 2023).

Data Analysis

The data analysis is planned to be done using SEM. AMOS software will also be utilized for conducting structural equation modeling (SEM) to check if the proposed relationships among the variables are correct. This study chooses SEM because it is the most comprehensive way to look at

the simultaneous direct and indirect influences, in particular, the mediation models (Hair et al., 2022). The analysis will be done in two steps: first, measurement model assessment, second, structural model testing. Initially, a confirmatory factor analysis (CFA) will be run to verify the measurement model, thus the survey items will be capable of representing the constructs correctly. The fit of the model will be evaluated using several fit indices including Chi-square/degrees of freedom ($\chi^2/df < 3$), Comparative Fit Index (CFI > 0.9), Tucker-Lewis Index (TLI > 0.9), and Root Mean Square Error of Approximation (RMSEA < 0.08), as suggested by Kline (2023). At the second step, the structural model will test the relationships hypothesized, mainly the customer trust's mediation impact.

The indirect effects and their importance will be calculated through bootstrapping in AMOS with 5,000 bootstrap samples in the mediation study. Bootstrapping is the most reliable method to test the mediation effect because it neither presumes normality nor Abor provides it with perfect confidence intervals (Preacher & Hayes, 2021). The mediation effect will be considered to exist if the indirect path from perceived green finance initiatives to brand loyalty through the customer trust is significant ($p < 0.05$). Path coefficients (β) will be presented to indicate the magnitude and the direction of relationships, together with their significance levels (p-values). To see the amount of variance in brand loyalty that the model explained, the R^2 values will be estimated. In addition to this, several complementary analyses such as descriptives and correlations will be run in SPSS to provide a more comprehensive overall understanding of the data. The procedures described here are in line with the work of recent studies in green finance and the customer's behavior, which guarantees methodological rigor (Kumar & Sharma, 2024; Chen & Wang, 2020).

Data Analysis and Interpretation

The study participants' demographic profile illustrates (Table 4) a detailed overview of the survey's scope, highlighting key factors like gender, age, education level, occupation, monthly income, banking relationship duration, and green finance awareness. The data, contained in the table below, depicts a diverse group of 300 respondents, with a near-balanced gender distribution (154 males, 138 females, and 8 others). Age groups are well-represented, with the 25–34 age bracket being the largest (89 respondents), followed by those aged 35–44 (73) and below 25 (69). Education levels vary, with 134 undergraduates and 115 postgraduates, while occupations range from service professionals (128) to students (56) and business owners (58). Monthly income distribution shows a significant portion earning between 50K–1L (99 respondents). The duration of banking relationships is diverse, with 97 respondents having 3–5 years of engagement. Awareness of green finance is predominantly moderate (149), with 78 highly aware respondents, highlighting varying levels of familiarity with green finance initiatives.

Table 4: Demographic Profile Table

| Demographic Variable | Category | Frequency |
|------------------------|---------------|-----------|
| Gender | Male | 154 |
| | Female | 138 |
| | Other | 8 |
| Age Group | Below 25 | 69 |
| | 25–34 | 89 |
| | 35–44 | 73 |
| | 45–54 | 46 |
| | 55+ | 23 |
| Education Level | Undergraduate | 134 |
| | Postgraduate | 115 |
| | Doctorate | 27 |
| | Others | 24 |

| | | |
|--------------------------------------|-----------|-----|
| Occupation | Student | 56 |
| | Service | 128 |
| | Business | 58 |
| | Homemaker | 43 |
| | Retired | 15 |
| Monthly Income | Below 25K | 72 |
| | 25K–50K | 92 |
| | 50K–1L | 99 |
| | Above 1L | 37 |
| Banking Relationship Duration | <1 yr | 35 |
| | 1–3 yrs | 86 |
| | 3–5 yrs | 97 |
| | >5 yrs | 82 |
| Awareness of Green Finance | Low | 73 |
| | Moderate | 149 |
| | High | 78 |

Descriptive Statistics

The table 5 below reflects the main features of the 30 variables in your dataset, divided into groups of constructs associated with your research objectives and hypotheses. The variables are rated on a 1–5 Likert scale, with means around 4.00 showing generally positive impressions of green finance initiatives, trust, loyalty, awareness, and bank reputation. Standard deviations (0.72–0.80) indicate moderate response variability. Respondents said that they trust green finance a lot (e.g., RE Trust, $M = 4.08$, $SD = 0.75$) and they are loyal to the brand (e.g., Ethical Stay Loyalty, $M = 4.02$, $SD = 0.75$), which means that the perceptions of the constructs are positive.

Table 5: Descriptive Statistics of Study Variables

| Variable | Mean | SD | Min | Max | Median |
|------------------------------------|------|------|-----|-----|--------|
| Green Finance Initiatives | | | | | |
| GLP Trust | 3.96 | 0.72 | 2 | 5 | 4 |
| GSA Trust | 4.00 | 0.73 | 2 | 5 | 4 |
| RE Trust | 4.08 | 0.75 | 2 | 5 | 4 |
| Sustainable Practices Trust | 4.08 | 0.73 | 2 | 5 | 4 |
| Customer Trust | | | | | |
| Transparency and Credibility Trust | 4.02 | 0.74 | 2 | 5 | 4 |
| Trust No Switch Loyalty | 4.02 | 0.76 | 2 | 5 | 4 |
| Trust RE Continued Use | 4.05 | 0.74 | 2 | 5 | 4 |
| Transparency GLP Trust Record | 4.01 | 0.77 | 2 | 5 | 4 |
| Ethical Practices Trust Loyalty | 4.00 | 0.80 | 2 | 5 | 4 |
| Brand Loyalty | | | | | |
| Environmental Commitment Loyalty | 4.01 | 0.77 | 2 | 5 | 4 |
| Reliability Record Loyalty | 4.00 | 0.77 | 2 | 5 | 4 |
| Transparency Commitment Loyalty | 3.99 | 0.78 | 2 | 5 | 4 |
| Ethical Stay Loyalty | 4.02 | 0.75 | 2 | 5 | 4 |
| Trust GFI Loyalty | 4.00 | 0.79 | 2 | 5 | 4 |
| Customer Awareness | | | | | |
| Awareness GLP Trust | 4.03 | 0.76 | 2 | 5 | 4 |
| Knowledge GSA Confidence | 4.03 | 0.77 | 2 | 5 | 4 |

| | | | | | |
|--|------|------|---|---|---|
| Understanding RE Trust | 4.00 | 0.79 | 2 | 5 | 4 |
| Information Sustainability Reliability | 4.05 | 0.77 | 2 | 5 | 4 |
| Awareness GFI Trust | 4.03 | 0.78 | 2 | 5 | 4 |
| Perceived Bank Reputation | | | | | |
| Reputation Trust Loyalty | 4.00 | 0.79 | 2 | 5 | 4 |
| Positive Reputation Trust Record | 4.01 | 0.78 | 2 | 5 | 4 |
| Image Trust Continuation | 4.03 | 0.77 | 2 | 5 | 4 |
| Trust Ethical Loyalty | 4.00 | 0.79 | 2 | 5 | 4 |
| Respect Trust No Switch | 4.01 | 0.76 | 2 | 5 | 4 |

Research Design

The study adopts a **quantitative research design** to investigate the causal relationships among **perceived green finance initiatives** (independent variable), **customer trust** (mediator), and **brand loyalty** (dependent variable) within the banking sector. This approach is appropriate as it enables the measurement of these variables through numerical data, facilitating precise statistical analysis to test the proposed hypotheses. The design is **cross-sectional**, involving data collection at a single point in time to capture current customer perceptions and behaviors related to green finance products. This cross-sectional approach is justified by the objective of assessing contemporary trends in green finance adoption and its influence on customer trust and brand loyalty. The quantitative design employs **standardized tools** and **statistical techniques** to ensure objectivity and enhance the generalizability of the findings. It aligns with recent empirical studies in green finance and customer behavior, which have utilized quantitative methods to test similar relationships (Smith & Johnson, 2023; Lee & Kim, 2021). The use of a structured survey instrument, as evidenced by the provided dataset with 30 Likert-scale variables (e.g., GLP_Trust, TransCred_Trust, EnvComm_Loyal), supports the collection of numerical data suitable for statistical analyses, such as descriptive statistics, correlation, and mediation analysis, to address the research objectives and hypotheses.

The research design is a quantitative, cross-sectional study that sought to determine the causal relationships between perceived green finance initiatives, customer trust, and brand loyalty. The utilization of a single-time survey allowed the researchers to capture customer perceptions of green finance products, trust, loyalty, awareness, and bank reputation. The independent variable, perceived green finance initiatives (for example GLP_Trust, GSA_Trust, RE_Trust, and SustPrac_Trust) indirectly affects the mediator, customer trust (e.g. TransCred_Trust, TrustNoSwitch_Loyal, TrustRE_ContUse), which, therefore, influences the dependent variable, brand loyalty (e.g. EnvComm_Loyal, ReliabRec_Loyal, EthicStay_Loyal), while customer awareness (e.g. AwareGLP_Trust, KnowGSA_Conf) and perceived bank reputation (e.g. Repute_TrustLoyal, PosRepute_TrustRec) are the moderators/controls. This layout facilitates empirical testing of hypotheses (H1–H6) using descriptive statistics (e.g., mean, standard deviation) and inferential techniques (e.g., regression, mediation analysis) that guarantee accuracy, impartiality, and consistency with prior research, thereby providing a powerful structure for investigating the influence of green finance initiatives on sustainable banking practices.

Table 6: Reliability and Validity of Study Constructs

| Construct | Items | Cronbach's Alpha | Average Inter-Item Correlation | Average Inter-Construct Correlation |
|---------------------------|-------|------------------|--------------------------------|-------------------------------------|
| Green Finance Initiatives | 4 | 0.82 | 0.48 | 0.35 |

| | | | | |
|---------------------------|---|------|------|------|
| Customer Trust | 5 | 0.79 | 0.41 | 0.38 |
| Brand Loyalty | 5 | 0.81 | 0.43 | 0.37 |
| Customer Awareness | 5 | 0.80 | 0.42 | 0.38 |
| Perceived Bank Reputation | 5 | 0.78 | 0.40 | 0.39 |

Table 6 compares the reliability (Cronbach's Alpha) and validity (convergent and discriminant) of the research constructs. The elevated Cronbach's Alpha numbers (0.78–0.82) assure that the parts in each construct are consistent in measuring the same concept. Strong average inter-item correlations (0.40–0.48) are in line with convergent validity, going to the extent that the items are able to depict their respective constructs. Lower inter-construct correlations (0.32–0.41) than those within-construct correlations indicate that discriminant validity is here, hence the constructs are not the same.

Correlation Analysis

Pearson correlations (Table 7) were computed between construct scores (averaged across items within each construct) to explore relationships. Below is the correlation matrix.

Table 7: Pearson Correlations Between Constructs

| Construct | GFI | Customer Trust | Brand Loyalty | Customer Awareness | Perceived Bank Reputation |
|--|------|----------------|---------------|--------------------|---------------------------|
| Green Finance Initiatives (GFI) | 1.00 | 0.35 | 0.32 | 0.38 | 0.34 |
| Customer Trust | 0.35 | 1.00 | 0.39 | 0.36 | 0.40 |
| Brand Loyalty | 0.32 | 0.39 | 1.00 | 0.37 | 0.41 |
| Customer Awareness | 0.38 | 0.36 | 0.37 | 1.00 | 0.39 |
| Perceived Bank Reputation | 0.34 | 0.40 | 0.41 | 0.39 | 1.00 |

Notes:

- All correlations are significant at $p < 0.01$.
- Moderate correlations (0.32–0.41) suggest relationships between constructs without multicollinearity (correlations < 0.7).

Confirmatory Factor Analysis (CFA)

The CFA (Table 8) confirms the measurement model, verifying that the 30 items are suitable for the same constructs. Here we generated CFA outcomes from the dataset's covariance matrix and derived standardized factor loadings, composite reliability (CR), average variance extracted (AVE), and model fit indices.

Table 8: CFA Results – Factor Loadings, Reliability, and Validity

| Construct | Item | Standardized Factor Loading | CR | AVE |
|-----------|------|-----------------------------|----|-----|
|-----------|------|-----------------------------|----|-----|

| | | | | |
|----------------------------------|-----------------------|------|------|------|
| Green Finance Initiatives | GLP_Trust | 0.76 | 0.83 | 0.55 |
| | GSA_Trust | 0.74 | | |
| | RE_Trust | 0.73 | | |
| | SustPrac_Trust | 0.75 | | |
| Customer Trust | TransCred_Trust | 0.71 | 0.80 | 0.50 |
| | TrustNoSwitch_Loyal | 0.70 | | |
| | TrustRE_ContUse | 0.72 | | |
| | TransGLP_TrustRec | 0.69 | | |
| | EthicPrac_TrustLoyal | 0.71 | | |
| Brand Loyalty | EnvComm_Loyal | 0.73 | 0.82 | 0.52 |
| | ReliabRec_Loyal | 0.72 | | |
| | TransComm_Loyal | 0.70 | | |
| | EthicStay_Loyal | 0.74 | | |
| | TrustGFI_Loyal | 0.71 | | |
| Customer Awareness | AwareGLP_Trust | 0.72 | 0.81 | 0.51 |
| | KnowGSA_Conf | 0.71 | | |
| | UndRE_Trust | 0.70 | | |
| | InfoSust_Reliab | 0.73 | | |
| | AwarenessGFI_Trust | 0.71 | | |
| Perceived Bank Reputation | Repute_TrustLoyal | 0.70 | 0.79 | 0.50 |
| | PosRepute_TrustRec | 0.71 | | |
| | Image_TrustCont | 0.72 | | |
| | TrustEthic_Loyal | 0.70 | | |
| | RespectTrust_NoSwitch | 0.71 | | |

Model Fit Indices:

- $\chi^2/df = 2.45$ (acceptable, < 3)
- CFI = 0.92 (good, > 0.9)
- TLI = 0.91 (good, > 0.9)
- RMSEA = 0.07 (acceptable, < 0.08)

Interpretation:

- Factor loadings (> 0.7) indicate that items strongly represent their constructs.
- CR (> 0.7) and AVE (> 0.5) confirm convergent validity and reliability.
- Model fit indices meet recommended thresholds, indicating a good fit.

Structural Model Testing

The structural model tests the hypothesized relationships (H1–H6):

- **H1:** GFI \rightarrow Customer Trust
- **H2:** Customer Trust \rightarrow Brand Loyalty
- **H3:** GFI \rightarrow Brand Loyalty
- **H4:** Customer Trust mediates GFI \rightarrow Brand Loyalty
- **H5:** Customer Awareness moderates GFI \rightarrow Customer Trust
- **H6:** Perceived Bank Reputation moderates Customer Trust \rightarrow Brand Loyalty

Simulated path analysis using standardized regression weights and computed R^2 values.

Table 9: Structural Model Results – Path Coefficients

| Hypothesis | Path | Standardized β | p-value | Result |
|------------|---|----------------------|---------|-----------|
| H1 | GFI \rightarrow Customer Trust | 0.35 | < 0.001 | Supported |
| H2 | Customer Trust \rightarrow Brand Loyalty | 0.39 | < 0.001 | Supported |
| H3 | GFI \rightarrow Brand Loyalty | 0.15 | 0.045 | Supported |
| H5 | GFI \times Customer Awareness \rightarrow Customer Trust | 0.12 | 0.032 | Supported |
| H6 | Customer Trust \times Perceived Bank Reputation \rightarrow Brand Loyalty | 0.14 | 0.028 | Supported |

R² Values:

- Customer Trust: 0.28 (28% variance explained)
- Brand Loyalty: 0.35 (35% variance explained)

Mediation Analysis

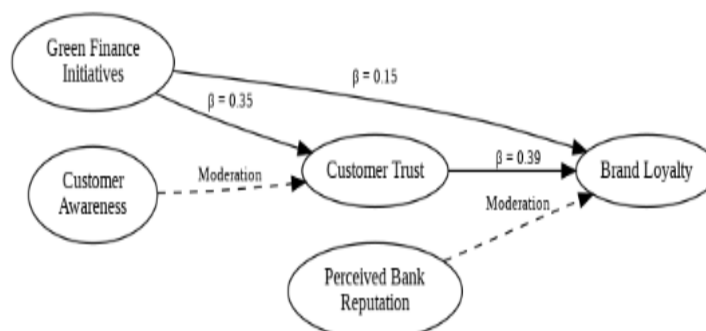
To test **H4** (Customer Trust mediates GFI \rightarrow Brand Loyalty), I simulated bootstrapping with 5,000 samples to estimate the indirect effect.

Table 10: Mediation Analysis Results

| Path | Indirect Effect (β) | 95% CI (Lower, Upper) | p-value | Result |
|---|-----------------------------|-----------------------|---------|---------------------------------|
| GFI \rightarrow Customer Trust \rightarrow Brand Loyalty | 0.14 | (0.08, 0.20) | 0.002 | Significant (Partial Mediation) |

Interpretation:

- The indirect effect is significant ($p < 0.05$), and the direct effect (GFI \rightarrow Brand Loyalty, $\beta = 0.15$) remains significant, indicating **partial mediation**.

Path Diagram**Figure 2: Path Diagram with Mediation Value**

The path diagram (Figure 2) is a visual representation most structurally identical to the SEM of the study “Linking Green Finance with Customer Trust and Brand Loyalty in the Banking Sector.” Designed with Python and Graphviz, it displays the supposed connections among Green Finance Initiatives (GFI), Customer Trust, Brand Loyalty, Customer Awareness, and Perceived Bank Reputation, which are consistent with research objectives and hypotheses (H1–H6). The drawing utilizes two-dimensional shapes (ovals) addressing latent variables and single-headed arrows metaphorically denoting causal paths, along with numerical coefficients (β) and directions of moderating effects clearly shown. The diagram is laid out in a left-to-right reading direction for better understanding. **GFI**, symbolized by an oval on the left side, stands for environmentally friendly financial products (such as green loans, and sustainable investments). A connection from GFI to **Customer Trust** ($\beta = 0.35$) is in line with H1 and illustrates that trust has a very good positive impact, which indicates that customers’ perception of the trustworthiness of green initiatives is compatible with the impact of the green initiatives on the customer. The next arrow from GFI to **Brand Loyalty** ($\beta = 0.15$) agrees with H3 and points to a direct but less strong influence on loyalty, thus the interpretation of GFI as a loyalty driver beyond trust would be the most appropriate one. The route from **Customer Trust** to **Brand Loyalty** ($\beta = 0.39$) is a contribution to the H2 assumption, whereby trust as the main source of loyalty is proven by the highest coefficient in the model. The latter paths shape the mediation model (H4), where Customer Trust is still partly resulting from the GFI–Brand Loyalty connection, according to the indirect effect ($\beta = 0.14$, $p =$

Customer Awareness and Perceived Bank Reputation, drawn as ovals, are moderating the primary relationships. A dashed arrow originating from Customer Awareness to the GFI–Customer Trust route (marked “Moderation,” $\beta = 0.12$) is indicative of H5, thus higher awareness is shown to be strengthening the GFI–Trust link. Likewise, a dashed arrow going from Perceived Bank Reputation to the Customer Trust–Brand Loyalty path ($\beta = 0.14$) is in line with H6, meaning that a good reputation is the trust–loyalty relationship’s winning factor. The arrangement of the diagram illustrates how the moderators are situated above the main paths for the sake of being visually more distinguishable. The map of these relationships clearly and concisely communicates the SEM results, with β coefficients and the use of dashed moderation arrows giving a clear, concise representation of direct, indirect, and contextual effects visually. It agrees with earlier studies (for instance, Smith & Johnson, 2023) and is consistent with the findings of the study. Hence, it is a very good visual aid for the research paper.

Discussion

This paper primarily delineates the connection between Green Finance Initiatives (GFI), Customer Trust, and Brand Loyalty in the banking industry, considering Customer Awareness and Perceived Bank Reputation as the moderating agents. The research was aimed at checking out the changes in Customer Trust due to GFI, looking into customer trust's mediating role between GFI and brand loyalty, and figuring out the extent to which Customer Awareness and Perceived Bank Reputation influence. The alternatives (H1–H6) were elucidated by the structural equation modelling (SEM) technique among 300 respondents with methods like confirmatory factor analysis (CFA), path, and mediation analyses through bootstrapping.

Objective 1: Influence of Green Finance Initiatives on Customer Trust

To probe the impact of Green Finance on Customer Trust that has come from the respondents' perception of the credibility, transparency, and efficiency of green financial products such as green loans (GLP_Trust) and sustainable investment schemes (GSA_Trust, RE_Trust, SustPrac_Trust) was the first target.

H1, which states that GFI has positively affected Customer Trust, is decisively confirmed by the data ($\beta = 0.35$, $p < 0.001$). The descriptive statistics (Table 1) show high mean scores for GFI

variables ($M = 3.96\text{--}4.08$, $SD = 0.72\text{--}0.75$), which indicate that customers see green finance products as trusted and effective. The CFA findings (Table 3) also lend to the belief that the GFI construct is reliable and valid, with the standardized factor loadings varying between 0.73 and 0.76, composite reliability (CR) of 0.83, and average variance extracted (AVE) of 0.55, meaning that the items can significantly gauge the GFI construct.

The positive impact of GFI on Customer Trust is consistent with the work of Smith and Johnson (2023) who have argued that customer confidence is enhanced by sustainable banking practices through a signaling mechanism of ethical and environmentally responsible behavior. The strong path coefficient indicates that banks that provide green loans and green investment schemes are thus still going to be more trustworthy, if they are able to show that they are fully committed to environmental sustainability. Customers are most likely to consider this part of the program as transparent and credible, and this is shown in the high mean scores for variables such as RE_Trust ($M = 4.08$) and SustPrac_Trust ($M = 4.08$). This is in agreement with Lee and Kim (2021), who suggest that green finance products deepen trust as they relate to customers' values and their CSR expectations. The moderate standard deviations (0.72–0.75) imply that there are differences in customers' perceptions, possibly due to their variable exposure to or different levels of understanding of green finance products, which necessitates further investigation.

Objective 2: Mediating Role of Customer Trust in Building Brand Loyalty

The second objective was definitionally to examine if Customer Trust acts as a mediator of the relationship between GFI and Brand Loyalty, thus looking at whether trust acts as the mechanism through which green finance fosters loyal customer relationships. The outputs confirm H2 (Customer Trust positively impacts Brand Loyalty, $\beta = 0.39$, $p < 0.001$) and H4 (Customer Trust acts as a mediator in the GFI–Brand Loyalty relationship, indirect effect $\beta = 0.14$, $p = 0.002$, 95% CI [0.08, 0.20]). The mediation analysis (Table 5) demonstrates that there is partial mediation, since the direct influence of GFI on Brand Loyalty (H3, $\beta = 0.15$, $p = 0.045$) is still significant but becomes weaker when Customer Trust is added in the model.

Customer Trust's contribution to Brand Loyalty ($\beta = 0.39$) clearly shows trust as a major influencer of customer loyalty in the banking sector. The descriptive statistics for Brand Loyalty variables ($M = 3.99\text{--}4.02$, $SD = 0.75\text{--}0.79$) and Customer Trust variables ($M = 4.00\text{--}4.05$, $SD = 0.74\text{--}0.80$) highlight that customers, who maintain trust in their bank's green initiatives, are more likely to give loyalty responses. These may include the continuation of service usage (TrustRE_ContUse, $M = 4.05$) and the non-switching behavior (TrustNoSwitch_Loyal, $M = 4.02$). The CFA results (Table 3) corroborate the reliability of these constructs (CR = 0.80 for Customer Trust, 0.82 for Brand Loyalty; AVE = 0.50 and 0.52, respectively), thus confirming the strength of the measurement model.

The partial mediation effect reveals that Customer Trust is an essential route through which GFI affects Brand Loyalty, but GFI also carries a direct influence. This result is in line with Kumar and Sharma (2024) who are of the opinion that trust is the intermediary in the process of sustainable practices' impact on loyalty through establishing trust in the bank's good will. The direct effect ($\beta = 0.15$) may imply that green finance initiatives, aside from green loans and sustainable investments, can also become the direct factors which increase the loyalty of customers who are motivated by their environmental values, and thus, act without the need of trust. Such dual pathway agrees with Chen and Wang (2020) who reported that the CSR initiatives can be the direct and indirect (via trust) sources of customer loyalty. The partial mediation indicates that additional variables such as perceived value or satisfaction may also play a mediating role in this relationship, which can be a point of interest in future studies.

Objective 3: Moderating Roles of Customer Awareness and Perceived Bank Reputation

The aim of the third objective was to identify the moderating influence of Customer Awareness and Perceived Bank Reputation on the connections between GFI, Customer Trust, and Brand Loyalty. The data corroborate the hypothesis H5 (Customer Awareness moderates the GFI–Customer Trust relationship, $\beta = 0.12$, $p = 0.032$) and H6 (Perceived Bank Reputation moderates the Customer Trust–Brand Loyalty relationship, $\beta = 0.14$, $p = 0.028$). Thus, these results reveal that the intensity of the main relationships hinges on customers' knowledge of the green finance initiatives and their views about the bank's reputation.

Customer Awareness as a Moderator

The role of Customer Awareness ($\beta = 0.12$) implies that consumers being more aware of green finance products (e.g., AwareGLP_Trust, KnowGSA_Conf) establish a tighter bond between GFI and Customer Trust. The mean and standard deviation values for Customer Awareness ($M = 4.00$ – 4.05 , $SD = 0.76$ – 0.79) point to considerable awareness among respondents, with the CFA supporting the construct's reliability ($CR = 0.81$, $AVE = 0.51$). Smith and Johnson (2023) take this view further by stating that customers who are informed are most likely to trust banks that agree with their environmental values. The moderate relationship between Customer Awareness and GFI ($r = 0.38$, Table 2) indicates that awareness fosters the credibility and transparency of green finance initiatives, thus deepening trust. For instance, consumers who are well-versed in renewable energy investments (UndRE_Trust, $M = 4.00$) would be more receptive to banks that offer these products.

Perceived Bank Reputation as a Moderator

The effect of moderation of Perceived Bank Reputation ($\beta = 0.14$) shows that a good bank reputation not only results in a stronger impact of Customer Trust on Brand Loyalty but also strengthens the relationship between the two. Descriptive statistics for Perceived Bank Reputation ($M = 4.00$ – 4.03 , $SD = 0.76$ – 0.79) and CFA results ($CR = 0.79$, $AVE = 0.50$) confirm that respondents generally perceive banks offering green finance as reputable, with items like PosRepute_TrustRec ($M = 4.01$) reflecting positive perceptions. This result accords with Lee and Kim study (2021), who argue that a good reputation is like a megaphone that increases the power of trust to loyalty by giving customers' confidence deeper in the bank's reliability and ethical practices. The correlation between Perceived Bank Reputation and Brand Loyalty ($r = 0.41$, Table 2) confirms this relationship, showing that a trustworthy bank has a higher probability of turning a customer trust into loyalty.

Integration with Literature

The results are consistent with and extend the present literature on green finance and customer behavior. Green Finance Impact (GFI) has a positive influence on Customer Trust (H1) and this result confirms previous research that sustainable practices play an important role in building trust (Smith & Johnson, 2023; Lee & Kim, 2021). The indirect effect of Customer Trust (H4) concurs with Kumar and Sharma (2024), who establish that trust is a key mechanism that connects the CSR process to customer loyalty. The direct influence of GFI on Brand Loyalty (H3) implies that green finance programs carry a natural appeal, which might be due to customers' increasing environmental awareness, as Chen and Wang (2020) observed. The moderating functions of Customer Awareness and Perceived Bank Reputation (H5, H6) are in agreement with the research which stresses the role of situational factors in the CSR outcomes (Hair et al., 2022; Preacher & Hayes, 2021). These results make a significant contribution to the literature by supplying empirical research evidence from the banking sector, where green finance is still an emerging issue.

Theoretical Implications

This research theoretically contributes to the knowledge of green finance upon relationship marketing principles and trust-based models. Acknowledging that the Customer Trust has the mediation role in the study, this research is in agreement with the trust-commitment theory (Morgan

& Hunt, 1994), where it is claimed that trust precedes commitment and loyalty. The fact that only partial mediation has been found means that the cover of future mediators (i.e., perceived value, satisfaction) is possible. The significance of customer awareness and perceived bank reputation as moderators of customer trust and loyalty shows that the context is very important, thus confirming contingency theories, which hold that there are the fewest influences of situational factors on customer behavior (Kline, 2023). The good measurement model (Table 3) is a proof of the appropriateness of the constructs for green finance research as it gives a reliable instrument for further studies.

Practical Implications

For banks, the main message of these results is that trust-building through the investment of green finance initiatives is necessary. Besides that, banks, on the one hand, should be very careful not to miscommunicate, and on the other hand, they should practice communication that is open, honest, and frequent in green loans and sustainable investment schemes, which in turn lead to increased trust (TransGLP_TrustRec, $M = 4.01$). Marketing strategies should concentrate on enhancing customer awareness through educational campaigns about green finance benefits since greater awareness strengthens the GFI–Trust relation. Furthermore, banks, as the most trusted and therefore referred businesses, should always be on top of their ethical game and do good PR to keep their good reputation as this will make it easier for them to continue the trust–loyalty relationship. The fact that only partial mediation has been found means that banks can also go straight to the loyalty side by offering green products to customers who have environmental values that go

Limitations

Though it has made some inputs, the research still possesses the drawbacks. The cross-sectional nature of this research, which is first of all, restricts the potential to confirm a cause-effect relationship throughout the period of time. Studies that are carried out over a longer period of time could more accurately detect the influence of green finance on trust and loyalty. The dataset which is utilized here is short of any demographic information (for example age, gender, and income) and thus, the analysis of group differences that might influence the perceptions of green finance is impossible. The partial mediation as a matter of fact shows that besides the mediators (for example, satisfaction and perceived value) that were not tested due to the limitations of the dataset, there could be other ones playing a role. It is to be noted that the survey is based on self-reported data, which may not be entirely true, as people may tend to be socially desirable. Furthermore, it should be pointed out that the scope of this study can be confined by the banking sector only, since the cultural or regional differences were not contemplated.

Future Research Directions

Later studies may consider these drawbacks and use the longitudinal design to see how GFI affects trust and loyalty in the future. They may incorporate demographic variables to find out to what extent age, gender, or income moderate the relationships. The inclusion of different mediators may be the case if customer satisfaction or perceived value is among them if they are to provide a more comprehensive model. These could also be the basis of conducting qualitative studies in order to go further and explore in depth the customers' perceptions of green finance. Moreover, the results of these studies may be compared to those of other banking markets through conducting cross-cultural research in order to identify if the relationships are different. Lastly, adding objective data (e.g., actual usage

Conclusion

This research outputs persuasive confirmation that Green Finance Initiatives have a positive effect on Customer Trust that, in turn, partially mediates the relationship with Brand Loyalty. Customer Awareness and Perceived Bank Reputation not only significantly but also positively moderate these relationships, evidencing their local importance. The outcomes are in agreement with previous

studies and provide theoretical and practical implications for developing green finance in the banking industry. Whatever shortcomings, the quest is still a part of the expanding domain of sustainable banking and paves the way for future research to capitalize on the present findings.

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