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Green Banking Practices and Perceived Bank Performance: Mediating Role of Green Financing

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Abstract

This study examines the impact of green banking practices (GBP) on perceived bank performance (BP), with a specific focus on the mediating role of green financing (GF). It analyzes four GBP dimensions, namely employee, operation, customer, and policy-related, using data from 269 banking professionals. Results show that GBPs and GF positively affect both environmental and financial performance, with GF partially mediating this relationship. Among GBP components, customer-related practices have the strongest impact, followed by employee and policy-related efforts, while operation-related practices show no significant influence. The findings provide strategic insights for banks and policymakers: strengthening green financing tools, integrating environmental policies into operations, and boosting customer and employee involvement are essential for sustainable outcomes. This study contributes to the evolving discourse on green finance by highlighting actionable pathways for improving both environmental and financial performance in the banking industry.

Keywords: Green banking practices, green finance, green taxonomy, environmental performance, performance of banks, sustainable banking

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Introduction

In recent years, the banking sector has undergone a paradigm shift towards sustainability, driven by growing global concerns over environmental degradation and climate change (Saif-Alyousfi & Alshammari, 2025). As financial intermediaries, banks play a pivotal role in promoting environmental responsibility through the adoption of GBPs, initiatives that aim to reduce the ecological footprint of banking operations while supporting environmentally responsible lending and investment. These practices encompass a wide range of activities, including digitalization, eco-friendly branch operations, green credit policies, and stakeholder engagement (Siddik et al., 2024). GF, in particular, has emerged as a strategic tool to channel financial resources into sustainable projects and low-carbon sectors, aligning economic development with environmental goals (Ma et al., 2024). An efficient green economy, marked by low energy consumption, minimal pollution, and reduced emissions, has become essential for achieving sustainable development (Liu et al., 2020).

Over the past few decades, environmental awareness has gained significant attention from governments, policymakers, advocacy groups, commercial enterprises, and the public (Ardoin et al., 2020; Handoyo, 2024). Issues such as environmental degradation, ethics, climate change, social responsibility, and the emergence of powerful activist voices have become focal points of global discourse (Carroll & Brown, 2018; Jabbour & Santos, 2008). Previously confined to households and communities, environmental protection efforts have expanded to include businesses, enhancing their value and reputation (Gunathilaka et al., 2015). Shareholders and investors increasingly take pride in associating with environmentally responsible firms. Recognizing that industrial development has contributed to global warming, ozone depletion, soil erosion, and deforestation, organizations now prioritize environmental performance alongside economic and social metrics (Banerjee, 2001). Regulatory bodies, consumers, and other stakeholders also emphasize the need for firms to demonstrate environmental accountability.

An environmental management system (EMS) offers a structured framework that enables businesses to monitor and mitigate their environmental impacts (Bansal & Hunter, 2003). EMS facilitates pollution prevention, waste reduction, energy savings, recycling, and improved corporate reputation. Furthermore, environmental management serves as a strategic tool for enhancing competitiveness (Porter & Linde, 1995). In today's competitive environment, prioritizing sustainability contributes to a firm's edge in the market. An organization's environmental performance is closely tied to its reputation and goodwill, yielding both ecological and financial benefits (Miles & Covin, 2000). Environmental challenges such as pollution and climate change, while problematic, also open up new avenues for innovation and growth (Thevanes & Arulrajah, 2016).

Historically, environmental issues were not considered relevant to the financial industry. However, this perception has evolved, and banks now acknowledge their dual role in being both influenced by and contributors to environmental outcomes (McKenzie & Wolfe, 2004). As major financiers of diverse industries, banks bear substantial responsibility. Without

proper verification mechanisms, they risk enabling environmentally harmful activities (Wijethunga & Dayaratane, 2018). Funding polluting industries indirectly contributes to environmental degradation, prompting banks to enforce the adoption of environmental management systems and technologies (Masukujjaman & Aktar, 2014). Even though banking operations may not directly impact the environment, the activities of bank-financed clients can have significant externalities. Hence, green banking must be integrated into operations, infrastructure, investment, and financing strategies to minimize carbon emissions and support sustainable enterprises (Bihari & Pradhan, 2011).

"Green" has become a symbol of eco-consciousness across various domains, including finance. Green banking refers to the adoption of ecologically sustainable practices within the banking sector and has garnered attention amid growing environmental concerns and the global push for sustainability (Mir & Bhat, 2022). Its objective is to encourage banks to promote environment-friendly initiatives, reduce their carbon footprint, and facilitate the transition to a green economy (Aslam & Jawaid, 2023).

The banking sector's role in sustainability is reflected in global efforts such as the Paris Agreement and the G20 agenda (Sarma & Roy, 2019). In this context, green banking, emphasizing the use of sustainable infrastructure and efficient IT systems, has gained importance, especially for developing nations vulnerable to climate change (Bose et al., 2017). Green finance (GF) serves as a strategic instrument to reconcile economic progress with environmental priorities (Zheng et al., 2021). To combat greenwashing and promote credible investments, Nepal Rastra Bank introduced the Nepal Green Finance Taxonomy (2024), offering consistent standards for identifying green investments. This initiative supports Nepal's net-zero targets, enhances access to global carbon markets, and encourages financial products aligned with ESG criteria.

Despite growing adoption, empirical research on the impact of green banking on BP remains sparse in developing countries like Nepal (Risal & Joshi, 2018). Specifically, the mediating role of GF between sustainable practices and performance outcomes, both financial and environmental, remains underexplored. Understanding this linkage is critical for banks aiming to balance profitability with sustainability and for policymakers seeking to promote responsible banking. Against this backdrop, the present study investigates how different dimensions of green banking practices influence bank performance and examines the mediating effect of GF, offering new insights into sustainable banking strategies.

Literature Review on Hypothesis Development

This study is grounded in Stakeholder Theory (Freeman, 1984), which emphasizes that an organization's long-term success depends on its ability to meet the expectations of a diverse set of stakeholders, like customers, employees, communities, regulators, and investors. Within the context of green banking, the theory suggests that adopting environmentally responsible practices aligns banks with the interests of environmentally conscious stakeholders (Weber, 2014). As public awareness of climate change and sustainability has grown, stakeholders now expect banks not only to generate profit but also to act as responsible stewards of the

environment (Carroll, 1991). By integrating GBPs, such as offering green financial products, financing eco-friendly projects, and reducing operational carbon footprints, banks signal their commitment to environmental and social concerns. This, in turn, enhances their brand image, customer loyalty, and ultimately financial performance (Scholtens, 2006).

Institutional Theory (DiMaggio & Powell, 1983) provides a complementary lens to understand the diffusion of GBPs. According to this theory, organizations tend to become increasingly similar over time through institutional isomorphism, driven by three forces: coercive pressures (regulatory and legal requirements), normative pressures (industry norms and professional standards), and mimetic pressures (emulating successful peers). In the banking sector, coercive forces such as environmental regulations and frameworks (e.g., green finance taxonomies) require banks to adopt environmental risk management tools. Normative pressures from industry alliances and global standards shape internal green policies and benchmarks. Meanwhile, mimetic pressures encourage banks to replicate innovative practices of leading institutions, such as sustainable lending models, eco-certifications, and green HR initiatives. Together, these forces institutionalize green banking as a normative and strategic imperative.

Empirical studies provide evidence supporting these theoretical foundations. Shaumya and Arulrajah (2017), for instance, investigated GBPs among 155 employees of commercial banks in Sri Lanka and found a strong positive relationship between GBPs and environmental performance. Notably, operation-related, policy-related, and employee-related practices had significant impacts, while customer-related practices were statistically insignificant. These findings highlight the differential influence of green banking dimensions and reinforce the relevance of stakeholder engagement and institutional adaptation in shaping environmental outcomes.

Several other studies have contributed to understanding the nexus between GBP's environmental performance and financial outcomes. In the context of Nepal, Risal and Joshi (2018) analyzed responses from 189 bankers using a multiple regression model and found that green policy and energy-efficient equipment significantly enhanced environmental performance, while green loans, green projects, and environmental training had limited or no impact. The study emphasized the role of banks and governments in promoting sustainable technologies.

Building on this foundation, Rehman et al. (2021) employed factor analysis and structural equation modeling (SEM) in selected Pakistani banks and highlighted that policy-related practices and daily operations significantly influenced the adoption of green banking. However, technological advancement and inconsistent economic conditions introduced data gaps, and factors such as online security and trust were seen as crucial to the uptake of digital green banking services. Importantly, their study noted that improved environmental performance also translated into better financial outcomes.

Recently, Subedi and Bhattarai (2024) explored green banking in Nepal using data from 373 middle-level employees and found a strong positive correlation between perceived financial performance and factors like green innovation, green investment, green human resource management, and green banking strategy. These studies reinforce the relevance of the present research framework, which investigates how various dimensions of green banking practices impact bank performance, both directly and through the mediating role of GF.

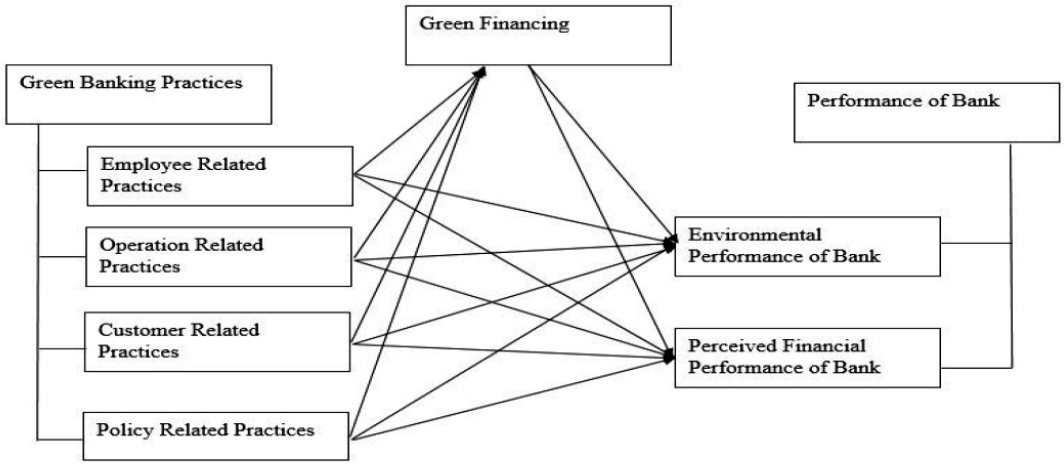
The conceptual framework of this study is grounded in the growing body of research emphasizing the role of GBP in enhancing bank performance, particularly through the mediating influence of GF. Prior studies have provided empirical support for these relationships. For instance, Zhang et al. (2022) investigated the impact of green banking activities on environmental performance using SEM with data from 352 bankers. Their findings revealed that GBPs positively influence both GF and the environmental performance of banks, with GF significantly mediating this relationship through investments in environmentally friendly projects such as renewable energy and energy efficiency.

Similarly, Chen (2022), drawing on data from 322 banking professionals, found that components such as green human resources, operational activities, green business strategies, and green investments had a strong positive impact on GF. However, customer-related practices showed no significant effect. The study also confirmed that green investments significantly enhance a bank's environmental performance. These findings collectively support the present framework, which examines the effects of employee, operation, customer, and policy-related green banking practices on both environmental and financial performance, with green financing as a key mediating variable.

Figure 1 illustrates the hypothesized relationships between GBPs and BP, emphasizing the mediating role of GF. GBPs are categorized into four key dimensions: employee-related, operation-related, customer-related, and policy-related practices. These dimensions are expected to influence both the environmental performance and the perceived financial performance of banks, which together represent overall bank performance. GF serves as a mediating variable, potentially strengthening the link between GBPs and performance outcomes. The framework reflects the growing recognition that sustainable banking strategies, supported by effective GF mechanisms, are crucial for enhancing both environmental responsibility and competitive performance in the financial sector.

Figure 1

Conceptual Framework



Research Hypothesis

H1: *There is a significant positive impact of a bank's employee-related practices of green banking on green financing.*

H2: *There is a significant positive impact of banks' operations-related practices of green banking on green financing.*

H3: *There is a significant positive impact of a bank's customer-related practices of green banking on green financing.*

H4: *There is a significant positive impact of banks' policy-related practices of green banking on green financing.*

H5: *There is a significant positive impact of green financing on the perceived environmental performance of the bank.*

H6: *There is a significant positive impact of green financing on the perceived financial performance of the bank.*

H7: *There is a significant positive impact of a bank's employee-related practices on the perceived environmental performance of the bank.*

H8: *There is a significant positive impact of the bank's operations-related practices on the perceived environmental performance of the bank.*

H9: *There is a significant positive impact of the bank's customer-related practices on the perceived environmental performance of the bank.*

H10: *There is a significant positive impact of the bank's policy-related practices and the perceived environmental performance of the bank.*

H11: *There is a significant positive impact of a bank's employee-related practices on the perceived financial performance of the bank.*

H12: *There is a significant positive impact of the bank's operations-related practices on the perceived financial performance of the bank.*

H13: *There is a significant positive impact of a bank's customer-related practices on the perceived financial performance of the bank.*

H14: *There is a significant impact of the bank's policy-related practices on the perceived financial performance of the bank.*

H15: *Green finance mediates the causal relationship between green banking practices and the perceived performance of the bank.*

Research Methods

This study follows a descriptive and explanatory research design. Descriptive analysis is used to outline the demographic profile of respondents, while explanatory design assesses the structural and causal relationships among the dependent, independent, and mediating variables. Primary data were collected using a structured questionnaire designed based on validated scales from prior research in green banking and sustainability. The instrument comprised 44 items, covering four independent variables, one mediating variable, and two dependent variables. Responses were collected online using Google Forms with a 7-point Likert scale, ranging from "strongly disagree" to "strongly agree." The questionnaire was pre-tested with a small group of banking professionals to ensure relevance, reliability, and clarity.

Data were collected using a purposive sampling technique from employees who are knowledgeable about or engaged in green banking initiatives of various commercial banks in Nepal. This sampling method ensures that only relevant and information-rich participants are included. A total of 269 valid responses were obtained, with participants representing a range of designations, including officers, supervisors, managers, and assistants, ensuring diverse insights into organizational green practices. The response rate was 79%.

Data were analyzed using Statistical Package for the Social Sciences (SPSS) for descriptive statistics and normality testing, while SmartPLS 4.0 was employed for SEM. Partial Least Squares SEM was found most suitable due to its effectiveness in estimating complex models, its flexibility in handling non-normally distributed data, and its appropriateness for predictive studies with moderate sample sizes.

The key variables used in the study and their conceptual definitions are presented in Table 1 below, along with relevant sources:

Table 1

Definition of Variables

Construct / Variable	No. of Items	Definition	Source(s)
Employee-Related Practices (ERP)	5	Initiatives related to employee training, awareness, motivation, and participation in environmentally responsible banking practices.	Chen et al. (2022); Sohail et al. (2023)
Operation-Related Practices (ORP)	7	Internal bank practices focus on eco-efficient infrastructure, digital processes, and waste reduction.	Shaumya and Arulrajah (2017); Bhat et al. (2024)
Customer-Related Practices (CRP)	5	Engagement with customers through green products, environmental risk assessments, and eco-friendly financial services.	Chen et al. (2022); Sohail et al. (2023)
Policy-Related Practices (PRP)	6	Institutional environmental policies include green branches, sustainability charters, and regulatory compliance.	Bansal et al. (2023); Bhat et al. (2024)
Green Finance (GF)	6	Financial products and services that promote environmental sustainability, including green loans, bonds, and investments.	Zhang et al. (2022); Taneja & Özen (2023)
Environmental Performance (EPB)	7	The bank's contribution to environmental improvement through reduced emissions, waste management, and sustainable investments.	Chen et al. (2022); Chhetri & Chhetri (2024)
Perceived Financial Performance (PFPB)	8	Stakeholders' perception of financial outcomes attributed to green banking initiatives, such as profitability and cost savings.	Subedi and Bhattarai (2024); Sohail et al. (2023)

Results and Analysis

This section presents the empirical findings of the study, analyzing the relationships among GBPs, GF, and BP. The analysis is based on data collected from 269 respondents and examined using Smart PLS 4.0. The results include measurement model assessment, structural model evaluation, and hypothesis testing to validate the proposed relationships. Furthermore, the mediating effect of GF is examined to understand its role in enhancing the impact of green banking practices on both environmental and perceived financial performance of banks.

Respondents Profile

The demographic profile of the respondents reflects a balanced representation in terms of gender, with an almost equal number of male and female participants. Most respondents belong to a younger age group, predominantly under the age of forty, indicating active engagement of mid-career professionals in the banking sector. A significant portion of the participants hold officer-level positions, suggesting that insights were gathered primarily from individuals involved in core banking operations. In terms of professional experience, a large share of the respondents has spent more than five years in the banking industry, reflecting their familiarity with institutional practices, including green banking initiatives.

Table 2

Demographic Profile of Respondents

Criteria	Frequency	Percentage (%)
Gender		
Male	134	49.81
Female	135	50.19
Job Position		
Manager	29	10.78
Supervisor	10	3.72
Officer	204	75.84
Assistant	26	9.67
Age		
Below 30 years	111	41.26
30-40 years	118	43.87
40-50 years	39	14.50
50-60 years	1	0.37
Experience in the Banking Sector		
Below 1 year	12	4.46
1-3 years	48	17.84
3-5 years	54	20.07
More than 5 years	155	57.62

Note. Field Survey

Measurement Model Assessment (First Order)

Smart-PLS was employed to evaluate and confirm construct reliability. Internal consistency is assessed using Cronbach's alpha and CR, while convergent validity is assessed via the AVE recommended by Fornell and Larcker (1981).

Reliability: According to Hair et al. (2014), the recommended threshold for Cronbach's alpha and CR is 0.70. Table 3 shows that all constructs have Cronbach's alpha and CR values above 0.70, indicating that CR is established. Furthermore, each construct's AVE surpasses 0.5, confirming convergent validity.

Table 3

Reliability and Validity

	Cronbach's alpha	CR (rho_a)	CR (rho_c)	AVE
ERP	0.823	0.856	0.877	0.595
ORP	0.900	0.904	0.921	0.626
CRP	0.865	0.872	0.903	0.652
PRP	0.936	0.939	0.949	0.758
GF	0.949	0.949	0.959	0.796
EPB	0.943	0.943	0.953	0.744
PFPB	0.913	0.925	0.930	0.626

Note. Researcher's Calculation

Heterotrait-Monotrait Ratio (HTMT): The HTMT assesses validity by contrasting the average correlations of items across different constructs with the average correlations within the same construct (Hair et al. 2019). A high HTMT value would indicate potential issues with discriminant validity. As shown in Table 4, all ratios fall below 0.90, confirming that discriminant validity has been achieved.

Table 4

HTMT Ratio

	CRP	ERP	GF	EPB	ORP	PFPB	PRP
CRP							
ERP	0.781						
GF	0.848	0.681					
EPB	0.855	0.696	0.864				
ORP	0.808	0.836	0.645	0.686			
PFPB	0.787	0.664	0.755	0.879	0.653		
PRP	0.854	0.785	0.717	0.754	0.856	0.642	

Note. Researcher's Calculation

Normality Test

The normality test results (see Table 5), using both Kolmogorov-Smirnov and Shapiro-Wilk tests, indicate that the data for all constructs deviate significantly from normal distribution as the *p-value* lies well below 0.05, suggesting non-normality of the data. The results imply that non-parametric statistical methods will be appropriate for analyzing the data.

Table 5

Normality Test

Construct	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Employee Related Practices (ERP)	0.102	269	<0.001	0.950	269	<0.001
Operation Related Practices (ORP)	0.136	269	<0.001	0.933	269	<0.001
Policy Related Practices (PRP)	0.100	269	<0.001	0.950	269	<0.001
Customer Related Practices (CRP)	0.115	269	<0.001	0.940	269	<0.001
Green Finance (GF)	0.100	269	<0.001	0.944	269	<0.001
Environmental Performance of Bank (EPB)	0.076	269	0.001	0.940	269	<0.001
Perceived Financial Performance of Bank (PFPB)	0.096	269	<0.001	0.945	269	<0.001

Note. Researcher's Calculation

Model Fit

The model fit indices presented in Table 6 indicate an acceptable and robust fit for the structural equation model. The Standardized Root Mean Square Residual (SRMR) values for both the saturated and estimated models are below the commonly accepted threshold of 0.08, suggesting that the model's approximation of the observed data is satisfactory and exhibits minimal residual discrepancies. Similarly, the Normed Fit Index (NFI) values for both models exceed the benchmark of 0.70, which reflects a good comparative fit of the proposed model relative to a null model. These results collectively confirm that the structural model is well-specified and adequately represents the underlying relationships among the constructs.

Table 6

Model Fit

	Saturated model	Estimated model
SRMR	0.060	0.066
d_ULS	3.516	4.307
d_G	1.607	1.697
Chi-square	2330.645	2410.373
NFI	0.795	0.788

Note. Researcher's Calculation

Path Coefficient

The final stage of the first-order model of the analysis includes reviewing the path coefficient and path diagram of the structural model. As shown in Table 7, path coefficients below 0.05 are significant at a 95% confidence interval, and path coefficients above 0.05 are not significant. Also, if the mean value falls between the confidence interval (given that zero does not lie between the lower limit and upper limit) then the path is significant; else the path is not significant.

Table 7
Path Coefficient

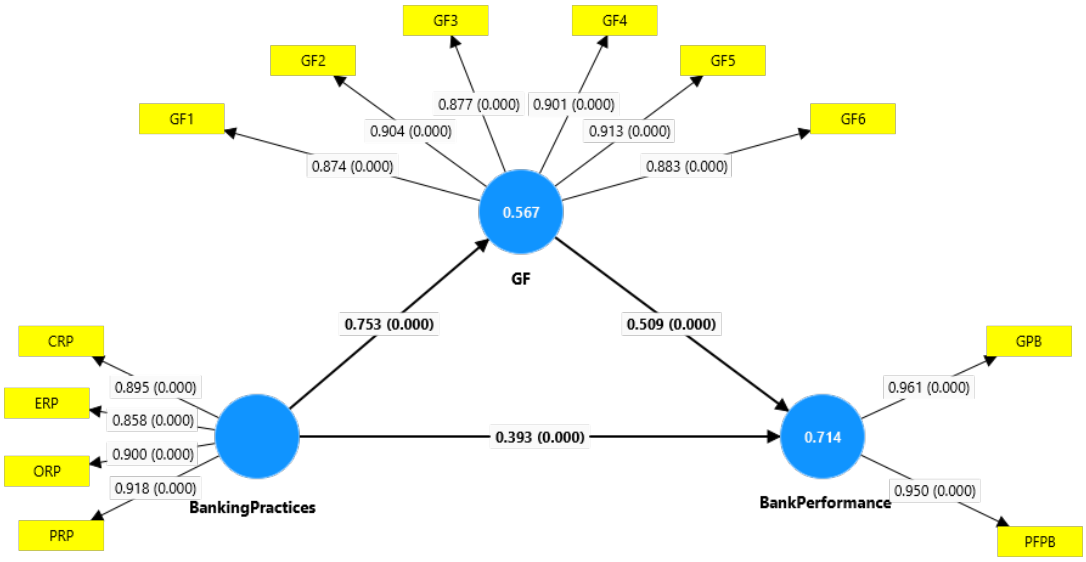
Path	Mean	Standard Deviation	t-stat	p-value	Confidence Interval	
					2.50%	97.50%
CRP -> GF	0.587	0.068	8.655	<0.001	0.445	0.711
CRP -> EPB	0.227	0.097	2.339	0.019	0.034	0.411
CRP -> PFPB	0.286	0.119	2.408	0.016	0.050	0.511
ERP -> GF	0.141	0.059	2.396	0.017	0.023	0.254
ERP -> EPB	0.053	0.064	0.830	0.407	-0.072	0.180
ERP -> PFPB	0.089	0.086	1.038	0.299	-0.078	0.254
GF -> EPB	0.501	0.107	4.673	<0.001	0.288	0.697
GF -> PFPB	0.391	0.129	3.022	0.003	0.135	0.632
ORP -> GF	-0.045	0.077	0.582	0.561	-0.194	0.105
ORP -> EPB	0.026	0.078	0.334	0.738	-0.127	0.177
ORP -> PFPB	0.144	0.085	1.701	0.089	-0.016	0.313
PRP -> GF	0.159	0.073	2.198	0.028	0.025	0.306
PRP -> EPB	0.138	0.097	1.428	0.153	-0.045	0.335
PRP -> PFPB	-0.057	0.095	0.603	0.547	-0.242	0.130

Note. Researcher's Calculation

Higher Order

Measurement Model: The outer loadings for PRP (0.918), ORP (0.900), ERP (0.858), and CRP (0.895), as well as EPB (0.961) and PFPB (0.950), all exceed cross-loadings and are statistically significant ($p < 0.001$). The path coefficients are also significant: GBP → GF (0.753), GBP → Bank Performance (0.393), and GF → bank performance (0.509), all with p-values < 0.001. The R^2 value for GF is 0.567, indicating that GBP explains 56.7% of its variance, while the R^2 for bank performance is 0.714, showing that GF and GBP together explain 71.4% of its variance.

Figure 2
Structural Model Assessment



Higher Order HTMT: The HTMT values for second-order constructs are all below the 0.90 threshold, with the highest being 0.864, confirming satisfactory discriminant validity among GBP, GF, and BP.

Table 8
Second-order HTMT ratio

	BP	GBP	GF
BP			
GBP	0.844		
GF	0.864	0.8	1.00

Note. Researcher's Calculation

Hypothesis Testing: The results of the hypothesis testing, as summarized in Table 9, provide valuable insights into the relationships among GBP, GF, and BP. The analysis confirms that CRP and GF significantly contribute to enhancing both environmental and financial performance of banks. Additionally, ERP and PRP were found to positively influence GF, suggesting that internal engagement and structured policy frameworks play a role in advancing sustainable financial initiatives.

However, ORP did not exhibit any significant effect on either GF or BP, highlighting a potential gap between operational green initiatives and their strategic outcomes. Similarly, ERP and PRP did not show a direct effect on environmental or financial performance, indicating that their influence may be more indirect or contingent upon other factors such as implementation strength or organizational support.

Overall, eight of the fifteen hypotheses (H1, H3, H4, H5, H6, H9, H13, and H15) were supported, affirming the central role of GF as both a direct contributor to BP and as a mediator linking GBP with broader sustainability outcomes. These findings reinforce the importance of customer engagement, targeted policy development, and internal alignment in driving effective GF strategies within the banking sector.

Table 9

Hypothesis Testing

Hypothesis	Mean	*p-value*	Remarks
H1: ERP -> GF	0.141	0.017	Supported
H2: ORP -> GF	-0.045	0.561	Not Supported
H3: CRP -> GF	0.587	<0.001	Supported
H4: PRP -> GF	0.159	0.028	Supported
H5: GF -> EPB	0.501	<0.001	Supported
H6: GF -> PFPB	0.391	0.003	Supported
H7: ERP -> EPB	0.053	0.407	Not Supported
H8: ORP -> EPB	0.026	0.738	Not Supported
H9: CRP -> EPB	0.227	0.019	Supported
H10: PRP -> EPB	0.138	0.153	Not Supported
H11: ERP -> PFPB	0.089	0.299	Not Supported
H12: ORP -> PFPB	0.144	0.089	Not Supported
H13: CRP -> PFPB	0.286	0.016	Supported
H14: PRP -> PFPB	-0.057	0.547	Not Supported
H15: GF -> GBP ->Bank Performance		<0.001	Supported

Note. Researcher's Calculation

Mediation Analysis

To determine the extent of this mediation, the Variance Accounted For (VAF) method was employed. The indirect effect was calculated as 0.383, and the total effect, which is the sum of the direct and indirect effects, was found to be 0.776. Using the VAF formula, i.e., VAF= Indirect Effect / Total Effect, the value was computed to be 0.494. Since this value falls between 0.20 and 0.80, it indicates that GF plays a partial mediating role in the relationship between GBPs and BP. This implies that while GBPs have a direct impact on performance, their influence is significantly enhanced when channeled through GF mechanisms.

Discussions

The findings of this study provide important insights into how green banking practices influence bank performance, with GF serving as a mediating factor. The analysis indicates that ERP, CRP, and PRP significantly enhance GF, consistent with previous research by Chen et al. (2022), Sohail et al. (2023), and Bhat et al. (2024). These results suggest that institutional efforts, such as training employees on environmental issues, engaging customers through green financial products, and implementing formal policy frameworks, play a crucial role in channeling financial resources toward environmentally responsible investments. In contrast, ORP did not show a significant effect on GF, diverging from the findings of Bansal et al. (2023). This inconsistency may be attributed to the relatively nascent stage of green operational implementation in Nepalese banks, where activities like digital connectivity or energy-saving infrastructure have not yet translated into green financial outcomes.

GF was found to have a statistically significant and positive impact on both the environmental and perceived financial performance of banks. This supports the notion that GF acts as a strategic enabler that aligns profitability with sustainability, a finding consistent with studies by Taneja and Özen (2023) and Subedi and Bhattarai (2024). The result further reveals that among the various GBP, only CRP has a direct and significant impact on both environmental and financial performance. This supports the notion that the effectiveness of client-facing initiatives, such as offering green loan products and evaluating environmental risks in credit assessments, is a critical drivers of sustainable banking outcomes.

Conversely, ERP, ORP, and PRP did not show statistically significant direct effects on performance metrics, reinforcing earlier conclusions by Shaumya and Arulrajah (2017) and Bhat et al. (2024). These results imply that internal green initiatives require stronger alignment with performance measurement systems or better implementation to yield visible performance improvements.

An important contribution of the study is the identification of GF as a partial mediator between green banking practices and bank performance. The mediation analysis confirms that while some GBP may not directly influence performance, their impact becomes evident when funneled through effective GF mechanisms. This finding is in line with the work of Zhang et al. (2022) and Bansal et al. (2023), highlighting the instrumental role of GF in translating sustainability intentions into actionable and measurable outcomes.

In the Nepalese context, where green banking is still in its formative phase, this highlights the need for banks to develop robust green financial products and reporting systems that can bridge the gap between policy and practice.

The contextual specificity of Nepal's banking environment provides further explanation for some divergent findings. The limited effect of ORP may reflect a lack of technological sophistication and limited investment in infrastructure required for impactful green operations. Similarly, the insignificant role of PRP in driving performance could be due to the recent introduction of green banking regulations, which have yet to achieve full institutional

integration. Furthermore, the absence of significant results for ERP may indicate a gap in environmental human resource development, suggesting that current training programs are either insufficient or misaligned with performance objectives.

Conclusion and Implications

This study concludes that GBPs have significant influence on perceived bank performance, with GF acting as a partial mediator. The study demonstrates that customer-related practices have the strongest direct impact on both environmental and financial performance. While employee-related and policy-related practices significantly enhance green financing, they do not directly influence performance outcomes. Operation-related practices, however, show no statistically significant effect on green financing or bank performance. The results confirm that green financing plays mediating role, indicating that the performance impact of certain GBPs becomes more visible when these practices are effectively converted into financial products or services that support environmental sustainability.

The findings of this study carry significant theoretical and practical implications for advancing sustainable banking. Theoretically, the study reinforces Stakeholder and Institutional Theories by demonstrating that green banking practices aligned with stakeholder expectations and regulatory frameworks can enhance both environmental and financial performance, particularly when mediated by green financing. It also contributes to the growing literature on sustainable finance by establishing the partial mediating role of green financing, emphasizing the importance of integrating mediators in sustainability-performance models. Practically, the study highlights the strategic importance of customer-related initiatives and structured policy frameworks in driving sustainability outcomes. Banks are encouraged to invest in green financial products, strengthen employee capacity, and realign operational systems to ensure their environmental initiatives translate into measurable performance.

Limitations and Further Research

Despite its valuable contributions, this study has certain limitations that offer avenues for future research. First, the use of cross-sectional data limits the ability to establish causal relationships between green banking practices, green financing, and bank performance. Longitudinal studies could provide deeper insights into how these relationships evolve over time. Second, the study relies on self-reported perceptions from banking professionals, which may introduce response bias; incorporating objective performance metrics or triangulating with customer perspectives could enhance validity. Third, the research is confined to the context of commercial banks in Nepal, which may limit the generalizability of findings to other financial institutions or geographic regions. Future research could explore comparative analyses across other financial actors such as development banks, cooperatives, and microfinance institutions to broaden the understanding of green finance ecosystems.

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Conflict of Interest

The Authors declare that there is no conflict of interest.

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Annex

Table A1

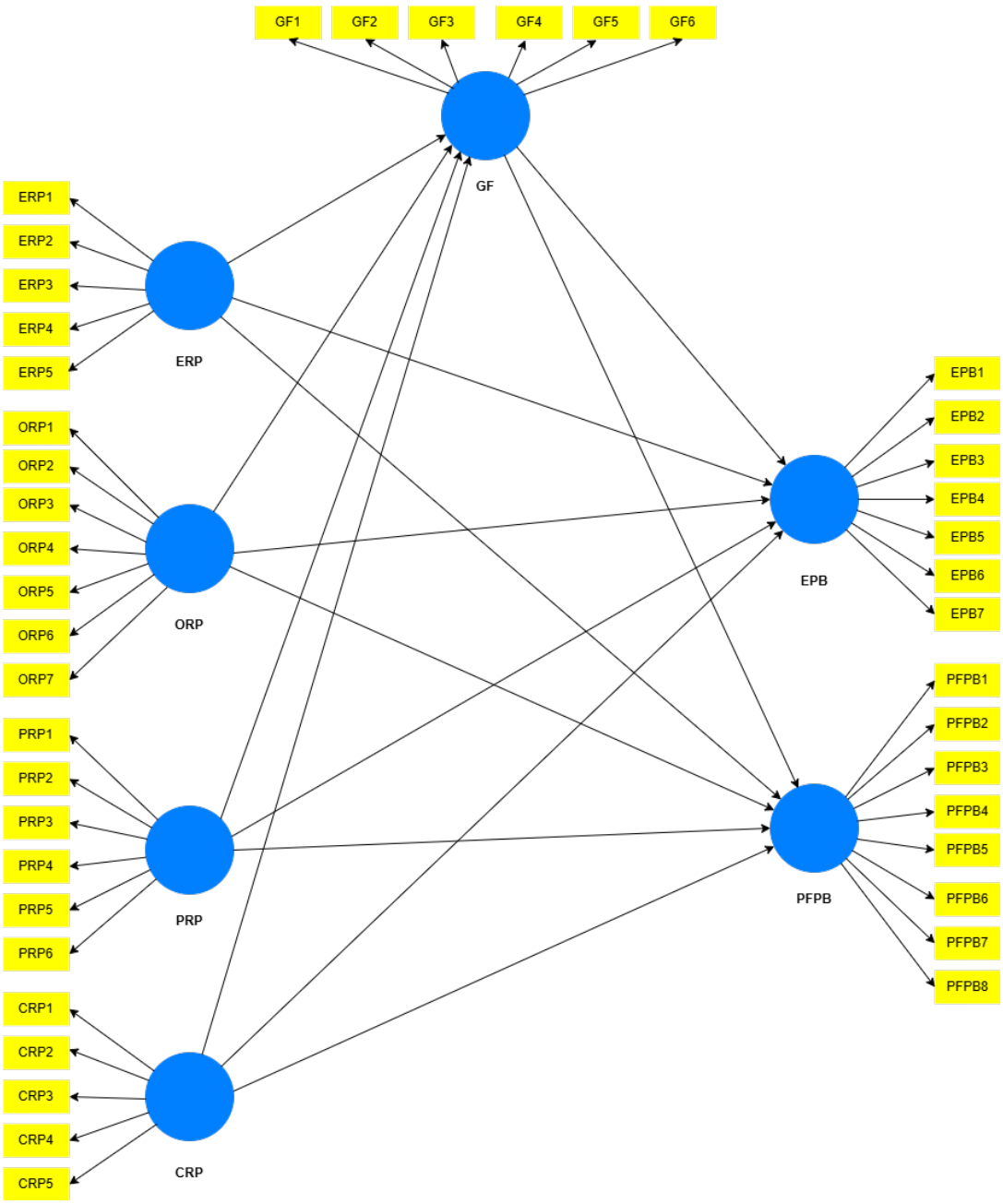
Cross Loading

	CRP	ERP	GF	EPB	ORP	PFPB	PRP
CRP1	0.814	0.627	0.653	0.605	0.646	0.556	0.775
CRP2	0.699	0.388	0.476	0.509	0.538	0.504	0.461
CRP3	0.829	0.550	0.650	0.650	0.547	0.620	0.579
CRP4	0.833	0.554	0.665	0.674	0.560	0.573	0.629
CRP5	0.851	0.548	0.653	0.671	0.600	0.587	0.664
ERP1	0.534	0.812	0.517	0.527	0.563	0.468	0.574
ERP2	0.574	0.858	0.534	0.552	0.573	0.470	0.579
ERP3	0.490	0.784	0.465	0.457	0.528	0.453	0.558
ERP4	0.346	0.511	0.262	0.249	0.427	0.293	0.280
ERP5	0.585	0.838	0.523	0.561	0.687	0.525	0.652
GF1	0.706	0.574	0.873	0.722	0.595	0.658	0.608

	CRP	ERP	GF	EPB	ORP	PFPB	PRP
GF2	0.686	0.540	0.904	0.732	0.553	0.609	0.630
GF3	0.654	0.513	0.877	0.728	0.487	0.584	0.583
GF4	0.693	0.539	0.901	0.720	0.514	0.617	0.580
GF5	0.714	0.546	0.913	0.735	0.542	0.679	0.637
GF6	0.679	0.561	0.883	0.740	0.540	0.668	0.589
EPB1	0.686	0.546	0.727	0.858	0.550	0.717	0.626
EPB2	0.666	0.495	0.681	0.851	0.532	0.701	0.587
EPB3	0.658	0.507	0.696	0.874	0.551	0.733	0.586
EPB4	0.664	0.573	0.657	0.832	0.537	0.674	0.628
EPB5	0.661	0.550	0.712	0.864	0.545	0.690	0.606
EPB6	0.677	0.576	0.725	0.886	0.592	0.740	0.660
EPB7	0.663	0.535	0.734	0.871	0.550	0.732	0.601
ORP1	0.520	0.622	0.445	0.471	0.802	0.478	0.631
ORP2	0.626	0.688	0.537	0.563	0.851	0.511	0.679
ORP3	0.626	0.626	0.537	0.570	0.784	0.552	0.693
ORP4	0.512	0.454	0.398	0.417	0.760	0.420	0.494
ORP5	0.512	0.469	0.391	0.465	0.796	0.454	0.579
ORP6	0.551	0.588	0.537	0.551	0.738	0.441	0.690
ORP7	0.586	0.522	0.461	0.466	0.802	0.460	0.598
PFPB1	0.600	0.468	0.609	0.716	0.538	0.828	0.504
PFPB2	0.665	0.560	0.684	0.789	0.583	0.853	0.591
PFPB3	0.610	0.493	0.629	0.723	0.524	0.892	0.533
PFPB4	0.610	0.486	0.652	0.721	0.508	0.824	0.562
PFPB5	0.451	0.413	0.418	0.468	0.340	0.635	0.370
PFPB6	0.518	0.469	0.517	0.643	0.426	0.790	0.460
PFPB7	0.468	0.408	0.472	0.548	0.446	0.758	0.377
PFPB8	0.489	0.354	0.464	0.542	0.396	0.722	0.369
PRP1	0.608	0.610	0.544	0.586	0.686	0.478	0.850
PRP2	0.635	0.580	0.552	0.579	0.658	0.497	0.877
PRP3	0.656	0.580	0.572	0.566	0.654	0.479	0.877
PRP4	0.713	0.672	0.636	0.682	0.743	0.609	0.903
PRP5	0.732	0.616	0.601	0.647	0.724	0.553	0.890
PRP6	0.687	0.618	0.624	0.640	0.684	0.531	0.823

Figure A1

Structural Model- First Order



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