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Assessing Employees' Perceptions of Green Banking in Nepal's Commercial Banks

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ABSTRACT

This study aimed to explore employees' perceptions of green banking in commercial banks of Nepal, focusing on the influence of five key independent variables: green financial products and services, green human resource management, green investment, risk management, and green business strategies. Data were collected from 386 respondents using a structured questionnaire. The relationships between the independent variables and employees' perceptions of green banking were analyzed using the Statistical Package for Social Science (SPSS) software. Descriptive analysis, correlation, and regression techniques were employed to interpret the data. The empirical findings revealed that green financial products and services, green investment, and green business strategies have a significant positive relationship with employees' perceptions of green banking. These factors play a crucial role in shaping employees' views on green banking initiatives, underscoring the importance of offering sustainable financial products, investing in eco-friendly projects, and adopting green business practices within commercial banks. Conversely, the study found that green human resource management and risk management do not exhibit a significant relationship with employees' perceptions of green banking. The study emphasizes that commercial banks should prioritize enhancing green financial products, green investment, and green business strategies to improve employees' perceptions of green banking.

Keywords: green banking, green financial products and services, green human resource management, green investment, risk management, green business strategies

Introduction

Climate change has emerged as one of the most complex and pressing issues in contemporary society. As awareness of global warming and its adverse effects on human life increases, governments, industries, and various stakeholders are intensifying their efforts to mitigate environmental challenges. Financial institutions, particularly banks, play a crucial role in this process. By promoting green products and services, banks can significantly reduce their environmental carbon footprint and contribute to sustainable development (Nath et al., 2014).

Despite being perceived as environmentally friendly due to their limited direct impact on the environment, banks' financing activities for high-carbon-emitting industries—such as steel, cement, and power generation—contribute significantly

to environmental degradation. This positions the banking sector as a critical bridge between economic development and environmental conservation, with the potential to encourage socially responsible and sustainable investments (Meena, 2013).

The global banking sector faces challenges due to its significant energy consumption and insufficient focus on internal sustainability measures, which have increased its carbon footprint. To address these issues, banks are transitioning from a traditional profit-centric approach to a triple bottom line framework that emphasizes three Ps: People (society), Planet (environment), and Profit (economy) (Risal & Joshi, 2018). This transition has catalyzed the concept of "green banking", which encompasses a holistic approach to embedding environmental and social accountability into banking operations (Tara et al., 2015).

Green banking—also referred to as ethical or sustainable banking—encompasses a range of environmentally friendly practices aimed at reducing the carbon footprint of banking activities. These practices include online and mobile banking, paperless transactions, energy management initiatives, and financing for renewable energy projects. Banks are increasingly adopting guidelines to manage social and environmental risks associated with development project financing, demonstrating their commitment to fostering sustainability (Mehta & Sharma, 2016). Examples of green products and services include online banking, mobile banking, green deposits, green mortgages and loans, green credit cards, and green reward checking accounts. By implementing measures such as paperless banking and utilizing renewable energy sources like solar and wind power, banks can further reduce their carbon footprints. Additionally, effective environmental management systems can facilitate the evaluation of risks associated with investment projects. Banks may also choose to withdraw from financing high-risk projects (Bihari & Pradhan, 2011).

The primary aim of green banking is to reduce consumers' energy costs while enhancing investments that contribute to a low-carbon economy. Financial institutions must demonstrate a stronger commitment to green investments in order to meet global environmental goals. The most important financial services can be provided with minimal environmental impact while engaging consumers at every level (Charan et al., 2019). Green banking offers numerous advantages: it eliminates paperwork by facilitating online transactions; it raises awareness among businesspeople regarding environmental and social responsibility; and it allows ethical banks to issue loans at lower interest rates due to their emphasis on ecological gains (Bihari & Pandey, 2015).

Problem Statement

Green banking is a relatively new phenomenon within the financial sector, marking a shift from traditional banking operations to practices that prioritize environmental sustainability. Unlike conventional banking, green banking focuses on the social and environmental impact of its activities, aiming primarily to protect and preserve the environment. While many banks adhere to guidelines issued by their central or head offices, the actual implementation of green banking practices remains in its developmental stages across various regions (Islam & Das, 2013).

Banks, despite being perceived as less environmentally intrusive than industries, contribute indirectly to pollution through their operations. The extensive use of air conditioning, lighting, electronic devices, and fuel-powered equipment increases carbon dioxide emissions. Moreover, their financial support for projects in pollution-intensive sectors exacerbates environmental degradation. These practices not only contribute to climate change but also disrupt supply chains, impact public health, and reduce workforce efficiency due to health-related absenteeism and lost man-hours. Over recent decades, there has been a growing societal emphasis on environmentally friendly practices. Governments, policymakers, businesses, and the public have increasingly focused on environmental protection and climate change, fostering an era of ecological awareness. This shift has placed

industries under pressure to adopt sustainable and environmentally friendly practices, as customers now demand greener products and services. The financial sector, responding to heightened public expectations and regulatory requirements, has embraced green banking as a viable solution to align with global environmental goals.

The transition to green banking has significantly influenced the performance of banks, particularly those dependent on financing manufacturing and production sectors with low environmental accountability. Shifting from traditional banking to green banking practices affects customer perceptions, satisfaction, loyalty, and overall financial performance. Although Nepal is relatively new to the green banking concept, the country is increasingly impacted by global environmental concerns, highlighting the necessity for its financial sector to integrate sustainable practices. This research aims to investigate employees' perceptions of green banking in Nepalese commercial banks. By understanding the attitudes and awareness of banking professionals toward green banking practices, the study seeks to identify opportunities and challenges in fostering sustainable financial operations within Nepal's banking industry.

Research Objective

The primary objective of this study is to explore employees' perceptions of green banking in commercial banks within the Kathmandu district. Specifically, the study seeks to assess how various dimensions of green banking—such as green financial products and services, green human resource management, green investment, risk management, and green business strategies—impact employees' understanding, attitudes, and support for sustainable banking practices. By identifying these factors, the research aims to provide insights that can guide the effective implementation of green banking initiatives in Nepal's commercial banking sector.

Literature Review

Green banking has emerged as a pivotal focus for financial institutions worldwide, driven by increasing environmental concerns and the demand for sustainable business practices. Defined as banking activities that promote environmental sustainability, reduce carbon footprints, and encourage eco-friendly investments, green banking represents a significant shift from traditional banking paradigms (Masukujjaman & Aktar, 2013). Unlike conventional banking, which primarily emphasizes financial profit, green banking integrates environmental and social considerations into its operations (Singh & Singh, 2012).

The concept of green banking originated in Western countries and has gained traction globally, particularly in emerging markets (Kapoor, 2016). It encompasses various initiatives such as paperless banking, the development of green financial products (e.g., eco-friendly loans and green mortgages), and the implementation of environmentally friendly human resource management practices (Zhelyazkova & Kitanov, 2015). These initiatives not only contribute to environmental conservation but also attract eco-conscious consumers and investors, thereby enhancing customer loyalty and overall financial performance (Leonidou et al., 2017). Furthermore, green banking helps mitigate various risks—including credit, legal, and reputational risks—especially as financial institutions face increasing regulatory pressures related to their environmental impact (Dharwal & Agarwal, 2013).

In emerging markets, the adoption of green banking is often driven by regulatory pressures and public demand for sustainable practices (Ntwork, 2017). Financial institutions in these regions are increasingly adopting green strategies to comply with international standards such as ISO 14001 and to capitalize on the growing market for green financial products (Mitić, 2012).

The role of employees is critical in the successful implementation of green banking initiatives. Human resource management practices that promote environmental awareness—such as training programs and performance-based rewards—are essential for fostering employee engagement and ensuring the effectiveness of green strategies (Jabbour & Santos, 2008). Employee perceptions of green banking significantly influence

its success; their commitment to sustainability directly impacts the bank's environmental performance (Sreedaran & Murugan, 2019).

Empirical Review

Sharma and Choubey (2022) examined the effects of three green banking initiatives—green product development, green corporate social responsibility (CSR), and green internal processes—on two potential outcomes: green brand image and green trust. Their findings indicated that 63% of respondents believed their bank developed several green banking products and services. Additionally, 53% of bankers felt their institution integrated green internal processes into daily operations, while 78% acknowledged engagement in various green CSR initiatives. The investigation revealed that over 60% of respondents believed these initiatives helped rebuild customer trust by enhancing the bank's green brand reputation.

Uddin's (2018) study titled "Practicality of Green Human Resource Management Practices: A Study on Banking Sector in Bangladesh" focused on implementing Green HRM concepts rather than merely discussing existing knowledge. The study assessed engagement with Green HRM practices across a sample of 30 commercial banks in Bangladesh. It highlighted how traditional HRM practices can be integrated with green initiatives across functions such as job analysis, recruitment, selection, induction, performance appraisal, and reward management. The findings indicated that while awareness of Green HRM was high among sampled banks, actual practice levels were below necessary thresholds. The study concluded that adopting green practices positively correlates with improved organizational performance and enhances reputation.

Chițimiea et al. (2021) investigated the significance of implementing green investments within organizations while identifying factors influencing such investment decisions. Their findings emphasized that facilitating environmentally sound projects addresses pressing issues like pollution and global warming. Although returns from investing in green projects may take longer to materialize, both private and public entities stand to benefit significantly in the long run.

Chitra and Gokilavani (2020) highlighted Indian green banking initiatives through their research. They identified key advantages and challenges associated with adopting green banking practices. Their study concluded that implementing these practices not only benefits the environment but also enhances operational efficiency while reducing fraud, errors, risks, and associated costs.

Hasan et al. (2019) explored the implications of integrating green strategies across various business processes within organizations. The study revealed an increasing trend among traditional businesses to adopt greener practices due to heightened awareness about environmental impacts. The authors argued that establishing comprehensive greening practices across all business functions is essential for achieving sustainability within the green economy.

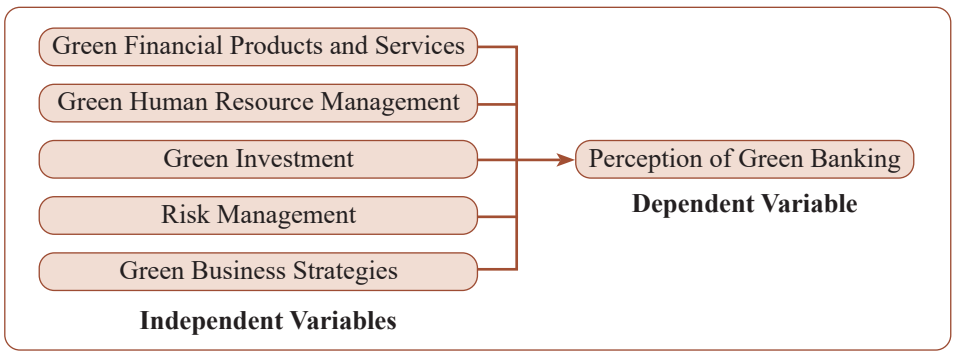
Green banking in Nepal is increasingly recognized as a vital strategy for promoting environmental sustainability within the financial sector. As highlighted by Mishra and Aithal (2023), green banking practices not only facilitate the development of eco-friendly financial products and services but also enhance public awareness about climate change and its implications. Historically, conventional banks in Nepal were slow to adopt sustainable practices; however, recent shifts indicate a growing commitment to integrating environmental considerations into their operations. This transition is essential for addressing the pressing challenges posed by climate change, as it enables banks to support investments in sectors that prioritize sustainability (Mishra & Rai, 2017). Furthermore, Mishra and Aithal (2022) emphasize that the implementation of green financing initiatives can significantly contribute to the overall economic development of Nepal while fostering a culture of sustainability among financial institutions. By adopting green banking practices, Nepalese banks can play a crucial role in mitigating environmental impacts and promoting a sustainable future for the nation (Mishra & Aithal, 2021; Mishra, 2023).

Theoretical/ Conceptual Framework

Theoretical underpinnings for the dependent and independent variables are presented below and are based on the numerous publications examined and reviewed in the literature review above. The domains of this paradigm include independent variables like Green Financial Products and Services, Green Human Resource Management, Green Investment, Risk Management and Green Business Strategies and dependent variable element Perception of Green Banking. The conceptualization of the theoretical framework demonstrates the interactions between the five independent variables and a dependent variable. The study's framework is depicted in the diagram below:

Figure 1

Conceptual Framework



In summary, green banking is an essential strategy for financial institutions seeking to align with global sustainability goals. It reduces environmental risks, enhances competitive advantage, and meets the growing demand for sustainable financial products. Understanding employee perceptions and engagement is crucial for the successful implementation of green banking practices, particularly in emerging markets like Nepal. Future research should focus on exploring these perceptions to further enhance the adoption of green banking. The literature indicates a growing recognition of the importance of green banking as a strategy for promoting sustainability within the financial sector. The integration of environmentally friendly practices not only enhances institutional reputation but also contributes positively to overall economic stability while addressing global environmental challenges. Future research should continue to explore employee perceptions and engagement in order to facilitate a more robust implementation of green banking initiatives across diverse contexts.

Methodology

Research Design, Sampling Technique and Size, Study Area

The study used both descriptive and causal-comparative research designs to inspect the concept of green banking and employees' perceptions of green banking in commercial banks of Nepal. A descriptive design was used for fact-finding and to gather complete information regarding the variables related to green banking. Additionally, a correlation research design was applied to explore the nature, direction, and strength of the relationships between independent variables and green banking practices. A causal-comparative research methodology was used to determine the impact of independent variables on green banking use and implementation. Furthermore, the study uses a quantitative research approach to evaluate the data. Structured questionnaires were delivered to various demographic groups via email, social media platforms, and printed hardcopy form.

In this study, the researcher utilized non-probability sampling techniques, specifically judgmental and convenience sampling. Given the

large population of employees across commercial banks in Nepal, a sample was selected to represent the entire population.

Due to the unavailability of comprehensive data on the total number of employees in all commercial banks, the sample size was determined using the following formula:

$$\text{Sample (n)} = \frac{z^2pq}{e^2}$$

Where,

- z is the value obtained from normal distribution table at 5% level of significance or 95% confidence level
- p is the proportion described by previous research (we take the standard value of 0.5 or 50%)
- q is the value remaining after p = 1-p
- e is the error limit, here we take standard value of 0.05

$$\text{Sample (n)} = \frac{1.96^2 x 0.5 x 0.5}{0.05^2} = 384$$

$$\text{Sample size} = \frac{z^2.[p*q]}{e^2} = 1.96$$

The sample size for this study is 386.

Instrumentation

The primary instrument applied for gathering data in this study was structured questionnaires, which were adapted and modified (Bohora, 2018).

The structured questionnaire for this study was divided into two sections: Part A and Part B. Part A included questions aimed at group respondents based on demographic characteristics such as age, gender, and education level. Part B included research-specific questions designed to address the study's objectives.

The respondents' demographic profile was analyzed using descriptive statistics such as mean, median, and standard deviation. In addition, T-tests and hypothesis testing were used to investigate the correlations between variables. Cronbach's alpha was used to determine the reliability of the measurement scales. Correlation and linear regression analyses were used with the SPSS software package to investigate the relationships between the independent variables (green financial products and services, green human resource management, green investment, risk management, and green business strategies) and the dependent variable (perception of green banking). All responses were examined using a 6-point Likert scale, and after completed, each item was analyzed separately. The six-point scale was mentioned as follows: strongly disagree=1; disagree=2; slightly disagree=3; neutral=4; agree=5; strongly agree = 6.

Data Analysis Tools

The data for this study was collected using a questionnaire administered through Google Forms. The raw data gathered from the responses were then examined using Microsoft Excel and SPSS software. These tools were applied to process the raw data and translate it into representations appropriate for meaningful analysis. Specifically, the analysis entailed calculating the mean, standard deviation, correlation, and conducting regression analysis.

Hypothesis Proposed

H1: There is a positive and significant impact of green financial products and services on the perception of employees towards green banking in commercial banks.

H2: There is a positive and significant impact of green human resource management on the perception of employees towards green banking in commercial banks.

H3: There is a positive and significant impact of green investment on the perception of employees towards green banking in commercial banks.

H4: There is a positive and significant impact of risk management on the perception of employees towards green banking in commercial banks.

H5: There is a positive and significant impact of green business strategies on the perception of employees towards green banking in commercial banks.

Model Specification

The study applied the following regression model:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \mu$

Y = GB = Green Banking

X_1 = GFPS= Green Financial Products and Services

X_2 = GHRM= Green Human Resource Management

X_3 = GI= Green Investment

X_4 = RM= Risk Management

X_5 = GBS= Green Business Strategies

Reliability Testing

In this research, we initially assessed the reliability of 25 respondent's responses through pilot testing. Subsequently, adjustments were made to certain statements based on the results of the pilot test and guidance from the supervisor. The reliability of the responses was measured by the Cronbach's alpha. The value of Cronbach's alpha was more than 0.70 for 386 respondents and 25 respondents that displayed statements were consistent and dependable before proceeding with the main study.

Table 1

Conceptual Framework Reliability Test for 25 Respondents

Particular	Reliability	No. of Items
Green Financial Products and Services	0.791	5
Green Human Resource Management	0.716	4
Green Investment	0.917	4
Risk Management	0.807	6
Green Business Strategies	0.983	6
Green Banking	0.894	6
Overall	0.877	6

Table 2

Reliability Test for 386 Respondents

Particular	Reliability (Population)	No. of Items
Green Financial Products and Services	0.722	5
Green Human Resource Management	0.754	4
Green Investment	0.935	4
Risk Management	0.791	6
Green Business Strategies	0.964	6
Green Banking	0.868	6
Overall	0.840	6

Table 3

Demographic Profile of the Respondents

	Constructs	Frequency	Percentage
Gender	Female	210	54.4
	Male	176	45.6

	Constructs	Frequency	Percentage
Age Group	Below 30 Years	112	34.7
	30-35 Years	156	40.4
	36-40Years	44	11.4
	40 and above	52	13.5
Knowledge of Green banking	Partial	200	51.8
	Full	186	48.2
Academic Qualification	Plus 2 and below	132	34.2
	Bachelor	165	42.7
	Master's and above	89	23.1
Opinion about green banking	Good	107	27.7
	Medium	153	39.6
	Very good	126	32.6
Satisfaction with Green banking	Low	45	11.7
	Medium	90	23.3
	High	112	29.0
	Very High	139	36.0
Future of Green Banking	Medium	94	24.4
	Very Good	292	75.6
	NIC Asia Bank	26	6.7
	NABIL Bank	57	14.8
	Global IME	36	9.3
	Nepal Investment Mega Bank	50	13.0
	Rastriya Banijya Bank	70	18.1
	Standard Chartered Bank	59	15.3
	NMB Bank	44	11.4
	Laxmi Sunrise Bank	44	11.4

The demographic analysis of the 386 responses received revealed that 45.6% of the respondents were male (176 individuals), and 54.5% were female (210 individuals). The age distribution showed that the largest group of respondents (40.4%) fell within the 30-35 years age range, comprising 156 individuals. The second largest group, accounting for 34.7%, was from the categories below 30 years and 40 years and above age. The 36-40 years age group made up 13.5% of the respondents, while the final age category, above 40, comprised 11.4%. In terms of academic qualifications, 42.7% (165 respondents) held a bachelor's degree, 34.2% (132 respondents) had completed intermediate education or below, and 23.1% (89 respondents) possessed a master's degree or higher. Regarding the perception of green banking products and services, 27.7% (107 respondents) considered them good, 39.6% (153 respondents) rated them as medium, and 32.6% (126 respondents) regarded them as very good. When asked about their knowledge of green banking, 51.2% (200 respondents) reported having partial knowledge, while 48.2% (186 respondents) had full knowledge. Satisfaction levels with green banking were distributed as follows: 36% (139

respondents) were highly satisfied, 29% (112 respondents) expressed high satisfaction, 23.3% (90 respondents) had medium satisfaction, and 11.7% (45 respondents) reported low satisfaction. Looking ahead, 24.4% (94 respondents) believed the future of green banking would be medium, while 75.6% (292 respondents) were optimistic about the very good future of green banking. The survey was conducted among employees from various commercial banks, including 26 respondents from NIC ASIA, 57 from NABIL, 36 from Global IME, 50 from Nepal Investment Mega Bank, 70 from Rastriya Baniya Bank, 59 from Standard Chartered Bank, 44 from NMB Bank Nepal, and 44 from Laxmi Sunrise Bank.

Table 4

Descriptive Analysis of Green Financial Products and Services

Code	Statements	N	Mean	Std. Deviation
GFS1	My bank achieves lasting growth by offering sustainable financial products or services.	386	4.92	1.19
GFS2	My bank focuses on green products/services as a matter of concern for green banking initiatives.	386	4.84	0.62
GFS3	Green products/services are demanded by customers.	386	5.60	0.62
GFS4	Green products/services have low perceived financial risk	386	4.80	1.24
GFS5	My bank develops environmentally friendly products that combine social concern.	386	5.43	0.68
GFS	Average	386	5.12	0.87

Descriptive statistics reveal that the mean of the Green Financial Products and Services ranges from a minimum value of 4.80 to maximum value of 5.60. Among them, the most agreed observations of the respondents are 'Green products/services are demanded by customers' whereas, the less agreed observation is 'Green products/services have low perceived financial risk'. The weighted average mean value overall is 5.12, which indicates green financial products and services are inclined towards agreement. The fourth statement with higher standard deviation of 1.2411 shows that respondents have more deviation with the statement 'Green products/services have low perceived financial risk' i.e. the values in the data set are away from the mean.

Table 5

Descriptive Statistics of Green Human Resource Management

Code	Statements	N	Mean	Std. Deviation
GHR1	My bank follows green practices (online advertisement tools, use of email, video-based telephone interviews) while recruiting and selecting staff.	386	4.15	1.31
GHR2	My bank conducts green banking training and seminars to build capacity for the employees.	386	4.35	1.30
GHR3	In my bank employees actively participate in the green training programs.	386	4.14	1.23
GHR4	Academic training and workshops on green banking, environmental and social risk management are conducted in my bank.	386	4.94	0.79
GHR	Average	386	4.39	1.16

Table 5 shows four descriptive statistical statements of Green Human Resource Management, among which the fourth statement has the highest mean and third statement has the lowest mean. The highest mean of 4.94 indicates that 'Academic training and workshops on green banking, environmental and social risk management is conducted in my bank' which is the most agreed statement. Lowest mean value of 4.14 indicates that respondents have agreed less on "In my bank employees actively participate in the green training programs'. The aggregate means of Green Human Resource Management is 4.398 which suggests that the respondents agree that Green Human Resource Management impacts the perception of employees regarding green banking.

Table 6

Descriptive Statistics of Green Investment

Code	Statements	N	Mean	Std. Deviation
GI1	My bank increases the proportion of investment in environmental projects like solar energy, hydropower and other similar projects.	386	4.93	0.99
GI2	My bank provides reasonable interest loans (Green loans) to consumers who initiate environmental projects on a social or individual level.	386	4.91	0.94
GI3	My bank encourages investment in economic activities that help to recover environmental degradation.	386	4.93	0.98
GI4	My bank encourages investment in that project which helps to prevent deterioration of the environment.	386	4.97	0.92
GI	Average	386	4.93	0.96

Table 6 shows four descriptive statistical statements of Green Investment, among which the fourth statement has the highest mean and the second statement has the lowest means. The highest means of 4.97 indicates that 'My bank encourages investment to that project which helps to prevent deterioration of the environment' which is the most agreed statement. The lowest mean value of 4.91 indicates that respondents have agreed less on 'My bank provides a reasonable interest loan (Green loan) to consumers who initiate environmental projects on a social or individual level'. The aggregate mean of Green Investment is 4.9372 which suggests that the respondents agree that Green Investment impacts the perception of employees in regards to green banking.

Table 7

Descriptive Statistics of Risk Management

Code	Statements	N	Mean	Std. Deviation
RM1	Addressing environmental issues in financial operations is a part of sound risk management in my bank.	386	4.25	1.24
RM2	My bank works with various national and international NGOs for insight & expertise on environmental management issues and performance.	386	4.54	1.15
RM3	My bank encourages projects which take care of performance and use of natural renewable resources.	386	4.45	1.19
RM4	My bank considers environmental risk management in business decisions.	386	4.54	1.23
RM5	My bank carries an environmental rating of the investment proposal.	386	4.93	0.96
RM6	My bank develops environmentally friendly products that combine ecological and social concerns to minimize the financial risk.	386	5.46	0.90
RM	Average	386	4.76	1.11

Table 7 shows the six descriptive statistics statements of risk management. The mean ranging from 4.25 to 5.46 shows that responses are inclined towards agreement. The table shows that the sixth statement has the highest mean i.e. 5.46. This indicates that the maximum respondents believe the statement 'My bank develops environmentally friendly products that combine ecological and social concerns so as to minimize the financial risk'. The first statement has the lowest mean value i.e. 4.25. It indicates that respondents agree that 'Addressing environment issues in financial operations are a part of sound risk management in my bank'. The average mean of risk management is 4.768 indicating inclination towards agreement.

Table 8

Descriptive Statistics of Green Business Strategies

Code	Statements	N	Mean	Std. Deviation
GBS1	Each year my bank determines a set of yearly green targets.	386	4.43	1.45
GBS2	My bank prepares the necessary budget for pursuing the strategic plan in synergy with green target.	386	4.61	1.37
GBS3	My bank uses online transactions (E-banking, mobile banking) for green banking.	386	4.48	1.34
GBS4	My bank provides a reasonable interest loan to promote green banking.	386	4.63	1.34
GBS5	My bank uses video conferencing and other online platforms instead of physical movement to promote green banking.	386	4.83	1.10
GBS6	My bank considers the environmental performance of suppliers, distributors, and sub-contractors while developing strategies regarding purchase.	386	4.97	1.17
GBS	Average	386	4.66	1.30

Table 8 shows the descriptive statistics of Green Business Strategies. There are altogether six statements in the table with their respective mean ranging from the highest mean value 4.97 to the lowest mean value of 4.43 which shows that responses are inclined towards agreement. The sixth statement has the highest mean of 4.97. It indicates that maximum respondents agree with the statement 'My bank considers the environmental performance of suppliers, distributors, and sub-contractors while developing strategies regarding purchase'. Similarly, the first statement has the lowest mean value i.e. 4.43. It indicates that respondents agree that 'Each year my bank determines a set of yearly green targets'. The average mean of green business strategies is 4.66 which respondents incline towards agreement. The table also shows that the first statement has the highest standard deviation of 1.459 shows that respondents have more deviation with the statement 'Each year my bank determines a set of yearly green targets' i.e. the values in the data set are slightly away from the mean.

Table 9

Descriptive Analysis of Green Banking

Code	Statements	N	Mean	Std. Deviation
GB1	My bank is involved in setting up green branches (energy efficient buildings/green buildings).	386	4.94	0.97
GB2	In my bank, head office level or top management is involved in environmental protection related planning and implementation.	386	5.11	0.80
GB3	My bank promotes and facilitates environmentally oriented enterprises through special grants, loans and guidance.	386	5.39	0.74
GB4	My bank plans and exercises environmentally oriented enterprises through special grants, loans and guidance.	386	5.06	0.96
GB5	My bank implements environmental (green) reward systems in the branches that support the green banking initiatives.	386	5.13	1.01
GB6	My bank has initiatives to reduce paper usage and other wastage of materials.	386	5.27	0.59
GB	Average	386	5.15	0.85

Table 9 shows the descriptive statistics of perception towards green banking. There are six statements in the table with their respective mean ranging from 4.94 to 5.27 which shows that responses are inclined towards agreement. The table shows that the sixth statement has the highest mean of 5.27. This indicates that maximum respondents believe that their bank has initiatives to reduce paper usage and other wastage of materials. Similarly, the first statement has the lowest mean value i.e. 4.94. It indicates that respondents agree that their bank is involved in setting up green branches (energy efficient buildings/green buildings) but the degree of agreement is lesser than the other statements. The average mean of performance of MFIs is 5.15, indicates the inclination of response towards agreement.

Table 10

Correlation Analysis

	Pearson					
Code	**GFS**	**GHR**	**GI**	**RM**	**GBS**	**GB**
GFS	1					
GHR	.259**	1				
GI	.351**	.420**	1			
RM	.276**	.520**	.623**	1		
GBS	.355**	.406**	.591**	.806**	1	
GB	.172**	.286**	.619**	.622**	.747**	1

1. ** Correlation is significant at the 0.01 level (2-tailed).
2. GFS = Green Financial Products and Services; GHR = Green Human Resource Management; GI = Green Investment; RM = Risk Management; GBS= Green Business Strategies; GB=Green Banking

Table 10 shows the correlation between the dependent variable, i.e., green banking and the independent variables, i.e., green financial products and services, green human resource management, green investment, risk management and green business strategies. The correlation coefficients for the dependent variable GB with the independent variables GFS, GHR, GI, RM and GBS are 0.172,0.286,0.619,0.622 and 0.747. This indicates a moderately positive significance in the relationship between the dependent and independent variables.

Table 11

Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimated
1	.795a	0.632	0.627	0.40891

Table 11 shows that the multiple correlation coefficient (R) value standing at 0.795 indicates a strong correlation between the independent variables and the dependent variable. This suggests a robust relationship between the predictors and the outcome. The modified coefficient of determination value (adjusted R-square) is 0.627, which indicates that about 62.7% of the variability in the dependent variable can be explained by the independent variables, when all other factors remain constant. This suggests a good fit of the regression model to explain the influence of the independent variables on the dependent variable. The standard error of estimate indicates that, on average, the results obtained from the multiple regression equation deviate by 0.40891 units.

Table 12

Analysis of ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	109.061	5	21.812	130.447	.000a
Residual	63.540	380	0.167		
Total	172.601	385			

Note. Dependent Variable: GB; Predictors: (Constant), GFS, GHR, GI, RM, GBS

Table 12 illustrates the ANOVA table, which assesses the overall significance of the regression model. The calculated F-value of 130.447 with a P-value of 0.000 is less than the threshold significance level of 0.05, indicating the significant divergence of the null hypothesis. This suggests that the predictors (GFS, GHR, GI, RM, and GBS) collectively have a significant effect on the dependent variable GB. From the Regression ANOVA table above, it can be inferred that the independent variables (Green Financial Products and Services, Green Human Resource Management, Green Investment, Risk Management and Green Business Strategies) are good predictors of the relationship with dependent variable Green Banking which is indicated by the significance value 0.000< 0.05.

Table 13

Regression Model Summary

Model	Unstandardized		Standardized	t	sig	Collinearity	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.333	.191		17.442	.000		
GFS	-.146	.033	-.154	-4.486	.000	.824	1.213

Model	Unstandardized		Standardized	t	sig	Collinearity	
	B	Std. Error	Beta			Tolerance	VIF
GHR	-.043	.028	-0.058	-1.550	.122	.702	1.424
GI	.257	.032	0.338	8.046	.000	.549	1.822
RM	-.057	.050	-.066	-1.129	.260	.280	3.576
GBS	.378	.030	.679	12.409	.000	.324	3.088

Table 13 provides a detailed beta coefficient that reveals how changes in each independent variable affect the outcome when other factors remain constant. The beta coefficient for GFS is -0.146, which signifies that if other things are kept constant, a one-unit increase in GFS is expected to result in a 0.146-unit decrease in the outcome variable. Similarly, a one-unit increase in GHR is expected to change the outcome by -0.043 units, although this change is not statistically significant ($p = 0.122$). The beta coefficient for GI is 0.257, indicating that a one-unit increase in GI is associated with a 0.257-unit increase in the outcome variable. Likewise, a one-unit increase in RM results in a -0.057-unit decrease in the outcome, but this effect is not statistically significant ($p = 0.260$). Finally, the beta coefficient for GBS is 0.378, indicating that a one-unit increase in GBS results in a substantial 0.378-unit increase in the outcome variable, which is highly statistically significant ($p < 0.001$).

Table 13 also provides the details of the Variance Inflation Factor (VIF), which is used as a diagnostic tool for multicollinearity among predictor variables. Multicollinearity occurs when there is a high degree of correlation among independent variables, which can lead to misleading interpretations of coefficients. However, in this study, all VIF values for the predictor variables are found to be lower than the threshold VIF level of 5, indicating no serious issues of multicollinearity among the independent variables. Specifically, GFS has a VIF of 1.213, GHR has a VIF of 1.424, GI has a VIF of 1.822, RM has a VIF of 3.576, and GBS has a VIF of 3.088, all suggesting that multicollinearity is not problematic in the model.

Table 14

Result of Hypothesis Testing

Hypothesis	P-value	Result
H1: There is a positive and significant impact of green financial products and services on the perception of employees towards green banking in commercial banks.	0.000	Accepted
H2: There is a positive and significant impact of green human resource management on the perception of employees towards green banking in commercial banks.	0.122	Rejected
H3: There is a positive and significant impact of green investment on the perception of employees towards green banking in commercial banks.	0.000	Accepted
H4: There is a positive and significant impact of risk management on the perception of employees towards green banking in commercial banks.	0.260	Rejected
H5: There is a positive and significant impact of green business strategies on the perception of employees towards green banking in commercial banks.	0.000	Accepted

The research result presents that at 0.05 the level of significance denoted by alpha is greater than the computed P-value for green financial products and services (0.05 > 0.000), green investment (0.05 >0.000) and green business strategies (0.05>0.000). Thus, they are accepted. On the other hand, green human resource management (0.05<0.122) and green business strategies (0.05<0.260) are less than

the computed p-value. Hence, they are rejected. The result presents a positive and significant impact of green financial products and services on the perception of employees of commercial banks. There is no positive and significant impact of green human resource management on the perception of employees of commercial banks. Green Investment has a significant relationship with the Perception of Employees towards Green Banking of Commercial Banks. The study found that green investment is directly influencing the perception of employees towards green banking of commercial banks. Risk management does not directly influence the perception of employees towards green banking of commercial banks. Green Business Strategies has a significant relationship with the Perception of Employees towards Green Banking of Commercial Banks. The study found that green business strategies are directly influencing the perception of employees towards green banking of commercial banks.

Results and Discussion

The concept of "green banking" has emerged as a transformative approach within the financial sector, with significant potential to advance banking practices and promote environmental sustainability. Green banking not only enhances public understanding of climate change but also enables financial institutions to contribute meaningfully to environmental conservation, thereby improving the overall standard of living on Earth. Historically, many conventional banks did not actively seek investment opportunities in sectors that support environmental sustainability. However, recent developments have seen these strategies being adopted more widely, particularly among cooperative banks and smaller institutions. This shift aligns with the findings of the present researcher, which supports the integration of green financial products and services in banking operations. Gupta (2015) further elucidates this trend by highlighting that while public sector banks in Kerala engage in green banking practices, their marketing efforts are less aggressive compared to those of private banks. The study found that 80% of respondents expressed satisfaction with daily online banking activities such as mobile banking and electronic fund transfers. This indicates a growing acceptance of green banking systems among consumers, who appreciate their contribution to reducing carbon footprints. The benefits of cashless banking extend beyond consumer satisfaction; they also enhance operational efficiency for employees and organizations alike. By lowering overall transaction costs and simplifying processes, green banking fosters greater involvement in environmental initiatives among stakeholders. Contrary to the present researcher's findings regarding the insignificant relationship between Green Human Resource Management (GHRM) and employee perceptions of green banking, Ogbu Edeh PhD & Okwurume (2019) found positive correlations between GHRM practices—such as green recruitment, training, and employee relations—and organizational sustainability in Nigerian deposit money banks. Their study suggests that cultivating a culture of GHRM can significantly enhance a bank's sustainability efforts. Similarly, Phu et al. (2022) revealed that GHRM positively correlates with employee commitment across various dimensions, indicating that effective GHRM practices can foster loyalty and engagement among employees.In exploring the relationship between financial institutions and green investments, Falcone (2018) examined how the duration of firm-bank relationships influences companies' adoption of environmentally friendly technologies. The study concluded that businesses with longer relationships with their primary banks are more likely to implement green investment strategies. Conversely, having multiple credit relationships may hinder a company's ability to invest in sustainable technologies. This finding supports the current research's emphasis on the importance of green investment strategies within the framework of green banking. Chițimiea et al. (2021) further reinforced the significance of promoting green investments as a means to address pressing environmental issues such as pollution and global warming. Their findings suggest that long-term investments in green projects yield substantial benefits for both private and public

entities, emphasizing the need for sustained commitment to environmental initiatives. Despite the present researcher's discovery of an insignificant relationship between risk management and green banking practices, Khairunnessa et al. (2021) highlighted the urgent need for developing countries to implement adaptation and mitigation policies related to climate change. Their study indicates that adverse climate effects could lead to significant declines in annual GDP, underscoring the importance of integrating risk management strategies within green banking frameworks. Chitra and Gokilavani (2020) provided insights into Indian green banking initiatives, identifying both benefits and challenges associated with their adoption. Their research concluded that implementing green banking practices can enhance operational efficiency while reducing risks associated with traditional banking activities. Despite government efforts to promote a greener environment through these initiatives, increased public awareness remains essential for maximizing their impact. Ullah et al. (2022) investigated the interplay between financial resources and green business strategies within competitive contexts. While their study revealed no direct influence of financial resources on green business strategy, it aligned with the present research's findings regarding a positive relationship between green business strategies and employee perceptions toward green banking in Nepalese commercial banks. Supporting this connection further, Yousaf et al. (2021) demonstrated that implementing green business practices serves as a reliable predictor of long-term organizational growth and contributes to achieving sustainable development objectives.

Conclusion

This study has examined the factors influencing employees' perceptions of green banking in commercial banks, focusing on the impact of various green banking practices. The findings suggest that green financial products and services, green investment, and green business strategies have a significant positive impact on employees' perceptions of green banking. Employees tend to view green banking more favorably when commercial banks offer sustainable financial products, engage in eco-friendly investments, and adopt green business strategies that align with broader sustainability goals.

However, the study also revealed that green human resource management and risk management do not have a significant influence on employees' perceptions of green banking. This suggests that while human resource practices and risk management are integral to the functioning of banks, they may not directly shape how employees view the green banking initiative. Given these findings, commercial banks should prioritize the development and promotion of green financial products and services, invest in sustainable projects, and implement green business strategies to strengthen their green banking offerings. While human resource development and green risk management are still important, they should not be the primary focus in shaping perceptions of green banking among employees. Instead, the emphasis should be on embedding sustainability into the core banking operations, ensuring that green investment and business strategies are at the forefront of green banking initiatives.

In conclusion, this research highlights the significant role that sustainable financial products, eco-friendly investments, and green business practices play in shaping employees' views of green banking. By focusing on these areas, commercial banks can not only enhance their environmental sustainability efforts but also improve their brand image, attract eco-conscious customers, and contribute to the global push for a more sustainable future.

Limitations of the Study

For research like this, it would have been better if the research was holistic and surveyed all the employees across the country but due to the lack of funds and for simplicity the present researcher will limit the study to Kathmandu valley. Due to the choice of the population of Kathmandu valley only, this research may not be highly reliable. There are different categories of the bank, but the present researcher has confined

the study to the employees of 'A' class commercial banks of Kathmandu. Likewise, the collection of information was accomplished by using a set of survey questionnaires so the result may be influenced by the biases and dishonesty of the respondents, and which may lead to an irrelevant result.

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