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Research Article

Adaptation of Green Banking Practices in Commercial Banks of Nepal

Puja Mishra

MBA Scholar, Apex College, Kathmandu, Nepal

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Corresponding Author
Puja Mishra

Email
puja.mishra@apexcollege.edu.np

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Orcid
https://orcid.org/0009-0005-1192-8466

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ABSTRACT

This research project aimed to investigate the current state of green banking practices along with the factors influencing the adoption in commercial banks in Nepal. The findings from the data analyzed through SPSS software revealed the descriptive findings indicate that among the five independent variables, Brand Image has the highest mean value of 3.596, indicating that it is perceived as the most important factor influencing the adoption of green banking practices. This is followed by Financial Benefits with a mean of 3.462, Regulatory Policies with a mean of 3.338, Environmental Interest with a mean of 3.332, and Stakeholder's Demand with the lowest mean of 3.076.Furthermore, the dependent variable, Adoption of Green Banking Practices, has a mean of 3.382, suggesting that respondents agree that the adoption of green banking practices is influenced by the independent variables, including Stakeholder's Demand, Regulatory Policies, Environmental Interest, Financial Benefits, and Brand Image. The study highlighted the importance of brand image as the most influential factor, with the highest mean score among the variables examined. Additionally, it indicated that there was a moderately positive environment for green banking practices among Nepalese commercial banks. Overall, this study contributes to the growing body of knowledge on green banking adoption and offers practical implications for sustainable banking practices in Nepal.

Keywords: *green banking, practices, influence factor, adoption, descriptive*

Introduction

Commercial banks are significant players in the economy (Mishra et al, 2021), and their operations can have significant environmental and social impacts for green financing (Mishra and Aithal,2022). Green banking practices have emerged as a crucial strategy to reduce these impacts and promote sustainable development which may be significant budget gap management of Nepal where foreign aids seem significant(Mishra and Aithal,2021).. However, the adoption of green banking practices among commercial banks in Nepal is still in its infancy.

Although banking sector is an important part of a nation's economic growth, it's operations can also have a negative effect on the planet by supporting unsustainable practices, funding polluting enterprises, and increasing carbon footprint. Therefore, it is critical that banks implement sustainable procedures to lessen their negative environmental impact. The goal of green banking is to coordinate financial activity with environmental and social responsibility goals. The main duties

of banks must be to promote environmentally responsible loans and investments (Thombre, 2011). Banks should take the initiative to compel businesses to make mandated investments in environmental management and to adopt the right technology and management systems (Aktar & Masukujjaman, 2013). By exclusively providing loans to groups that care about the environment, banks can uphold their commitment to ethics (Goyal & Joshi, 2011; Thombre, 2011). Even if environmental preservation is not a top priority for the banking sector, banks can nevertheless make a positive impact by increasing energy and material efficiency, life quality and conservation, and the caliber of services and goods.

The advantages of green banking are numerous because there is less need for paper work because transactions and procedures are carried out online or electronically. Also, it raises business people's understanding of their social and environmental responsibilities, empowering them to adopt environmentally beneficial business practices. Because ethical banks place a higher value on ecological benefits, loans are given at a rate that is comparably lower and the interest is also lower than with normal banks (Mehar, 2014).

Banks and other financial institutions have made a number of efforts and initiatives that have encouraged them to maintain environmentally friendly practices and engage in carbon footprint reduction operations (Bihari, 2010; Bhome & Jha, 2013; Deka, 2015). According to Aktar and Masukujjaman (2013), Bangladesh Bank was the first financial institution to introduce the idea of green banking in a worldwide setting. Similar to how Laxmi Bank was the first bank in Nepal to pioneer the idea of green banking (Mehta & Sharma, 2016). Banks are focused on various environmental protection initiatives in these attempts, such as promoting bicycles as an emission-free mode of transportation and providing enticing financing packages for environmentally friendly products that reward consumers for adopting green behaviors (Mehta & Sharma, 2016). With relation to the requirement for loan disbursement The Indian form of green banking, which began with the goal of preserving the environment, was demonstrated by Bihari (2011). These banks have established environmental safety requirements that all customers must adhere to in order to be eligible for a loan. Most importantly, according to Gupta (2015), the green banking system has several advantages because its products help to cut down on paper use and safeguard the environment. Tu & Yen (2015) have further suggested that in order to obtain the most possible environmental advantages, green banking practices in developing nations, like Vietnam, are supplemented by the implementation of e-banking.

In this regard, it is important to note the arguments made by Joshi and Rishal (2018) regarding the use of green banking tools, techniques, and equipment to reduce internal and external carbon emissions in order to protect the environment, and by Ahmed and Uddin (2018) regarding the importance of investing in green projects for the long-term growth of financial institutions. In this regard, Nayak and Sahoo (2008) proposed the development of green banking practices while considering environmental and ecological issues. They also discussed the "Green Channel Counter" to advance the innovation of "green banks." The perspective of Bhardwaj and Malhotra (2013), who also argued for the adoption of the green bank practices by enterprises and industries from an environmental standpoint, further supports this issue.

Moreover, Dileep and Rajesh's (2014) claim on banks' direct and indirect contributions to ecological footprints is something to think about. Some of the impressive justifications for green banking practices come from Arumugam and Chirute's (2018) ideas for the loan distribution subject to the adoption of environmental elements. Afroz (2017) provided an example of green banking in Bangladesh, which involved managing energy in practical and efficient methods and using less paper inside of banking facilities. In these circumstances, Lalon (2015) and Yajurvedi (2015) provided substantial support for the debate regarding the necessity and significance of green banking practices by arguing that these practices are the way that banks compete by making changes

to their operational procedures on a policy level. Lalon (2015) also argued that customers' attention can be strategically targeted to environmentally beneficial social causes. In the context of Nepal, Joshi and Risal (2018) present detailed proof of Laxmi Bank's green banking practices, which have included assisting consumers through simple transactions, avoiding customer counter delays, raising knowledge of digitization and simple financing, and environmental protection.

Problem Statement

In the current setting, green banking is a new problem that has drawn scholars from all over the world to investigate it (Rai et al., 2019). The problem of green finance, however, is new and has received relatively little attention in the context of Nepal, which is a sad fact. As a result, this study aimed to identify the factors that determine the adoption of green banking practices among commercial banks in Nepal. Most banks merely adopt what the head office recommends and only follow the advice they receive from the head office (Das & Islam, 2013). Nepal, like many other countries, is striving to promote sustainable finance as a means to address environmental challenges and support sustainable development. The study explores the factors that facilitate the adoption of green banking practices, such as stakeholder's demand, regulatory policies, environmental interest, financial benefits and brand image of banks. This knowledge can assist in formulating policies and initiatives to create an enabling environment for sustainable banking in Nepal. Green banking enables the sustainable development that is why the practice adopted in the sector for green banking need to be assessed deeply. The findings will assist the decision-makers of the Nepalese government and Nepalese Bank in modifying how they deal with the country's banks.

Research Objective

The study aims to assess the current status along with factors influencing the adoption of green banking practices among commercial banks in Nepal.

Literature Review

Chronological Development of Green Banking

In order to safeguard nature and natural resources and preserve the environment, green banking refers to banking activities that pay particular attention to environmental, social, and ecological concerns (Chowdhury & Dey, 2016). According to Menon et al. (2017), the idea of a green economy was first introduced in the 1970s, but it gained traction following the financial crisis of 2009. The government now supports green banking, which is the process of managing the banking industry's operations in a way that reduces internal and external carbon footprints from the bank's internal and external functions by investing in green technology projects that lessen pollution. According to Jayabal and Soundarya (2017), the first green bank was based in Mt. Dora, Florida, in the United States.

The international community looks for ways to maintain a sustainable economy and society in response to the damaging impacts of economic development on the environment (Ciocoiu, 2011). The terms "green economy", "green growth", and "low-carbon economy" emerged in this context (Markandya & Mundaca, 2016). The green economy is described as "the process of reconfiguring businesses and infrastructure to deliver better returns on natural, human, and economic capital investments, while at the same time reducing greenhouse gas emissions, extracting and using fewer natural resources, creating less waste, and reducing social disparities" by the United Nations Environment Programme (UNEP). As a result, green banking has made significant progress recently because banks, as financiers, have a significant impact on funding projects undertaken by industries. Green banking can therefore play a significant role in the creation of growth through investments in the environment and ensure that other businesses behave responsibly as well (Bihari & Pandey, 2015).

Green Banking

Green banking is widely understood to be the advancement of eco-friendly methods that help

businesses lessen their carbon footprint through their financial operations. These procedures include creating online accounts, paying bills online, and using internet banking. Additionally, banks make internal investments to lessen their own carbon footprint (Schmidheiny & Zorraquin,1998).

According to some experts, green banking is just the standard banking procedure where all operations are governed by the same authorities with an emphasis on environmental sustainability (Bhome & Jha, 2013). Green banking, according to Lalon (2015), is any type of banking that has a positive impact on the environment. According to Bhardwaj and Maholtra (2013), green banking is an effort by the banks to encourage the growth of environmentally friendly enterprises and, as a result, rehabilitate the environment. Green banking, as defined by Aktar and Masukujjaman (2013), refers to eco- or environment-friendly banking systems that halt environmental degradation and increase the livability of this world. According to Tara et al. (2015), green banking necessitates giving priority funding to industries that support various environmental preservation initiatives.

The term "green banking" describes a bank's environmental friendliness and commitment to ethical and green practices. According to Dr. Chinnadurai and Sudhalakshmi (2014), the green banking idea will be advantageous to customers, banks, industries, and the economy as a whole.

The findings indicated that 53% of banks take a defensive stance toward environmental issues, and many banks are unaware of the contribution they can make to sustainable development and how financial performance is seen. Brazil has taken a combination voluntary and mandatory approach to sustainable banking, motivated by the need for greater environmental conservation efforts as well as the promotion of sustainable development and perceptions of financial performance. To address serious environmental issues and assist the transition to a green, inclusive, and resilient sustainable economic path, China chose a policy-based approach to sustainable banking (IFC, 2014).

Green banking, commonly referred to as green practices of banks, is the term used to describe environmentally friendly actions made by banks to reduce their daily carbon footprint and external carbon emissions. Similarly, a sustainable bank is one that is concerned with the effects of its investments and loans on society and the environment. It refers to steps taken by banks to promote environmentally friendly investment and grant priority lending to businesses that have already gone green or are working to do so and so aid in the restoration of the environment (Deka, 2015).

The positive feedback loop in the European banking industry between corporate social performance and corporate financial performance. The primary goal of the study is to examine how Corporate Social Performance (CSP) and Corporate Financial Performance (CFP) relate to the European banking industry. To validate the research hypotheses, panel data analysis was performed in this study. The primary findings support the effective management strategy by demonstrating a favorable impact of CSP on CFP. The results, however, show that CFP has a detrimental impact on CSP, making it unable to support the theoretical underpinnings of the spare resources strategy. Therefore, the idea that the merging of the two methodologies would result in a positive feedback loop is unsupported (Bussoli & Conte, 2018).

Ahuja (2015) stated that, the phrase "Go Green" has gained popularity in today's eco-friendly society and is now applicable to every aspect of business. With all commercial endeavors, there is a tide of change that emphasizes not only profit but also people and the environment. Because of environmental awareness and consciousness, corporations can no longer focus solely on revenues. There is a shift toward a green economy, and businesses must be environmentally conscious in every aspect of their operations. Green banking is one of them. By guaranteeing environmentally friendly processes in the banking industry, internal and external carbon footprints can be reduced. A broader perspective is to use green lending principles. The banking

sector is typically not regarded as a polluting one. However, it has an effect on the environment by raising energy use (lighting, air conditioning), as well as paper consumption.

Lalon (2015) identified Green banking as a component of international efforts to protect the environment and the climate. He highlighted the significance of "green banking" for social advancement as he pointed out in his study's conclusion.

According to Mehata and Sharma (2016), customers in Nepal have acknowledged the need of "Green Banking" activities for future sustainability and environmental protection, despite their limited comprehension of the idea as a whole.

Devkota et al. (2021) discovered that in the context of Nepal, both clients and bankers are less knowledgeable about the idea of green banking practices. With the support of some efficient policy initiatives, banks and governments must raise public awareness of green banking practices.

Zhang et al. (2022) found that green banking practices greatly improve banks' environmental performance and sources of green financing also have a big impact on banks' environmental performance. Additionally, it was found that the relationship between green banking practices and banks' environmental performance is mediated by green financing. Insufficient customer awareness of green banking, high investment costs, technical barriers, a lack of qualified staff to appraise green credits and loans, and the complexity and difficulty of evaluating green projects were also noted as major obstacles impeding the growth of green banking in Bangladesh. The study also found that the main advantages of green banking development are that it aids in the achievement of the nation's sustainable economic development by boosting banks' competitiveness, lowering long-term costs and expenses, offering online banking services, enhancing customers' goodwill, and lowering carbon footprints.

Regular banking only allows customers to transact business at their physical locations, which limits its accessibility. Customers are inconvenienced when conducting business as a result. When compared to traditional banking, green banking offers a wide range of services that address their shortcomings.

Green Banking Practices

Companies do have an ethical obligation, but it is not shielded by restricted liability from the results of their activities. A bank's ethical responsibility extends to the government, customers, shareholders, workers, and the community. The track record and ethics of a corporation determine whether it succeeds or fails in the long run. He said that our dedication to ethical behavior will be put to the test when we dealt with challenges that were more complicated and contradictory (Green, 1989).

Now is the time to take the lead on green banking in order to rescue the earth. Banks should prioritize lending to industries that support environmental policies (Rashid, 2010).

In order to push enterprises to make mandated investments for environmental management, usage of relevant technologies, and management systems, the bank should go green and take a proactive role in considering environmental and ecological factors as part of their lending principles (Hayder, 2012).

Green Investment

For the financial sector in emerging and advanced economies, climate change brings both threats and possibilities. Financial institutions cannot afford to ignore the route toward low-carbon economies throughout the transition period. Climate risk is a significant consideration in every lending decision because energy subsidies, emission limits, and carbon prices will all have a direct influence on the financial situations of these institutions' clients. Additionally, financial institutions will need to comprehend the climate risks connected to their non-green assets and develop mitigation strategies. However, there are also a lot of opportunities for financial institutions to offer cutting-edge financing solutions for improvements in energy efficiency, the production of renewable energy, green building and transportation, and climate-smart agriculture.

Financial institutions can utilize this increasing network of investors to diversify their funding sources and lower funding costs by tapping into new climate and environmentally friendly investment opportunities (IFC, 2016). Any sort of bond instrument whose revenues are used to fund or re-finance new or existing green initiatives is referred to as a "green bond." These initiatives often include pollution prevention and control, energy efficiency, clean transportation, sustainable water management, climate change adaptation, and renewable energy.

Green Banking in Nepal

The Nepalese population agrees that "Green Banking" activities are required for environmental preservation and sustainable growth in the future, despite their general lack of grasp of the "Green Banking" idea. Regarding green banking in Nepal, it has been observed that the country's banks are not actively promoting such projects and lag behind international trends. Even Nepal Rastra Bank, the Central Bank of Nepal, has not developed any "Green Banking" policies or plans. However, a large number of banks in Nepal have begun to offer services that assist green banking initiatives, i.e., they promote the "Go Green" concept in Nepal. Additionally, some banks provide customers with a "Green Savings Account" that involves the planting of a tree for each new account that is opened there. Additionally, practically all banks advise their staff to use as little paper as possible and offer online banking services to their clients.

The majority of banks in Nepal promote "Green Banking" by taking the following actions:

- Paperless Banking: Computerized branches at all banks have begun the transition to paperless banking. Most banks have the ability to transition to electronic reporting and correspondence. Banks have urged their clients to use e-banking services like mobile banking, online banking, debit and credit cards, and ATMs.
- Energy Consciousness: Some banks have a focus on energy conservation and use compact fluorescent lighting (CFL) to reduce energy use while working. Some banks have performed energy audits in each of their offices to ensure efficient energy use. They may run their offices and ATMs with renewable energy as well.
- Using the mass transit system: In order to conserve gasoline, several banks have been providing shared transportation for groups of officials stationed at a single office.
- Green Building: For their office and employee housing, some banks have started creating and utilizing green buildings.
- Lending to Eco-Friendly Projects: The majority of banks, including Standard Chartered Bank, Laxmi Bank, Civil Bank, and Nepal Investment Bank, have been lending to solar energy projects, hydro power projects, bio gas projects, and other environmental projects in support of the "Go Green" concept. Laxmi Bank is the first bank in Nepal to endorse the Go Green idea out of all of these banks.
- For the preservation and sustainable development of the Lumbini region, some banks (including Laxmi Bank, Siddhartha Bank, Bank of Kathmandu, and Nabil Bank) collaborate with Lumbini Development Trust (LTD). The million Tree Project was launched with the goal of planting one million trees in Lumbini by 2020. Similarly, some banks (Rastriya Banijya Bank) support in “Clean Bagmati” projects.

Current Development of Green Financing in Nepal

The "Guidelines on Environmental and Social Risk Management for Banks and Financial Instances (ESRM)" published by the NRB in 2018 have served as the driving force behind Nepal's regulatory-driven development of green finance, in addition to the sustainability policies and frameworks already stated. The Nepal ESRM Guideline includes sector-specific lists of permissions and licenses as well as general and sector-specific checklists to assist financial institutions in assessing E&S risk. Additionally, the ESRM includes all of the

materials, templates, and tools required to facilitate ESRM deployment in banks. Nepal has achieved this through working with the Sustainable Banking Network (SBN), a group that supports and monitors the growth of green banking in emerging countries, to adopt the ESRM principles.

NRB has been instructing the BFIs to evaluate the environmental implications of projects via Environmental Impact Assessments (EIAs) for a number of years. Additionally, the NRB has given commercial banks the mandate to allocate a specific percentage of total lending to priority sectors. Commercial banks have been told to allocate at least 15% of their total lending by 2023 to the agriculture industry, 10% to the energy sector, and 15% to SMEs starting in 2020. The agriculture, energy, and tourism sectors as well as SMEs must get at least 20 percent and 15 percent of the credit from Class B and Class C BFIs, respectively.

- The monetary policy has allowed for the issuing of Energy Bonds by the BFIs to satisfy the regulatory obligation of investing in the energy industry. This is another policy measure that supports green financing in Nepal.
- BFIs are required to offer credit to hydropower projects that have begun exporting hydropower at base rate plus up to one percentage point for a term of up to five years.
- BFIs are permitted to use "External Commercial Borrowing" (ECB) to invest in the energy and other productive sectors; BFIs are mandated to provide credit facilities at base rate plus one percentage point to reservoir-based hydropower projects.

The BFIs must place at least 5% of their entire loan portfolio in the underserved sector, according to a directive from NRB. One of these components of lending to the impoverished segment is renewable energy. For the promotion of renewable energy projects based on Private and Public Private Partnership (PPP), and promoted by the User Committee, Cooperatives (excluding the Savings and Credit Cooperatives), Private and Public Private Institutions targeting the underprivileged and bearing 50% (compared to typically around 30% for other sectors) or above of the project costs by themselves, loans up to the limits specified by NRB are provided. These industries include the following:

- Gasifier Technology up to 200 KW
- Micro and Small Hydroelectricity Projects with a capacity up to 1,000 KW
- Solar Mini Grid with a capacity up to 500 KW.
- Institutional Bio-gas Plant up to 200 Cube Meters
- Wind and Solar Wind Energy Mixed System

Finally, BFIs may finance individual borrowers' vehicle loans up to 50% of the tax invoice, but may finance electrical vehicles up to 80% of the tax invoice, a provision established specifically to support green financing.

Implementation of Green Banking by Commercial Banks

Laxmi Bank was the first bank in Nepal to start implementing green banking strategies, focusing primarily on digitization through two core services: mobile money service and internet banking to avoid customer-counter delays and provide access to easy financing, and the Clean Energy Development Bank and Sanima Bank encourage hydropower investment and solar energy development funds to reduce energy (Mehta & Sharma, 2016).

In order to invest in sustainable, climate- and environment-friendly projects through Eco-Loans, banks like Nepal Investment Bank and NMB Bank have launched green finance products like Green Double Fixed Deposit and Green Fixed Deposits. Even as early as 2012, the Ace Development Bank, which later merged to form the Nepal Investment Bank, made history by being the first bank in Nepal to operate sustainably by purchasing carbon credits under the Clean Development Mechanism (CDM).

The Nepali government is working to reduce carbon emissions from cities, and to that end, banks are being urged to invest in clean energy and stay informed about various environmental challenges

(Belás et al., 2016). According to statistics, there were 318 ATMs in Nepal as of mid-April 2019, along with 893 thousand online banking customers, 7 million mobile banking users, 6.28 million debit card users, and 113,000 credit card users (NRB, 2020).

The Development Bankers Association of Nepal (DBAN) has begun promoting and using green finance, and it is eager to develop universal standards that would be applicable to all DBAN Member Banks. BFIs are becoming more and more interested in entering the market for green bonds at the same time. Both Nepal Infrastructure Bank and Nepal SBI Bank have emphasized their efforts to issue a green bond. Last but not least, microfinance institutions have also granted loans for green financing.

Every banking and financial institution in Nepal is currently attempting to adopt the "green banking" concept in their banking operations by automating manual tasks, offering services like "balance enquiry," "check balance statement," and "fund transfer and deposit," as well as "opening and closing accounts via using online" (Joshi & Risal, 2018). These institutions are also investing in projects that are "green concepts" and providing loans at low levels of interest for green projects.

Advantages of Green Banking

With the ability to influence business, production, and other economic activities through financing them, banks occupy a unique position in the economy (Chowdhury et al., 2018). Green banking methods assist in lowering both internal and external carbon emissions, which helps to safeguard the environment. Control internal carbon footprints like lighting, air conditioning, electronic equipment, and high paper consumption through the use of renewable energy, which results in fewer trees being cut down and less environmental pollution (Ko et al., 2012). On the other hand, control external carbon emission by investing in and lending to projects and businesses that adopt green concepts.

Customers' lives are made easier and more secure with online banking by offering services like balance enquiry, check balance statement, fund transfer and deposit, opening and closing account, and easy-to-access location to prevent identity theft (Drennan & Wessel, 2010). This reduces waste from the customers' lives by eliminating paper waste. Similar to this, it saves time and money by eliminating the need to make numerous trips to the bank in order to conduct banking activities and by completing all banking-related tasks via mobile or electronically wherever you are (Dhamija & Sahni, 2018). Similar to how it helps with online payment systems, doing so will help you avoid late fees (Mishra & Aithal, 2022).

For banks, green banking offers modest advantages such as improved goodwill and reputation, client loyalty, favorable environmental effects, and process simplification that go beyond monetary gains (Natarajan & Vijay, 2015). Additionally, it aids in maintaining ethical standards and educating businesses about their social responsibility and environmental initiatives (Mishra & Aithal, 2023).

Methodology

Research Design and Plan

The research employed descriptive inference statically on primary survey data. To collect the necessary data, a well-structured questionnaire was developed and distributed to bank employees of various banks within the Kathmandu Valley. The questionnaire was self-administered, allowing respondents to provide firsthand information and insights. The findings presented in this research are entirely based on the data and facts provided by the sampled respondents, ensuring a reliable and factual basis for the study's outcomes.

The study extensively employed statistical tests and analyses to ensure rigorous examination of the research data. The Statistical Package for Social Sciences (SPSS) software and Microsoft Excel were utilized for the analysis and interpretation of the quantitative data. Descriptive statistics were

employed to calculate measures such as the mean and standard deviation based on the respondent profile, providing a comprehensive overview of the data. The goal of this study was to comprehend the factors influencing adoption of green banking practices in commercial banks.

This study focuses on bank employees from multiple banks within the Kathmandu Valley as the target population.

Sample Size

The researcher distributed questionnaires to obtain survey responses from a total of 215 respondents, which served as the sample size for this study. It is important to note that this sample is considered representative of the entire population under study. The geographical scope of the study was limited to the Kathmandu Valley. The sample comprised employees from banks 20 commercial banks which are shown below in table no. 1.

Table 1: Sample Size of Study

Banks	Respondents
Agricultural Development Bank Limited	7
Citizens Bank International Limited	8
Everest Bank Limited	10
Global IME Bank	13
Himalayan Bank Limited	11
Kumari Bank Limited	13
Laxmi Bank	7
Machhapuchchhre Bank Limited	9
Nabil Bank	15
Nepal Bank Limited	8
Nepal Investment Mega Bank Limited	10
NIC Asia Bank	29
NMB Bank	17
Prabhu Bank	8
Prime Commercial Bank Limited	7
Rastriya Banijya Bank Limited	9
Sanima Bank	10
Siddhartha Bank	10
Standard Chartered Bank	5
Sunrise Bank Limited	9
Total	**215**

Sampling Methods

The data collection process utilized a non-probability sampling technique known as Purposive Sampling. To distribute the questionnaires, various online platforms such as email, Facebook, Linked In and physical visits to the bank were utilized. These platforms facilitated efficient and convenient communication with the respondents, allowing for the timely collection of data.

Instrumentation

The research questionnaire was structured into three sections. The first section focused on capturing demographic profiles of the respondents, including gender, age, marital status, educational qualification, management level and working experience. The second section focused on the employee's knowledge about green banking.

The third section encompassed multiple questions were included for each variable, using a five-point Likert scale to gauge the level of agreement or disagreement. These questions aimed to measure the various factors that influences the adoption of green banking practices.

The questionnaire was adapted from various research articles conducted on green banking practices. The source of questionnaire for each variable is given in table no. 2.

Table 2: Sources for Questionnaire

Variables	Sources
Stakeholder's demand and regulatory policies	Factors determining the adoption of green banking amongst commercial banks in Malaysia by Arumugam and Chirute (2018).
Environmental interest	Measuring Green Banking Practices on Bank's Environmental Performance: Empirical Evidence from Kathmandu valley by Risal & Joshi (2018).
Financial benefits	Green banking practices and perceived financial performance of Nepalese commercial banks in Kathmandu district by Bohara (2018).
Brand image	Factors behind the Adoption of Green Banking by Bangladeshi Commercial Banks by Ahmad, Zayed & Harun (2013).
Adoption of green banking practices	Measuring Green Banking Practices: Evidence from Sri Lanka by Shaumya & Arulrajah (2016).

Data Collection

Primary Data

In this particular study, primary data was obtained through a questionnaire survey aimed at acquiring quantitative data using Google Forms. Prior to conducting the main survey, a small pilot study was carried out using responses from a selected group of 20 participants. The Cronbach's alpha coefficient for each variable was found to be above 0.6, indicating an acceptable level of reliability for the instrument used. The main study involved 215 respondents, and the Cronbach's alpha value remained above 0.6, confirming the instrument's reliability.

Secondary Data

The secondary data for this study was gathered from a variety of sources, including websites, journal papers, and textbooks.

Data Analysis Plan

Upon collecting all the questionnaires from the respondents, the data analysis process involved the utilization of SPSS and MS-Excel. The responses were coded and organized into an SPSS worksheet, considering the specific coding rules based on the nature of the questions, such as Likert scales. The obtained data were subsequently analyzed using the SPSS software. Various graphical tools, including tables, charts, diagrams, and graphs, were employed to present the data effectively. Descriptive statistics such as mean and standard deviation were utilized for a comprehensive examination of the variables.

Data Analysis

Demographic Profile of the Respondents: The survey garnered responses from a total of 215 participants, enabling valuable insights to be gleaned from the questionnaire responses. By analyzing these demographic factors, a clearer understanding of the respondents' backgrounds and characteristics is attained.

Distribution of Respondents based on Gender: The following table and figure illustrate the distribution of respondents by gender, with 60.9% being male and 39.1% being female. The data indicates that male participants outnumbered their female counterparts.

Distribution of the Respondents based on Age: The age distribution of respondents has been divided into four categories as shown in table no. 3. The majority of respondents, accounting for 63.7%, fell within the age group of 20-30 years.

Table 3: Age Group of the Respondents

Age	Frequency	Percentage
20-30	137	63.7
30-40	60	27.9
40-50	17	7.9
50 and above	1	.5
Total	**215**	**100.0**

Distribution of Respondents based on Marital Status

The marital status of the respondents has been categorized as married, unmarried, and others. The table below clearly indicates that 62.3% of the respondents were unmarried, while 37.2% were married. Additionally, 0.5% fell into the "others" category. Based on the analysis, it can be concluded that the majority of the respondents were unmarried.

Distribution of the Respondents based on Educational Qualification

The table no. 4 below provides a summary of the respondents' academic qualifications. It reveals that 62.8% of the respondents held a master's degree, 32.6% had a bachelor's degree, and 4.7% had a PhD.

Table 4: Educational Qualification of the Respondents

Qualification	Frequency	Percentage
Bachelors	70	32.6
Masters	135	62.8
PHD Level	10	4.7
Total	**215**	**100.0**

Distribution of Respondents based on Level of Management

Out of a total of 215 respondents, 32.6% were classified as junior-level management, 54.4% fell into the medium-level management category, and 13.0% were categorized s senior-level management.

Distribution of Respondents based on Working Experience

The distribution of working experience shows out of a total of 215 respondents, 49.8% had 1-5 years of experience, 19.5% had 5-10 years of experience, 12.1% had more than 10 years of experience, and 18.6% had less than 1 year of experience.

Distribution of Respondents based on Awareness about Green Banking

The awareness level of respondents regarding Green Banking shows that out of the total 215 respondents, 15.3% had an average awareness level, 40.9% had a good awareness level, and 43.7% had a very good awareness level.

Level of Satisfaction towards Adaptation of Existing Green Banking Practices

The level of satisfaction indicates that out of the total of 215 respondents, 41.9% reported an average level of satisfaction, 33.5% reported a high level of satisfaction, 5.6% reported a low level of satisfaction, and 19.1% reported a very high level of satisfaction towards existing green banking practices.

Future of Green Banking System in Nepal

From the total of 215 respondents, 5.6% expressed an average opinion, 49.3% held a good opinion, 3.7% had a poor opinion, and 41.4% had a very good opinion about the future of the Green Banking System.

Descriptive Analysis of Stakeholder's Demand

Table 5: Descriptive Statistics of Stakeholder's Demand

Code	Statements	Mean	SD "σ"
SD1	My bank is providing training and resources to its employees to help understand and implement green banking practices.	3.21	1.058
SD2	My bank is significantly influenced by local communities to embrace and implement environmentally friendly practices.	3.18	.976
SD3	My bank is significantly pressured from government and regulatory bodies to adopt green banking practices.	3.07	1.003
SD4	Customers and clients have strong influence in pressuring my bank to adopt green banking practices.	2.86	.961
SD5	Environmentalists and social groups have great influence on my bank to adopt green banking practices.	3.06	.965
	Stakeholder's Demand	3.076	0.9926

Within the table 5, it is notable that SD1 and SD2 have the highest means of 3.21 and 3.18, respectively. These two statements are particularly significant in terms of stakeholder's demand, indicating that they play a crucial role in influencing the adoption of green banking practices.

Additionally, It is noteworthy that SD4 has the lowest standard deviation of 0.961, suggesting a consistent response pattern as compared to others. On the other hand, SD1 exhibits the highest standard deviation of 1.058, indicating greater variation in responses regarding stakeholder's demand.

The aggregate mean of stakeholder's demand across all statements is calculated to be 3.076. This suggests that the respondents generally agree that stakeholder's demand may have an impact on the adoption of green banking practices. As the mean value is above 3, it indicates a relatively high influence of the given variable on the dependent variable. The findings indicate that stakeholder's demand plays a significant role in driving the adoption of green banking practices, with varying degrees of impact observed across different statements within stakeholder's demand.

Descriptive Statistics of Regulatory Policies

Within the table 6, it is observed that the statements "RP4" and "RP2" have the highest means of 3.45 and 3.33, respectively. These two statements are particularly significant in relation to regulatory policies, indicating that they play a crucial role in influencing the adoption of green banking practices.

Table 6: Descriptive Statistics of Regulatory Policies

Code	Statements	Mean	SD "σ"
RP1	My bank is encouraged by regulatory policies and guidelines to adopt green banking practices.	3.30	1.007
RP2	My bank has integrated environmental considerations into the operations and decision-making processes due to regulatory policies.	3.33	.980
RP3	My bank is strongly motivated by regulatory policies to invest in environmentally friendly projects.	3.32	.934
RP4	Regulatory policies help my bank in reducing environmental risks and liabilities.	3.45	.969
RP5	My bank is influenced to accelerate the adoption of green banking practices due to regulatory policies.	3.29	.978
	Regulatory Policies	**3.338**	**0.9736**

Additionally, the table provides information about the standard deviation values. Notably, the statement "RP3" has the lowest standard deviation of 0.934, suggesting a consistent response pattern among the respondents as compared to others. Conversely, the statement "RP1" exhibits the highest standard deviation of 1.007, indicating greater variation in responses regarding regulatory policies.

The aggregate mean of regulatory policies across all statements is calculated to be 3.338. This suggests that the respondents generally agree that regulatory policies may have an impact on the adoption of green banking practices. Since the mean value is above 3, it indicates a relatively high influence of the variable on the dependent variable.

Overall, the findings suggest that regulatory policies are perceived as influential in shaping the adoption of green banking practices, with certain statements within the regulatory policies category carrying more weight. The variations in standard deviation further highlight the diverse perspectives on regulatory policies among the respondents.

Descriptive Statistics of Environmental Interest

Table 7 presents the descriptive statistics of environmental interest, focusing on its influence on the adoption of green banking practices. Within the table, it is evident that the statements "EI5" and "EI4" have the highest means of 3.40 and 3.37, respectively. These two statements are particularly significant in terms of environmental interest, indicating that they play a crucial role in influencing the adoption of green banking practices.

Table 7: Descriptive Statistics of Environmental Interest

Code	Statements	Mean	SD "σ"
EI1	My bank prioritizes environmental sustainability in its daily operations.	3.34	1.060
EI2	My bank uses waste minimization, pollution prevention, etc. as an initiative for green banking.	3.36	1.093
EI3	My bank transparently discloses its environmental impact and progress in reducing it.	3.19	1.091
EI4	My bank actively engages in educating customers about sustainable financial choices.	3.37	1.098
EI5	My bank encourages projects that show its concern for the environment in the form of sustainable development.	3.40	1.031
	Environmental Interest	**3.332**	**1.0746**

Additionally, the table provides information about the standard deviation values. Notably, the statement "EI5" has the lowest standard deviation of 1.031, suggesting a consistent response pattern among the respondents as compared to others. On the other hand, the statement "EI4" exhibits the highest standard deviation of 1.098, indicating greater variation in responses regarding environmental interest.

The aggregate mean of environmental interest across all statements is calculated to be 3.332. This suggests that the respondents generally agree that environmental interest may have an impact on the adoption of green banking practices. Since the mean value is above 3, it indicates a relatively high influence of the variable on the dependent variable.

Overall, the findings suggest that environmental interest plays a significant role in shaping the adoption of green banking practices, with certain statements within the environmental interest category carrying more weight. The variations in standard deviation further highlight the diverse perspectives on environmental interest among the respondents.

Descriptive Statistics of Financial Benefits

Table 8 presents the descriptive statistics of financial benefits, focusing on their impact on the adoption of green banking practices. Within the table, it is observed that the statements "FB3" and "FB4" have the highest means of 3.53. These two statements are particularly significant in relation to financial benefits, indicating that they play a crucial role in influencing the adoption of green banking practices.

Table 8: Descriptive Statistics of Financial Benefits

Code	Statements	Mean	SD "σ"
FB1	Adopting green banking practices has led to cost savings for my bank.	3.43	1.052
FB2	Green banking practices has been effective in attracting environmentally conscious customers and increasing their loyalty for my bank.	3.45	0.989
FB3	My bank can access new sources of funding or investment opportunities by adopting green banking practices.	3.53	1.008
FB4	Adoption of green banking practices is a way for my bank to meet regulatory requirements and avoid penalties.	3.53	0.901
FB5	My bank's financial stability is increased by including environmental factors into risk management procedures.	3.37	1.001
	Financial Benefits	**3.462**	**0.9902**

Additionally, the table provides information about the standard deviation values. Notably, the statement "FB4" has the lowest standard deviation of 0.901, suggesting a consistent response pattern among the respondents as compared to others. On the other hand, the statement "FB1" exhibits the highest standard deviation of 1.052, indicating greater variation in responses regarding financial benefits.

The aggregate mean of financial benefits across all statements is calculated to be 3.462. This suggests that the respondents generally agree that financial benefits may have an impact on the adoption of green banking practices. Since the mean value is above 3, it indicates a relatively high influence of the variable on the dependent variable.

Overall, the findings suggest that financial benefits are perceived as influential in shaping the adoption of green banking practices, with certain statements within the financial benefits category carrying more weight. The variations in standard deviation further highlight the diverse perspectives on financial benefits among the respondents.

Descriptive Statistics of Brand Image

Table 9 showcases the descriptive statistics of brand image, focusing on its influence on the adoption of green banking practices. Within the table, it is evident that the statements "BI4" and "BI5" have the highest means of 3.66 and 3.64, respectively. These two statements are particularly significant in terms of brand image, indicating that they play a crucial role in influencing the adoption of green banking practices.

Table 9: Descriptive Statistics of Brand Image

Code	Statements	Mean	SD 'σ"
BI1	Integrating green banking practices has enhanced the public image and reputation of my bank.	3.48	1.089
BI2	Adoption of green banking practices is a way for my bank to differentiate ourselves from the competitors and gain a competitive edge.	3.62	1.069
BI3	Positive brand image resulting from green banking practices can has attracted new customer segments to my bank.	3.58	1.001
BI4	A strong brand image has been influential in building trust and credibility with stakeholders for my bank.	3.66	.977
BI5	Adoption of green banking practices is a way for my bank to improve our overall brand perception in the market.	3.64	1.036
	Brand Image	**3.596**	**1.0344**

Additionally, the table provides information about the standard deviation values. Notably, the statement "BI4" has the lowest standard deviation of 0.977, suggesting a consistent response pattern among the respondents as compared to others. On the other hand, the statement "BI1" exhibits the highest standard deviation of 1.089, indicating greater variation in responses regarding brand image.

The aggregate mean of brand image across all statements is calculated to be 3.596. This suggests that the respondents generally agree that brand image may have an impact on the adoption of green banking practices. Since the mean value is above 3, it indicates a relatively high influence of the variable on the dependent variable.

Overall, the findings suggest that brand image plays a significant role in shaping the adoption of green banking practices, with certain statements within the brand image category carrying more weight. The variations in standard deviation further highlight the diverse perspectives on brand image among the respondents.

Descriptive Statistics of Adoption of Green Banking Practices

Table 10 presents the descriptive statistics of the adoption of green banking practices, providing insights into its relationship with the independent variables. Within the table, it is observed that statements AG2 and AG5 have the highest means, specifically 3.44 and 3.38, respectively. This indicates that these statements, particularly AG2 and AG5, play a significant role in influencing the adoption of green banking practices.

Furthermore, the table 10 reveals the standard deviation values associated with the adoption of green banking practices. Notably, AG2 exhibits the lowest standard deviation of 0.988, indicating a consistent pattern in responses related to this variable as compared to others. Conversely, AG5 displays the highest standard deviation of 1.034, indicating greater variation in responses concerning the adoption of green banking practices.

Table 10: Descriptive Statistics of Adoption of Green Banking Practices

Code	Statements	Mean	SD 'σ'
AG1	To encourage environmental awareness and sustainability, my bank participates in community outreach activities.	3.35	1.003
AG2	My bank focuses on implementing energy-saving measures in its own operations, such as efficient lighting and equipment.	3.44	.988
AG3	My bank employs environmentally conscious advertising techniques to promote and advocate for eco-friendly practices.	3.37	1.001
AG4	My bank has tendency towards following a green banking practices by providing training and capacity building program to the employees.	3.37	1.028
AG5	My bank has environmental (green) policy to support sustainable environment.	3.38	1.034
	Adoption of Green Banking Practices	**3.382**	**1.0108**

The aggregate mean of the adoption of green banking practices, calculated as 3.382, suggests that the respondents generally agree that the adoption of green banking practices is influenced by the independent variables such as stakeholder's demand, regulatory policies, environmental interest, financial benefits, and brand image. With a mean value above 3, it indicates a substantial impact of these variables on the dependent variable.

Overall, the findings indicate that AG2 and AG5 statements hold particular significance in shaping the adoption of green banking practices. The variations in standard deviation highlight the diverse perspectives among the respondents

regarding the adoption of green banking practices. It suggests that the independent variables, including stakeholder's demand, regulatory policies, environmental interest, financial benefits, and brand image, collectively influence the adoption of green banking practices.

The research findings indicated that some of the results were consistent with the findings of previous studies, while others differed. This suggests that the influence and impact of these variables on the adoption of green banking practices can vary across different contexts. The study contributes to the existing body of knowledge by shedding light on the specific factors that drive the adoption of green banking practices in the context of the surveyed bank employees in the Kathmandu valley.

This study focuses on understanding the factors that influence the adoption of green banking practices specifically within the context of commercial banks in Nepal. The findings highlight the importance of considering these factors in shaping green banking adoption strategies, as they have implications for sustainability and environmental consciousness in the banking sector.

Conclusion

Green banking, which involves conducting bank transactions and bill payments without paper or through online platforms, offers numerous benefits. By embracing green banking, individuals can shop, communicate, and handle their banking activities in an environmentally-friendly manner. This practice not only streamlines financial processes but also eliminates paper waste, benefiting both those who manage paperwork and the overall environment.

The study found that commercial banks in Nepal are increasingly embracing green banking practices to promote environmental sustainability. The three primary factors influencing the adoption of green banking in Nepal are stakeholder demand, environmental interest, and brand image. Notably, brand image emerged as the most influential factor in driving the adoption of green banking practices among commercial banks in the country. Green banking plays a crucial role in reducing carbon footprints and addressing various dimensions of sustainability. However, the absence of a standardized green banking policy poses a challenge. Implementing green banking practices opens up new market opportunities and avenues for product differentiation. It is essential for Nepal's banks to seriously consider sustainable growth for the nation.

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