

Impact of Green Credit on the Profitability of Nepalese Commercial Banks

Dhaneshwar Mahato and Sumit Pradhan*

Abstract

This study examines the impact of green credit on the profitability of Nepalese commercial banks. Profitability is the dependable variable. The independent variables are green credit volume, green credit policy, loan portfolio diversification, corporate social responsibility expenditure and green project performance. The primary source of data is used to assess the opinions of the respondents regarding the impact of green credit on the profitability of Nepalese commercial banks. The study is based on primary data of 136 respondents. To achieve the purpose of the study, structured questionnaire is prepared. The correlation coefficients and regression models are estimated to test the different factors affecting profitability of Nepalese commercial banks.

The result shows that green credit volume has a positive impact on profitability. It means that higher the level of green credit volume, higher would be the profitability. Similarly, green credit policy has a positive impact on profitability. It indicates that better the green credit policy, higher would be the profitability. Likewise, loan portfolio diversification has a positive impact on profitability. It shows that higher loan portfolio diversification leads to an increase in the profitability. Further, corporate social responsibility expenditure has a positive impact on profitability. It reveals that higher the corporate social responsibility expenditure, higher would be profitability. Moreover, green project performance has a positive impact on profitability. It shows that better green project performance leads to the increase in the profitability

Keywords: profitability, green credit volume, green credit policy, loan portfolio diversification, corporate social responsibility expenditure, green project performance

1. Introduction

Green credit refers to financial services and lending practices directed toward businesses that support environmental sustainability. It encompasses loans for renewable energy projects, energy-efficient technologies, pollution control initiatives, and environmentally sustainable industrial practices. Green credit aligns with global efforts to combat climate change and reduce environmental degradation, making it a significant strategy for financial institutions worldwide. Green credit is a financial concept that is often tied to promoting environmental sustainability, reducing emissions, or encouraging eco-friendly investments. Loan portfolio diversification refers to the practice of spreading a financial institution's lending activities across various sectors, geographic regions, or borrower types to reduce risk exposure and enhance financial stability (Markowitz, 1952). Similarly, the term green credit policy describes strategies and regulations that aim to align financial lending with sustainability objectives, focusing on renewable energy, pollution control, and low-carbon infrastructure (Zhang *et al.*, 2019). The volume of green credit indicates the total funding provided by financial institutions for initiatives that aim to reduce environmental degradation and promote sustainable development. Likewise, loan portfolio diversification refers to the practice of spreading a financial institution's lending activities across various sectors, geographic regions, or borrower types to reduce risk exposure and enhance financial stability (Markowitz, 1952). Effective management and implementation of green projects ensure timely loan repayments and reduce the likelihood of defaults.

Carroll (1999) studied that the corporate social responsibility: Evolution of a

* Mr. Mahato is a Freelance Researcher, Kathmandu, Nepal and Mr. Pradhan is the Research Coordinator, Uniglobe College (Pokhara University Affiliate), Kathmandu, Nepal.

definitional construct. The study stated that the CSR expenditure refers to the funds allocated by a company towards initiatives that aim to benefit society, the environment, and stakeholders, typically through charitable donations, sustainability projects, or community development programs. Similarly, Moon (2007) examined that the contribution of corporate social responsibility to sustainable development. The study stated that the term CSR expenditure describes the financial resources a corporation dedicates to programs or activities that address environmental sustainability, social welfare, and ethical business practices, above and beyond legal obligations. Likewise, Porter and Kramer (2011) analyzed that the creating shared value. The study explained that the CSR expenditure represents the funds invested by a company in social and environmental projects as part of its strategy to demonstrate corporate citizenship and foster goodwill among stakeholders. Furthermore, Matten and Moon (2008) assessed that the implicit and explicit CSR: A conceptual framework for a comparative understanding of corporate social responsibility. The study defined corporate social responsibility expenditure is the budget spent on activities aimed at improving social, environmental, or ethical standards, such as community development, education, health, and environmental protection. Moreover, Sen *et al.* (2006) evaluated that the role of corporate social responsibility in strengthening multiple stakeholder relationships: A field experiment. The study demonstrated that the CSR expenditure includes the financial commitments made by a corporation to support projects that have positive social or environmental impacts, often intended to align with the company's corporate values and enhance its public image.

Zhang *et al.* (2022) examined that the green credit as a tool for financial stability and environmental sustainability. The study found that an increase in green credit volume reduces non-performing loans in environmentally sensitive sectors, enhancing financial stability by 15%. Similarly, Wang and Chen (2020) investigated that the environmental benefits of green credit initiatives: A carbon emission perspective. The study stated that the banks increasing their green credit volume to industries adopting eco-friendly technologies observed a 25% reduction in carbon emissions. Likewise, Kumar and Gupta (2021) analyzed that the green credit allocation trends and their impact on renewable energy projects. The study revealed that the green credit allocation to renewable energy projects rose by 20% over three years, contributing significantly to sustainable energy growth. Further, Singh and Das (2023) evaluated that the financial benefits of green credit portfolios in banking institutions. The study showed that the banks with higher green credit portfolios experienced a 10% increase in long-term profitability due to reduced default risks. Moreover, Osei and Mensah (2021) assessed that the barriers to green credit adoption in developing economies: A critical review. The study highlighted that the limited awareness among borrowers and lack of regulatory support hindered the growth of green credit volume by 30% in developing countries. Additionally, Zhao and Lin (2022) analyzed that the role of green credit in risk management in environmentally sensitive industries. The study stated that institutions allocating over 20% of their credit to green projects exhibited better risk management in environmentally vulnerable sectors.

Martinez and Lopez (2020) examined that the comparative analysis of green credit allocation in Europe and Asia. The study revealed that European banks showed a higher green credit volume allocation (35%) compared to Asian banks (20%) due to stricter regulations. Similarly, Ahmed and Rahman (2023) investigated that the contributions of green credit towards Sustainable Development Goals (SDGs). The study highlighted that increased green credit volume contributed significantly to achieving Sustainable Development Goals

(SDGs), particularly Goal 7 (Affordable and Clean Energy). Likewise, Tanaka and Suzuki (2022) examined that the role of fintech in improving green credit disbursement efficiency. The study indicated that the use of fintech in green credit evaluation processes increased disbursement efficiency, leading to a 20% growth in green credit volume. Further, Kumar and Sharma (2020) investigated that the effects of green credit policies on sustainable investments and non-performing loans. The showed that the banks adopting green credit policies reported a 12% increase in sustainable investments and a decline in non-performing loans. Moreover, Smith and Johnson (2021) studied that the influence of green tax incentives on green credit volume. The study found that implementation of green tax incentives led to a 15% rise in green credit volumes across environmentally sensitive sectors.

Zhang and Li (2021) analyzed that the effects of green credit policies on carbon emissions in high-risk industries. The study revealed that the introduction of green credit policies in China led to a 15% reduction in carbon emissions in industries with high environmental risks. Similarly, Ahmed and Rahman (2022) evaluated that the challenges in green credit adoption: A focus on regulatory frameworks and institutional awareness. The study revealed that the inadequate regulatory frameworks and low awareness among financial institutions hindered the adoption of green credit policies. Likewise, Wang and Zhao (2021) examined that the impact of green credit policies on renewable energy funding in emerging markets. The study found that green credit policies encouraged a 20% increase in funding for renewable energy projects in emerging markets. Furthermore, Tanaka and Suzuki (2022) analyzed that the resource allocation disparities in green credit between developed and developing nations. The study showed that the developed nations allocated 25% more resources to green credit than developing nations, driven by stricter environmental regulations. Moreover, Osei and Mensah (2020) studied that green credit as a tool for SME eco-innovation. The study highlighted that the green credit policies provided small and medium enterprises (SMEs) with access to low-interest loans, fostering eco-innovation in 30% of surveyed businesses. Additionally, García-Morales and Jiménez-Barrionuevo (2021) examined that the impact of CSR investment on financial performance and customer loyalty. The study stated that companies that increased their CSR expenditure by 10% reported a 5% improvement in overall financial performance and customer loyalty.

In the context of Nepal, Subedi and Bhattarai (2024) examined that the green credit volume and its impact on financial stability in Nepalese banks. The study stated that the higher green credit volumes in Nepalese banks have led to stable returns and reduced risks associated with traditional lending practices. The study also showed that the green credit contributes to compliance with national and international environmental regulations, thereby enhancing a bank's operational efficiency. Similarly, Ghimire and Poudel (2021) studied that the green banking practices: Adoption of environmentally friendly banking operations. The study highlighted that the green banking practices include adoption of environmentally friendly banking operations, including paperless banking, energy-efficient infrastructure, and green financing. Likewise, Khanal (2023) analyzed that the resilience of Nepalese banks during economic downturns through green credit diversification. The study stated that Nepalese banks with diversified loan portfolios, including significant green credit allocations, exhibited greater resilience during economic downturns. Further, Gautam and Adhikari (2019) analyzed that financial returns and credibility through green credit: Evidence from Nepalese banks. The study found that the banks supporting high-performing green projects benefit from improved financial returns and enhanced credibility. Moreover, Karki and

Adhikari (2021) assessed that the green banking practices in Nepal: A review of digital and environmentally friendly banking services. The study indicated that green banking practices initiatives undertaken by banks to promote environmental sustainability, including digital banking services, green loans, and internal environmental policies.

The above discussion reveals that the empirical evidences vary greatly across the studies concerning the impact of green credit on the profitability of Nepalese commercial banks. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The main purpose of the study is to examine the impact of green credit on the profitability of Nepalese commercial banks. Specifically, it examines the effect of green credit volume, green credit policy, loan portfolio diversification, corporate social responsibility expenditure and green project performance on the profitability of Nepalese commercial banks.

The remainder of this study is organized as follows. Section two describes the sample, data and methodology. Section three presents the empirical results and the final section draws the conclusion.

2. Methodological aspects

The study is based on primary sources of data which were gathered from 7 different province of Nepal. For primary data a structured questionnaire was used. This study contains a sample of 7 province of Nepal whose respective data are collected from a total of 136 respondents. The respondents' views were collected on green credit volume, green credit policy, loan portfolio diversification, corporate social responsibility expenditure, green project performance and profitability. This study is based on descriptive as well as casual comparative research designs.

The model

The model used in this study assumes that profitability depends upon the impacts of green credit. The dependent variable selected for the study is profitability. Similarly, the independent variables are green credit volume, green credit policy, loan portfolio diversification, corporate social responsibility expenditure and green project performance. Therefore, the model estimated in this study is stated as follows:

$$P = \beta_0 + \beta_1 \text{GCV} + \beta_2 \text{GCP} + \beta_3 \text{LPD} + \beta_4 \text{CSRE} + \beta_5 \text{GPP} + e$$

Where,

GCV=Green Credit Volume

GCP=Green Credit Policy

LPD=Loan Portfolio Diversification

CSRE=Corporate Social Responsibility Expenditure

GPP=Green Project Performance

P=Profitability

Green credit volume was measured using a 5-point Likert scale where the respondents

were asked to indicate the responses using 5 for strongly disagree and 1 for strongly agree. There are 5 items and sample items include “Green credit volume supports climate goals”, “Green credit volume incentivized by government policies” and so on. The reliability of the feature was measured by computing the Cronbach’s alpha ($\alpha = 0.943$).

Green credit policy was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly disagree and 1 for strongly agree. There are 5 items and sample items include “Green credit policy is growing global trend”, “Green credit policy reduces environmental impact” and so on. The reliability of the feature was measured by computing the Cronbach’s alpha ($\alpha = 0.936$).

Loan portfolio diversification was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly disagree and 1 for strongly agree. There are 5 items and sample items include “The loan portfolio diversification implemented by Nepalese commercial banks have a significant impact on overall profitability” “Loan portfolio diversification that allow for flexibility positively influence employee satisfaction and, consequently, firm performance” and so on. The reliability of the feature was measured by computing the Cronbach’s alpha ($\alpha = 0.941$).

CSR expenditure was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly disagree and 1 for strongly agree. There are 5 items and sample items include “CSR expenditure enhances brand value”, “CSR expenditure strengthens stakeholder relationships” and so on. The reliability of the feature was measured by computing the Cronbach’s alpha ($\alpha = 0.928$).

Green project performance was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly disagree and 1 for strongly agree. There are 5 items and sample items include “Green project performance has direct link to profitability”, “Green project performance facilitates access to additional funding” and so on. The reliability of the feature was measured by computing the Cronbach’s alpha ($\alpha = 0.931$).

Profitability was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly disagree and 1 for strongly agree. There are 5 items and sample items include “A higher volume of green credit directly correlates with increased profitability for commercial banks”, “Profitability can be positively affected by government incentives for banks that finance green projects, improving overall financial performance” and so on. The reliability of the feature was measured by computing the Cronbach’s alpha ($\alpha = 0.935$).

The following section describes the independent variables used in this study along with the hypothesis formulation.

Green Credit Volume

Green credit refers to loans or financial support provided to environmentally sustainable projects. Wu *et al.* (2020) explored that banks increasing green credit achieve higher long-term profitability. Similarly, Wang *et al.* (2019) pointed that green credit reduces credit risks associated with environmentally harmful industries. Likewise, Sun and Cui (2018) showed green credit policies improve financial stability and operational efficiency. Further, Chang *et al.* (2017) showed that the link between green finance and financial outcomes for banks.

Moreover, Hu *et al.* (2021) studied how green finance fosters sustainable banking practices. Furthermore, Du *et al.* (2022) stated green credit initiatives reduce regulatory and reputational risks. Additionally, Korkut *et al.* (2019) highlighted the role of green credit in advancing financial sustainability. Based on it, this study develops following hypothesis:

H₁: There is a positive relationship between green credit volume and profitability.

Green Credit Policy

A green credit policy is a set of guidelines, regulations, or financial incentives aimed at encouraging environmentally sustainable practices through credit or financial mechanisms. Green credit policies regulate lending practices to align with environmental goals. They influence profitability by fostering sustainable growth. Jain and Sharma (2018) pointed that green policies improve risk management in financial portfolios. Similarly, Li *et al.* (2021) showed that green lending policies impact bank profitability positively through market differentiation. Likewise, Biswas (2020) stated stricter environmental compliance improves borrower credit quality. Further, Tang *et al.* (2022) pointed green policies mitigate reputational risks and enhance investor confidence. Moreover, Carter *et al.* (2019) showed policies reduce operational risks associated with carbon emissions. Furthermore, Luo and Fang (2020) revealed how policies improve loan performance and reduce default risks. However, Chen *et al.* (2021) defined green policies foster innovation and profitability for financial institutions. Additionally, Han *et al.* (2020) discussed policy frameworks to optimize green lending practices. Based on it, this study develops following hypothesis:

H₂: There is a positive relationship between green credit policy and profitability.

Loan Portfolio Diversification

Loan portfolio diversification refers to spreading loans across different industries or sectors, which can reduce risks and enhance bank profitability. By having a diversified loan portfolio, banks or financial institutions can smooth out the financial performance over time and minimize exposure to risks associated with a particular borrower or industry. Tabak *et al.* (2011) demonstrated that the diversification enhances risk-adjusted returns for banks. Similarly, Elsas *et al.* (2010) explored the trade-offs between specialization and diversification in banking. Likewise, Berger and Udell (2005) revealed how diversification improves credit portfolio performance. Further, Campa and Hernando (2006) pointed diversification's role in mitigating sectoral risks. Moreover, Deng *et al.* (2018) explored that diversified portfolios perform better in volatile markets. Additionally, Lin *et al.* (2017) found a positive link between diversification and profitability. Based on it, this study develops following hypothesis:

H₃: There is a positive relationship between loan portfolio diversification and profitability.

CSR Expenditure

CSR expenditure refers to the financial resources that a company allocates toward its Corporate Social Responsibility (CSR) activities. These are voluntary initiatives that go beyond legal obligations, aimed at improving the well-being of society, the environment, and the stakeholders involved. Carroll and Shabina (2010) demonstrated that the CSR investments improve long-term financial performance. Similarly, Orlitzky *et al.* (2003) showed that there is a strong correlation between CSR expenditure and firm profitability. Likewise, Wang *et al.* (2016) highlighted CSR activities' role in strengthening customer loyalty. Further, Porter and Kramer (2011) suggested CSR creates shared value and improves profitability.

Moreover, Brammer *et al.* (2006) stated that the CSR expenditure enhances investor confidence. Furthermore, Scholtens (2006) pointed that the CSR initiatives improve banking performance. Additionally, Bénabou and Tirole (2010) revealed that how CSR expenditure affects risk and financial outcomes. Based on it, this study develops following hypothesis:

H₄: There is a positive relationship between CSR expenditure and profitability.

Green Project Performance

Green project performance refers to the success of environmentally sustainable projects funded by banks. It impacts both environmental outcomes and profitability. Wang *et al.* (2019) pointed that the high performing green projects improve bank profitability. Similarly, Boiral *et al.* (2012) explained that the successful green projects enhance corporate reputation and reduce costs. Likewise, Qian *et al.* (2017) highlighted the economic benefits of investing in high-performing green projects. Further, Delmas and Toffel (2008) revealed that how project performance improves regulatory compliance. Moreover, Panwar *et al.* (2014) pointed that green project success leads to better customer satisfaction and profitability. Furthermore, Guo *et al.* (2020) revealed that the role of green project outcomes in improving operational efficiency. Additionally, Scholtens (2009) demonstrated that successful green projects drive stakeholder engagement and profitability. Based on it, this study develops following hypothesis:

H₅: There is a positive relationship between green project performances and profitability.

3. Results and discussion

Correlation analysis

On analysis of data, correlation analysis has been undertaken first and for this purpose, Kendall's Tau correlation coefficients along with means and standard deviations have been computed, and the results are presented in Table 1.

Table 1

Kendall's Tau correlation coefficients matrix

This table presents Kendall's Tau coefficients between dependent and independent variables. The correlation coefficients are based on 136 observations. The dependent variable is P (Profitability). The independent variables are GCV (Green credit volume), GCP (Green credit policy), LPD (Loan portfolio diversification), CSRE (Corporate social responsibility expenditure) and GPP (Green project performance).

Variables	Mean	S.D.	GCV	GCP	LPD	CSRE	GPP	P
GCV	2.454	1.179	1					
GCP	2.432	1.116	0.710**	1				
LPD	2.341	1.140	0.634**	0.648**	1			
CSRE	2.387	1.075	0.695**	0.683**	0.653**	1		
GPP	2.457	1.090	0.606**	0.632**	0.603**	0.718**	1	
P	2.459	1.125	0.679**	0.634**	0.617**	0.685**	0.640**	1

Notes: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.

The table 1 shows the Kendall's Tau correlations coefficients of dependent and independent variables. The study shows that green credit volume is positively correlated to profitability. It means that higher the level of green credit volume, higher would be the

profitability. Similarly, green credit policy is positively related to profitability. It indicates that better the green credit policy, higher would be the profitability. Likewise, loan portfolio diversification has a positive relationship with profitability. It shows that higher loan portfolio diversification leads to an increase in the profitability. Further, corporate social responsibility expenditure has positive relationship with profitability. It reveals that higher the corporate social responsibility expenditure, higher would be profitability. Moreover, green project performance is positively correlated to profitability. It shows that better green project performance leads to the increase in the profitability.

Regression analysis

Having indicated Kendall's Tau correlation coefficients, the regression analysis has been carried out and the results are presented in Table 2. More specifically, it presents the regression results of green credit volume, green credit policy, loan portfolio diversification, corporate social responsibility expenditure and green project performance on the profitability of Nepalese commercial banks.

Table 2

Estimated regression results of green credit volume, green credit policy, loan portfolio diversification, corporate social responsibility expenditure and green project performance on the profitability of Nepalese commercial banks

The results are based on 136 observations using linear regression model. The model is $P = \beta_0 + \beta_1 \text{GCV} + \beta_2 \text{GCP} + \beta_3 \text{LPD} + \beta_4 \text{CSRE} + \beta_5 \text{GPP} + e$, where the dependent variable is P (Profitability). The independent variables are GCV (Green credit volume), GCP (Green credit policy), LPD (Loan portfolio diversification), CSRE (Corporate social responsibility expenditure) and GPP (Green project performance).

Models	Intercepts	Regression coefficients of					Adj. R ²	SEE	F-value
		GCV	GCP	LPD	CSRE	GPP			
1	0.254 (3.346)**	0.898 (32.234)**					0.885	0.381	1039.039
2	0.202 (2.222)*		0.928 (27.300)**				0.846	0.441	745.288
3	0.361 (3.888)**			0.896 (25.074)**			0.823	0.473	628.705
4	0.183 (1.870)				0.954 (25.536)**		0.828	0.466	652.063
5	0.223 (1.968)*					0.910 (21.595)**	0.775	0.533	466.358
6	0.160 (2.179)*	0.597 (8.552)**	0.342 (4.639)**				0.900	0.355	609.838
7	0.152 (2.156)*	0.528 (7.559)**	0.181 (2.153)*	0.244 (3.542)**			0.908	0.341	446.029
8	0.117 (1.632)	0.456 (5.942)**	0.144 (1.701)	0.209 (2.987)**	0.160 (2.108)*		0.911	0.336	344.363
9	0.096 (1.324)	0.442 (0.5726)	0.139 (1.648)	0.201 (2.868)**	0.095 (1.069)	0.099 (1.411)	0.911	0.335	277.975

Notes:

- Figures in parenthesis are t-values
- The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
- Profitability is the dependent variable.

Table 2 shows beta coefficients for green credit volume are positive with profitability. It shows that green credit volume has a positive impact on profitability. This finding is similar with the findings of Wu *et al.* (2020). Similarly, the beta coefficients for green credit policy

are positive with profitability. It reveals that green credit policy has a positive impact on profitability. This finding is similar to the findings of Chen *et al.* (2021). Likewise, the beta coefficients for loan portfolio diversification are positive with profitability. It indicates that loan portfolio diversification has a positive impact on profitability. This finding is similar to the finding of Lin *et al.* (2017). Further, the beta coefficients for corporate social responsibility expenditure are positive with profitability. It shows that corporate social responsibility expenditure has a positive impact on profitability. This finding is consistent with the findings of Carroll and Shabina (2010). Moreover, the positive beta coefficients for green project performance are positive profitability. It shows that green project performance has a positive impact on profitability. This finding is consistent with the findings of Wang *et al.* (2019).

4. Summary and conclusion

Green credit refers to loans and financial products provided to businesses, individuals, or projects that contribute to environmental sustainability, such as renewable energy, energy efficiency, and conservation projects. The impact of green credit on the profitability of Nepalese commercial banks is a multifaceted topic, as it involves both environmental and financial factors. Green credit has a dual impact on the profitability of Nepalese commercial banks. On one hand, it presents an opportunity to enter new, growing market segments and attract new customers who prioritize sustainability. It also offers the potential for long-term financial returns from green projects that often come with lower risks and government incentives. On the other hand, the initial investment costs, competition, and higher risk in some green sectors could reduce short-term profitability. The long-term profitability of green credit for Nepalese commercial banks will depend on factors such as the adoption rate of green finance, the regulatory environment, market demand, and the ability of banks to effectively manage and evaluate green projects. This study provides insightful information regarding the impact of green credit on the profitability of Nepalese commercial banks. The study analyzes various significant variables that could impact profitability of Nepalese commercial banks. These variables include how green credit volume, green credit policy, loan portfolio diversification, CSR expenditure and green project performance influence profitability.

This study attempts to examine the impact of green credit on the profitability of Nepalese commercial banks. The study is based on primary data with 136 observations.

The major conclusion of the study is that green credit volume, green credit policy, loan portfolio diversification, CSR expenditure and green project performance have positive impact on profitability. The study also concludes that green credit volume is the most significant factor followed by green credit policy and CSR expenditure that influence the impact of green credit on the profitability of Nepalese commercial banks.

References

- Ahmed, R., and M. Rahman, 2022. Challenges in green credit adoption: A focus on regulatory frameworks and institutional awareness. *Journal of Green Finance and Policy* 14(2), 211–229.
- Ahmed, R., and M. Rahman, 2023. Contributions of green credit towards Sustainable Development Goals (SDGs). *Sustainability and Development Journal* 11(1), 89–103.
- Bénabou, R., and J. Tirole, 2010. Individual and corporate social responsibility. *Economics* 77(305), 1–19.
- Berger, A. N., and G. F. Udell, 2005. A more complete conceptual framework for SME finance. *Journal*

of Banking and Finance 30(11), 2945–2966.

- Biswas, P., 2020. Stricter environmental compliance and its impact on borrower credit quality. *Journal of Sustainable Finance and Investment* 10(4), 312–329.
- Boiral, O., M. Cayer, and C. M Baron, 2012. The action logics of environmental leadership: A developmental perspective. *Journal of Business Ethics* 109(4), 445–463.
- Brammer, S., C. Brooks, and S. Pavelin, 2006. Corporate social responsibility and financial performance: Evidence from a panel of UK firms. *Business Ethics: A European Review* 15(3), 207–222.
- Campa, J. M., and I. Hernando, 2006. MandAs performance in the European financial industry. *Journal of Banking and Finance* 30(12), 3367–3392.
- Carroll, A. B., 1999. Corporate social responsibility: Evolution of a definitional construct. *Business and Society* 38(3), 268–295.
- Carroll, A. B., and N. Shabina, 2010. Corporate social responsibility: A case study approach. *Journal of Business Ethics* 91(2), 145–156.
- Carter, R., T. Green, and J. Palmer, 2019. The role of green policies in reducing operational risks associated with carbon emissions. *Environmental Finance* 15(3), 42–51.
- Chang, J., Li. H., and W. Yang, 2017. The relationship between green finance and financial outcomes for banks: Evidence from global practices. *Finance Research Letters* 2(4), 56–62.
- Chen, H., Y. Zhang, and S. Li, 2021. Fostering innovation and profitability in financial institutions through green policies. *Journal of Banking Regulation* 22(1), 45–60.
- Delmas, M. A., and M. W Toffel, 2008. Organizational responses to environmental demands: Opening the black box. *Strategic Management Journal* 29(10), 1027–1055.
- Deng, X., C. Zhou, and H Wang, 2018. Portfolio diversification in volatile markets: Evidence from international banks. *Global Finance Journal* 3(7), 1–10.
- Du, L., J. He, and T. Wang, 2022. The role of green credit initiatives in reducing regulatory and reputational risks. *Sustainability* 14(8), 4723.
- Elsas, R., A. Hackethal, and M Holzhäuser, 2010. The anatomy of bank diversification. *Journal of Banking and Finance* 34(6), 1274–1287.
- García-Morales, V., and M. Jiménez-Barrionuevo, 2021. The impact of CSR investment on financial performance and customer loyalty. *Journal of Corporate Responsibility* 18(3), 145–159.
- Gautam, P., and S Adhikari, 2019. Financial returns and credibility through green credit: Evidence from Nepalese banks. *Nepal Journal of Banking Studies* 5(2), 45–57.
- Ghimire, S., and M Poudel, 2021. Green banking practices: Adoption of environmentally friendly banking operations. *Journal of Nepalese Business Studies* 14(1), 1–15.
- Guo, Y., H. Wen, and Y. Du, 2020. Green credit policy, green innovation, and green total factor productivity: Empirical evidence from China. *Environmental Science and Pollution Research* 27(10), 10590–10608.
- Han, J., W. Liu, and K. Zhou, 2020. Optimizing green lending practices through policy frameworks. *Environmental Policy and Governance*, 30(3), 182–194.
- Hu, Z., L. Chen, and X. Yang, 2021. How green finance fosters sustainable banking practices: A case study analysis. *Environmental Economics and Policy Studies* 23(2), 197–217.
- Jain, P., and R. Sharma, 2018. Green policies and risk management in financial portfolios. *Risk Management and Insurance Review*, 21(2), 155–172.

- Karki, R., and D. Adhikari, 2021. Green banking practices in Nepal: A review of digital and environmentally friendly banking services. *Nepal Economic Review* 33(4), 123–145.
- Khanal, R., 2023. Resilience of Nepalese banks during economic downturns through green credit diversification. *Banking and Financial Review* 7(1), 32–49.
- Korkut, E., S. Yilmaz, and A. Cetin, 2019. Advancing financial sustainability through green credit: A systematic review. *Journal of Financial Stability* 4(1), 150–166.
- Kumar, A., and R. Gupta, 2021. Green credit allocation trends and their impact on renewable energy projects. *Journal of Sustainable Finance and Investment* 12(3), 234–250.
- Kumar, S., and V. Sharma, 2020. The effects of green credit policies on sustainable investments and non-performing loans. *Finance and Environment Research* 13(1), 67–80.
- Li, F., J. Tang, and H. Wu, 2021. The impact of green lending policies on bank profitability: Evidence from market differentiation. *Journal of Financial Services Research* 60(1), 23–40.
- Lin, C., Y. Ma, and F. M. Song, 2017. Bank diversification and profitability in the era of globalization. *Journal of Financial Stability* 3(10), 45–57.
- Luo, X., and Z. Fang, 2020. Green policies and their impact on loan performance and default risks. *Sustainability* 12(12), 4997.
- Markowitz, H. 1952. Portfolio selection. *The Journal of Finance* 7(1), 77–91.
- Markowitz, H., 1952. Portfolio selection. *The Journal of Finance* 7(1), 77–91.
- Martinez, J., and C. Lopez, 2020. Comparative analysis of green credit allocation in Europe and Asia. *Global Banking Review* 22(4), 345–360.
- Matten, D., and J. Moon, 2008. Implicit and explicit CSR: A conceptual framework for a comparative understanding of corporate social responsibility. *Academy of Management Review* 33(2), 404–424.
- Moon, J., 2007. The contribution of corporate social responsibility to sustainable development. *Sustainable Development* 15(5), 296–306.
- Orlitzky, M., F. L. Schmidt, and S. L. Rynes, 2003. Corporate social and financial performance: A meta-analysis. *Organization Studies* 24(3), 403–441.
- Osei, K., and E. Mensah, 2020. Green credit as a tool for SME eco-innovation: A case study. *International Journal of Green Finance* 10(2), 101–118.
- Osei, K., and E. Mensah, 2021. Barriers to green credit adoption in developing economies: A critical review. *International Journal of Environmental Finance* 9(4), 321–338.
- Panwar, R., T. Rinne, E. Hansen, and H. Juslin, 2014. Corporate responsibility: Balancing economic, environmental, and social issues in the forest products industry. *Forest Policy and Economics* 4(3), 57–65.
- Porter, M. E., and M. R. Kramer, 2011. Creating shared value. *Harvard Business Review* 89(1/2), 62–77.
- Qian, W., S. Schaltegger, and R. Burritt, 2017. The role of emissions trading in generating information for carbon management. *Accounting, Auditing and Accountability Journal* 30(7), 1452–1479.
- Scholtens, B., 2006. Finance as a driver of corporate social responsibility. *Journal of Business Ethics* 68(1), 19–33.
- Scholtens, B., 2009. Corporate social responsibility in the international banking industry. *Journal of Business Ethics* 86(2), 159–175.
- Sen, S., C. B. Bhattacharya, and D. Korschun, 2006. The role of corporate social responsibility in

- strengthening multiple stakeholder relationships: A field experiment. *Journal of the Academy of Marketing Science* 34(2), 158–166.
- Singh, P., and R. Das, 2023. Evaluating the financial benefits of green credit portfolios in banking institutions. *Global Financial Insights* 15(2), 112–129.
- Smith, A., and T. Johnson, 2021. The influence of green tax incentives on green credit volume. *Journal of Environmental Economics* 29(1), 34–50.
- Subedi, R., and M. Bhattarai, 2024. Green credit volume and its impact on financial stability in Nepalese banks. *Nepalese Financial Journal* 12(1), 78–95.
- Sun, L., and W. Cui, 2018. The effects of green credit policies on financial stability and operational efficiency. *Journal of Banking and Finance* 9(5), 91–107.
- Tabak, B. M., D. M. Fazio, and D. O. Cajueiro, 2011. The effects of loan portfolio concentration on Brazilian banks' return and risk. *Journal of Banking and Finance* 35(11), 3065–3076.
- Tanaka, H., and K. Suzuki, 2022. Resource allocation disparities in green credit between developed and developing nations. *Global Sustainability Studies* 9(4), 98–115.
- Tanaka, H., and K. Suzuki, 2022. The role of fintech in improving green credit disbursement efficiency. *Asia-Pacific Financial Review* 16(3), 231–247.
- Tang, Q., L. He, and W. Zhang, 2022. Mitigating reputational risks and enhancing investor confidence through green policies. *Journal of Business Ethics* 180(4), 971–987.
- Wang, H., and L. Chen, 2020. The environmental benefits of green credit initiatives: A carbon emission perspective. *Environmental and Resource Economics* 45(1), 89–102.
- Wang, H., L. Tong, R. Takeuchi, and G. George, 2016. Corporate social responsibility: Implications for firm performance in competitive environments. *Journal of Management* 42(5), 1325–1344.
- Wang, L., Z. Xu., and Z. Zhu, 2019. Green credit and bank performance: Evidence from China. *Financial Innovation* 5(1), 1–16.
- Wang, R., L. Zhao., and Z. Zhang, 2019. Reducing credit risks in environmentally harmful industries through green credit policies. *International Journal of Environmental Research and Public Health* 16(14), 2539.
- Wang, Y., and Q. Zhao, 2021. The impact of green credit policies on renewable energy funding in emerging markets. *Energy and Sustainability Journal* 19(2), 127–142.
- Wu, X., Z. Li., and J. Chen, 2020. The long-term profitability effects of increasing green credit: Evidence from global banking sectors. *Sustainable Development* 28(5), 1152–1163.
- Zhang, L., and J. Li, 2021. Effects of green credit policies on carbon emissions in high-risk industries. *Journal of Environmental Policy and Finance* 15(1), 75–92.
- Zhang, L., Z. Wang, and J. Yang, 2019. Green credit and environmental performance: Evidence from green projects in developing countries. *Environmental Economics and Policy Studies* 21(3), 345–361.
- Zhang, Y., Zhao, X., and P. Lin, 2022. Green credit as a tool for financial stability and environmental sustainability. *Finance and Environment Journal* 18(2), 76–94.
- Zhao, X., and P. Lin, 2022. The role of green credit in risk management in environmentally sensitive industries. *Journal of Risk and Sustainability* 13(1), 53–67.