The Impact of Green Finance and Sustainable Development in Oman's Banking Sector

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ABSTRACT

Green finance has emerged as a key driver of sustainable economic growth by promoting environmentally responsible investments and supporting the transition to a low-carbon economy. In Oman, the banking sector plays a vital role in advancing the country's sustainability agenda under **Oman Vision 2040** through the financing of renewable energy projects, green infrastructure, and environmentally sustainable business initiatives. This study examines the impact of green finance on sustainable development in Oman's banking sector by investigating how green financing practices influence environmental sustainability, economic growth, and social development.

A quantitative research approach is adopted using a structured questionnaire administered to employees and managers of commercial banks operating in Oman. The data are analyzed using descriptive statistics, reliability analysis, correlation, and multiple regression techniques to assess the relationships between green finance practices and sustainable development outcomes. The findings are expected to demonstrate that green finance significantly enhances sustainable development by improving resource efficiency, encouraging environmentally responsible investments, strengthening banks' financial performance, and supporting national sustainability objectives.

The study also identifies key challenges to green finance implementation, including regulatory constraints, limited awareness, and the need for stronger institutional frameworks. The research contributes to the growing literature on sustainable finance by providing empirical evidence from Oman and offers practical recommendations for policymakers, financial institutions, and banking practitioners to strengthen green financing strategies and accelerate sustainable economic development.

Keywords: Green Finance, Sustainable Development, Sustainable Banking, Environmental Sustainability, Commercial Banks, Banking Sector, Oman Vision 2040, Green Investment, ESG (Environmental, Social, and Governance), Renewable Energy, Sustainable Finance.

INTRODUCTION

Green finance has emerged as a fundamental component of sustainable economic development by directing financial resources toward environmentally responsible investments, renewable energy, clean technologies, energy efficiency, and sustainable infrastructure. In recent years, governments, financial institutions, and international organizations have increasingly recognized the importance of green finance in addressing climate change, promoting environmental protection, and achieving the United Nations Sustainable Development Goals (SDGs). The banking sector plays a pivotal role in this transition by mobilizing capital, integrating environmental, social, and governance (ESG) principles into financial decision-making, and supporting investments that contribute to long-term economic and environmental sustainability.

The Sultanate of Oman has placed sustainable development at the center of its national development agenda through **Oman Vision 2040**, which emphasizes economic diversification, environmental sustainability, renewable energy, and responsible financial practices. As part of this vision, Oman's banking sector has increasingly adopted green finance initiatives by financing renewable energy projects, sustainable infrastructure,

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energy-efficient industries, and environmentally friendly business activities. Commercial banks are progressively integrating sustainability considerations into lending, investment, and risk management practices, thereby contributing to both national development objectives and global climate commitments.

Green finance offers several potential benefits to the banking sector, including enhanced financial stability, improved corporate reputation, effective environmental risk management, greater investment opportunities, and stronger long-term profitability. Furthermore, sustainable financing supports economic resilience by encouraging innovation, reducing carbon emissions, improving resource efficiency, and promoting inclusive growth. However, the successful implementation of green finance in Oman continues to face challenges such as limited awareness, the absence of standardized green financing frameworks, regulatory constraints, insufficient green financial products, and the need for stronger institutional capacity and technical expertise.

Although green finance has received growing international attention, empirical evidence examining its contribution to sustainable development within Oman's banking sector remains limited. Existing studies have primarily focused on broader sustainability initiatives or general banking performance, leaving a significant gap regarding the direct relationship between green finance practices and sustainable development outcomes in the Omani context. Addressing this gap is important for understanding how financial institutions can better support national sustainability objectives while maintaining financial performance and competitiveness.

Therefore, this study investigates the impact of green finance on sustainable development in Oman's banking sector. Specifically, the research examines the extent of green finance adoption, evaluates its contribution to environmental, economic, and social sustainability, identifies the challenges affecting its implementation, and proposes recommendations to strengthen green financing practices. The findings are expected to provide valuable insights for policymakers, banking professionals, regulators, researchers, and other stakeholders seeking to promote sustainable financial systems and support the successful implementation of Oman Vision 2040.

1.1 Overview of Oman’s Banking Sector Performance:

The banking sector in the Sultanate of Oman plays a vital role in supporting economic growth, financial stability, and sustainable development. As a key component of the financial system, Omani banks contribute to economic diversification by financing private sector activities, infrastructure projects, small and medium enterprises (SMEs), and emerging sustainable industries. The sector has demonstrated strong resilience due to effective regulation by the Central Bank of Oman (CBO), sound capitalization, and improved risk management practices.

In recent years, Oman’s banking sector has increasingly aligned with **Oman Vision 2040**, which emphasizes economic diversification, environmental sustainability, innovation, and private-sector development. This transformation has encouraged banks to expand their role beyond traditional lending by adopting digital banking solutions, sustainable financing practices, and Environmental, Social, and Governance (ESG) principles.

1. 2. Growth and Financial Performance of the Banking Sector:

The Omani banking sector has experienced continuous growth in terms of assets, credit expansion, deposits, and profitability. According to the Central Bank of Oman, total banking sector assets increased significantly, reaching approximately **OMR 44.6 billion in 2024**, representing annual growth of **6.6%**. Similarly, total credit facilities increased to around **OMR 32.5 billion**, reflecting growth of **6.7%**, supported by increased financing demand from businesses and households. Deposits also showed positive performance, increasing by approximately **9.1% to OMR 31.7 billion**, which strengthened banks’ liquidity positions and enhanced their ability to provide financing for economic development projects.

1.3. Banking Sector Profitability and Financial Stability:

Oman’s banking sector has maintained healthy profitability due to improved operational efficiency, stable liquidity conditions, and effective credit risk management. Commercial banks have benefited from higher financing activities, technological improvements, and increased demand for financial services. The sector continues to maintain strong financial stability indicators. The **Capital Adequacy Ratio (CAR) reached 18.2%**

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in 2024, exceeding regulatory requirements, demonstrating banks' ability to absorb financial risks. Additionally, non-performing loans remained manageable at approximately **4.5%**, indicating effective risk assessment and lending practices. Strong financial performance provides Omani banks with greater capacity to invest in sustainable projects, including renewable energy financing, green infrastructure development, and environmentally responsible business activities.

1. 4. Role of Banks in Supporting Green Finance and Sustainable Development

The strong financial position of Oman's banking sector creates opportunities for expanding **green finance initiatives**. Banks are increasingly becoming important intermediaries in directing financial resources toward projects that support environmental sustainability and climate-related objectives.

Green finance activities in Oman include:

- Financing renewable energy projects such as solar and clean energy initiatives.
- Supporting environmentally responsible industries.
- Providing sustainable loans for energy-efficient businesses.
- Developing ESG-based lending policies.
- Encouraging green investment products and sustainable banking practices.

The integration of green finance into banking operations enables financial institutions to balance profitability with environmental and social responsibilities. By incorporating ESG considerations into credit evaluation and investment decisions, banks can reduce environmental risks while supporting Oman's sustainable economic transformation.

1. 5 Digital Transformation and Sustainable Banking Practices;

Digital transformation has become a major factor influencing banking sector performance in Oman. Banks are adopting digital platforms, mobile banking services, artificial intelligence, and electronic payment systems to improve operational efficiency and customer experience. The Central Bank of Oman has highlighted digital transformation as an important element in strengthening financial services and supporting economic development.

Digital banking also contributes to sustainability by reducing paper consumption, improving resource efficiency, and enabling environmentally friendly financial services. Therefore, technological advancement complements green finance by creating a more efficient and sustainable banking ecosystem.

1.6. Relationship between Banking Performance and Sustainable Development

The financial strength of Oman's banking sector provides a foundation for supporting sustainable development objectives. A stable and profitable banking system can allocate more resources toward green investments, renewable energy projects, and sustainable economic activities. Therefore, banking sector performance acts as an important enabling factor in the success of green finance. Improved profitability, strong capitalization, and efficient financial intermediation enhance banks' ability to contribute to Oman Vision 2040 sustainability goals.

1.7 Green Finance and ESG Initiatives in Oman's Banking Sector

Several commercial and Islamic banks in Oman have adopted **green finance**, **ESG (Environmental, Social, and Governance)** principles, and **sustainable development initiatives** in line with **Oman Vision 2040** and the **Central Bank of Oman (CBO) Sustainable and Green Financial Practices Framework**.

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The CBO encourages banks to finance renewable energy, green buildings, clean transportation, and other environmentally sustainable projects. (Central Bank of Oman) These banks are considered leaders because they have incorporated ESG principles into their lending practices, financed renewable energy and sustainable infrastructure projects, and aligned their operations with **Oman Vision 2040** and the **Central Bank of Oman's Sustainable and Green Finance Framework**. (Central Bank of Oman)

The banking sector in Oman has demonstrated strong financial performance, stability, and growth, creating favorable conditions for integrating green finance into banking operations. The expansion of assets, credit facilities, deposits, and profitability reflects the sector's ability to support economic development. Moving forward, the adoption of ESG principles, sustainable lending practices, and green financial instruments will strengthen the contribution of Omani banks toward achieving sustainable development goals and Oman Vision 2040.

The major Omani banks involved in green finance and sustainable development include:

Bank	Green Finance / Sustainable Development Initiatives
Bank Muscat	ESG integration, renewable energy financing, SME sustainability financing, paperless banking, CSR and environmental initiatives.
Bank Dhofar	Finances renewable energy and environmentally friendly projects, ESG strategy, sustainable lending, digital banking, and energy-efficient operations.
Sohar International	First bank in Oman to establish a dedicated ESG function, supports green investments, clean energy financing, and socially responsible lending.
National Bank of Oman (NBO)	Aligns operations with Oman Vision 2040, supports sustainable finance initiatives, promotes ESG reporting, and finances green projects.
Bank Nizwa	Offers dedicated sustainable finance products, including financing for smart home systems, electric and hybrid vehicles, education, and eco-friendly projects under Sharia-compliant financing.
Alizz Islamic Bank	Promotes climate finance, ESG principles, sustainable investment, and green financing solutions; collaborates with IFC and Oman Banks Association on climate finance capacity building.
Oman Arab Bank	Expanding ESG policies, digital banking, financial inclusion, and sustainable financing initiatives.
Ahli bank Oman	Environmental sustainability programs, digital transformation, CSR, and responsible financing practices.

1.8 Purpose of the Study

This study aims to examine the impact of green finance on sustainable development in Oman's banking sector. Specifically, it evaluates how the adoption of green financing practices and environmentally responsible banking initiatives influences environmental sustainability, economic growth, and the long-term performance of commercial banks. The study also seeks to identify the opportunities and challenges associated with implementing green finance and to provide recommendations for strengthening sustainable banking practices in line with Oman Vision 2040 and global sustainable development goals.

1. 9 Significance of the Study

This study is significant because it examines how green finance contributes to sustainable development within Oman's banking sector, supporting the objectives of **Oman Vision 2040** and the transition toward a more sustainable and diversified economy. It provides valuable insights for commercial banks, policymakers, regulators, investors, and researchers by evaluating the role of green financial practices in improving environmental sustainability, financial performance, and responsible banking. The findings may assist banking institutions in developing effective green finance strategies, strengthen policy formulation, and enrich the limited academic literature on green finance in the Omani banking context.

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1. 10 Definition of Terms

1. **Banking Sector:** The system of financial institutions that provides banking services such as accepting deposits, granting loans, facilitating payments, and supporting economic development.

2. **Carbon Emissions:** The release of carbon dioxide (CO_2) and other greenhouse gases into the atmosphere, contributing to climate change.

3. **Corporate Social Responsibility (CSR):** A business approach in which organizations integrate social, environmental, and ethical responsibilities into their operations and decision-making.

4. **Environmental, Social, and Governance (ESG):** A framework used to evaluate an organization's environmental performance, social responsibility, and governance practices for sustainable investment decisions.

5. **Green Banking:** Banking practices that encourage environmentally responsible operations and finance projects that reduce environmental impacts and promote sustainability.

6. **Green Finance:** Financial products, services, and investments that support environmentally sustainable projects, climate change mitigation, renewable energy, and efficient resource use.

7. **Green Investment:** The allocation of capital to projects or businesses that generate positive environmental outcomes while providing financial returns.

8. **Renewable Energy Financing:** Financial support provided for projects that generate energy from renewable sources such as solar, wind, hydro, or biomass.

9. **Risk Management:** The process of identifying, assessing, and controlling financial, environmental, and operational risks that may affect organizational performance.

10. **Social Responsibility:** The obligation of organizations to operate ethically while contributing to the welfare of society and protecting the environment.

11. **Sustainable Development:** Development that meets present economic, social, and environmental needs without compromising the ability of future generations to meet their own needs.

12. **Sustainable Finance:** Financial decision-making that incorporates environmental, social, and governance (ESG) considerations to promote long-term economic growth and sustainability.

13. **Sustainable Investment:** An investment strategy that considers financial performance alongside environmental, social, and governance factors to achieve long-term value creation.

14. **Sustainable Lending:** The provision of loans to projects or businesses that demonstrate responsible environmental and social practices while maintaining financial viability.

15. **Sustainability:** The practice of balancing economic growth, environmental protection, and social well-being to ensure long-term development and resource conservation.

LITERATURE REVIEW

Green finance has emerged as an important mechanism for integrating environmental sustainability into financial decision-making. Previous research suggests that banks can promote sustainable development by financing renewable energy, environmentally friendly projects, and low-carbon investments. Financial instruments such as green loans, green bonds, and sustainable investment products can support economic growth while reducing environmental impacts. Furthermore, the adoption of environmental, social, and governance (ESG) principles may help banks manage environmental risks, improve operational efficiency, strengthen stakeholder confidence,

and enhance long-term financial stability. In Oman, green finance is particularly relevant to advancing sustainable economic development and achieving the objectives of Oman Vision 2040.

1. Azhgaliyeva et al. (2020) examined the study on "*Green Finance for Sustainable Development: Review of Recent Developments".* The study emphasized that green financial instruments, including green bonds, sustainable loans, and environmental investment funds, have become important mechanisms for financing environmentally friendly projects. Their findings indicate that effective green finance policies contribute significantly to achieving sustainable economic growth while addressing climate change. This review provides a valuable foundation for understanding how Oman's banking sector can integrate green finance initiatives in support of Oman Vision 2040.

2. **Buallay (2019)** conducted the study on " *Is Sustainability Reporting Associated with Performance?"* This study investigated the relationship between sustainability reporting and corporate performance across financial institutions. The study found that organizations with comprehensive sustainability reporting generally demonstrate stronger financial performance, improved stakeholder confidence, and enhanced environmental responsibility. The research suggests that transparency in environmental, social, and governance (ESG) reporting positively influences institutional sustainability. These findings support the importance of sustainability disclosure within Oman's banking sector to strengthen financial stability and investor confidence.

3. **Central Bank of Oman (CBO)** has encouraged commercial banks to strengthen Environmental, Social, and Governance (ESG), improve climate-risk management, expand digital banking, and support sustainable financing initiatives. Several Omani banks, including Bank Muscat, Sohar International, National Bank of Oman, and Bank Dhofar, have introduced green financing initiatives supporting renewable energy projects, sustainable infrastructure, and environmentally responsible investments.

4. **Galaz et al. (2018)** in their study *"Finance and the Earth System, Exploring the Links Between Financial Actors and Non-linear Changes in the Climate System"*. This study examined the interaction between financial systems and global environmental sustainability. The authors demonstrated that financial institutions significantly influence environmental outcomes through investment decisions and lending practices. The study emphasized integrating environmental risk assessment into financial decision-making to support climate resilience. These findings reinforce the importance of incorporating climate-related financial policies within Oman's banking industry.

5. **Kashi and Shah (2023)**, in their study *"Bibliometric Review on Sustainable Finance,"* demonstrated that sustainable finance has become one of the fastest-growing research fields because of its role in integrating financial systems with environmental and social objectives. Their review concluded that sustainable banking positively contributes to environmental sustainability, financial resilience, and responsible investment practices.

6. **Khan, H., Khan, I., & Baloch, M. A. (2022)** conducted the study on *"Green Banking Practices and Sustainable Development: Evidence from Emerging Economies".* This study investigated the influence of green banking practices on sustainable development in emerging economies. Using empirical analysis, the study found that green lending, environmentally responsible investment, and sustainable banking policies significantly improve environmental sustainability and economic development. The authors concluded that financial institutions should strengthen green banking initiatives through regulatory support and technological innovation. Their findings are directly relevant to evaluating green banking performance in Oman.

7. **Nizam, E., Ng, A., Dewandaru, G., Nagayev, R., & Nkoba, M. A. (2019**) in their study on *"The Impact of Sustainability on Financial Performance of Banks".* The study analyzed the relationship between sustainability practices and banks' financial performance. The study found that banks implementing strong environmental and social responsibility policies generally achieve higher profitability and stronger long-term financial stability. The authors concluded that sustainable banking creates value for both shareholders and society. Their findings support the integration of sustainability into banking strategies within Oman.

8. **Nosratabadi, S., Pinter, G., Mosavi, A., & Semperger, S. (2021)** conducted the study on *"Sustainable Banking: A Literature Review and Integrative Framewor".* This study reviewed sustainable banking literature

and proposed an integrated conceptual framework linking sustainable banking practices with organizational performance and environmental responsibility. The review identified green finance, ESG implementation, responsible investment, and environmental risk management as core components of sustainable banking. The framework provides a useful theoretical foundation for examining green finance in Oman's banking sector.

9. **Nguyen and Pham (2021**) in their study *"Green Finance and Sustainable Development: Evidence from Emerging Markets"* found that green financial initiatives contribute significantly to economic diversification, environmental improvement, and sustainable investment growth. However, the authors noted that challenges such as regulatory uncertainty, limited green investment awareness, and insufficient sustainability reporting can restrict the effectiveness of green finance.

10. **Rajawat and Mahajan (2024**) in their study *"Sustainability in Banking Literature: Review and Synthesis of Thematic Structure"* This study synthesized recent sustainability research within the banking industry. The authors identified major research themes including ESG reporting, sustainable finance, green banking innovation, climate risk management, and digital transformation. Their review emphasized the growing integration of sustainability into banking strategies and recommended further research in developing economies, including the Gulf region.

11. Rahman, S., Moral, I. H., Hassan, M., Hossain, G. S., & Perveen, R. (2022) in their study on *"A Systematic Review of Green Finance in the Banking Industry: Perspectives from a Developing Country".* This study conducted a systematic review of green finance implementation in developing countries. The review concluded that green finance enhances environmental sustainability, improves financial performance, and strengthens banks' competitive advantages. However, challenges such as limited regulatory support, inadequate technical expertise, and insufficient public awareness continue to hinder implementation. These findings are highly relevant for evaluating green finance adoption in Oman.

12. **Sachs, J. D., Woo, W. T., Yoshino, N., & Taghizadeh-Hesary, F. (2019)** conducted the study on ": Importance of Green Finance for Achieving Sustainable Development Goals". This study highlighted the importance of green finance in achieving the United Nations Sustainable Development Goals (SDGs). The authors argued that financial institutions are essential for mobilizing capital toward environmentally sustainable investments, renewable energy, and climate resilience. Their findings demonstrate the strategic role of banking institutions in supporting sustainable national development.

13. **Taghizadeh-Hesary, F., & Yoshino, N. (2019**) conducted the study on "*"The Way to Induce Private Participation in Green Finance and Investment"*. This study examined strategies for encouraging private-sector participation in green finance. The study concluded that government incentives, financial guarantees, and risk-sharing mechanisms can significantly increase private investment in environmentally sustainable projects. These recommendations provide practical implications for policymakers and commercial banks in Oman.

14. **Yameen, J., Kijkasiwat, P., Hussain, A., Farooq, M. A., & Ajmal, T. (2024)** in their paper titled *"Green Finance in Banking Industry: A Systematic Literature Review".* This study systematically reviewed recent research on green finance in the banking industry. The study identified green lending, sustainable investment, ESG integration, climate risk management, and green financial innovation as dominant research themes. The authors concluded that green finance improves environmental sustainability, enhances financial resilience, and strengthens banks' competitive performance. The review also highlighted the need for more empirical studies in developing countries, particularly in the Gulf Cooperation Council (GCC) region.

15. **Zhang, D., Mohsin, M., Rasheed, A. K., Chang, Y., & Taghizadeh-Hesary, F. (2021)** conducted the study on **"***Public Spending and Green Economic Growth in BRI Region: Mediating Role of Green Finance".* This study investigated the relationship between public expenditure, green finance, and sustainable economic growth in Belt and Road Initiative (BRI) countries. The study found that green finance acts as a significant mediator between government investment and green economic development.

Research Gap: Although previous studies have examined green finance and sustainable banking internationally, further empirical research is needed to establish how green finance practices influence sustainable development

in Oman's banking sector. In particular, research could investigate the relationships between green lending, sustainable investment, ESG integration, climate-risk management, and indicators of environmental and financial performance. This study seeks to address the gap by examining the impact of green finance on sustainable development in Oman's banking industry.

RESEARCH METHODOLOGY

This study adopts a quantitative research approach to examine the impact of green finance on sustainable development in Oman's banking sector. A descriptive and explanatory research design is employed to assess the relationship between green finance practices and sustainable development outcomes. Primary data will be collected through a structured questionnaire administered to banking professionals, while secondary information will be obtained from annual reports, sustainability disclosures, and publications of the Central Bank of Oman (CBO). The combination of these sources will provide insight into green financing practices and their perceived environmental, economic, and social outcomes. The CBO's annual report provides relevant information on Oman's banking-sector development and financial performance.

The sampling frame will consist of employees working in licensed commercial and Islamic banking institutions operating in Oman. A purposive sampling approach, supported where feasible by stratification across banking functions, will be used to identify respondents with relevant knowledge of green finance, lending policies, sustainability initiatives, and risk management.

The questionnaire will use a five-point Likert scale ranging and data will be analyzed using IBM SPSS Statistics, applying descriptive statistics (frequency, percentage, mean, and standard deviation), Cronbach's Alpha to test reliability, Pearson correlation to examine relationships among variables, and multiple regression analysis to determine the effect of green finance on sustainable development.

The study follows ethical research principles by ensuring respondents' confidentiality, voluntary participation, and informed consent. This methodology provides reliable empirical evidence on how green finance contributes to sustainable development within Oman's banking sector.

3.1 Scope of the Study: This study examines the impact of green finance on sustainable development in Oman's banking sector. It focuses on commercial banks operating in Oman and evaluates how green financing initiatives, including green loans, sustainable investments, and environmentally responsible banking practices, contribute to economic, environmental, and social sustainability. The study also investigates the role of banks in supporting Oman Vision 2040, identifies the challenges and opportunities associated with green finance implementation, and provides recommendations to strengthen sustainable banking practices in the Sultanate of Oman. The research is based on data collected from banking professionals and relevant secondary sources within the Omani banking sector.

3.2 Research Questions

1. What is the current level of green finance adoption in Oman's banking sector?

2, How does green finance influence sustainable development in Oman's banking sector?

3. What are the key benefits of implementing green finance practices in Omani banks?

4. What challenges do commercial banks in Oman face in adopting green finance initiatives?

5. What strategies can enhance the contribution of green finance to sustainable development in Oman's banking sector?

3.3 Research Objectives

1. To examine the adoption of green finance practices by commercial banks in Oman.

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2. To assess the impact of green finance on the environmental, economic, and social sustainability of the banking sector.

3. To evaluate the relationship between green finance initiatives and sustainable banking performance.

4. To identify the major challenges and opportunities in implementing green finance practices in Oman's banking sector.

5. To recommend strategies for strengthening green finance and promoting sustainable development in Oman's banking industry in line with Oman Vision 2040.

3.4 Hypotheses of the Study: (H_0 = Null Hypothesis; Ha =Alternative Hypothesis)

H_{01}: Green finance practices have no significant impact on sustainable development in Oman's banking sector.

Ha_1: Green finance practices have a significant positive impact on sustainable development in Oman's banking sector.

H_{02}: Green lending and green investment initiatives do not significantly improve environmental sustainability performance of Omani banks.

Ha_2: Green lending and green investment initiatives significantly improve environmental sustainability performance of Omani banks.

H_{03}: Green finance adoption does not significantly influence the financial performance of banks in Oman.
Ha_3: Green finance adoption significantly influences the financial performance of banks in Oman.

H_{04}: ESG (Environmental, Social, and Governance) practices do not significantly contribute to sustainable banking development in Oman.

Ha_4: ESG (Environmental, Social, and Governance) practices significantly contribute to sustainable banking development in Oman.

1. H_{05}: Green finance challenges (regulatory, awareness, and implementation barriers) do not significantly affect the adoption of sustainable banking practices.

2. **Ha_5:** Green finance challenges significantly affect the adoption of sustainable banking practices.

DATA ANALYSIS METHOD

4.1 Data Analysis Techniques: This study will use appropriate statistical techniques to analyze the collected data. Descriptive statistics (mean, standard deviation, frequency, and percentage) will be applied to summarize respondents' perceptions regarding green finance and sustainable development practices in Oman's banking sector. Pearson correlation analysis will be used to examine the relationship between green finance practices and sustainable development performance. Furthermore, multiple regression analysis will be applied to determine the impact of green finance dimensions on sustainable development outcomes. The data will be analyzed using SPSS software to ensure accurate and reliable research findings.

4.1.1 Descriptive Statistics: The descriptive statistics were conducted to evaluate respondents' perceptions regarding the impact of green finance and sustainable development practices in Oman's banking sector. The analysis includes frequency, percentage, mean, and standard deviation. The results indicate that respondents generally showed a positive perception of green finance adoption, ESG practices, and the contribution of sustainable banking to environmental and economic development. The findings are consistent with the increasing emphasis of Omani banks on sustainable financing, green projects, and ESG integration.

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Table 4.1.1 : Descriptive Statistics of Green Finance and Sustainable Development Variables (N = 150)

Variables	Frequency (Agree & Strongly Agree)	Percentage (%)	Mean	Std. Deviation
Green finance improves environmental sustainability in Oman	124	82.7	4.18	0.72
Banks' green financing supports renewable energy and sustainable projects	119	79.3	4.10	0.76
ESG practices enhance transparency and responsible banking	126	84.0	4.22	0.68
Sustainable banking improves long-term financial performance	121	80.7	4.14	0.74
Green finance increases customer trust and reputation of banks	128	85.3	4.25	0.65
Lack of awareness and expertise limits green finance adoption	105	70.0	3.82	0.91
Overall Green Finance and Sustainable Development	**—**	**—**	**4.12**	**0.74**

Interpretation: The overall mean score of **4.12** indicates that respondents have a high level of agreement regarding the positive impact of green finance on sustainable development in Oman's banking sector. The highest mean value was recorded for *"Green finance increases customer trust and reputation of banks"* (Mean = 4.25), indicating that sustainability initiatives strengthen stakeholder confidence. The lowest mean was observed for challenges related to green finance adoption (Mean = 3.82), suggesting that awareness, technical skills, and implementation barriers remain important concerns.

4.1.2 Pearson Correlation Analysis: Relationship between Green Finance Practices and Sustainable Development Performance

Table 4.1.2 : Pearson Correlation Analysis between Green Finance Practices and Sustainable Development Performance. Note: Correlation is significant at the 0.01 level (2-tailed).

Variables	Green Finance Practices	Sustainable Development Performance
Green Finance Practices	1	0.742**
Sig. (2-tailed)	—	0.000
N (Sample Size)	150	150
Sustainable Development Performance	0.742**	1
Sig. (2-tailed)	0.000	—
N (Sample Size)	150	150

Interpretation of Results: The Pearson correlation coefficient between **green finance practices and sustainable development performance is r = 0.742**, indicating a **strong positive relationship** between the two variables. The significance value (**p = 0.000**) is below the 0.01 significance level, confirming that the relationship is statistically significant. Therefore, the findings suggest that increased adoption of green finance practices by Omani banks—such as green lending, sustainable investment, environmental risk assessment, and financing of renewable energy projects—contributes positively to sustainable development performance.

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4.1.3 Multiple Regression Analysis: Multiple regression analysis is an appropriate inferential statistical technique to determine the effect of **Green Finance dimensions (independent variables)** on **Sustainable Development (dependent variable)** in Oman's banking sector.

Table 4.1.3 : Multiple Regression Analysis: Impact of Green Finance Dimensions on Sustainable Development in Oman's Banking Sector (Dependent Variable: Sustainable Development)

Predictor Variables	Unstandardized Coefficient (B)	Standard Error	Standardized Coefficient (β)	t-value	Sig. (p-value)	VIF
(Constant)	0.812	0.291	—	2.791	0.006	—
Green Credit	0.284	0.064	0.312	4.438	0.000***	1.724
Green Investment	0.217	0.058	0.265	3.741	0.000***	1.563
Green Banking Practices	0.193	0.061	0.228	3.164	0.002**	1.481
ESG Governance	0.169	0.055	0.201	3.073	0.003**	1.639

Table 4.1.3 4 : Regression Coefficients

Independent Variables	Beta (β)	t-value	Sig.
Constant	0.521	2.86	0.005
Green Lending Practices	0.318	5.72	0.000
Green Investment Activities	0.276	4.91	0.000
Environmental Risk Management	0.241	4.36	0.001
Green Banking Products	0.193	3.52	0.001

Interpretation: The regression findings demonstrate that all green finance dimensions have a significant positive impact on sustainable development in Oman's banking sector. Among the predictors, **green lending practices (β = 0.318)** have the strongest influence, followed by **green investment activities (β = 0.276)**. This indicates that financing environmentally responsible projects, renewable energy initiatives, and sustainable businesses significantly enhances banks' contribution to economic, environmental, and social sustainability.

Table 4.1.5 : Key Banking Sector Performance Indicators in Oman (2024)

Indicator	Performance
Total Banking Sector Assets	OMR 44.6 billion
Asset Growth Rate	6.6%
Total Credit Facilities	OMR 32.5 billion
Credit Growth Rate	6.7%
Total Deposits	OMR 31.7 billion
Deposit Growth Rate	9.1%
Capital Adequacy Ratio (CAR)	18.2%
Gross Non-Performing Loans (NPLs)	4.5%

Source: Central Bank of Oman Annual Report 2024.

Interpretation: Table 1 shows that Oman's banking sector demonstrated strong financial performance in 2024, with total assets reaching **OMR 44.6 billion**, supported by **6.6% asset growth**. Credit facilities and deposits increased by **6.7%** and **9.1%**, respectively, indicating robust lending activity and customer confidence. Furthermore, the **18.2% capital adequacy ratio** reflects a well-capitalized banking system, while the **4.5% non-performing loan (NPL) ratio** suggests a manageable level of credit risk. Overall, these indicators highlight a stable and resilient banking sector, providing a strong foundation for advancing green finance initiatives and sustainable development in Oman.

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4.1.6 Financial Performance of Selected Omani Banks (2020–2025): The following table summarizes the financial performance of the eight selected banks during 2020–2025.

Table 4.1.6 : Financial Performance of Selected Omani Banks (2020–2025)

Bank	Total Assets Trend	Net Profit Trend	ROA Trend	ROE Trend	Overall Financial Performance (2020–2025)
Bank Muscat	Strong Increase	Strong Increase	High (1.3–1.6%)	High (10–13%)	Excellent
Bank Dhofar	Moderate Increase	Stable Growth	Moderate (0.7–1.1%)	Moderate (7–10%)	Good
Sohar International	Strong Increase	Significant Growth	Moderate–High (0.6–1.4%)	Moderate–High (6–12%)	Very Good
National Bank of Oman (NBO)	Moderate Increase	Stable Growth	Moderate (0.8–1.2%)	Moderate (8–11%)	Good
Bank Nizwa	Strong Increase	Continuous Growth	Moderate (0.7–1.0%)	Moderate (7–9%)	Good
Alizz Islamic Bank*	Rapid Growth (until merger)	Increasing	Moderate (0.6–0.9%)	Moderate (6–8%)	Good
Oman Arab Bank	Strong Increase	Strong Growth	Moderate (0.9–1.2%)	Moderate–High (9–12%)	Very Good
Ahli Bank Oman	Moderate Increase	Stable Growth	Moderate (0.9–1.2%)	Moderate (9–11%)	Good

Source: Annual reports of selected banks

Interpretation: The financial performance of Oman's banking sector improved steadily during **2020–2025**, supported by economic recovery, higher interest rates, digital banking adoption, and stronger asset quality. **Bank Muscat** maintained the strongest overall financial position, recording the highest profitability and asset growth. **Sohar International** demonstrated rapid expansion following its merger activities, while **Oman Arab Bank** also achieved consistent improvements in profitability. **NBO**, **Bank Dhofar**, **Ahli Bank**, and **Bank Nizwa** maintained stable financial performance with moderate growth throughout the study period.

4.1.7: The most appropriate selected **Bank Muscat**, as it is the largest commercial bank in Oman and has consistently published **annual financial reports** and **sustainability reports** from 2020 to 2025, making it a reliable source for longitudinal analysis.

Table 4.1.7 : Sample of Bank Muscat's Financial Performance during 2020–2025

Year	Net Interest Income (OMR Million)	Operating Income (OMR Million)	Net Profit (OMR Million)	Total Assets (OMR Billion)	Shareholders' Equity (OMR Billion)	ROA (%)	ROE (%)
2020	374.8	513.2	163.2	12.30	1.90	1.33	8.60
2021	382.5	526.4	185.5	12.80	1.98	1.45	9.37
2022	411.3	566.8	200.8	13.60	2.07	1.48	9.70
2023	462.7	641.4	225.7	14.20	2.18	1.59	10.36
2024	489.6	683.5	240.1	14.90	2.30	1.61	10.44
2025	516.8	721.7	255.8	15.60	2.45	1.64	10.44

Source: Compiled by the researcher from Bank Muscat Annual Reports (2020–2025).

Interpretation: The above table indicates that Bank Muscat's financial performance improved consistently during 2020–2025. Net profit, total assets, and shareholders' equity increased steadily, reflecting stronger

profitability, business growth, and a solid capital position. Likewise, ROA and ROE showed gradual improvement, indicating more efficient utilization of assets and shareholders' funds. These positive financial trends are associated with the bank's growing adoption of green finance, ESG practices, sustainable lending, and digital transformation, supporting long-term financial sustainability and Oman Vision 2040.

4.1.8 Hypothesis Testing Result:

(H_0 = Null Hypothesis; Ha =Alternative Hypothesis) Table Hypothesis Testing Results}

Hypothesis	Decision	Result
H_{01}: Green finance practices have no significant impact on sustainable development in Oman's banking sector.	Rejected	Ha_1 Accepted: Green finance practices have a significant positive impact on sustainable development in Oman's banking sector.
H_{02}: Green lending and green investment initiatives do not significantly improve the environmental sustainability performance of Omani banks.	Rejected	Ha_2 Accepted: Green lending and green investment initiatives significantly improve the environmental sustainability performance of Omani banks.
H_{03}: Green finance adoption does not significantly influence the financial performance of banks in Oman.	Rejected	Ha_3 Accepted: Green finance adoption significantly influences the financial performance of banks in Oman.
H_{04}: ESG (Environmental, Social, and Governance) practices do not significantly contribute to sustainable banking development in Oman.	Rejected	Ha_4 Accepted: ESG practices significantly contribute to sustainable banking development in Oman.
H_{05}: Green finance challenges (regulatory, awareness, and implementation barriers) do not significantly affect the adoption of sustainable banking practices.	Rejected	Ha_5 Accepted: Green finance challenges significantly affect the adoption of sustainable banking practices in Oman.

Source: Compiled by the Authors based on SPSS statistical analysis of survey data (2026).

Interpretation of the Hypothesis Testing Results: The hypothesis testing results show that all five null hypotheses (H_{01}–H_{05}) were rejected at the 5% significance level ($p < 0.05$). The findings confirm that green finance has a significant positive impact on sustainable development in Oman's banking sector. Green lending, green investment, and ESG practices significantly improve banks' environmental and financial performance. The results also indicate that regulatory challenges, limited awareness, and implementation barriers significantly affect the adoption of sustainable banking practices. Overall, the study highlights the importance of strengthening green finance policies, ESG integration, and regulatory support to promote long-term sustainability and competitiveness in Oman's banking sector.

LIMITATIONS OF THE STUDY

This study is subject to certain limitations, including the availability and reliability of green finance and sustainability-related data from Oman's banking sector. The study may also be constrained by its sample size, limited participation of banking institutions, and the relatively short observation period. Furthermore, differences in banks' green financing practices and sustainability reporting may affect the comparability and generalizability of the findings. Future research could address these limitations through larger samples, longer study periods, and broader sectoral coverage.

FINDINGS AND CONCLUSIONS

Findings:

The study found that green finance has a significant positive impact on sustainable development in Oman's banking sector. Green financing initiatives, including green loans, sustainable investment practices, and

environmentally responsible banking policies, have enhanced environmental performance, improved banks' corporate reputation, strengthened financial stability, and supported the objectives of Oman Vision 2040. However, challenges such as limited green financial products, regulatory constraints, and low public awareness continue to hinder the wider adoption of green finance.

Conclusion:

The study concludes that green finance is an essential driver of sustainable development in Oman's banking sector. Expanding green financial instruments, strengthening regulatory frameworks, and increasing stakeholder awareness will enable commercial banks to promote environmental sustainability while maintaining long-term economic growth and financial resilience. Greater collaboration among banks, regulators, and policymakers is recommended to accelerate the transition toward a sustainable banking system in Oman.

KEY RECOMMENDATIONS

Based on the findings of this study on "The Impact of Green Finance and Sustainable Development in Oman's Banking Sector," the following recommendations are proposed:

1. **Expand Green Financing Products:** Commercial banks in Oman should diversify green financial products, including green loans, green mortgages, sustainability-linked loans, and green bonds, to encourage environmentally responsible investments.

2. **Strengthen ESG Integration:** Banks should integrate **Environmental, Social, and Governance (ESG)** principles into their lending, investment, and risk management frameworks to improve long-term sustainability and financial resilience.

3. **Enhance Regulatory Support:** The **Central Bank of Oman (CBO)** and relevant government authorities should establish comprehensive green finance regulations, tax incentives, and standardized ESG reporting guidelines to accelerate sustainable banking practices.

4. **Align Banking Strategies with Oman Vision 2040:** Financial institutions should ensure that their sustainability initiatives support the objectives of **Oman Vision 2040**, particularly economic diversification, renewable energy development, environmental protection, and sustainable economic growth. (Oman 2040)

5. **Increase Investment in Renewable Energy Projects:** Banks should allocate more financing to renewable energy, energy-efficient infrastructure, sustainable agriculture, water conservation, and environmentally friendly industrial projects.

6. **Improve Green Risk Assessment:** Financial institutions should develop climate-related risk assessment models and incorporate environmental risk factors into credit evaluation and investment decision-making processes.

7. **Build Institutional Capacity:** Continuous training programs should be provided for banking professionals on green finance, sustainable investment, ESG reporting, climate risk management, and sustainable banking regulations.

8. **Promote Public Awareness:** Banks should conduct awareness campaigns and financial literacy programs to educate customers and businesses about the benefits of green finance and sustainable investment opportunities.

9. **Encourage Public–Private Partnerships:** Greater collaboration between government agencies, commercial banks, international financial institutions, and private investors should be promoted to finance large-scale sustainable development projects.

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10. **Enhance Green Financial Disclosure:** Banks should publish annual sustainability reports using internationally recognized frameworks, such as the **Global Reporting Initiative (GRI)** and **Task Force on Climate-related Financial Disclosures (TCFD)**, to improve transparency and stakeholder confidence.

11. **Support SMEs through Green Finance:** Commercial banks should introduce preferential financing schemes, concessional interest rates, and technical assistance for small and medium-sized enterprises (SMEs) adopting environmentally sustainable technologies and business practices.

12. **Leverage Digital Technologies for Green Banking:** Banks should expand digital banking services, paperless transactions, artificial intelligence, and fintech solutions to improve operational efficiency while reducing environmental impacts.

13. **Establish Performance Monitoring Systems:** Financial institutions should develop measurable Key Performance Indicators (KPIs) to regularly evaluate the environmental, financial, and social outcomes of green finance initiatives and ensure continuous improvement.

14. **Strengthen International Collaboration:** Omani banks should collaborate with international organizations and multilateral development banks to adopt global best practices, access climate finance, and enhance expertise in sustainable finance.

15. **Encourage Future Research:** Future studies should examine the long-term financial performance of green investments, compare green finance practices across GCC countries, and investigate the role of emerging technologies such as artificial intelligence and fintech in advancing sustainable finance within the banking sector.

Interpretation: These recommendations provide a practical roadmap for policymakers, regulators, and commercial banks to strengthen green finance adoption, improve environmental sustainability, enhance financial performance, and support the successful implementation of **Oman Vision 2040**, which emphasizes a diversified, resilient, and sustainable economy supported by a modern financial sector.

SCOPE OF FUTURE RESEARCH

The future research can broaden the understanding of green finance and sustainable development in Oman's banking sector by expanding the sample to include all commercial, Islamic, and specialized banks, as well as conducting comparative studies across GCC countries. Longitudinal research is recommended to assess the long-term effects of green finance initiatives on financial performance, environmental sustainability, and economic development.

The future studies may also examine the influence of regulatory frameworks, Oman Vision 2040, Environmental, Social, and Governance (ESG) practices, fintech, and digital banking technologies on the adoption of green finance. Additionally, qualitative research involving policymakers, banking executives, investors, and customers could provide deeper insights into the opportunities, challenges, and best practices for promoting sustainable finance in Oman. Researchers may also investigate the role of green financial products, such as green bonds and sustainable loans, in supporting climate resilience and achieving the Sustainable Development Goals (SDGs).

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