

THE EFFECTIVENESS OF MAINSTREAMING ERM IN GREEN BANKING GOVERNANCE: A CASE OF THE ZIMBABWEAN BANKING INDUSTRY.

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Abstract

The global economic development is often realised at the expense of environmental degradation, due to human malpractices in agriculture, transportation, manufacturing, and energy production activities. Enterprise risk management (ERM) sustainably shapes the impact of green banking so that it reliably offers a strategic panacea which harmonizes economic growth with environmental sustainability. This study serves to assess the effectiveness of mainstreaming ERM in green banking governance basing on the insights from the banking industry in Zimbabwe. The study objectives were to understand the ERM standard operating procedures (SOPs) in green banking governance, assess the influence of ERM in the mitigation of ESG risks, determine and analyse the social and environmental sustainability of green bank investments. The qualitative study which was done under an descriptive research design used purposive sampling technique and a sample size of twelve (12) interviewees was determined using the rules of data saturation. The study results show that banks are using COSO 2017 ERM framework to give reliable SOPs in green banking governance, ERM is a cornerstone in green banking governance in mitigating ESG risks, there are international and national regulatory frameworks that adequately champion the integration of ERM into green banking operations. The study concludes that, the effective mainstreaming of ERM in green banking governance makes the banking industry in Zimbabwe effective and efficient in its financial and nonfinancial operations. The study recommends that; there should be proper ERM SOPs that are determined and established by each and every bank to suit its existing green banking operations.

Keywords: Banking Industry, Enterprise Risk Management (ERM), Green Banking.

INTRODUCTION

This research seeks to analyse the effectiveness of mainstreaming enterprise risk management (ERM) in green banking governance basing on the insights from the Zimbabwean banking industry. The motive is to ensure that ERM shapes green banking practices to be ethical and rewarding in banking financial and non-financial operations.

Effectiveness of ERM in Green Banking Governance

The global economic development is usually realised at the cost of environmental degradation, due to human malpractices in agriculture, transportation, manufacturing, and energy production activities. The human structured or unstructured activities resulting in uncontrolled carbon footprint release levels exacerbate climate change and variability vagaries (Tankosic et al., 2025). To counter the negative effects of human operations, green banking systematically embeds social, environmental and governance (ESG) initiatives into banking productions and investment structures. Green banking fosters the mitigation of internal and external

environmental threats and simultaneously consolidating strategic financial stability and economic resilience (Mustafi et al., 2024). Enterprise risk management (ERM) sustainably shapes the impact of green banking so that it reliably offers a strategic panacea which harmonizes economic development with environmental sustainability. It also ensures that banking operations are climate smart internally and the banks externally support initiatives that sequester carbon emissions, enhance energy efficiency and promote environmental security. With the right ERM governance and support, green banking investments such as energy-efficient infrastructure, eco-friendly agriculture and green bonds, become pillars of the long-term economic resilience (Phan et al., 2020). Chauhan et al., (2023) assert that mainstreaming ERM into green banking governance secures banks from possible losses and enhances strategic socio-economic progress.

ERM has been a cradle for green banks for them to sustainably finance novel technologies, promote long term projects, mitigate pollution, however fostering customers to apply environmentally compatible practices. Financial developments are aligned to be associated with environmental responsibilities which build a sustainable ecological unity model (Nasr et al., 2024). This establishes a roadmap that advances blue ocean sustainable growth and climate-conscious investment strategies. Proper ERM administration in green banking incentivize climate-friendly investments and sharp the sustainable finance landscape (Azad et al., 2025). The adverse economic externalities are taxed and sustainable financial practices are enhanced which reinforce the role of banks as smart financial intermediaries with strategic keen interests in sustainability-driven investments.

Global Banking Industry

ERM in the green banking governance of NLB Komercijalna Banka in Serbia has been commended for increasing environmental protection, strengthening market position and enhancing the configuration of innovative financial products. The integration of ERM into green banking practices in Iranian banking industry spearhead by the agricultural banks and Central Bank, improved the quality of the life support systems that is, water, air and land which once heavily degraded (Zadfallah et al., 2025). ERM synthesis in green banking initiatives in the Sri Lankan banking sector resulted in the massive reduction of operational costs, market and reputation risks especially for the Industrial Credit and Investment Corporation of India (ICCI) banks and State Bank of India (SBI) (Cunha et al., 2021).

Bangladesh Bank (BB), the country's central bank, emphasize on the need for the banking industry to implement ERM integration into green banking. ERM aligned to green banking in Bangladesh is making the nation one of the world's next growing economies associated with huge investments, development, and economic probability to become a huge market in the 21st century (Zhang et al., 2022). The green banks influence the design of green structures and sustainable development which ultimately contribute to the mitigation of ESG risks (Miah et al., 2020). ERM mainstreaming in green banking initiatives were also commended in Pakistan, Nepal, India, and Sri Lanka for making investments sustainable and rewarding. ERM inclusion in green banking for the Vietnam banking industry increase environmental protection and combat climate change (Bang et al., 2023). Arifi (2024) realized the mainstreaming of ERM in green banking governance brought more foreign direct investments (FDIs) and a boost in business operations for banks in Kosovo and North Macedonia.

African Banking Industry

El Chaarani et al., (2025) celebrated the financial and non-financial stability and benefits that were generated by the application of ERM in green banking. This minimised the damage of the ecological environment and increase customers' ability to payback their loans since the environment become less financially volatile in Middle East and North Africa (MENA) region.

ERM mainstreaming in green banking was commended for bringing positive effects in the Nigeria banking industry. Van Niekerk (2024) realised that 11 Nigerian banks listed in Nigeria Stock Exchange (NSE) for 12 years experienced financial stability and increased loan-to-deposit ratio which contributed to the profitability of banks. Vekya (2024) realised the benefits of ERM in internal green banking where 43 banks in Kenya which adopted e-banking realised more profitability as compared to their counterparts. This reduced their stationary operational costs and increased efficiency.

Zimbabwean Banking Industry

The Zimbabwean banking industry that is, the commercial, building societies, savings, merchant and infrastructural developing banking sectors, have done piecemeal efforts to adopt green banking governance. The situation is even worrisome if one would go a step further to determine the mainstreaming of ERM in green banking governance. There are few banks with clear green banking frameworks, yet others have cloud ones, which are First Capital Bank (FCB), Commercial Bank of Zimbabwe (CBZ), Stanbic Bank and Infrastructural Development Bank of Zimbabwe (IDBZ) among others.

First Capital Bank (FCB) has adopted green banking initiatives in line with the global ESG framework to make sure incremental continuous compliance leading to sustainable development (FCB, 2023). The mainstreaming of ERM framework into green banking governance is taken as moral code that results in responsible banking. FCB formally adopted the Sustainability Standards and Certification Initiative (SSCI) supported by European Organisation for Sustainability Development (EOSD). Its green bank mission is to reduce the carbon footprint in the atmosphere and preserve land, water, waste and paper appropriately. Most of the bank's branches and also the Head Office operate on solar energy which resulted in the bank landing the 2023, Zimbabwe Corporate Governance Excellence Awards -Best innovation in Governance Award-Banking Sector (FCB). The African Development Bank (AfDB) offered First Capital Bank (FCB) a financial package of \$15,000,000 so that it supports smart manufacturing, construction, transport and agriculture projects in 2023. The Environmental and Social Safeguards and Compliance Department (SNSC) of the AfDB assessed FCB's Integrated Safeguards System (ISS) to determine the green banking capacity and rate of implementation success (AfDB, 2023). The idea was to buttress its green banking initiative and minimise environmental and/or social risks including air pollution, water, and social contamination; as well as social risks including gender-based violence and sexual harassment.

The Commercial Bank of Zimbabwe (CBZ) Holdings Limited (Ltd) adopted green banking governance and annually invest 2% of its annual income towards ESG projects. It plans to increase the use of green energy and funding solar projects. CBZ invests in carbon credits to minimise ESG risks (CBZ, 2025).

The Infrastructural Development Bank of Zimbabwe (IDBZ) a Development Finance Institution (DFI) established through an Act of Parliament to lead infrastructure development and financing in Zimbabwe, adopts green banking initiatives (Zvirevo, 2019). The green banking mechanism is meant to sustainably finance energy, transport, water and sanitation, information, communication and technology (ICT) and housing initiatives so that they become safe key enablers for socioeconomic development. This dovetails with Zimbabwe's commitment to address climate change in development pathways which were substantiated by the ratification of 1992 United Nations Framework Convention on Climate Change (UNFCCC), the 2009 Kyoto Protocol and the 2016 Paris Agreement (AfDB, 2023). The IDBZ green banking system serves to mitigate GHG emissions and adapt to the country's Nationally Determined Contribution (NDCs). It is at the centre of national efforts to mobilize and coordination packaging of green projects. The green banking initiative in Zimbabwe is enabled

by appropriate policies and institutional frameworks that seek to address climate change and variability.

Figure 1: Green Banking Institutional Framework in Zimbabwe



Source: Zvirevo (2019:12)

IBDZ stands as the National Designated Authority (NDA) and the National Implementing Entity (NIE) which seek to use the Adaptation Fund (AF) and Green Climate Fund. IDBZ receives technical support from the World Bank to establish its Environmental and Social Safeguard Standards (ESS) and Gender Policies in line with the International Finance Corporation (IFC) Performance Standards (PS). The ESS and Gender Policies are applied through the Environmental and Social Sustainability Management System (ESSMS) to minimize severe environmental and social impacts of its activities; and increase environmental and social benefits. However, IDBZ green banking is still low and small allocations are still realised from the fiscus.

Problem Statement

Zimbabwean banks have been commended in the Southern Africa Development Community (SADC) for taking the first initiatives in adopting green banking mechanisms. However, the banking industry in Zimbabwe lacks formal and traceable ERM standard operating procedures that guides how green banking initiatives have to be done and supported even faced with frequent and severe threats. This makes social and environmental investments by banks often crump before achieving the intended goals because there are no clear internal and external risk appetite, tolerance and governance that foster sustainability and resilience. The rate of unfinished or pending bank investment towards social and environmental development is alarming in Zimbabwe which raises a lot of sustainability questions since midway implementation ESG risks are proving to be disastrous. This study serves to determine the effectiveness of mainstreaming ERM in green banking governance basing on the evidence drawn from the Zimbabwean banking industry.

Study Objectives

The following objectives were determined which are:

1. To understand the ERM standard operating procedures (SOPs) in green banking governance.
2. To assess the influence of ERM in the mitigation of ESG risks.
3. To determine the regulatory framework that sustains the role of ERM in green banking operations.
4. To analyse the green bank investments in social and environmental sustainability.

Study Propositions

P1: There are clear ERM SOPs in the green banking governance.

P2: ERM essentially improve ESG risk mitigation.

P3: There are strong regulatory frameworks to support ERM mainstreaming in green banking operations.

P4: Green bank investments contribute to social and environmental sustainability.

LITERATURE REVIEW

The literature review briefly presents the empirical works synthesized on each and every objective area. This gives purpose, direction and the basis for the study to make more impact.

The ERM SOPs in Green Banking Governance

This section focuses on the conceptualization of ERM and green banking before presenting the ERM SOPs needed in sustaining green banking governance.

Conceptualization of Banking ERM

ERM is defined as a process of integrated banking risk management to determine and assess risk, integrate several types of risk (such as credit, market, interest rate, liquidity, and operational risks), and coordinate risk management across all banking operating sections (Rabbi et al., 2024). It enhances the critical understanding of banking risks and empower the banks to take necessary creative thinking and problem solving measures to mitigate direct and indirect impacts. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) 2017 ERM framework, presents an exceptional inclusive and integrated enterprise business strategy planning alliance which aligns with the execution of banking strategies (Risal & Joshi, 2025). According to the Bank Negara Indonesia (2022) ERM essentially safeguard customer environmental needs, through sustainable complex risk control, tolerance and governance, which enable banks in Indonesia to achieve the green banking vision and mission.

Conceptualizing Green Banking

Green banking was innovated by the Dutch bank, Triodos Bank, in 1980, and was later applied by the State of Florida in 2009. According to Chen (2022) green banking started in 2003, with implementations of the Equator Principles (EP), which are a set of intentional guidelines primarily recommended by major international financial institutions, such as Citigroup, , and Westpac Banking Corporation. The idea was to ensure homogenous risk management systems for financing schemes with potential social and environmental impacts. The governing landscape of green banking was bolstered and widened by the inception of the United States (US) Green Bank Act in 2009 (Bank of Thailand [BOT], 2020).

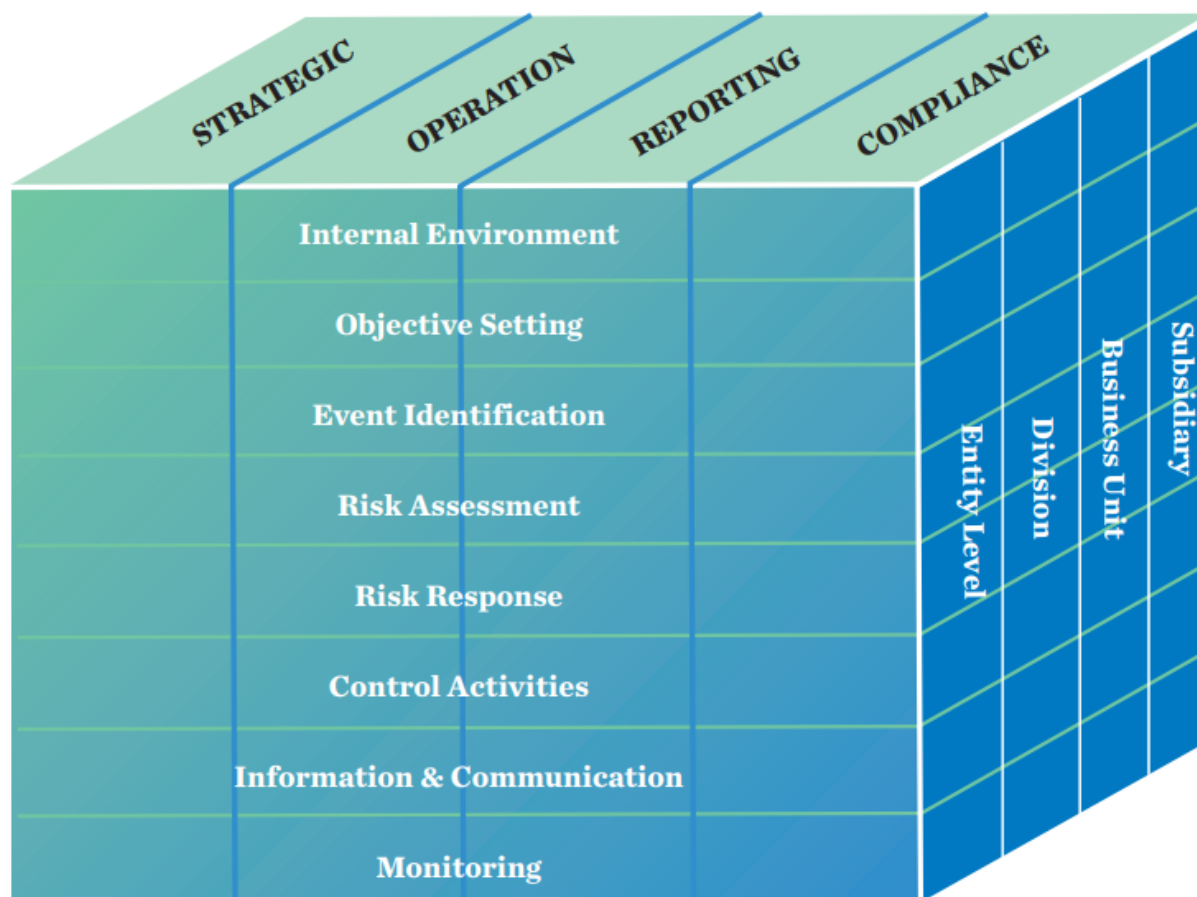
Green banking is defined as the internal and external establishment of financial sustenance by banking and non-banking financial institutions to minimise greenhouse gas (GHG) emissions and increase societal resilience to climate change, at the same time supporting sustainable development goals such as job creation economic growth, and gender equality (Phan et al. 2020). The essence of green baking is a multi-stakeholder approach to protect the environment from negative externalities, and promote ecological unity between the built up and the biodiversity (Lalon et al., 2025). Banks as financial intermediators, act as catalysts to switch industries to low-carbon economy, enhance energy efficiency, improve renewable energy, and reduce environmental degradation (Maltais & Nykvist, 2020). Internal green banking seek to minimise energy use and switching to renewable energy, digitize operations, and reduce waste

products. External green banking support renewable energy generation, effluent treatment, biogas plants and long term infrastructure.

ERM SOPs in Green Banking Governance: COSO 2017 ERM Framework

This study adopts the COSO 2017 ERM Framework as a sustainable cradle to superimpose green banking governance on and assure profitable internal and external pursuits. The COSO 2017 ERM framework flowchart comprehensively cater for all risks that can threaten green banking progress and development. It ensure green banks are getting comprehensive risk information, making rational decisions, have transparent and accountable operations and are accessible to diverse stakeholders. Figure 2 illustrates the COSO ERM Framework.

Figure 2: COSO 2017 ERM Framework



Source: COSO (2017:5)

Figure 2 shows the COSO 2017 ERM framework and the eight SOPs that are discreet and interrelated. Each of the eight SOPs have its vital key notes that should be critically prioritised by banks in order to reap maximum benefits from green banking governance. Figure 3 better presents the COSO 2017 ERM framework SOPs essential to sustain the governance of green banking.

Figure 3: COSO ERM Framework SOPs

INTERNAL ENVIRONMENT Risk Management Philosophy – Risk Appetite – Board of Directors – Integrity and Ethical Values – Commitment to Competence – Organizational Structure – Assignment of Authority and Responsibility – Human Resource Standards
OBJECTIVE SETTING Strategic Objectives – Related Objectives – Selected Objectives – Risk Appetite – Risk Tolerances
EVENT IDENTIFICATION Events – Influencing Factors – Event Identification Techniques – Event Interdependencies – Event Categories – Distinguishing Risks and Opportunities
RISK ASSESSMENT Inherent and Residual Risk – Establishing Likelihood and Impact – Data Sources – Assessment Techniques – Event Relationships
RISK RESPONSE Evaluating Possible Responses – Selected Responses – Portfolio View
CONTROL ACTIVITIES Integration with Risk Response – Types of Control Activities – Policies and Procedures – Controls Over Information Systems – Entity Specific
INFORMATION AND COMMUNICATION Information – Communication
MONITORING Ongoing Monitoring Activities – Separate Evaluations – Reporting Deficiencies

Source: COSO (2017:3)

Figure 3 shows the COSO 2017 ERM Framework SOPs. The SOPs ensure that the green banking governance initiatives are risk averse and assured to achieve the intended goals. The COSO 2017 ERM Framework SOPs are presented as follows:

Internal Environment

The internal environment focus on the bank green banking risk appetite, tolerance and governance to determine the degree of readiness. The resources (human, skills, partnerships, leadership, financial, information) available to implement green banking initiatives are evaluated so that corporate culture and climate are well aligned to the existing resource base and operational environment (Rahman et al., 2024). The idea is to increase the internal and external banks ESG risk appetite and tolerance so that nothing shall surprise stakeholders in their respective operations. The internal environment advocates for the regular registration of ESG risks so that changes are picked and proactively adjusted to. Stakeholder engagement is prioritised to ensure the risk assessment and profiling exercises are comprehensive and rewarding (Gulzar et al., 2024).

Objective Setting

The COSO 2017 ERM framework empower banks to scan and skim through their macro, market and micro environments so that they realistically develop green banking specific, measurable, attainable, realistic and time based (SMART) objectives (Zhang et al., 2022). The green banking SMART objectives are associated with objective verifiable indicators, means of verifications and assumptions that make monitoring and evaluation easy. Deviations can also be radiometrically picked and adjustments are done to ensure the green bank blueprints are getting followed religiously to minimise significant risk threats (Akhter et al., 2021).

Event Identification

Event identification focuses on the green banking ESG risk sources, severity, frequency and magnitude in order to determine their anticipated impacts (Forest Watch Indonesia, 2020). The stakeholder participatory risk mapping and identification process ensures that all potential

green banking threats are exposed and contingency plans are put in place. The subjective (interviews, focus group discussions) and objective (questionnaires) ESG risk identification methods are used, and the risks are effectively profiled for prioritization process (Asian Development Bank, 2022a).

Risk Assessment

Green banking risks are dynamic and there is need to consistently determine their severity and frequency through regular risk assessment process. Effective risk identification and profiling are bedrocks to risk assessment, since they give insights to what the banks can do with each and every ESG risk they are faced with to ensure their operations are sustainable and strategic (Bangko Sentral ng Pilipinas [BSP], 2020a). The assessments are done quantitatively and qualitatively to ensure comprehensive risk treatment or response actions. The green banking risk assessment processes are better done through methods such as the impact and probability matrix to determine the impact significance and severity of each ESG risk.

Risk Response

Risk response or treatment proactively and reactively respond to each identified and profiled ESG risk in a way that safeguard the mission of the green banking mission statement (Mohaimen et al., 2025). Successful risk response strategies transform negative ESG risks into positive green banking benefits. It is essential for banks to respond to high-risk areas with suitable control mechanisms. There are four ways used to respond to risks which are:

Risk Retention/Acceptance

Risk retention is suitable in case of a risk that is beyond the bank's risk appetite or tolerance levels, or the risk likelihood is so low and it does not need to be transferred, reduced or avoided (Mir & Bhat, 2022). It is used to respond to unavoidable internal and external risks that are small and not possible to transfer and they do not take huge tolls on the profits of business operations.

Risk Reduction/ Mitigation

Risk reduction make sure that banks take suitable action to reduce risk likelihood or impact. It respond to internal and external risks which are characterized by high in frequency and low in severity (Florea & Florea, 2023). The essence of risk reduction is to minimize risk impact by changing the way a bank operates in order to mitigate the likelihood of a loss.

Risk Sharing/ Transfer

Bank risk transfer pass on the identified inevitable high magnitude risks to third parties (Hermawan & Khoirunisa, 2024). It ensures that banks reduce the probability or impact of risks by shifting or sharing a portion of risk through purchasing insurance products, forming joint ventures, engaging in hedging transactions, or outsourcing an activity. Risk sharing or transfer is suitably used for internal and external risks associated with high severity and low frequency (Lawrence et al., 2022). For instance, the risk of theft or product damage as internal risks can be insured and drought risks as external risks can be treated through banking interruption coverage.

Risk Avoidance / Termination

Banking risk avoidance or termination ensure that banks prevent or eradicate threats or threatening operational conditions that result in risks. It encourages banks to exit green bank operations or systems that give rise to uncertainties which are typically associated with both high severity and frequency (Azmi et al., 2021). Risk avoidance imply a complete change of a banking plan to totally evade the costly and unavoidable risks detected.

Control Activities

Control activities are preventative or detective measures or actions developed through manual and automated green banking policies and procedures to assist in risk management and accomplishment of bank expectations (Cabaron & Cabaron, 2021). Control activities are

closely connected to banks risk tolerance. A preventive control is used to avert unintended events. A detective control is established to determine unintended ESG events after the initial processing has occurred but before the eventual objective has concluded. In both cases control activities essentially take appropriate actions to correct or avoid inadvertent results (Rabbi & Amin, 2024). Control activities are done on all bank levels, stages and processes backed by technological support to be efficient and effective.

Information and Communication

Information and communication ensure that a bank obtain and disseminate key financial information to support the accomplishment of financial reporting goals (Mollah et al., 2024b). The risk mapped, profiled, processed and distributed financial or non-financial information support green banking control processes. Clear ESG risk messages from the top critically energize the green banking mechanisms throughout the bank. Information systems enable banks to achieve effective communication through facilitating effective stakeholder engagement. According to COSO (2017) for a bank to achieve ideal information and communication, six principles are required which are information needs, control, management communication, upstream communication, board communication and communication with outside parties.

The application of the COSO 2017 ERM framework steps as the SOPs in green banking was done in the Turkish and Australian banking industries (Chen et al., 2022). The initiative was done in Indonesia through a regulatory guidance of the Financial Services Authority Regulation Number 51/POJK.03/2017 which was welcomed by 8 public banks which committed to implement COSO 2017 ERM framework in green banking practices so that they steer sustainable development (World Wide Fund for Nature [WWF], 2020). The COSO 2017 ERM framework procedures mainstreaming in green banking governance was also welcomed by the Nepal banking industry which realised more positive internal and external benefits (Risal & Joshi, 2025). The banking industry managed to double its support towards sustaining the green supply chain management (GSCM) of fruits and vegetables towards its neighbouring countries, which increased the gross domestic product.

Puspitasari et al., (2021) realised that the disorder and collapse of Indonesian banking green banking during the Asian Crisis in 1997-1998 period was the absence of ERM in the national banking industry. The adoption of ERM in green banking after the issuing of the Sustainable Finance Roadmap Phase 1 in 2014 by the Financial Services Authority (Otoritas Jasa Keuangan), transformed the Indonesian banking industry to become resilient and an important driver of economic growth (Teng et al., 2021). A study which was done by Gulzar et al., (2024) to understand the essence of ERM in green banking, focused on the 10 banks listed on the Indonesia Stock Exchange between 2016 and 2020. The findings presented that ERM systems positive impacted on the on Indonesian banking sustainable growth.

The Influence of ERM in the Mitigation of ESG Risks

IFC identified the need for ESG risk mitigation through integrated risk management, ERM, in order improve sustainability. Banks have increasingly integrated ESG risks into their ERM governance. The initiative was supported by the UN initiative on corporate social responsibility where over \$30 trillion was allocated as of 2023 (Miah et al., 2020). ERM essentially mitigate ESG risks through green banking initiative which makes the banking ecosystem stable. Green banking sustained stable banks incorporate sustainable practices through loans, investments, and other financial services that are poised to reduce ESG risks. ERM foster banks to religiously apply and comply to green banking initiatives so that massive investment and credit benefits are realised. Table 1 below illustrates some of the ESG risks that are mitigated through aligning meaningful ERM in green bank governance.

Table 1: ESG Risks Associated with Climate Change and Variability

Risk Type	Credit	Market	Operational
Physical	1. Increased chance of loan non-payment in climate-sensitive sectors such as agriculture and tourism. 2. Reduced real estate values in coastal areas because of amplified flood and erosion threats.	1. Downgrading of credit ratings for borrowers, including public entities, due to severe weather catastrophes.	1. Relocation of corporate headquarters and data centres.
Transition	1. Depreciation of assets and collateral. 2. Reduction of credit portfolio quality due to stuck assets. 3. Increased default risk in high carbon-emission sectors.	1. Rising energy and raw material expenditures. 2. Higher transactional costs due to poor macroeconomic conditions.	1. Increased reputational risks from investments in high-discharge sectors.
Liability	1. Disruptions in supply value chains caused by greater damage and resource losses.	1. Rising insurance premium expenditures.	1. Increased reputational risks due to breaches of fiduciary responsibility.

Table 1 shows the ESG risks that bedevil the operations of banks if ERM is not properly administered. ERM ensure that banks carry out adequate climate risk assessment, and put in place governance measures that hedge operations against substantial banking losses. It caters for all financial uncertainties that are brought up by ESG risks so that the banks collateral values remain high (Wu & Li, 2020). The Bank of England and the Task Force on Climate-related Financial Disclosures [TCFD] (2024) promulgate that ERM is vital for ESG risks mitigation and makes the banking system stable. ERM in ESG risks governance, contribute to environmental protection, reduced reputation and operational risks.

The high banking market dynamics and risk type typology transformations are experienced without fear when ERM has been immersed into green banking (Masukujjaman et al., 2021). ERM ensures that banks are always ready to change and are promptly meeting stakeholder expectations in strategic ways.

The green bank investments which are conforming to social and environmental sustainability standards have been experiencing a boom and an estimated global value of \$18.4 trillion in 2021 was realised which is projected to be increased by 13% in 2026 (Ma et al., 2023). The European Investment Bank (EIB) and the World Bank have invested considerable amount of funds in reducing carbon footprints, which makes ERM towards ESG risks mitigation essential. Therefore, ERM has been used as a tool to invest sustainable funds in ESG assets, by 2023, in the European Union (EU) 84% of all assets were in ESG markets and 11% of the US assets were in the ESG sector. The banking industry in the Republic of Serbia is gradually integrating ERM in ESG risks mitigation and increasing the resilience of the climate smart investments. It adopted the net zero carbon dioxide (CO₂) emissions by 2050 to show its commitment towards ESG risk reduction.

Abiad et al., (2024) analysed the usefulness of ERM integration into green bank operations basing on the findings from 66 commercial banks of 6 Gulf Cooperation Council nations. The closed ended questionnaire structured and numerical data gathered was analysed using two-stage least squares and Generalized Method of Moments (GMM) approaches using the data from 2019 to 2023. The findings showed that ERM dimensions inversely impacted on the ESG risks that were typically high.

Global Forest Watch (2020) reports ERM has been a turnaround strategy used by banks in Cambodia to mitigate ESG risks that had resulted in more than 57.5 metric tons of CO₂ emissions in 2019. The Association of Southeast Asian Nations (ASEAN) also realised the transformation which was brought by banking ERM in reclaiming the 37,000 hectares of forest in Northern Thailand that was devastated between 2015 and 2020 (United Nations Food and Agriculture Organization [FAO], 2020). This disaster dented Thailand's energies to translate 40% of its land into green forest, initiated in 1975 (International Union for Conservation of Nature [IUCN] Asia, 2019).

Bank Mandiri allotted green bonds worth IDR 500 billion to funding projects that result in the reduction of GHG emissions in Indonesia which resulted in sustainable forestry governance (Bank Mandiri, 2022). Bank Negara Indonesia (BNI) has launched the BNI Go Green program, promoted the environmentally friendly and sustainable business practices through plummeting paper use and establishing environmentally friendly banking products (Bank Negara Indonesia, 2022).

The Regulatory Framework that Sustains ERM in Green Banking Operations

The United Nations Environmental Programme (UNEP) Finance Initiative and the Equator Principles have been commended for establishing ERM basis in treating ESG risks and nurturing sustainable financial practices (UNEP, 2020). The Equator Principles are a voluntary framework, not legally binding for banks to manage environmental and social risks during green banking initiative governance. They have been criticized for the absence of transparency, weak oversight, and unpredictable enforcement. The incorporation of the Equator Principles with ERM systems strengthen green banking operations and result in banking industry resilient to climate change and variability perturbations (Global Forest Watch, 2020). On top of that the global regulatory mechanisms such as the Paris Agreement and United Nations (UN) Sustainable Development Goals (SDGs) further emphasize the need for ERM towards green banking so that rational financial decisions are made and sustainability is central to modern banking strategies. The regulations advocate for sustainable investments and accelerate the global transition to low-carbon economies. They demand the development and expansion of green financial devices for instance green bonds and ESG connected loans to enhance financial resilience and quickens the change towards sustainable economic frameworks.

The UN Principles for Responsible Banking and the Net-Zero Banking Alliance, emphasized on the need for banks to have adopted the mobilization of sustainable finance by the end of 2021. The European Sustainability Framework advocate for banks to reduce non-renewable energy uptake by 15%, paper usage by 25%, and the carbon footprint by 5%. The UN Convention on Biological Diversity (CBD) a multilateral environmental treaty that took effect in 1993 establishes a basis for ERM in green banking so that the unprecedented crisis on wildlife and natural environment is reduced (Hermawan & Khoirunisa, 2024). It advocates for the regular convention of the Conference of Parties (COP) discuss policies that shape the resource mobilization and execution of the Global Biodiversity Framework (GBF). The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES,

2019) emphasize the need for regular resource mobilization to mitigate environmental degradation and climate change (Asian Development Bank, 2022a).

The Green Bank Investments In Social and Environmental Sustainability

Green banking was realised as a substance for financial and environmental sustainability. Socially and environmentally sustainable green bank investments have been associated with reduced revenue volatility and lower credit risk, which lead to little defaults of loans and minimised capital requirements for creditors (Owais & Arslan, 2020). The environmentally sensitive green bank investments balance economic benefits with environmental security which brings higher adjusted returns. The green banks attract social, energy and ecological agents to sustainably practice social and environmental stewardship through diverse products and services which incentivize their operations.

Table 2: Green Bank Products and Services that Sustain Social and Environmental security

Category	Sub-category	Concept and Example
Loans	Corporate	Business loans for large, medium, small, and micro entities participating in green projects such as energy efficiency, renewable energy, forestry and climate-resilient agriculture.
	Individuals	Loans for individuals to set up small-scale renewable energy systems and consumption of energy-efficient appliances, climate-resilient homes, and electric vehicles (EVs).
	Project Finance	Tactical, often non-recourse and syndicated loans for funding huge renewable energy projects and climate-resilient infrastructure.
	Vehicle Insurance	Lower insurance premiums for sustainable activities such as using EVs and reusing parts during repairs.
Securitization	Bonds	Use of green bonds, including mortgage-backed securities (MBS) and asset-backed securities (ABS) to fund green buildings and refinance current sustainable assets.
	Storage	Asset storage until the target value is attained.
Equity Investment	Venture Capital	Investment in startups and high-risk businesses developing green and climate-resilient technologies.
	Private Equity	Investment in finances devoted to fund long term projects.
Brokerage & Market Creation	Brokerage Activities	Trading green bonds and low-carbon credits for customers to sustain green investments. Trading green bonds and low-carbon credits from the bank's funds to ensure market liquidity.
	Market Making	
Technical Assistance	Advisory Services	Offering advisory services, either paid or free, for structuring green financial projects.
	Capacity Building	Embracing borrowers and developers in considering and utilizing green banking products.

The net outflows of sustainable funds in the US in 2023 increased the rational social and environmental sustainability of ESG investments which balanced economic viability and environmental objectives. The NLB Komercijalna Banka in Serbia in 2023 allocated over €43

million toward ESG projects that set to improve environmental security. It offered green loans for renewable energy and sustainable construction to the tune of €100,000 without collateral. The loans supported modernization of business aligned with Building Research Establishment Environmental Assessment Method (BREEAM) a UK-based system, Leadership in Energy and Environmental Design (LEED) a US-based, and Deutsche Gesellschaft für Nachhaltiges Bauen (DGNB) a German-based guarantees, investments in energy-efficient technologies, and mitigating CO₂ emissions by approximately 20%. Financing decisions also extended to EVs, encouraging cleaner transport systems. In collaboration with Serbian Ministry of Mining and Energy and the World Bank, NLB Komercijalna Banka implemented the Green Consumer Loans as part of the 'Clean Energy and Energy Efficiency for Citizens' program, which encouraged households to get incentives through consuming 65%-90% subsidized energy-efficient appliances and home upgrades.

The private commercial banks (PCBs) in the Indian Coimbatore City prioritised the adoption of the Socially Responsible Investment (SRI) Giordani and Floros (2023) observed that commercial banks in Greece managed to promote social and environmental sustainability through their climate fund which reduced the carbon footprint in the atmosphere.

Theoretical Underpinnings of the Study

This research is underpinned by the legacy theory (Friedman, 1970) and sustainability banking (World Commission on Environment and Development [WCED], 1987). The two theories focus on the importance of ERM on green banking initiatives. Figure 4 shows the theoretical framework of the study.

Figure 4: Theoretical Framework

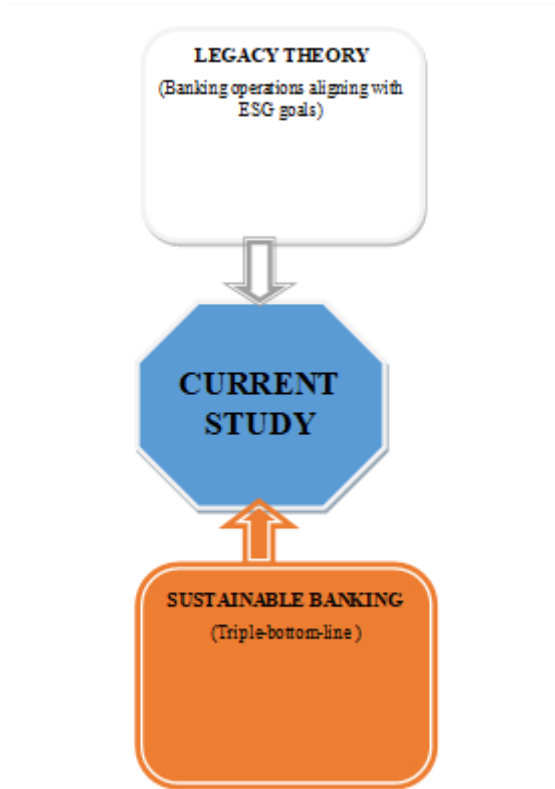


Figure 4 shows the theoretical framework used in this research.

Legitimacy Theory

The legitimacy theory was envisaged by Milton Friedman (1970) to emphasize the importance of balancing banking operations with environmental sustainability. It advocates for the

application of ERM in green banking to ensure that operations are not conflicting with local social and economic environments (Ozili, 2022). The legitimacy theory ensure that green banking investments essentially support the social and environmental sustainability of local communities. This ensures that banks can make profit and also improve their brand equity in the mindsets of stakeholders. The banks are obliged to adhere to the local community regulations and norms so that they improve the environmental sustainability (Cunha et al., 2021). The legitimacy theory seeks to align the local environmental needs and the banking operations to form ecological unity so that the banks have good legitimacy status that improve their sustainability.

Sustainability Banking

Sustainable development was first established by the World Commission on Environment and Development (WCED) in 1987. It advocates for the banks to significantly improve the benefits of natural and human resources sustainably by realigning green banking operations that support life support systems (land, air and sea). Sustainable banking is done to balance the environment, banking and society in long term or the triple-bottom-line (Saci et al., 2022). Green banking incorporate ESG in operations which make banks proactive in climate change funding and increased commercial value of sustainable investment (PricewaterhouseCoopers [PwC], 2022).

Conceptual Framework

This study adopts the interventions pyramid model to conceptualise the usefulness of ERM in green banking and mitigate the effects of ESG risks. This makes it easy to appreciate the role of ERM in green banking initiative so that environmental and social sustainable operations are realised.

Figure 5: Green Banking Governance Interventions Pyramid Model



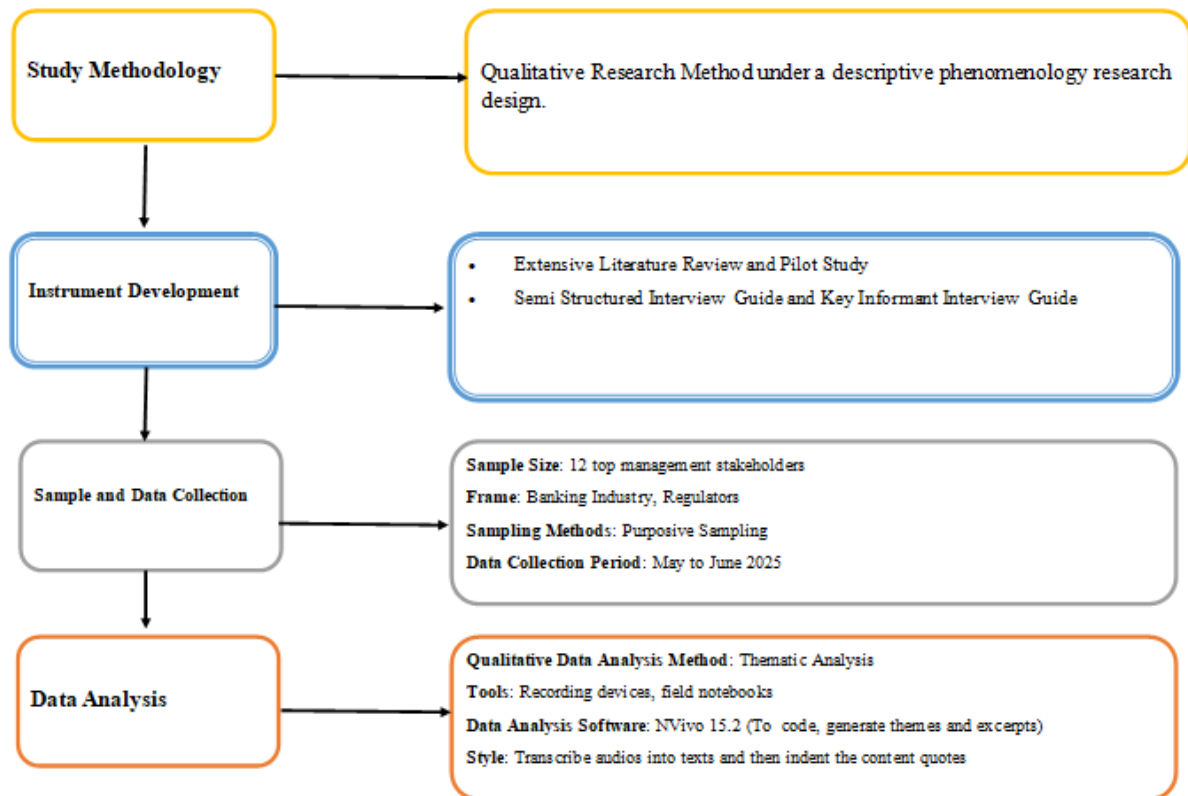
Source: Author's Compilation (2025)

Figure 5 presents the intervention pyramid model as the study's conceptual framework to understand the role played by ERM in green banking mechanisms. ERM provides a basis for green banking to be able to tolerate wide ESG risks, have suitable appetite for the risks and govern the risks appropriately in ways that improve the banking operations.

METHODOLOGY

This qualitative research was done prioritising top management stakeholders from the banking industry, trade unions and regulators to get best insights that lead to solid conclusions. Figure 6 presents the flowchart of the research methodology that was followed in this research to produce quality study findings.

Figure 6: Flowchart of the Study Methodology



Source: Author's Own Design (2025)

Figure 6 presents the research flowchart followed in this study to come up with standardised and authentic results.

RESULTS AND DISCUSSIONS

The results and discussions present the findings which were obtained from the Reserve Bank of Zimbabwe Banking Supervision Division (RBZ-BSD), Bankers Association of Zimbabwe (BAZ), First Capital, Stanbic Bank, Commercial Bank of Zimbabwe (CBZ) and the Infrastructural Development Bank of Zimbabwe (IDBZ). The key informant interview (KII) guide was used to obtain subjective data from the managing directors or chief executive officers from both banks and regulatory entities. The semi-structured interview guide was used to gather data from subordinate employees from the banks and regulatory entities as well. The field notes were made to complement the data gathered from both qualitative data collection tools. The subjective data gathered in audio recordings and field notes were transcribed into chatbots, excerpts and transcripts which was the basis for coding, establishing themes and condensing in NVivo 15.2.1. The codebook was developed with codes, subthemes and main themes that were recurrent in the research. The triangulated data was analyzed using thematic analysis, which was made possible using standardized descriptive coding in NVivo 15.2.1 which guaranteed the rigour in the study. Four main themes were generated from the codebook which are ERM SOPs suitable in green banking governance, ERM influence on ESG risks mitigation, regulatory framework initiatives that sustains ERM in green banking governance and green banking investments effect in social and environmental sustainability. The data

analysis and findings presentation was done in two phases, that is, the socio-demographic, results presentation and discussions.

Socio-Demographic Characteristics of Participants

The socio-demographic demographics of the regulatory and banking stakeholders give a basis to understand the depth and quality of data provided to the study. The cross cutting details included in this study are response rate, age, gender, level of education and level of experience. Table 3 presents the socio-demographic characteristics of the participants that participated in the study.

Table 3: Socio-Demographic Characteristics of the Participants

No	Participant ID	Age	Gender	Level of Education	Level of Experience
1	KII 1	44	Male	PhD	13 Years
2	KII 2	51	Male	PhD	20 Years
3	KII 3	42	Female	PhD	14 Years
4	SSI 1	35	Male	Masters	10 Years
5	SSI 2	39	Female	Masters	12 Years
6	SSI 3	33	Male	Masters	11 Years
7	SSI 4	30	Female	Degree	6 Years
8	SSI 5	37	Male	Masters	12 Years

n=8

Source: Primary Data (2025)

Table 3 shows the socio-demographic characteristics of the top management (KII) and subordinate staff members (SSI) who are working to ensure green banking governance is vital and making commendable inroads in their operations. The findings show that eight out of possibly twelve interviewees effectively submitted their views to the study. Three of the effective interviewees were drawn from the key informant interview (KII) side and the remaining five interviewees were gathered from the semi-structured interview (SSI) side. The ages (30-51) of the interviewees shows that they are still economically active and are inclined to high level creative and critical thinking abilities. Three of the interviewees are females and the remaining five are male counterparts which shows that the study was gender biased towards the male incumbents. The study high levels of education ranging from undergraduate level to Doctor of Philosophy (PhD) reflects that the incumbents awareness spaces are very wide and rich. The depth of experience that the interviewees possess show that they have seen more to do with green banking and have relevant ideas to moot sustainable green banking governance that would make banks successful.

Interview Findings

The semi-structured and KII interview guides findings are presented in this section. The nominal data that was obtained through audios and field notes were transcribed into standardized chatbots, transcripts and excerpts. The excerpts were coded in so that they can be coded in NVivo 15.2.1. The chatbots were imported into NVivo 15.2.1 and coded to get main and child codes. The codes were used to develop the subthemes and main themes. The standardized themed data was analysed using thematic analysis to ensure quotes are connected

to each and every relevant theme. Table 4 shows the effectiveness of mainstreaming ERM in green banking governance codes, subthemes and main themes of the study.

Table 4: Mainstreaming ERM in Green Banking Governance Codes, Sub-Themes, and Main Themes

Codes	Sub-Themes	Main Themes
The ERM plan follows the COSO 2017 ERM	Existing ERM Plan	ERM SOPs Suitable in Green Banking Governance
Ensures that all procedures are followed and aligned		
The SOPs ensure that all essential stages are religiously followed	ERM SOPs Success	
They give purpose and direction to the green banking stakeholders.		
The ERM SOPs define the risk tolerance, governance and appetite that can be taken in green banking.		
Minimize reputational risks in the public terrain.	ERM Ability to Mitigate ESG Risks	ERM Influence on ESG Risks Mitigation
Avert climate change causes		
Sponsor climate smart banking processes.		
Reputational risks	Successfully Managed Risks	
Credit risks		
Vis-major risks, operational costs risks		
United Nations Environmental Programme (UNEP) Finance Initiative and the Equator Principles	International Regulations that Govern ERM in Green Banking Operations	Regulatory Framework Initiatives that Sustains ERM in Green Banking Governance
Paris Agreement		
United Nations (UN) Sustainable Development Goals (SDGs)		
UN Principles for Responsible Banking and the Net-Zero Banking Alliance		
	Local Legal Framework that Sustain ERM in Green Banking Operations	
National Determined Contribution		
Climate Change Adaptation and Mitigation Strategy		

Reduce revenue volatility	Green Banking Investments in Social and Environmental Investments	Green Banking Investments Effect in Social and Environmental Sustainability
Lower credit risks		
	Resilience of ESG Investments	
Buttress smart city and investments drive		
Improve renewable energy generation.		

n=8

Source: Primary Data (2025)

Table 4 presents the combined main themes, sub-themes, and codes gathered from the four research objectives that feed into the main research topic. The results present the transcribed codes, subthemes, and main themes obtained from the interview audios. The main theme and its related subthemes as well as codes were individually presented and discussed on each of the following subthemes.

Theme 1: ERM SOPs Suitable in Green Banking Governance

The understanding of the ERM standard operating procedures that are being followed in green banking governance in the banking industry give a basis for innovation and creativity. Two subthemes were generated from the coding process and the respective findings are offered under each subtheme.

Existing ERM Plan (cited in 8 files)

The existence of the ERM plan that governs and guides green banking governance makes the study provisions real and practical. It gives more relevance to the study and a bigger room for improvement if there are glitches which are taking back progress. The collective views expressed by the KIIs and SSIs are presented below:

“The banks are following the provisions of the COSO 2017 ERM framework in ensuring that green banking governance flows seamlessly and regularly” (KIIs).

“The COSO 2017 ERM framework ensure that all the green banking procedures are religiously aligned and risks are extensively averted at all costs” (SSIs).

The KIIs and SSIs show that in the Zimbabwean banks, ERM plans give SOPs that guide the implementation of green banking governance. The existence of a blueprint for ERM backed green banking governance makes it reliable and effective for the bankers and regulators to radically and incrementally improve operations should need be.

ERM SOPs Success (cited in 6 files)

The ERM SOPs success is a vital determinant in making sure that green banking governance is done properly. They shows the roadmap and critical success factors that anchor the success of banks. The obtained views from the interviewees are:

“The ERM SOPs are critical steps that are needed give purpose and direction to the banks, their existence forecast success and give a success route that banks need to stand above the rest” (KIIs).

“The ERM SOPs give guidelines that all successful banks need to follow on their way to successful pursuits, they are vital checklist guides that enumerate what it takes for green banking governance to be sustainable” (SSIs)

The KIIs and SSIs show that Zimbabwean banks are following ERM SOPs to be successful in green banking governance. This implies that the ERM SOPs are acting as guidelines and templates that are enumerating success to the banking stakeholders. The ERM SOPs are critical success factors that banks are willing to follow so that they reap more financial and non-financial sustainable benefits.

In conclusion, the Zimbabwean banks are using the COSO 2017 ERM framework as SOPs plan to guide the implementation of green banking governance. The existence of a blueprint

for ERM backed green banking governance makes it reliable and effective for the bankers and regulators to radically and incrementally improve operations should need be. Zimbabwean banks are following ERM SOPs to be successful in green banking governance. This implies that the ERM SOPs are acting as guidelines and templates that are enumerating success to the banking stakeholders.

Theme 2: ERM Influence on ESG Risks Mitigation

ERM influence on ESG risks mitigation is essential to the banks so that they make landmark impacts on tactical and strategic operations. It ensures that risks comprehensive appetite are properly governed and tolerated. Two subthemes were generated from the coding process and the respective findings are offered under each subtheme.

ERM Ability to Mitigate ESG Risks (cited in 6 files)

ERM ability to mitigate ESG risks is important to ensure that all advantages of are known and gathered for each and every bank. The ability of ERM to reduce internal and external risks increase the potential of banks to make indomitable financial and nonfinancial marks in their respective sectors. The collective views expressed by the KIIs and SSIs are presented below:

“ERM plans brim with great success chances in combating reputational, credit and operational risks that are associated with the causes and vagaries of ESGs” (KIIs).

“ERM initiatives are essential since they are empirically capable of adsorbing the negative connotations of ESGs such as reputational, operational costs and disasters” (SSIs).

The KIIs and SSIs highlight that ERM initiatives are the blueprints that act against the rampant effects of ESGs. The ERM initiatives map out how best can banks manage ESGs so that they reap more benefits from their operations internally and externally. They give banks fully abilities to be effective and efficient in their micro, market and macro operating environments. Successfully Managed Risks (cited in 7 files)

The banks have often taken stock of the ESG risks that they have managed using ERM. The traceable success stories brought by ERM in ESG make them resilient and increase resource mobilization to suppress risks and obtain more sustainable competitive advantages. The obtained views from the interviewees are:

“Several banks here in Zimbabwe have realised commendable benefits in terms of risk mitigation due to the use of ERM since they managed to drive down credit, operational and reputational risks” (KIIs).

“If we look back in our operational annals we can see that there a positive in credit, operational and reputational progress that were brought through the ERM initiatives” (SSIs)

The KIIs and SSIs reflect that banks have successfully used ERM framework and initiatives to mitigate credit, operational and reputational risks that were bedevilling their operations. This shows that ERM is a vital organ that banks need in reducing the viscosity of ESG risks that have become topic across all continental divides. ERM plans are mitigatory panaceas that banks require to avert financial and non-financial risks that are stalling their progress.

In conclusion, ERM initiatives are the blueprints that act against the rampant effects of ESGs. The ERM initiatives map out how best can banks manage ESGs so that they reap more benefits from their operations internally and externally. They give banks fully abilities to be effective and efficient in their micro, market and macro operating environments. Banks have successfully used ERM framework and initiatives to mitigate credit, operational and reputational risks that were bedevilling their operations. This shows that ERM is a vital organ that banks need in reducing the viscosity of ESG risks that have become topic across all continental divides. ERM plans are mitigatory panaceas that banks require to avert financial and non-financial risks that are stalling their progress.

Theme 3: Regulatory Framework Initiatives that Sustains ERM in Green Banking Governance

The regulatory framework mechanisms behind the mainstreaming of ERM in green banking governance initiatives are important to sustain continuity. The international and domestic regulatory frameworks are of paramount importance to ensure that they justify the need for banks to support the integration of ERM into green banking governance. Two subthemes were generated from the coding process and the respective findings are offered under each subtheme. International Regulations that Govern ERM in Green Banking Operations (cited in 7 files)

The international regulatory frameworks that drive ERM into green banking operations ensure that the foundations of banking operations are solid and standardized. This paved the way for globalization and modernization which attract the banks to follow the international best practices that are being implemented by developed countries banks to attract investors and sustainable sources of revenue. The collective views expressed by the KIIs and SSIs are presented below:

“The ERM integration into green banking governance is a brainchild of the United Nations Environmental Programme (UNEP) Finance Initiative and the Equator Principles, Paris Agreement and UN Principles for Responsible Banking and the Net-Zero Banking Alliance among many other provisions” (KIIs).

“ERM mainstreaming into green banking governance is fundamentally drawn from the Paris Agreement, United Nations (UN) Sustainable Development Goals (SDGs) and UN Principles for Responsible Banking and the Net-Zero Banking Alliance” (SSIs).

The KIIs and SSIs reflect that the banks are motivated by the UNEP Finance Initiative and the Equator Principles, Paris Agreement, UNSDGs and UN Principles for Responsible Banking and the Net-Zero Banking Alliance to integrate ERM into green banking governance. This makes the initiative sustainable and it attracts a lot of stakeholders that support banks with sustainable streams of revenue and creative ideas that they need to fulfil their goals.

Local Legal Framework that Sustain ERM in Green Banking Operations (cited in 8 files)

The banks in Zimbabwe are also drawn their legal basis from the domestic pieces of legislation and policies. They support the banks to make essential developments towards making ERM a sustainable determinant in green banking governance. The obtained views from the interviewees are:

“The local banks are supported by the National Determined Contribution and Climate Change Adaptation and Mitigation Strategy that give insights in the proper management of internal and external risks” (KIIs).

“The ERM initiative into green banking governance is imbedded in National Determined Contribution among many other climate change and variability initiatives” (SSIs)

The KIIs and SSIs reflect that Zimbabwean banks are supported by the National Determined Contribution and Climate Change Adaptation and Mitigation Strategy to make ERM inroads into green banking governance. This makes green banking governance more sustainable and feasible since the domestic legal frameworks are strategic and they also offer sustainable competitive advantage.

In conclusion, the Zimbabwean banks are motivated by the UNEP Finance Initiative and the Equator Principles, Paris Agreement, UNSDGs and UN Principles for Responsible Banking and the Net-Zero Banking Alliance to integrate ERM into green banking governance. This makes the initiative sustainable and it attracts a lot of stakeholders that support banks with sustainable streams of revenue and creative ideas that they need to fulfil their goals. In the domestic terrain, the banks are supported by the National Determined Contribution and Climate Change Adaptation and Mitigation Strategy to make ERM inroads into green banking governance.

Theme 4: Green Banking Investments Effect in Social and Environmental Sustainability

Green banking investment make some significant effects in social and environmental sustainability. This ensure that the projects that are incubated and sponsored through green banking finances are ongoing and support the environmental sustainability. Two subthemes were generated from the coding process and the respective findings are offered under each subtheme.

Green Banking Initiatives in Social and Environmental Investments (cited in 4 files)

The green banking initiative towards social and environmental investments contribute to subsequent reduction of ESG risks. This makes social and environmental projects sustainable and done at larger scale so that they buttress the international and domestic efforts to fight against climate change negative effects. The collective views expressed by the KIIs and SSIs are presented below:

“Green banking initiatives essentially reduce revenue volatility and lower credit risks in social and environmental investments which makes them sustainable and more beneficial” (KIIs).

“Green banking efforts towards social and environmental investments pave way for more reliable credit and offer adequate revenue” (SSIs).

The KIIs and SSIs highlight that green banking initiatives are the cradle of sustainable social and environmental investments. This ensures that more revenue and all due diligence has been done to ensure that non-performing loan risk is absorbed and reduced to the lowest level. The green banking boost the life span and magnitude of social and environmental investments.

Resilience of ESG Investments (cited in 5 files)

The resilience of ESG investments on the ERM backed green banking governance is a vital step that banks need to leave a mark in diverse communities. The ESG projects are expected to absorb pressure and withstand the test of time when they are invested in so that they attain the resilient step. The obtained views from the interviewees are:

“Green banking governance that is premised on the ERM mechanisms contribute to smart city initiatives where clean energy and renewable energies are the order of the day” (KIIs).

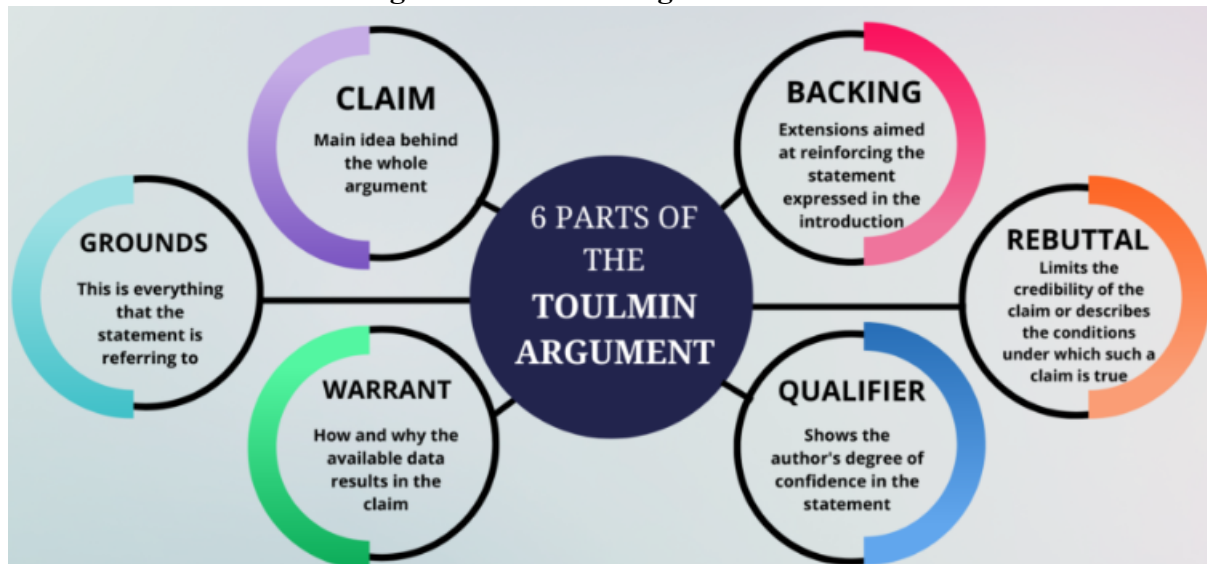
“The green banking model makes ESG projects long term and more stable since they would be able to get adequate funding and all the baseline surveys are done to test the feasibility of the projects” (SSIs)

The KIIs and SSIs show that green banking drive ESG projects to be more broad, beneficial and embrace clean technologies that do not pollute the environment. This increase the projects support from various stakeholders and they also attract more funding from individual and institutional stakeholders. The structural and non-structural resilience status of the ESG projects comes from their ability to support the climate change and variability adaptation and mitigation.

In a nutshell, green banking initiatives are the cradle of sustainable social and environmental investments. This ensures that more revenue and all due diligence has been done to ensure that non-performing loan risk is absorbed and reduced to the lowest level. The green banking boost the life span and magnitude of social and environmental investments. Green banking drive ESG projects to be more broad, beneficial and embrace clean technologies that do not pollute the environment. This increase the projects support from various stakeholders and they also attract more funding from individual and institutional stakeholders. The structural and non-structural resilience status of the ESG projects comes from their ability to support the climate change and variability adaptation and mitigation.

Results Discussions

The Toulmin Argument Model was used to offer arguments collected from creative and critical thinking basis. The model was envisaged by Stephen Edelston Toulmin (1958) who established practical ways to analyse ethical arguments appropriately. Figure 7 shows the Toulmin Argument Model.

Figure 7: Toulmin Argument Model

Source: Furber (2019:15)

Figure 7 shows the six components of a balance findings discussion that are required to give standardized outputs. Following the Toulmin Argument Model result in well-organized and balanced research discussion.

Theme 1: ERM SOPs Suitable in Green Banking Governance

The Zimbabwean banks are using the COSO 2017 ERM framework as SOPs plan to guide the implementation of green banking governance. The existence of a blueprint for ERM backed green banking governance makes it reliable and effective for the bankers and regulators to radically and incrementally improve operations should need be. Zimbabwean banks are following ERM SOPs to be successful in green banking governance. This implies that the ERM SOPs are acting as guidelines and templates that are enumerating success to the banking stakeholders. The obtained primary results corroborate with the results that were gathered by Phan et al., (2020) who realised that COSO 2017 ERM framework has been successfully used in green banking governance. On top of that, Chen et al., (2022) the application of the COSO 2017 ERM framework steps as the SOPs in green banking was done in the Turkish and Australian banking industries. A study which was done by Gulzar et al., (2024) to understand the essence of ERM in green banking, focused on the 10 banks listed on the Indonesia Stock Exchange between 2016 and 2020. The results showed that ERM systems positive impacted on the on Indonesian banking sustainable growth. The connection between primary and secondary shows that the COSO 2017 ERM framework as the SOPs suitable in green banking governance.

Theme 2: ERM Influence on ESG Risks Mitigation

ERM initiatives are the blueprints that act against the rampant effects of ESGs. The ERM initiatives map out how best can banks manage ESGs so that they reap more benefits from their operations internally and externally. They give banks fully abilities to be effective and efficient in their micro, market and macro operating environments. Banks have successfully used ERM framework and initiatives to mitigate credit, operational and reputational risks that were bedevilling their operations. This shows that ERM is a vital organ that banks need in reducing the viscosity of ESG risks that have become topic across all continental divides. ERM plans are mitigatory panaceas that banks require to avert financial and non-financial risks that are stalling their progress. The obtained findings correspond to the empirical evidence in a study which was done by Wu and Li (2020) ERM ensure that banks carry out adequate climate risk assessment, and put in place governance measures that hedge operations against substantial

banking losses. It caters for all financial uncertainties that are brought up by ESG risks so that the banks collateral values remain high. In the same view, Abiad et al., (2024) assessed the usefulness of ERM integration into green bank operations basing on the findings from 66 commercial banks of 6 Gulf Cooperation Council countries. The closed ended questionnaire structured and numerical data gathered was analysed using two-stage least squares and Generalized Method of Moments (GMM) approaches using the data from 2019 to 2023. The findings showed that ERM dimensions inversely impacted on the ESG risks that were typically high. The connection between primary and empirical evidence shows that ERM inclusion in green banking is a sustainable panacea towards ESG risks mitigation.

Theme 3: Regulatory Framework Initiatives that Sustains ERM in Green Banking Governance
The Zimbabwean banks are motivated by the UNEP Finance Initiative and the Equator Principles, Paris Agreement, UNSDGs and UN Principles for Responsible Banking and the Net-Zero Banking Alliance to integrate ERM into green banking governance. This makes the initiative sustainable and it attracts a lot of stakeholders that support banks with sustainable streams of revenue and creative ideas that they need to fulfil their goals. In the domestic terrain, the banks are supported by the National Determined Contribution and Climate Change Adaptation and Mitigation Strategy to make ERM inroads into green banking governance. The findings correspond to the secondary findings obtained by Rabbi and Amin (2024) the Paris Agreement and United Nations (UN) Sustainable Development Goals (SDGs) further emphasize the need for ERM towards green banking so that rational financial decisions are made and sustainability is central to modern banking strategies. FAO (2020) added that the UN Principles for Responsible Banking and the Net-Zero Banking Alliance, emphasized on the need for banks to have adopted the mobilization of sustainable finance by the end of 2021. The European Sustainability Framework advocate for banks to reduce non-renewable energy consumption by 15%, paper usage by 25%, and the carbon footprint by 5%.

Theme 4: Green Banking Investments Effect in Social and Environmental Sustainability
Green banking initiatives are the cradle of sustainable social and environmental investments. This ensures that more revenue and all due diligence has been done to ensure that non-performing loan risk is absorbed and reduced to the lowest level. The green banking boost the life span and magnitude of social and environmental investments. Green banking drive ESG projects to be more broad, beneficial and embrace clean technologies that do not pollute the environment. This increase the projects support from various stakeholders and they also attract more funding from individual and institutional stakeholders. The structural and non-structural resilience status of the ESG projects comes from their ability to support the climate change and variability adaptation and mitigation. The findings which were gathered corroborate to the study results by Owais and Arslan (2020) where environmentally sensitive green bank investments balance economic benefits with environmental security which brings higher adjusted returns. The green banks attract social, energy and ecological agents to sustainably practice social and environmental stewardship through diverse products and services which incentivize their operations. Furthermore, Giordani and Floros (2023) observed that commercial banks in Greece managed to promote social and environmental sustainability through their climate fund which reduced the carbon footprint in the atmosphere. The connection between primary and secondary results show that green banking investments are vital social and environmental sustainability.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The summary, conclusion and recommendations give study finding in a snapshot.

Summary

The results summaries are given per objective

Theme 1: ERM SOPs Suitable in Green Banking Governance

The Zimbabwean banks are using the COSO 2017 ERM framework as SOPs plan to guide the implementation of green banking governance. The existence of a blueprint for ERM backed green banking governance makes it reliable and effective for the bankers and regulators to radically and incrementally improve operations should need be. Zimbabwean banks are following ERM SOPs to be successful in green banking governance. This implies that the ERM SOPs are acting as guidelines and templates that are enumerating success to the banking stakeholders.

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Conclusion

In conclusion, ERM application in green banking governance is essential for banks and surrounding societies to better adapt and mitigate climate change and variability causes and vagaries. The COSO 2017 ERM framework gives verified SOPs that stakeholders can embrace to moot sustainable and reliable ESG projects that complement environmental sustainability drive. The ERM adoption in green banking governance is buttressed by international and domestic legal frameworks that justify and give intervention platforms.

Recommendations

1. The banks and responsible authorities should embrace creative and critical thinking skills in connecting ERM to green banking so that all processes would flow effectively.
2. The banks and responsible authorities should efficiently adopt stakeholder engagement so that they broaden their risk appetite, tolerance and governance which dovetails with the ERM framework.

3. The banks and responsible authorities should find ways to encourage all ESG entities to seriously adopt and be willing to edify their operations to suit ESG goals and benefits.

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