

EVALUATING THE EFFECTIVENESS OF MONEY LAUNDERING THROUGH ESG
RISK IN THE INDIAN BANKING AND FINANCIAL SYSTEM

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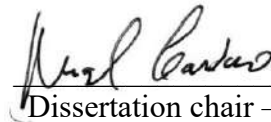
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Dedication

With deep gratitude, I would like to dedicate my research work to my father, Dr (Col) U. N. Ambastha for his constant support, blessings and the values he instilled in me. His inspiration and constant encouragement played a pivotal role in my academic journey and the person I have become. May god bless him.

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ABSTRACT

EVALUATING THE EFFECTIVENESS OF MONEY LAUNDERING THROUGH ESG RISK IN THE INDIAN BANKING AND FINANCIAL SYSTEM

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2025

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Money Laundering (ML) poses a significant threat to the integrity of the global financial system, with increasing concerns about its linkages to Environmental, Social, and Governance (ESG) risks. This study explores the largely overlooked intersection between ESG compliance and ML risks within India's financial sector and offers actionable strategies for strong governance and sustainable growth.

Adopting a mixed-methods research framework, the study integrates Quantitative analysis conducted using SPSS tool to assess the correlation between ESG scores and ML risks, while qualitative insights are derived through thematic analysis using Thematic analysis. Additionally, the Decision-Making Trial and Evaluation Laboratory (DEMATEL) method is employed to identify key relationships among ESG factors influencing ML activities.

The findings reveal that ESG factors do play a crucial role in either facilitating or mitigating ML risks. The study also highlights a significant gap in awareness among financial institutions regarding the intersection of ESG risks and ML. Despite regulatory advancements, many financial institutions lack robust policies to integrate ESG considerations into ML frameworks.

The findings indicate that poor governance structures, inadequate social accountability, and minimal environmental oversight collectively increase exposure to money laundering. Despite increasing regulatory focus on both ESG and ML compliance, a majority of financial institutions in India have yet to recognize the synergy between the two topics. ESG is still

being treated as a reporting obligation rather than a strategic tool for risk management. To address these challenges, the study recommends integrating ESG-based metrics into ML risk assessments, enforcing stricter regulatory standards, and developing training programs to enhance awareness. Furthermore, the adoption of the latest technologies like AI and machine learning tools, is suggested for real-time monitoring and pattern detection.

This research advocates for a paradigm shift, where sustainability and financial integrity are not parallel concerns but interconnected goals. Aligning ESG compliance with ML strategies can not only reduce systemic vulnerabilities but also position Indian banks and financial institutions as leaders in ethical and responsible banking. In an era marked by increasing scrutiny and stakeholder activism, the cost of inaction is too high, making immediate and informed response a strategic imperative.

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CHAPTER I: INTRODUCTION

1.1 Introduction

The convergence of Environmental, Social, and Governance (ESG) considerations with Anti-Money Laundering (AML) practices is significantly reshaping risk management strategies within India's banking and financial system. Financial institutions are under increasing pressure to adopt sustainable and ethical practices, making the integration of ESG factors into AML frameworks both a strategic imperative and a regulatory challenge Ardizzi et al. (2014). This paper explores the effectiveness of assessing money laundering through the lens of ESG risks in the Indian context, with a focus on regulatory developments, practical implementation issues, and implications for future research.

Money laundering refers to the process of disguising the origins of illicitly obtained funds by passing them through a series of complex financial transactions to make them appear legitimate. This process generally involves three stages: placement, layering, and integration Financial Action Task Force (2023). In contrast, Environmental, Social, and Governance (ESG) frameworks are used to evaluate corporate performance in three critical domains: environmental sustainability, social responsibility, and governance structures. The environmental dimension considers a company's impact on the natural environment, the social component assesses its relationships with stakeholders such as employees and communities, and the governance dimension evaluates internal management practices, including board diversity and executive compensation United Nations Principles for Responsible Investment (2024).

ESG-related risks are becoming increasingly important for financial institutions, particularly as they must comply with stricter regulatory expectations and respond to growing societal demands for transparency and ethical conduct. Research by Fiordelisi et al. (2023) highlights that a robust ESG strategy can significantly reduce exposure to financial risks while enhancing reputational value and long-term sustainability. In support of this perspective, the Reserve Bank of India (2024) has recommended that Indian banks integrate ESG considerations into their risk assessment frameworks, thereby improving their capacity to detect money laundering activities arising from weak governance or environmentally harmful practices.

The convergence between ESG and Anti-Money Laundering (AML) compliance is becoming increasingly pronounced, as financial institutions acknowledge that a significant proportion of

criminal financial activity is linked to ESG-relevant misconduct. The Financial Action Task Force (2023) has identified crimes such as illegal logging, wildlife trafficking, and unregulated mining as not only environmental offenses but also substantial sources of illicit financial flows. In response, financial institutions are now incorporating ESG-related indicators into their Know Your Customer (KYC) protocols to better assess client risk and flag unethical or non-compliant actors Naghi et al. (2023).

Furthermore, regulatory authorities are playing a proactive role in promoting the integration of ESG factors into AML frameworks. The Reserve Bank of India (2024) has mandated that banks gather data from diverse sources to enhance the effectiveness of their risk assessments related to money laundering and terrorist financing. This shift represents a move toward a more holistic and integrated approach to financial crime prevention. Additionally, research by Silvers (2021) demonstrates that coordinated regulatory oversight and collaboration across financial institutions can significantly enhance market transparency and reduce instances of misconduct.

Nonetheless, practical barriers persist. Indian banks often struggle with the lack of unified regulatory standards and the overwhelming volume of sustainability-related disclosures, which makes consistent ESG risk evaluation difficult KPMG (2021). Moreover, training gaps in bank personnel inhibit the effective integration of ESG into AML practices. Addressing these challenges requires continuous learning and robust internal governance structures D'Avino and Tselika, (2024).

Evaluating money laundering through the lens of ESG risk within India's financial system reveals a compelling interplay between sustainable finance and compliance mechanisms. Financial institutions that proactively integrate ESG into AML frameworks not only strengthen their risk management but also align themselves with broader societal and environmental objectives. However, given the emerging nature of ESG-AML convergence, institutions must invest in capacity-building and system-wide upgrades to fully leverage the benefits. Future research should prioritise the quantification of integrated frameworks' effectiveness in reducing financial crimes while supporting sustainable development.

India's regulatory ecosystem is evolving in tandem. ESG compliance has gained momentum with rising investor and consumer demand for sustainability-focused governance. The Securities and Exchange Board of India (SEBI) mandates ESG disclosures for listed companies, pushing firms to embed sustainability into their strategic outlooks SEBI (2024).

Simultaneously, AML and Counter-Terrorist Financing (CTF) protocols are being continuously updated in line with global standards. The RBI and Enforcement Directorate (ED) have introduced stricter regulations, compelling institutions to enhance due diligence and reporting of suspicious transactions. In 2024, the RBI released comprehensive guidelines for AML/CTF risk assessment for banks and regulated entities, aligning domestic practices with international best practices RBI (2024).

A key insight driving this integration is that ESG risks often serve as underlying facilitators of financial crime. Environmental crimes such as illegal deforestation, unregulated mining, and waste dumping are closely linked with illicit financial flows and money laundering activities Belasri et al. (2020). As such, the RBI has reiterated the importance of integrating ESG factors into AML frameworks to better detect governance failures and environmental abuse RBI (2024). Financial institutions have started reflecting these priorities in their customer onboarding processes and in the design of financial products such as sustainability-linked loans and ESG-compliant bonds, which incentivize ethical behaviour and environmental responsibility.

Despite the potential benefits, integrating Environmental, Social, and Governance (ESG) principles into Anti-Money Laundering (AML) frameworks presents numerous challenges. A major issue is the fragmented nature of ESG regulations and standards, which complicates the development of cohesive strategies within banks. Financial institutions are inundated with vast and often inconsistent sustainability-related data, making it difficult to evaluate ESG risks effectively, particularly in emerging economies such as India, where ESG reporting practices lack uniformity Houston, T. et al. (2022). The lack of reliable and comparable ESG data hinders the ability to assess risk exposure accurately across clients and sectors. Compounding this is the need for enhanced capacity-building and training initiatives to enable bank personnel to understand and address ESG-related risks in line with AML objectives.

Another layer of complexity arises from the polarised discourse around ESG adoption. Financial institutions are often caught between stakeholders advocating for sustainable finance and those sceptical of its costs and impact. The divergence in international ESG policy frameworks adds regulatory uncertainty and litigation risk for banks operating across jurisdictions Houston, T. et al. (2022). Moreover, in the absence of clear and measurable financial benefits, ESG is often perceived as a cost centre rather than a revenue driver. As a result, banks may prioritise ESG compliance primarily to mitigate reputational risks rather than as a core component of strategic planning.

To overcome these challenges, Indian banks and financial institutions may adopt a structured and strategic approach to ESG-AML integration. A key recommendation is the development of a comprehensive ESG framework aligned with international standards such as those proposed by the Task Force on Climate-related Financial Disclosures (TCFD) and the Global Reporting Initiative (GRI). This framework should encompass detailed policies and procedures to identify, evaluate, and manage ESG-related risks that may signal money laundering activities. Simultaneously, institutions should invest in advanced data infrastructure and analytics capabilities to process high-volume ESG and financial transaction data for suspicious activity detection OECD (2023).

Training remains pivotal to the successful implementation of these measures. Regular training programmes and workshops can equip staff with the necessary skills to navigate ESG risks within AML operations. Financial institutions should also foster collaboration through shared knowledge platforms with regulators, peers, and international watchdogs to harmonise AML responses and reduce blind spots in ESG risk assessment World Bank (2023).

A risk-based approach to ESG-AML compliance is also essential. This ensures that resources are directed to high-risk entities and transactions, thereby improving operational efficiency. Moreover, promoting transparency through ESG and AML disclosures builds trust among stakeholders and reinforces the institution's commitment to ethical finance SEBI (2024).

Technology plays a transformative role in enhancing ESG-AML integration. Artificial Intelligence (AI), Machine Learning (ML), and advanced analytics offer powerful tools to process complex data streams, detect anomalies, and identify potential ESG-linked financial crimes. Many Indian and global banks have begun leveraging these technologies to improve due diligence, transaction monitoring, and real-time risk flagging systems IFC (2023).

Real-world case studies illustrate how banks and financial institutions can simultaneously drive ESG goals and maintain AML compliance. For example, green financing initiatives support the transition to a low-carbon economy by funding renewable energy and energy-efficient infrastructure. ESG-compliant bonds and sustainability-linked loans (SLLs) tie financial incentives to environmental performance, offering borrowers reduced interest rates for meeting predefined targets. These financial products enable banks to align profitability with regulatory expectations and societal benefits BIS (2022).

Looking ahead, empirical research is needed to quantify the effectiveness of ESG-AML integration. Future studies should aim to establish measurable metrics that link ESG-AML

practices to financial performance, risk reduction, and broader societal outcomes. Additionally, cross-country comparative analyses could provide insights into how global best practices can be adapted to India's unique institutional and regulatory landscape.

In conclusion, assessing money laundering through the lens of ESG risk reveals deep interconnections between sustainable finance and financial regulation in India. As banks continue to embed ESG factors into their compliance and operational frameworks, they not only strengthen their internal controls but also contribute to environmental protection, social justice, and transparent governance. Nevertheless, the journey toward integration is having certain challenges, ranging from data inconsistencies to regulatory divergence. Therefore, a holistic approach combining policy coherence, technological innovation, capacity development, and stakeholder engagement is critical. By doing so, Indian banks and financial institutions can build institutional resilience, enhance their reputational capital, and pave the way for an ethical and sustainable financial system

1.2 Research Problem

The banking and financial system has long been a cornerstone of the country's economic development, facilitating growth, capital mobilization, and wealth creation. However, this sector also faces significant challenges, particularly in terms of combating financial crimes such as money laundering. Money laundering, the process of disguising illicitly gained proceeds as legitimate funds, poses a critical threat to financial systems, economic stability, and national security. In recent years, the integration of Environmental, Social, and Governance (ESG) principles into banking and financial practices has emerged as a transformative framework to address not only sustainability goals but also systemic risks such as money laundering. While ESG adoption is primarily viewed through the lens of sustainability and corporate governance, its potential role in mitigating money laundering risks has garnered increasing attention. Despite this, the relationship between ESG performance and anti-money laundering (AML) effectiveness remains underexplored, particularly in the context of Indian banks and financial institutions.

A holistic approach, incorporating case-based ESG-AML training that could instill a proactive compliance culture. completion metrics, and there is limited evidence on their impact on compliance performance Tschopp & Huefner (2015). However, many Indian banks and financial institutions treat ESG adoption as a symbolic compliance measure rather than a strategic risk management tool. Governance-related ESG metrics are underutilized in

identifying AML vulnerabilities, despite their potential to flag organizational behaviors associated with financial misconduct Kotsantonis & Serafeim (2019). Training and capacity-building represent another critical but underexplored linkage between ESG and AML. Employee training programs often treat AML and ESG as isolated domains, ignoring their operational interconnections Colnerud & Rosander (2019). Technological limitations also hinder ESG-AML convergence. Blockchain, RegTech, and AI systems have shown promise in international markets Ernst & Young (2020), but adoption in Indian banking remains sporadic and inconsistent. Most banks rely on outdated legacy systems, limiting their capacity to integrate ESG data into AML workflows. Additionally, smaller institutions often lack the cyber-resilience and data governance frameworks necessary for ESG-AML alignment Kotsantonis & Serafeim (2019).

Amidst these challenges, the adoption of Environmental, Social, and Governance (ESG) principles has emerged as a transformative framework to embed ethical, transparent, and sustainable practices within financial institutions World Economic Forum (2020). India's banking and financial system plays a pivotal role in the country's economic development by enabling capital formation, credit expansion, and infrastructure financing RBI (2021). However, as the financial system becomes increasingly complex and integrated with global markets, it faces rising threats from financial crimes such as money laundering. Money laundering is the process of obscuring the origins of illicit funds, is a serious concern that undermines economic stability, distorts capital flows, and poses national security risks. While ESG implementation has largely focused on sustainability and reputational metrics, its potential to support Anti-Money Laundering (AML) efforts is gaining recognition Gatzert & Reichel (2021). However, empirical research exploring the integration of ESG into AML frameworks, particularly in the Indian context, remains limited. This study addresses this gap by investigating whether ESG performance correlates with effective AML practices in Indian banking and financial system. The study also identifies gaps in proactive monitoring and ESG-integrated risk reporting. Current AML mechanisms are largely reactive, triggered post-transaction, whereas ESG systems, if integrated, could enable real-time risk anticipation through key performance indicators and continuous audits Gatzert & Reichel (2021). However, building such integrated systems demands high investment in data infrastructure, analytics, and skilled personnel, which many institutions are unable or unwilling to afford. The lack of standardized ESG metrics, especially for governance and compliance, exacerbates this issue Global Reporting Initiative (2021).

India's susceptibility to money laundering is heightened by its growing economy, burgeoning fintech sector, and extensive cross-border trade. Despite a well-established regulatory environment, enforced by institutions like the Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI), other Indian Regulators, and Financial Intelligence Unit (FIU_Ind), significant compliance gaps persist RBI (2022). These include variation in institutional readiness, regulatory enforcement inefficiencies, and an evolving threat landscape. While the Prevention of Money Laundering Act (PMLA), 2002, and FATF guidelines have enhanced institutional accountability, enforcement remains inconsistent, especially in governance practices, where ESG and AML concerns overlap.

For instance, banks that lack independent audits or internal ethical checks may be more prone to facilitating illicit transactions, yet ESG assessments in India seldom integrate such dimensions with AML scoring (MSCI, 2023). The diversity in ESG adoption across public, private, and foreign banks also creates a fragmented risk landscape. Public sector banks, constrained by bureaucracy and legacy systems, often lag in both ESG and AML innovation PwC (2023). In contrast, private banks and multinational institutions tend to adopt global best practices but are not exempt from occasional compliance lapses CRISIL (2023). Smaller institutions and non-banking financial companies (NBFCs) face further resource and capability constraints, reducing their ability to align ESG performance with AML obligations. This heterogeneity complicates policy interventions and weakens sector-wide effectiveness. Digitization adds further complexity. As banks transition toward digital channels, ranging from mobile payments to blockchain-based transactions, new laundering methods emerge, often faster than regulatory capacity to detect them. ESG principles promoting transparency and ethical conduct offer a pathway to preempt such risks, but their applicability in tech-driven financial ecosystems remains largely aspirational. Technologies such as artificial intelligence and machine learning can assist in integrating ESG-AML practices by enabling pattern recognition and predictive analytics, but these innovations are nascent and face resistance from regulators due to concerns over explainability and bias PWC (2023). Lastly, the cultural inertia in Indian banking and financial system presents a structural challenge. ESG requires a shift toward long-term ethical value creation, which often conflicts with short-term profitability metrics emphasized in traditional banking KPIs. Unless there is top-down leadership commitment and cross-departmental integration, ESG-AML frameworks will continue to exist in silos. Organizational change management, therefore, is vital to realizing the synergies between ESG and AML.

In summary, this study responds to the urgent need for an integrated ESG-AML framework within Indian banking. By examining the correlation between ESG familiarity and AML effectiveness, this research not only fills a key academic gap but also attempt to meaningfully contribute to the policy and operational dialogue surrounding financial crime prevention and sustainable finance..

1.3 Purpose of Research

The purpose of this study is to comprehensively assess the awareness, integration, and effectiveness of ESG principles in relation to AML frameworks within Indian banking and financial system. The study aims to evaluate the level of understanding among financial institutions regarding the interconnectedness of ESG and AML, as ESG factors, particularly governance (G), play a critical role in mitigating financial crime risks, including money laundering. By examining the current state of ESG-AML integration, the research seeks to identify gaps in implementation, monitoring, and reporting mechanisms that may hinder regulatory compliance and operational efficiency. Some of the key objectives are to assess the level of awareness and understanding of ESG principles and their connection to AML and, also to evaluate the effectiveness of current ESG-AML integration practices and to identify gaps in implementation, monitoring, and reporting mechanisms. Additionally, the study will assess the impact of ESG metrics on financial transparency and risk mitigation, exploring whether stronger ESG performance correlates with reduced money laundering risks and enhanced regulatory compliance. The research also evaluates the adherence of Indian financial institutions to both national, for example, Prevention of Money Laundering Act, 2002, guidelines from regulators like Reserve Bank of India (RBI), Securities Exchange Board of India (SEBI) and international, e.g., Financial Intelligence Unit, FATF recommendations, UNSC, ESG and AML regulations, identifying discrepancies and recommending strategies for alignment. Such findings will provide actionable insights for policymakers, regulators, stakeholders and financial institutions to strengthen ESG-AML convergence, fostering a more transparent, compliant, and sustainable financial ecosystem in India. The study's outcomes will contribute to academic discourse on sustainable finance while offering practical recommendations to enhance governance frameworks, reduce financial crime risks, and improve investor confidence in India's banking and financial sector. By bridging the gap between ESG and AML, this research aims to promote and synergize a holistic approach to risk and compliance management that aligns with global sustainability goals while addressing the unique challenges faced by Indian financial institutions.

1.4 Significance of the Study

The significance of this study lies in its comprehensive examination of the intersection between Environmental, Social, and Governance (ESG) frameworks and Anti-Money Laundering (AML) compliance, particularly within the context of the Indian banking and financial system. As financial crimes, especially money laundering, becoming increasingly sophisticated, ESG principles, when embedded strategically, can reinforce AML mechanisms by enhancing transparency, corporate accountability, and ethical risk governance Fatemi et al. (2018). This study offers vital insights for regulators, policymakers, investors, and banking and financial professionals, addressing emerging vulnerabilities while aligning with global sustainability goals.

1.4.1 Strengthening Regulatory Compliance and Governance

One of the key contributions of this study is its focus on improving regulatory adherence by assessing how well Indian banks and financial institutions integrate ESG factors into AML frameworks. Financial institutions operating in India must comply with both domestic regulations such as the Prevention of Money Laundering Act, 2002, and guidelines from the regulators and international standards like the Financial Action Task Force (FATF), Financial Intelligence Unit, recommendations, and the UN Principles for Responsible Banking. Strong governance, the “G” in ESG, has a direct impact on AML effectiveness, influencing internal controls, whistleblower systems, and audit protocols Eccles et al. (2014), GRI (2021). By identifying institutional gaps, this study contributes to improving compliance efficiency and reducing exposure to regulatory and reputational risks Basel Committee (2022). Prevention of Money Laundering Act, 2002 and international mandates such as the FATF Recommendations and UN Principles for Responsible Banking, disparities persist in governance-related ESG implementation FATF (2021).

1.4.2 Enhancing Financial Transparency and Risk Mitigation

Financial transparency remains a cornerstone of AML resilience. Research has demonstrated that robust ESG practices, particularly in governance and ethics, contribute to enhanced AML performance Tschopp and Huefner, (2015). Institutions with mature ESG disclosures, especially regarding board independence, risk oversight, and compliance culture, tend to exhibit improved detection and reporting of suspicious transactions Gatzert and Reichel, (2021). This study evaluates the correlation between ESG ratings and AML strength, offering insights for aligning sustainability reporting with risk mitigation strategies. High-ESG-rated

banks with mechanisms like AI-enabled fraud detection or grievance redressal systems are increasingly seen as lower-risk by both regulators and investors.

1.4.3 Bridging the Gap Between Global Indian Banking Standards

Benchmarking Indian banks against global standards encourages the adoption of proactive compliance models, improving cross-border trust and investment attractiveness World Economic Forum (2020). While global banks like Barclays, Bank of Nova Scotia, and HSBC consistently achieve high ESG ratings (S&P Global) due to stringent AML and governance frameworks, many Indian banks and financial institutions like Canara Bank, Bank of India, (S&P Global) lag with moderate ESG scores. This disparity highlights a critical need for Indian financial institutions to adopt global best practices in ESG-AML integration. This study helps bridge this performance divide by identifying global best practices, such as digital onboarding checks, ESG-aligned risk metrics, and ESG-embedded loan approval systems PwC (2023). Given India's growing prominence in global finance, aligning with international ESG-AML standards will enhance the competitiveness of Indian financial institutions in cross-border transactions and foreign investments.

1.4.4 Supporting Investor Decision-Making and Sustainable Finance Growth

Investors interest in ESG-aligned institutions is rapidly increasing. ESG transparency, particularly when it includes AML-related disclosures, directly impacts institutional valuation, cost of capital, and stakeholder confidence Tschopp and Huefner, (2015). However, the Indian market suffers from inconsistent ESG frameworks, which complicates investor analysis. This study provides empirical validation of the link between ESG adherence and AML integrity, enabling fund managers, ESG index providers, and compliance auditors to better evaluate institutional credibility. Colnerud and Rosander, (2019). Furthermore, it supports the growth of ESG-themed financial products, such as green bonds and ethical funds, by ensuring their legitimacy is not compromised by hidden financial crime risk.

1.4.5 Promoting Technological Innovation in AML Compliance

Digital transformation plays a pivotal role in ESG-AML convergence. Global leaders increasingly deploy artificial intelligence, blockchain, and predictive analytics to detect financial crimes and verify ESG claims Kotsantonis and Serafeim, (2019). However, Indian financial institutions remain cautious, often relying on outdated manual systems that increase operational costs and compliance lag. This study highlights successful technology use-cases in AML, such as AI-powered transaction risk scoring or blockchain-enabled audit trails,

which can improve ESG ratings and regulatory trust Gatzert and Reichel, (2021). Its findings inform Indian banks on how RegTech solutions can be incorporated into their ESG-AML strategies, aligned with RBI and SEBI's digital compliance push SEBI (2023).

1.4.6 Contributing to Academic and Policy Discourse on Sustainable Banking

From a theoretical perspective, this study advances the literature by integrating ESG and AML within a single compliance framework, a linkage previously underexplored Fatemi et al. (2018). Most existing research treats ESG and AML as separate domains, with limited exploration of their mutual reinforcement. By empirically demonstrating their overlap, particularly through governance and audit mechanisms, the study lays a foundation for new models of sustainable compliance. These findings may help in future policymaking by regulators like RBI, SEBI, and the Ministry of Finance, particularly as they refine ESG disclosure norms and AML enforcement strategies RBI (2023), SEBI (2023). Furthermore, the study supports academic development by providing a multi-variable framework for future ESG-AML evaluations and risk modeling.

Overall, this study contributes to financial integrity, sustainability, and policy innovation by revealing how ESG principles, particularly governance, audit, transparency, and ethics, can reinforce AML frameworks. Its findings support a shift from siloed regulatory compliance to integrated risk governance, enabling Indian financial institutions to align with global best practices. By making ESG-AML integration measurable, actionable, and scalable, the research informs institutional strategy, regulatory mandates, and academic discourse on building a sustainable and ethical financial ecosystem.

1.5 Research Objectives and Questions

Objectives

- a. To assess the level of awareness, perceived implications, key challenges, and anticipated future trends regarding ESG-AML integration among professionals in the -Indian banking and financial institutions
- b. To explore the perceptions of compliance professionals and ESG consultants on the challenges and ethical dilemmas in aligning ESG goals with AML regulations in the Indian financial sector

- c. To identify which ESG-AML components have the strongest correlation on the effectiveness of money laundering risk mitigation frameworks in Indian banking and financial system
- d. To examine the ESG disclosure scores and various regulatory reports/actions within the banking and financial system

Research Questions

- a. What are the levels of awareness, perceived implications, key challenges, and anticipated future trends related to ESG-AML integration among professionals in the Indian banking and financial sector?
- b. How do compliance professionals and ESG consultants perceive the challenges and ethical dilemmas associated with integrating ESG goals with AML regulations in the Indian financial sector?
- c. What are the major ESG-AML integration components that exert the strongest influence on the overall effectiveness of money laundering risk mitigation frameworks in Indian banking and financial systems?
- d. To what extent do ESG disclosure scores correlate with the various reports and regulatory actions within the Indian banking and financial system?

CHAPTER II: REVIEW OF LITERATURE

Environmental, Social, and Governance (ESG) frameworks have gained significant traction as tools for promoting sustainable development and responsible corporate behavior. However, they are not immune to misuse, with emerging literature highlighting vulnerabilities that allow money laundering to infiltrate ESG initiatives. This review explores how ESG management systems intersect with financial crimes, focusing on their role in facilitating or mitigating money laundering.

2.1 Theoretical Framework

The relationship between Environmental, Social, and Governance (ESG) risks and money laundering (ML) in the banking and financial sector has emerged as a critical area of research in financial crime studies. This literature review synthesizes theoretical perspectives from journals to establish a conceptual framework for understanding how ESG factors influence ML vulnerabilities, regulatory compliance, and financial transparency. The review draws upon Stakeholder Theory, Institutional Theory, and the Risk-Based Approach (RBA) to Anti-Money Laundering (AML), supported by empirical studies on ESG disclosures, governance failures, and illicit financial flows.

2.1.1 Stakeholder theory and ESG disclosures

Stakeholder theory Freeman (1984) postulates that corporations must balance the interests of various stakeholders, including regulators, investors, customers, and society at large. In the banking and financial sector, ESG disclosures serve as a transparency mechanism to mitigate financial crime risks, including ML. Environmental (E) risks emerge when banks finance high-risk sectors (e.g., fossil fuels, mining, arms manufacturing), as their complex supply chains and opaque transactions increase ML exposure Weber (2022), particularly where weak environmental due diligence fails to detect illicit fund flows. Social (S) vulnerabilities arise from inadequate customer due diligence (CDD) and poor employee training Arjoon et al. (2021), making banks prone to layering and integration of dirty money. Conversely, robust governance (G), marked by independent boards, whistleblower protections, and strong oversight, has been empirically proven to reduce ML incidents, demonstrating how comprehensive ESG integration strengthens AML frameworks.

2.1.2 Institutional Theory and Regulatory Compliance

DiMaggio and Powell, (1983) explains how organizations conform to regulatory norms to maintain legitimacy, as seen in the varying compliance levels among Indian banks despite the Financial Action Task Force's (FATF) growing emphasis on ESG-integrated AML frameworks. Coercive isomorphism manifests through regulatory enforcement, exemplified by the Reserve Bank of India (RBI) penalizing banks for governance failures tied to money laundering while mimetic isomorphism drives Indian private banks to emulate global peers, such as adopting ESG risk assessment models from European institutions Dharmapala (2019). Robust governance (G) factors, such as independent board oversight and whistleblower protections, have been empirically associated with reduced ML incidents, reinforcing the role of institutional mechanisms in shaping effective AML frameworks.

Governance (G) Factors: Strong corporate governance, including independent board oversight and whistleblower protections, has been empirically linked to lower ML incidents.

2.1.3 Risk-Based Approach (RBA) to AML and ESG Integration

The FATF's RBA requires financial institutions to assess ML risks dynamically. Recent studies suggest that ESG factors should be incorporated into ML risk models Van der Zwan (2021). Among these factors, governance emerges as the strongest predictor, as weak corporate governance, such as lack of board independence and inadequate internal audits, shows a significant correlation with increased ML incidents. Empirical evidence further supports this linkage, with banks exhibiting higher ESG scores reporting fewer suspicious transaction reports (STRs), suggesting enhanced ML detection capabilities Sustainalytics (2023).

- a. **Governance as the Strongest Predictor:** Weak corporate governance (e.g., lack of board independence, inadequate internal audits) is strongly correlated with higher ML cases.
- b. **Financial Transparency and ESG Reporting:** Agency Theory Jensen and Meckling, (1976) suggests that transparency reduces information asymmetry between banks and regulators, a principle that extends to ESG-AML integration, where high-quality ESG reporting, particularly on beneficial ownership and high-risk clients, has been shown to deter money laundering Baker and McKenzie, (2022). Furthermore, empirical evidence suggests that banks undergoing stringent third-party ESG audits demonstrate lower money laundering risks Deloitte (2021), reinforcing the role of accountability mechanisms in strengthening AML frameworks.

- c. **ESG Reporting Quality:** Detailed disclosures on beneficial ownership and high-risk clients deter ML, Baker and McKenzie, (2022)

2.1.4 Legitimacy Theory

Legitimacy theory asserts that organizations seek to operate within the bounds of societal norms and expectations. ESG reporting serves as a mechanism for financial institutions to legitimize their operations by demonstrating a commitment to ethical standards and regulatory compliance.

Patel and Desai (2024) investigated the determinants of sustainability reporting in Indian banks, focusing on green loan disclosures. Their findings indicate that banks with robust ESG practices are more likely to disclose green lending activities, thereby enhancing their legitimacy in the eyes of stakeholders and regulators. This transparency can deter illicit activities, including money laundering, by promoting a culture of openness and compliance.

This literature review establishes Stakeholder Theory, Institutional Theory, and the Risk-Based Approach (RBA) as the core theoretical framework for analyzing the ESG-ML relation. The findings highlight the need for stronger ESG disclosures, governance reforms, and regulatory enforcement to curb ML in banking.

2.2 Conceptual Framework

The growing convergence of Environmental, Social, and Governance (ESG) principles with Anti-Money Laundering (AML) frameworks represents a paradigm shift in how financial institutions in India and globally approach regulatory compliance, ethical responsibility, and long-term sustainability. The intersection of ESG and AML is particularly critical in the Indian financial sector, where regulatory reforms, market liberalization, and increased scrutiny from both domestic and international stakeholders have intensified the demand for transparency and ethical governance. However, despite the theoretical appeal of aligning ESG with AML goals, the practical challenges are manifold, ranging from awareness and ethical dilemmas to technical implementation and reporting discrepancies.

A foundational concern in this integration is the awareness level, perceived implications, key challenges, and anticipated future trends surrounding ESG-AML frameworks among professionals in the Indian banking sector. While policy documents and regulatory mandates provide directional clarity, operationalization is inconsistent across institutions. Moreover, monetary and fiscal policy environments also influence ESG-AML outcomes. Svensson

(2010) highlights how low policy rates and accommodative fiscal strategies can inadvertently impact financial stability, credit availability, and regulatory leniency. Many professionals, especially those not directly involved in compliance roles, exhibit limited understanding of how ESG considerations intersect with AML requirements. Addressing the shadow economy's contribution to money laundering, Ardizzi et al. (2014) offer a model that can be instructive for Indian policymakers. Their estimate that 6% of Italy's GDP involves laundered money, facilitated by cash-intensive sectors, is particularly relevant to India's vast informal economy. Here, it is pertinent to highlight that estimated laundered money is in the range of 2 % to 5 % of the World's GDP. This overlap poses a significant challenge to AML frameworks and demands ESG integration strategies that go beyond corporate boardrooms to influence downstream actors, supply chains, and informal service providers. ESG-AML integration must therefore be both vertically and horizontally expansive, touching not only top-tier institutions but also small non-banking financial institutions (NBFCs), small and medium enterprises (SMEs) and vendor ecosystems.

The fragmented nature of ESG reporting standards, coupled with the complex language of AML legislation, creates confusion and implementation inertia. This lack of clarity often results in superficial ESG adoption, where tick-box exercises substitute for genuine commitment. Hanley (2019) describes how big data analytics and machine learning tools can automate compliance, proactively identify red flags, and integrate ESG signals with AML indicators. Such systems can transform static, retrospective compliance into dynamic, predictive governance. Furthermore, trends suggest that ESG-AML integration will likely evolve towards stricter regulatory convergence, increased use of technology, and data-driven monitoring. Yet, as suggested by Gadgil et al. (2021), long-term transformation will require not just regulation but collective action, cross-generational engagement, and systemic change. Finally, youth participation, innovation, and stakeholder dialogue are crucial for building resilient ESG-AML frameworks. As emphasized by Gadgil et al. (2021), leveraging platforms like social media, creative campaigns, and academic collaboration can broaden the stakeholder base, enhance transparency, and ensure that ESG-AML efforts resonate beyond compliance departments. This inclusive approach is particularly essential in India's demographically young and digitally enabled workforce, which can serve as both watchdogs and change agents in financial integrity processes.

In contrast, Berg et al. (2023) show that when ESG ratings are statistically aggregated and weighted through methods like Treynor-Black optimization, they produce better alignment

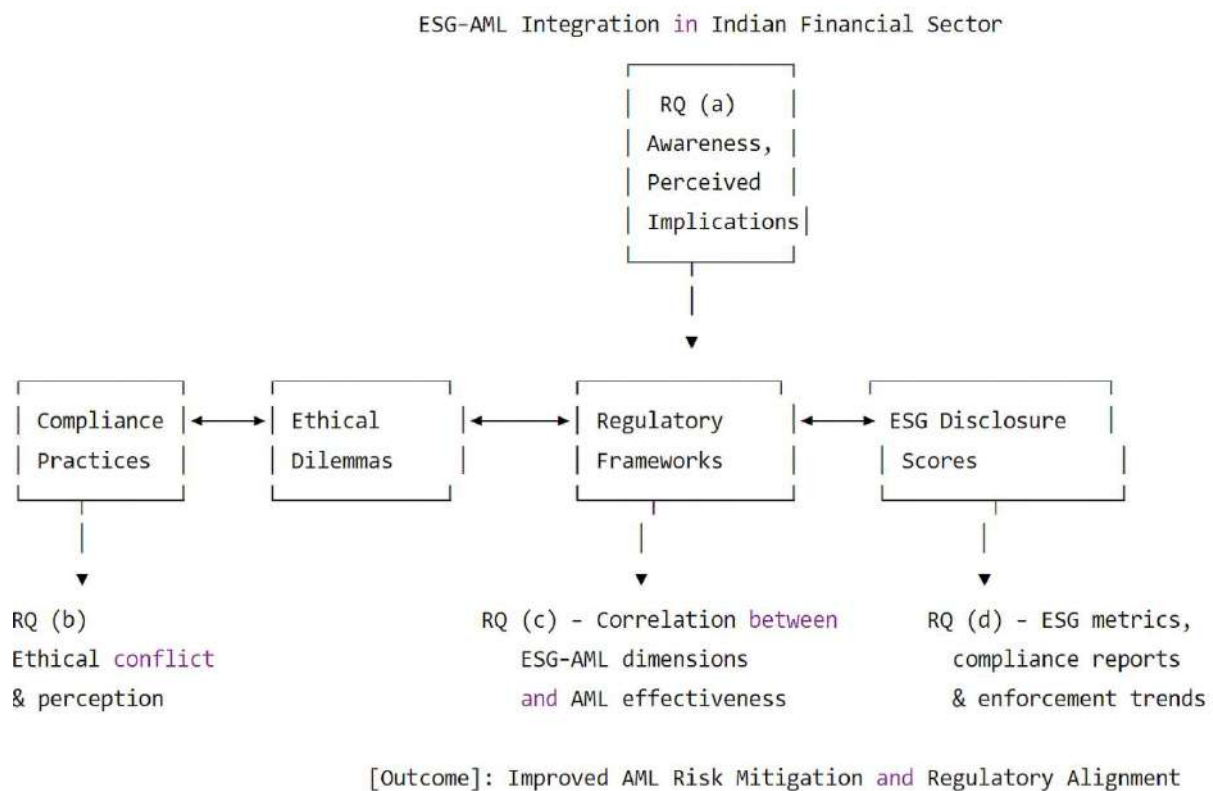
with investment performance, suggesting that improved rating methodologies could help bridge the disclosure-action gap. A closer look at how compliance professionals and ESG consultants perceive the integration reveals critical ethical dilemmas and implementation bottlenecks. On one hand, ESG consultants advocate for transparency, sustainability, and inclusive governance; on the other, AML compliance officers focus on stringent legal adherence and the minimization of reputational and financial risk. The tension between these roles becomes evident when financial institutions face trade-offs, such as choosing between a profitable client with questionable environmental records or disengaging to preserve ESG credibility. According to Achim et al. (2024), weak governance can facilitate greenwashing, where institutions camouflage money laundering under ESG-friendly veneers.

The components of ESG-AML integration that exert the strongest influence on the overall effectiveness of money laundering risk mitigation frameworks include governance quality, technological investment, third-party verifications, and risk-based due diligence systems. Governance, both at the institutional and regulatory level, emerges as the key player. Institutions with a culture of transparency, internal audits, and board-level ESG-AML oversight exhibit better preparedness to identify and prevent illicit activities. According to Danisman et al. (2024), banks with higher ESG engagement demonstrated greater resilience during financial crises, largely due to sound governance and credit risk management practices. Technology, especially regulatory technology (RegTech), is another potent enabler. Additionally, regulatory alignment with global best practices, such as those outlined by the Financial Action Task Force (FATF) and Basel Committee, enables institutions to implement contextualized yet globally benchmarked AML controls. Chitimira and Ncube, (2022) caution, however, that such frameworks must be localized to accommodate India's unique socio-economic realities. The relationship between ESG disclosure scores and actual regulatory actions, such as audit flags, penalties, or compliance ratings, presents another layer of complexity. While ESG disclosure has improved in India, largely due to SEBI's Business Responsibility and Sustainability Reporting (BRSR) mandate, its correlation with real-time regulatory outcomes remains tenuous. Empirical analysis suggests that high ESG scores do not necessarily equate to reduced AML violations. This disconnect may be attributed to divergent rating methodologies, self-reporting biases, and the absence of real-time verification mechanisms. Han et al (2024) found that ESG performance is positively linked to financial outcomes in the Korean context but moderated negatively by the firm's debt ratio, indicating that high-leverage firms may underperform in ESG despite favourable disclosures.

Adding to this complexity is the influence of external credit environments on CSR and ESG compliance behaviours, as explored by Liu et al. (2024). Their findings from the U.S. context reveal that deregulated credit markets reduce firms' incentives to maintain CSR efforts. As competition for capital intensifies, firms shift from stakeholder alignment to shareholder returns. In India, where NBFCs and fintech's increasingly dominate lending ecosystems, similar shifts may deprioritize ESG-AML considerations in favour of short-term liquidity and market capture. This underscores the importance of systemic incentives, such as tax benefits, green finance access, and reputational indexing, for sustaining ESG-AML compliance even in deregulated markets. In India, the RBI's accommodative stance post-COVID-19 and fiscal stimulus packages have fuelled credit growth, but they also raise questions about relaxed AML surveillance in the face of economic recovery imperatives. ESG-AML integration must thus adapt to macroeconomic contexts and incorporate scenario-based stress testing to remain robust.

This study examines the incorporation of Environmental, Social, and Governance (ESG) principles into Anti-Money Laundering (AML) frameworks in the Indian financial sector, utilizing four primary theoretical foundations: Diffusion of Innovation Theory, Stakeholder Theory, Resource-Based Analysis (RBA), and Legitimacy Theory. Each of these theories elucidates the processes, motives, and institutional dynamics behind ESG-AML integration, hence facilitating the interpretation of findings across the four study issues.

The first research question (RQ a), which evaluates awareness, perceived implications, obstacles, and trends of ESG-AML integration among banking professionals, is based on Everett Rogers' Diffusion of Innovation Theory. This theory asserts that the acceptance of novel concepts or practices, such as ESG-integrated compliance systems, hinges on perceived benefits, alignment with established values, and organizational preparedness.



Source: Author Representation

RQ represents Research Question

The second research question (RQ b), which examines the viewpoints of compliance experts and ESG consultants on ethical challenges, is analysed within the framework of Stakeholder Theory, as articulated by R. Edward Freeman (1984). This idea posits that firms must acknowledge and equilibrate the interests of many stakeholders, including not just shareholders but also regulators, consumers, workers, and society at large. The combination of ESG and AML often engenders ethical dilemmas, such as reconciling privacy rights with monitoring mandates imposed by AML legislation, or promoting financial inclusion while complying with rigorous consumer due diligence standards. Stakeholder theory offers a framework for examining how institutions manage conflicting demands while maintaining ethical and legal validity Freeman (1984).

The third research question (RQ c), which aims to identify the ESG-AML components that most significantly impact money laundering risk reduction, is underpinned by the Resource-Based Analysis (RBA) of the company. RBA suggests that an organization's competitive edge arises from distinctive internal resources, including technological systems, proficient individuals, governance skills, and compliance infrastructure. Integrating ESG and AML procedures necessitates significant expenditures in data analytics, reporting systems, and

interdisciplinary knowledge. Institutions that adeptly use these resources are more inclined to reduce financial crime risks and adhere to regulatory requirements. This approach emphasizes the strategic importance of internal ESG-AML competencies in improving compliance efficacy Barney (1991).

The concluding research question (RQ d), which investigates ESG disclosure ratings and regulatory reactions, is grounded in Legitimacy Theory. This idea asserts that corporations pursue legitimacy by adhering to society norms and expectations, particularly when subject to public scrutiny. ESG disclosures, sustainability reports, and voluntary transparency initiatives serve as strategic instruments for financial organizations to exhibit responsibility and alignment with public interest. In the realm of AML, regulatory inquiries and compliance deficiencies may severely undermine institutional credibility. By incorporating ESG principles and ensuring robust disclosures, banks seek to mitigate such risks and preserve stakeholder confidence Suchman (1995).

Collectively, these four theories provide a comprehensive conceptual framework to analyse the evolution of ESG-AML integration concerning organizational awareness, ethical practices, internal resource allocation, and external reporting within the Indian banking and financial sector.

Overall, this conceptual framework establishes that ESG-AML integration in the Indian banking sector is a multi-dimensional construct shaped by awareness levels, governance quality, professional perceptions, component-specific efficacy, disclosure accuracy, and macroeconomic contexts. While the ESG-AML interface holds transformative potential, its success depends on overcoming deep-rooted challenges, both technical and ethical. Strategic convergence of regulation, technology, education, and participatory governance will be key to unlocking the full potential of ESG-AML integration, positioning Indian financial institutions as leaders in sustainable and crime-free finance.

2.3 Review of Prior Studies

The increasing integration of Environmental, Social, and Governance (ESG) criteria into financial sector practices has critical implications for risk management, especially concerning money laundering within the Indian banking system. As Indian financial institutions align themselves with global sustainability goals, they encounter a dual imperative: advancing responsible investing while concurrently addressing the risks associated with financial crime. The relationship between ESG adoption and anti-money laundering (AML) effectiveness

forms a complex and emerging area of concern within both academic and policy-making circles.

Alessi et al. (2021) highlight the danger of "greenwashing", whereby entities deliberately misrepresent their environmental disclosures to create a facade of compliance. Such distortions enable money launderers to mask illegal activities behind projects purportedly aligned with sustainable development. The authors also caution that ESG-related disclosures, though critical for transparency, often lack uniform verification standards, especially in jurisdictions with nascent ESG regulation. Lee et al. ((2022) also note the decentralized and often unregulated nature of ESG-linked innovations, particularly those based on blockchain. These innovations offer both anonymity and cross-border fluidity, enabling bad actors to exploit gaps in regulatory coverage. The authors warn that without proper surveillance mechanisms and governance controls, ESG-linked blockchain financing may become fertile ground for laundering activities, particularly in emerging markets like India. Recent literature underscores how ESG adoption influences banks' compliance and governance structures. The concept of the "ESG-efficient frontier" is particularly noteworthy, positing that firms can simultaneously achieve competitive financial returns and sustainable outcomes Hasan et al. (2022). This is highly relevant to India's financial sector, where ESG frameworks are now being adopted by major public and private banks to guide lending decisions. By embedding ESG assessments within their risk management architecture, banks can enhance reputational integrity while also minimizing their exposure to illicit financial activities, including money laundering.

However, integrating ESG into compliance systems is not without challenges. Lee et al. (2022) examine the role of FinTech innovations in strengthening AML mechanisms. Their study highlights how decentralized financial platforms, augmented by crowd-sourced rating systems, can improve fraud detection in initial coin offerings (ICOs). Yet, the study also cautions that such technologies have yet to achieve widespread implementation in ESG-linked financial instruments. In many a cases, ESG products, such as green bonds or carbon offset credits, lack the regulatory maturity required to withstand systemic abuse. This technological and regulatory lag creates significant vulnerabilities, particularly in countries like India, where oversight infrastructure is still evolving.

In a related study, Achim et al. (2024) emphasize the importance of strong governance mechanisms in mitigating financial crime. Their findings indicate that effective oversight, especially through robust regulatory frameworks, can reduce the impact of money laundering

on sustainable development by as much as 50 percent. This reinforces the notion that governance structures play a central role in determining the effectiveness of both ESG and AML compliance mechanisms. Similarly, Hasan et al. (2022) argue that standardized ESG audits, reporting mandates, and consistent third-party evaluations can significantly deter the manipulation of sustainability metrics for illicit gain. They further suggest that companies with transparent ESG practices demonstrate stronger financial performance and regulatory compliance, thereby reducing their overall ML risk profile. Effective corporate governance, therefore, becomes a cornerstone for integrating ESG and AML. It ensures not only legal adherence but also enhances stakeholder trust and systemic transparency. The importance of governance is particularly salient in Indian banks, which are often scrutinized for their internal control weaknesses and opaque operational cultures. By implementing board-level ESG accountability and independent ESG-AML oversight committees, Indian banks can institutionalize ethical conduct while fortifying themselves against financial crime.

Furthermore, ESG-linked financial products themselves can be misused for laundering illicit funds. Instruments like green bonds, social impact investments, and carbon trading credits involve complex financial flows that are susceptible to manipulation. In addition to technology-related vulnerabilities, corporate governance remains a pivotal factor in shaping AML resilience. According to Achim et al. (2024), banks with robust governance practices are inherently more capable of detecting financial crimes, especially those hidden within ESG-aligned investment schemes. Their study concludes that institutions emphasizing internal accountability, ethics training, and independent compliance functions are better insulated against regulatory violations. This finding resonates strongly in the Indian context, where historical lapses in governance, such as those seen in large-scale loan fraud cases, have undermined the credibility of financial institutions.

Collectively, the literature reviewed highlights the necessity of integrated ESG-AML frameworks, particularly in India's developing regulatory landscape. While ESG offers promising pathways for promoting sustainability and resilience, its mechanisms must be fortified against misuse. Integrating ESG metrics into AML protocols, improving governance oversight, and enhancing technological capacity are essential to counter the evolving threats of financial crime. Therefore, Indian financial institutions and regulators must prioritize ESG risk validation and conduct enhanced due diligence, particularly in high-risk sectors and transactions.

2.3.1 Money Laundering in Financial System

Money Laundering (ML) is a global issue that undermines the integrity of financial systems, particularly in emerging economies such as India Cohen and Felson, (1979). In recent years, Environmental, Social, and Governance (ESG) risks have gained prominence as criteria for evaluating organizational sustainability and ethical practices. This literature review examines the intersection of ML and ESG risks, focusing on the Indian banking and financial system. Johnson et al. (2000) addresses climate change-related central banking problems without mentioning AML measures. AML client due diligence is not linked to ESG frameworks or sustainable finance targets indicating a substantial gap in comprehending these links.

Werner (2014) provides a foundational assessment of bank money creation, explaining how the opacity inherent in lending systems, especially via ESG-linked instruments, can facilitate ML. Although his focus was Western economies, his model is directly relevant to Indian financial sector, where powerful banking structures and uneven oversight create opportunities for masking illicit funds within ESG flows. Ardizzi et al. (2014) quantify money laundering in Italy but do not tie their findings to ESG practices or examine how AML frameworks affect sustainable finance. Quarles (2020) highlights financial stability principles and priorities in 2020 but does not include AML or ESG governance. Similarly, Eccles et al. (2014) note that much of the existing ESG-related research on financial performance often overlooks the governance pillar and its connection to AML measures, which could have significant implications for research outcomes and policy development. Di Tommaso et al. (2014) focus on the influence of ESG activities on bank lending during financial crises, but they do not address the potential role of AML procedures in minimizing financial crime or enhancing ESG-aligned investments. These gaps in the literature highlight the need for integrated research framework that explicitly link governance, AML standards, and ESG considerations. Such integration is vital for combating financial crime and promoting sustainable development on a global scale. While integrating ESG risk assessments into AML strategies holds considerable promise for the Indian financial system, it is not without challenges.

The rise of ESG criteria has transformed corporate governance and risk assessment within the financial sector. Yet, this shift also presents significant challenges, particularly the potential for ML to be camouflaged within ESG-compliant schemes. In the Indian banking and financial system, where regulatory frameworks are still maturing, understanding the relationship between ESG risk and ML is critical. The Financial Action Task Force (FATF) recommends a risk-based approach to AML, which involves identifying, assessing, and mitigating ML risks. Integrating ESG factors into the Risk Based Approach (RBA) can

enhance the effectiveness of AML measures by providing a holistic view of client risks FATF (2019). Several ESG scoring models, such as those developed by MSCI and Sustainalytics, can be adapted to assess ML risks. These models evaluate organizations based on their ESG performance and can be used to identify high-risk clients in the Indian banking sector. Recent studies have proposed integrated AML-ESG frameworks that combine traditional AML measures with ESG risk assessments.

Di Tommaso and Thornton, (2020) examine how ESG scores affect bank risk-taking and value, but they ignore methodology inconsistencies that may encourage unethical behavior or decrease AML compliance. Belasri et al. (2020) do not investigate corporate social responsibility (CSR) as a deterrent against financial crime within AML frameworks, while Gadgil et al. (2022) suggest discussing how AML can address environmental crimes like resource exploitation and climate finance fraud. AML regimes harm sustainable finance goals, Sorensen et al. (2022) argue that inadequate AML practices skew ESG-related returns but do not examine how these dynamics affect financial systems.

India's status as a high-risk jurisdiction for ML stems from its large informal sector, cash-heavy transactions, and regulatory inconsistencies. The Prevention of Money Laundering Act (PMLA), 2002, is the primary ML legislation, but enforcement remains uneven and financial institutions continue to struggle with implementing robust AML safeguards RBI (2020). India's financial institutions are increasingly integrating ESG into their corporate social responsibility (CSR) strategies. However, the effectiveness of these frameworks in reducing ML risk remains in doubt. The lack of mandatory external verification enables self-reporting of ESG compliance, inadvertently creating channels to funnel illicit funds into the banking system. To address this, authors stress that policy interventions should mandate ESG assessments within AML frameworks to prevent misuse of ESG-labelled products. Silvers (2021) highlights the importance of regulatory cooperation across jurisdictions in strengthening AML, especially in equity markets. As India deepens its integration into global capital markets, international coordination becomes essential. Silvers argues that harmonized AML-ESG standards and joint regulatory mechanisms can close the oversight gaps currently exploited through ESG-labelled financial flows.

Zaman et al. (2021) reveal the consequences of compromised corporate governance, particularly within co-opted boards, that enable financial misconduct, including ML. Studies have highlighted the role of corruption and regulatory arbitrage in facilitating money laundering in India. The lack of integration between AML frameworks and ESG risk

assessments further exacerbates the problem, as financial institutions fail to identify high-risk clients and transactions effectively. Weak governance structures, such as inadequate board oversight and lack of transparency, are key enablers of money laundering. ESG frameworks emphasize the importance of strong governance practices, including ethical leadership and compliance with regulatory requirements. Integrating governance risk assessments into AML strategies can help Indian banks identify and mitigate ML risks more effectively. Social risks, such as unethical business practices and lack of community engagement, are often linked to money laundering activities. For instance, shell companies and non-profit organizations are frequently used to launder money in India. ESG frameworks can help financial institutions assess the social impact of their clients and identify potential red flags KPMG (2022). Environmental risks, such as illegal mining and deforestation, are increasingly being used as conduits for money laundering. In India, the lack of stringent environmental regulations and enforcement mechanisms has made it easier for criminals to exploit natural resources for illicit financial gains. ESG risk assessments can help banks identify clients involved in environmentally harmful activities and prevent ML.

Naghi et al. (2023) discuss efforts to strengthen the European Union's fight against money laundering, with a focus on promoting sustainable economic models. While their study focuses on the EU, its findings are relevant for India, where financial institutions are increasingly incorporating ESG into their business models. The authors argue that integrating AML and ESG frameworks can create a more sustainable financial system, reducing the risk of money laundering. When we consider India's financial sector has made significant strides in improving AML measures, but its ESG framework yet to evolve to meet global standards. The lack of regulatory cooperation in enforcing ESG-related compliance creates opportunities for financial crime. For instance, companies with weak ESG scores may still attract investment due to poor transparency in ESG reporting. Silvers' findings suggest that international regulatory collaboration, particularly in monitoring ESG compliance, could enhance the effectiveness of AML efforts in the Indian financial system. Fiordelisi et al. (2023) investigate European banks and discover that while robust environmental coupling reduces financial volatility, especially in stock price fragility, it also presents opportunities for ESG score manipulation. In contexts like India's voluntary ESG reporting environment, inflated ESG metrics may obscure ML risks. The authors propose that rigorous third-party validation of ESG claims is essential to prevent misuse and reinforce financial-system resilience. Leong et al. (2024) analyse policy interventions aimed at reducing illegal money lending, a common ML insurgency channel, in *The Journal of Financial Economics*. They

find that localized AML policies can effectively constrict illegal financial flows, but in India's informal credit environment, such interventions may miss significant portions of transactions entirely. This raises concerns about ESG-themed lending instruments inadvertently serving as cover for laundering illicit proceeds. The authors argue that ML mitigation via ESG frameworks can only be effective when tailored to local economic ecosystems.

In India, where regulatory oversight of ESG reporting remains limited, financial institutions are at risk of being exploited by companies that use ESG as a cover for laundering illicit funds. Fiordelisi et al. (2023) suggest that integrating ESG risk assessments into financial risk management strategies could mitigate these risks, making the Indian banking system more resilient to money laundering. Palmieri et al. (2024) analyze the impact of ESG pillars on banking default risk, with a focus on how business models aligned with ESG principles can reduce financial vulnerabilities. Their research shows that banks with stronger ESG frameworks are less likely to default, as they are better equipped to manage non-financial risks, including those related to regulatory compliance and corporate governance. This has direct implications for the Indian banking sector, where integrating ESG into risk management frameworks could reduce the likelihood of financial institutions being used for money laundering. Alves and Meneses, (2024) explore the relationship between ESG scores and debt costs, finding that companies with higher ESG scores tend to face lower debt costs. However, they also caution that ESG scores can be manipulated, particularly in countries with weaker regulatory framework exists. In the Indian context, where ESG reporting is often self-regulated, companies may artificially inflate their ESG scores to reduce borrowing costs, thereby obscuring their involvement in money laundering activities. The authors suggest that stronger regulatory oversight of ESG reporting is needed to prevent such manipulation. In India, where ESG frameworks are still evolving, financial institutions must adopt more rigorous ESG risk assessments to prevent money laundering. By aligning debt pricing with genuine ESG performance, banks can reduce the likelihood of being exploited by companies seeking to launder money through ESG-related investments.

Naseer et al. (2024) examine the nexus between climate change risks, ESG practices, and market volatility, finding that companies with strong ESG practices are better able to withstand market shocks. In India, where market volatility is often driven by external factors such as global economic conditions, integrating ESG into investment strategies could provide a buffer against financial instability. However, the authors also highlight the potential for ESG frameworks to be exploited by companies seeking to launder money, particularly in volatile

market conditions. D'Avino and Tselika, (2024) investigate the drivers of banks' misconduct, including unethical behavior that can facilitate money laundering. Their research highlights how weak governance structures and inadequate regulatory oversight can create opportunities for financial crime. In India, where banking misconduct has been a persistent issue, stronger regulatory frameworks are needed to prevent money laundering through ESG-related channels.

Hoepner et al. (2024) explore the relationship between ESG shareholder participation and downside risk, yet their analysis does not extend to the governance or anti-money laundering (AML) dimensions that are critical to financial integrity. These include the absence of universally accepted ESG metrics, limited institutional awareness, and the substantial cost of implementing such integrated frameworks.

2.3.2 Banking Crises: Liquidity, Malfeasance, and Market Discipline

In the aftermath of the global financial crisis, nonbank financial intermediation has grown significantly and now represents nearly half of global financial assets in key jurisdictions. These intermediaries, formerly termed “shadow banks,” offer alternative credit channels and foster economic activity by diversifying funding sources. Technological advancement and robust policy frameworks are vital for long-term financial stability. Svensson (2010) and Hanley (2019) and emphasize the importance of RegTech solutions in automating compliance, strengthening governance frameworks, and enhancing risk management capabilities within financial institutions. However, this shift has also introduced systemic risks, particularly surrounding the notion of institutions being “too big to fail.” To mitigate such concerns, Quarles (2020) advocates for policy solutions developed by the Financial Stability Board (FSB), notably the total loss-absorbing capacity (TLAC) standard. This strategy incorporates a “bail-in” mechanism to manage the failure of systemically important firms without disrupting core financial services. Although ESG engagement has been well-examined in the corporate sector, its effects on banks remain under-researched. Studies show mixed results regarding how ESG factors influence bank value, efficiency, and resilience. Lins et al. (2017) provide evidence from the 2008–2009 crisis that firms with strong social capital, as indicated by CSR intensity, achieved superior returns, profitability, and debt access compared to their low-CSR peers. These findings reinforce the role of social trust and responsibility in building financial resilience during times of market stress.

Cerqueti et al. (2021) examine ESG compliance in equity mutual funds and find that highly rated ESG funds show greater resilience in stress scenarios, providing useful insights into risk management and portfolio diversification strategies. Jackson et al. (2021) analyse banking crises because of asymmetric information, where perceptions of increased malfeasance led to reduced investment in banks. While deposit insurance helps stabilize liquidity, it also perpetuates risky or poor banking practices, ultimately diminishing welfare. Hansen (2022) discusses the role of central banks in climate action and advocates for clear, credible policies that are aligned with their mandates while ensuring independence from political influence. The authors underscore the importance of real-time government disclosures of banking malfeasance to reduce information asymmetry and restore market trust. Ellul (2023) emphasize the need for economic transformation to address climate change and argue that corporations and banks must play a central role in responding to broad societal challenges. Similarly, Karas (2023) examines the numbing effect of deposit insurance on market discipline in Russia, showing that insured households exhibit reduced sensitivity to bank capitalization during crises, thus weakening the typical wake-up call mechanism.

The role of financial institutions in addressing climate change is also gaining attention in academic literature. In parallel, Quaye et al. (2024) explore the impact of green finance on asset pricing, demonstrating that green revenue factors alter firm betas and influence risk factor correlations, especially during periods of strong activism and political support for climate initiatives. Elvira-Lorilla et al. (2024) investigate the ambiguous relationship between national corruption levels and corporate cash holdings. They introduce corporate anti-bribery policies as a mediating variable, revealing that firms in highly corrupt countries tend to reduce cash holdings to limit bribe payments and signal financial discipline. This aligns with the existence of weaker anti-bribery policies and highlights the intricate link between corruption, CSR, and financial decision-making. Hoepner et al. (2024) investigate the effects of ESG engagement on shareholder risk, demonstrating that successful engagement, especially in environmental domains, significantly reduces firms' downside risks. Firms that reduce environmental incidents following engagement report improved value-at-risk (VaR) metrics, underscoring the financial and risk-management benefits of proactive ESG initiatives. Bax et al. (2024) analyse the link between ESG ratings and systemic financial risk in Europe from 2007 to 2022. Using variance decomposition methods, they find that both top and bottom ESG performers significantly influence systemic risk during stable periods. During financial crises, however, high ESG performers exhibit greater spillover effects, highlighting the dual role of ESG in stabilizing or exacerbating systemic risk. These insights offer valuable

guidance for policymakers in managing ESG-driven financial risks. Climate change research has typically focused on economic output, with relatively less attention paid to income inequality. Mumtaz et al. (2024) address this gap by examining how climate shocks influence income distribution. Through frequency domain analysis, they find that low-income populations, especially in hot, agriculture-dependent economies, suffer the most from adverse climate events. Their findings underline the urgent need for adaptive strategies to curb climate-driven inequality.

2.3.3 Government and Financial Crime: A Path to Sustainable Development

Achieving sustainable development necessitates strong governance, which serves as a critical pillar in the prevention and mitigation of financial crimes. In a related domain, Alessi et al. (2021) introduce the concept of a “negative greenium”, a risk premium associated with a company’s environmental performance and transparency. Their research, which focuses on European stock returns, integrates greenhouse gas emissions and environmental disclosure data to formulate a priced “greenness and transparency” factor. This factor assists investors in evaluating and hedging risks tied to the transition to a low-carbon economy. Their findings caution that failure to adequately price climate-transition risks could lead to significant global financial losses, especially for European banks. Consequently, the study advocates for the application of climate stress tests for systemically important financial institutions to ensure financial resilience amid the ongoing environmental transformation. In the FinTech ecosystem, certification mechanisms, particularly those relying on the “wisdom of crowds”, play a vital role in the success of initial coin offerings (ICOs). Lee et al. (2022) show that favourable ratings from diverse analysts on blockchain platforms not only predict fundraising success but also long-term token value and project viability. These analyst-generated ratings are instrumental in detecting potential fraud at early stages, highlighting the efficacy of decentralized, market-based certification systems. The study recommends incentivizing analysts to issue transparent and informative evaluations, which in turn promotes greater trust and integrity in ICO markets.

Achim et al. (2024) assert that governance is a foundational element of sustainability, emphasizing that high institutional quality and stringent legal frameworks significantly reduce the opportunity to exploit environmental regulations. Their study examines the moderating role of governance on four major types of financial crime, corruption, shadow economy, money laundering, and cybercrime, and how these crimes affect key sustainable development indicators, including the Human Development Index (HDI), Environmental Performance

Index (EPI), and greenhouse gas (GHG) emissions. Drawing on data from 185 countries between 2015 and 2022, the authors apply Pooled OLS and panel threshold regression models to reveal that good governance can mitigate the harmful impacts of financial crime on sustainable development by up to 50%. These findings provide practical guidance for policymakers on how institutional reforms can reduce environmental harm and support sustainable development goals.

The increasing integration of technology firms into financial services has fundamentally reshaped the global financial landscape. Companies such as Facebook, Amazon, and Tencent have leveraged their digital infrastructure to offer services including payments, lending, insurance, and asset management. Their participation enhances financial inclusion by increasing speed, reducing costs, and improving accessibility. A particularly notable innovation is the adoption of decentralized technologies, which eliminate traditional financial intermediaries. These innovations facilitate direct interactions among financial market participants and hold promise for applications in areas such as interbank settlements and anti-money laundering. As a result, technological advancement not only promotes efficiency but also strengthens regulatory and compliance frameworks.

Hypothesis Framework

Environmental, Social, and Governance (ESG) awareness has increasingly been recognized as a critical component of ethical financial practices, particularly in contexts vulnerable to illicit financial activities such as money laundering. Research suggests that professionals familiar with ESG principles are more likely to emphasize transparency and ethical accountability (Fatemi et al. (2018). Transparency International (2022) similarly emphasizes that ESG familiarity builds institutional credibility and enhances stakeholders' trust. These findings support the hypothesis:

H1: There is a correlation between ESG familiarity and transparency belief

Integrating ESG into institutional policies and risk frameworks provides organizations with stronger tools to align with Anti-Money Laundering (AML) standards. Eccles et al. (2014) argue that ESG policy integration contributes to long-term sustainability, enabling organizations to identify red flags and improve internal compliance. World Economic Forum (2020) further notes that embedding ESG principles enhances the ability of firms to identify and mitigate reputational and financial crime risks.

H2: ESG policy integration improves AML alignment

The effectiveness of AML policies is closely tied to the robustness of internal reporting systems. Alon and Elul, (2020) argue that strong AML frameworks, those embedded with clear governance protocols, lead to improved reporting and detection of suspicious transactions. Similarly, the FATF (2021) asserts that countries and institutions with detailed AML rules have significantly higher success in prosecuting financial crime.

H3: AML policy strength affects reporting effectiveness

Human capital and compliance culture are increasingly recognized as drivers of ethical behaviour within institutions. Colnerud and Rosander, (2019) found that ethics training strengthens employee engagement and professional conduct. Training enables staff to recognize ESG risks and their connection to money laundering, thus increasing compliance ownership.

H4: Training improves engagement

However, training outcomes are not always uniformly positive. Tschopp and Huefner, (2015) point out that training programs, if perceived as symbolic or irrelevant, can cause disengagement or even resistance among staff, particularly in bureaucratic institutions. In such settings, training may burden staff without improving compliance behaviours, which supports:

H5: Training effectiveness impacts performance

As financial crime becomes more sophisticated, the need for integrated ESG-AML solutions becomes urgent. Institutions that treat ESG-AML integration as a strategic priority are often more optimistic about adapting to future compliance trends. OECD (2022) notes that when leadership prioritizes ESG-AML convergence, teams exhibit greater preparedness and adaptability to regulatory changes. Similarly, PwC (2023) highlights that organizations investing in ESG-AML convergence are better positioned to leverage AI, analytics, and blockchain technologies for future risk detection.

H6: ESG-AML priority correlates with optimism

Finally, given the interconnectedness of governance, monitoring, compliance, training, reporting, and institutional culture, it is likely that these multiple variables collectively shape

an institution's ESG-AML outlook. Ernst & Young (2020) suggests that a systems-based approach to ESG-AML integration, accounting for policy, operations, governance, and human behaviour, provides a more accurate prediction of organizational readiness for future compliance challenges.

H7: The combined influence of Sections 1 to 7 significantly predicts Section 8 (Future Outlook)

These hypotheses reflect an emerging body of literature that views ESG and AML not as isolated domains but as interconnected systems governed by principles of transparency, accountability, and ethical risk management. As regulatory bodies continue to emphasize ESG disclosures and AML effectiveness, the convergence of these frameworks is poised to redefine compliance cultures within financial institutions.

2.4 Research Gaps

The rise of environmental, social, and governance (ESG) criteria has transformed the landscape of corporate governance and risk management in the global financial sector. ESG metrics, once primarily focused on sustainability and social impact, are now increasingly intertwined with regulatory compliance and risk mitigation strategies. However, this evolution also introduces new vulnerabilities, particularly the risk of money laundering (ML) activities being camouflaged under ESG-aligned financial flows. In the Indian context, where ESG frameworks remain voluntary and the informal sector continues to exert significant influence on the economy, the risk of financial crime under the guise of sustainability has grown increasingly complex. This review synthesizes key scholarly contributions to explore how ESG and AML (anti-money laundering) frameworks interact, highlighting the need for robust, integrated models tailored to India's unique financial ecosystem.

2.4.1 Policy Interventions and Informal Lending Risks

Leong et al. (2024) investigate how policy interventions targeting illegal money lending can reduce the entry points for ML in financial systems. Their work in *The Journal of Financial Economics* demonstrates that AML regulations are effective only when aligned with local economic realities. In India, where informal lending networks operate beyond the regulatory perimeter, such interventions often fall short. The authors caution that these informal channels can exploit ESG-themed financial products, such as green bonds or sustainability-linked loans, to recycle illicit funds, leveraging the public trust associated with ESG branding. This

creates a significant research gap in the Indian context: there is limited empirical data on how informal finance intersects with ESG-compliant instruments to facilitate ML. Further research is needed to assess the role of community finance and self-regulated lenders in laundering funds through ESG-labelled initiatives.

2.4.2 ESG Frameworks and Regulatory Weakness

Despite Indian financial institutions increasingly embedding ESG strategies into corporate social responsibility (CSR) initiatives, a key implementation gap exists in ensuring that these frameworks are effective in preventing ML. As ESG disclosures in India are largely self-reported and lack external validation, companies may use high ESG ratings to project a positive image while engaging in questionable financial practices. This weakness underscores the call by Leong et al. (2024) for tighter integration of ESG and AML protocols. However, there is a lack of country-specific regulatory models that embed ESG risk scoring into AML monitoring systems, particularly for institutions below the top tier of national banks.

2.4.3 Cross-Border Risk and Regulatory Cooperation

Silvers (2021) highlights the importance of international regulatory cooperation in curbing financial misconduct, particularly as financial markets grow more integrated. In India, cross-border transactions and growing access to global ESG-aligned capital increase the risks of undetected ML. While India's participation in global forums like the Financial Action Task Force (FATF) improves AML governance, domestic ESG oversight remains weak. Silvers (2021) suggests that harmonized ESG standards and real-time information sharing between jurisdictions can significantly reduce these vulnerabilities. Yet, research is still missing on how Indian regulators coordinate with global ESG standard-setters, especially in real-time surveillance of capital flows with ESG labels.

2.4.4 Governance Failures and Board Oversight

Zaman et al. (2021) explore how poor corporate governance, especially within co-opted boards, facilitates corporate misconduct and financial crime. Their findings are pertinent to India's banking sector, where governance weaknesses have historically contributed to scandals and financial instability. Weak or complicit boards can bypass due diligence requirements, including those attached to ESG investments. There is an urgent need for empirical studies linking Indian board composition and ESG performance to AML violations, a current blind spot in the literature.

2.4.5 Financial System Opacity and the Role of Banks and financial institutions

In foundational work, Werner (2014) argues that banks have the power to create money through lending, thereby shaping the flow and structure of financial systems. Without adequate transparency, these processes can become a conduit for laundering funds, especially via complex ESG-linked investment structures. Werner's study, though Western-focused, is deeply relevant to India, where opaque financial instruments and regulatory lag create opportunities for ESG-wrapped laundering. Current research in India has not adequately mapped the role of domestic banks in facilitating ESG-linked laundering, presenting another critical gap.

2.4.6 ESG Engagement and Risk Misrepresentation

Fiordelisi et al. (2023) examine the correlation between ESG commitment and stock price volatility in European banks. While their findings suggest ESG engagement reduces financial risk, they also caution that companies may inflate ESG credentials to hide instability. In the Indian scenario, where ESG compliance remains largely voluntary, there's a risk that companies manipulate ESG disclosures to attract lower-cost capital while engaging in ML. This opens a research void around how ESG ratings influence perceived creditworthiness and ML risk in emerging markets like India. Palmieri et al. (2024) show that ESG-aligned business models reduce banking sector vulnerabilities, particularly default risk. Their study suggests that ESG frameworks can enhance resilience by integrating non-financial risk monitoring into credit assessments. In the Indian context, applying this finding means strengthening ESG dimensions in banking risk matrices. However, few Indian studies have tested whether ESG metrics are embedded into credit scoring systems, particularly for SMEs and mid-sized financial institutions. More research is needed to determine how ESG risk integration affects loan performance and financial crime detection.

2.4.7 ESG Score and regulatory Manipulation

Alves and Meneses, (2024) demonstrate that higher ESG scores reduce debt costs. However, they also warn of manipulation risks in low-governance settings, like India, where companies might inflate ESG scores to secure cheaper loans while hiding unlawful activities. This manipulation not only weakens ESG trust but also facilitates ML. The authors argue for robust ESG auditing mechanisms. A critical gap exists in understanding how Indian banks verify ESG credentials before extending credit, and how this verification process affects AML outcomes. Naseer et al. (2024) connect strong ESG practices with reduced vulnerability to

market volatility. In the Indian financial market, frequently impacted by external macroeconomic shocks, ESG could serve as a stabilizing buffer. However, the volatility also presents windows for laundering, particularly through rapid portfolio shifts under ESG labels. This duality suggests the need for India-specific research on how ESG investments behave during periods of capital instability, and how such volatility may be exploited for ML. D'Avino and Tselika, (2024) assess how banks' unethical conduct stems from weak enforcement and governance. Their findings have direct implications for India, where high-profile bank frauds have exposed regulatory loopholes. ESG frameworks, if left unchecked, can become tools for laundering, particularly when ethics audits and compliance reviews are inconsistent. Indian regulatory bodies must consider embedding ethical conduct indicators into ESG scoring systems, a proposition not yet empirically tested in the Indian banking context.

2.4.8 Sustainability, AML, and EU Learning Models

Achieving sustainable development requires good governance, which plays a pivotal role in curbing financial crimes. In the FinTech ecosystem, certification mechanisms, particularly those that leverage the “wisdom of crowds,” are critical for the success of initial coin offerings (ICOs). Lee (2022) demonstrates that favorable ratings from diverse analysts on FinTech platforms predict not only fundraising success but also long-term token performance. Furthermore, these ratings help identify potential fraud early on, showcasing the effectiveness of market-based certification processes. The findings underscore the value of incentivizing analysts to provide informative ratings, enhancing trust and transparency in blockchain financing. The integration of technology firms into financial services has significantly reshaped the financial landscape over the last decade. Companies like Facebook, Amazon, and Tencent are leveraging their technological capabilities to offer payments, credit, insurance, and asset management services. Their involvement enhances the speed, efficiency, and accessibility of financial services, often at lower costs to consumers. A notable trend in financial innovation is the shift toward decentralized technologies that eliminate the need for intermediaries. These advancements enable direct connections between financial market participants, with applications ranging from interbank payment settlements to anti-money laundering efforts. Naghi et al. (2023) highlight how the European Union integrates ESG and AML agendas to promote sustainable finance. While the Indian government has encouraged green financing and ESG-aligned capital markets, similar AML-ESG convergence is still

embryonic. There is limited academic exploration of how Indian financial regulators might adopt EU-style ESG-AML frameworks, leaving a gap in comparative policy learning.

Research Gaps Identified

- Lack of empirical data on how India's informal financial networks leverage ESG-labelled instruments for ML activities.
- Insufficient integration of ESG risk scoring within existing AML monitoring frameworks in Indian banks.
- Weak empirical linkage between board governance structures and ESG-driven AML compliance failures in India.
- No systematic study on how Indian credit institutions verify ESG credentials and align them with AML checks.
- Underexplored regulatory cooperation, both domestic and international, in governing cross-border ESG investments in India.
- Limited analysis of ESG disclosure manipulation in Indian companies and its direct relation to financial crime.
- Lack of India-specific models integrating ESG and AML frameworks at the policy and institutional level.

Overall, the literature suggests that while ESG frameworks offer significant potential in promoting responsible finance, they also introduce new vulnerabilities, particularly when used as instruments to mask money laundering. In India, where ESG policies are still maturing and AML frameworks are challenged by informal economies and cross-border flows, the risks are exacerbated. Addressing these issues requires a unified regulatory vision, empirical scrutiny, and technological integration. By bridging ESG-AML gaps through tailored policies, governance reforms, and cross-sectoral collaboration, the Indian financial sector can build resilience not only against financial crime but also toward sustainable development.

2.5 Summary

The literature review emphasizes the increasing alignment of Environmental, Social, and Governance (ESG) principles with Anti-Money Laundering (AML) frameworks, illustrating their capacity to enhance financial integrity while recognizing substantial operational and regulatory challenges, particularly within the Indian context. This paper theoretically utilizes Stakeholder Theory, Institutional Theory, Risk-Based Approach (RBA), Agency Theory, and

Legitimacy Theory to examine the conceptual connections between ESG and AML. Stakeholder Theory demonstrates that ESG disclosures enhance transparency and stakeholder trust, essential for addressing illicit financial flows, while Institutional Theory elucidates how regulatory pressure pushes ESG adoption. The RBA model promotes the incorporation of ESG risk evaluations to monitor money laundering concerns dynamically, particularly via governance indicators. Agency Theory advocates for ESG disclosure as a mechanism to alleviate asymmetries between banks and regulators, but Legitimacy Theory frames ESG reporting as a method for banks to conform to social and ethical standards. Notwithstanding these theoretical advancements, execution is inconsistent owing to disparate standards, knowledge deficiencies among experts, operational silos between ESG and compliance teams, and insufficient technical infrastructure. Further, India's extensive informal sector, dependence on self-reported ESG disclosures, and non-structured implementation of AML legislation especially in smaller Banks, NBFCs, intensify the dangers of laundering illegal money disguised as sustainability efforts. Empirical data indicates that effective governance, comprehensive compliance systems, third-party audits, and the implementation of technology, particularly RegTech, are associated with reduced occurrences of money laundering. Conversely, research cautions that ESG-related financial instruments, such as green bonds or carbon credits, may be used to obscure criminal activities, especially in deregulated or emerging financial markets. Research indicates that ESG rating inflation and inadequate board supervision might facilitate "greenwashing," concealing financial misconduct within sustainable enterprises. The analysis also assesses the divergent professional perceptions, ESG consultants promote ethical governance and openness, whilst AML specialists prioritize legal compliance, resulting in internal difficulties inside organizations. In several studies, 'governance' constantly appears as the paramount ESG pillar for minimizing financial crime, followed by data analytics, personnel training, and risk-based ESG integration. The literature highlights significant research deficiencies, the absence of empirical studies linking informal lending networks to ESG-labelled laundering, inadequate convergence of ESG and AML in regulatory frameworks, a limited comprehension of ESG score manipulation, and insufficient cross-border collaboration in ESG financial governance. The Indian context necessitates customized models that integrate local economic conditions, technology capabilities, and regulatory development. The review synthesizes various theoretical frameworks to examine four fundamental research questions, the awareness and perception of ESG-AML integration, ethical dilemmas encountered by compliance professionals, the most significant ESG-AML elements for combating money laundering, and the relationship between ESG disclosures and

regulatory results. The analysis employs Stakeholder Theory, the Resource-Based Analysis, and Legitimacy Theory, therefore establishing a complete framework for comprehending ESG-AML integration. Notwithstanding the increasing emphasis on ESG policies, deficiencies in real-time audit procedures, coordination shortcomings, and dependence on voluntary disclosures undermine the efficacy of AML efforts. Moreover, macroeconomic conditions, such as monetary policy and the emergence of non-bank financial intermediaries, geo-political developments, could undermine the effectiveness of AML supervision. Technological innovation, albeit exciting, presents risks, FinTech platforms and decentralized finance models may provide anonymity and cross-border liquidity that enable money laundering unless coupled with real-time ESG-AML monitoring. The assessment underscores the pressing need for standardized regulations, regulatory incentives, and technology adaption as ESG increasingly influences investing practices, financial inclusion, and institutional credibility. It promotes a comprehensive transformation, encompassing not just major institutions but also suppliers, and informal entities, to effectively integrate ESG-AML principles into India's socio-financial structure. The study emphasizes that the effective incorporation of ESG into AML processes requires intent from government and regulators, legislative change, institutional investment, ethical leadership, systemic transparency, youth participation, and multidisciplinary cooperation.

CHAPTER III: METHODOLOGY

3.1 Overview of the Research Problem

In recent years, ESG factors have emerged as pivotal benchmarks for evaluating the ethical standards, transparency, and sustainability of financial institutions globally and locally in India. These frameworks are intended to guide corporations and banks towards more responsible business practices that align with broader societal and environmental goals. However, while ESG integration promises greater accountability and risk mitigation, it also introduces new complexities and vulnerabilities that can be exploited for illegitimate purposes. This study identifies a pressing and less explored research problem, the potential misuse of ESG frameworks as a veil to obscure illicit financial activities, particularly money laundering, within the Indian banking and financial sector. Money laundering, a long-standing concern for regulatory bodies and law enforcement agencies, has evolved in sophistication over the years. As traditional financial surveillance mechanisms improve and regulatory scrutiny increases, criminal actors seek more nuanced avenues to conceal the origins of illicit funds. ESG frameworks, despite being tools of ethical finance, may unintentionally serve as such avenues due to their subjective evaluation methods, lack of standardized global and local benchmarks, and inconsistent enforcement across jurisdictions.

The central problem addressed by this study lies in the growing intersection between ESG reporting and Anti-Money Laundering (AML) mechanisms, and how the former may be leveraged to circumvent the latter. While ESG initiatives are meant to promote transparency, responsible investing, and risk-based governance, they also rely heavily on self-reported data, unaudited sustainability disclosures, and ratings issued by third-party agencies with divergent methodologies. In India's context, where ESG adoption is still in a developmental phase and regulatory frameworks are evolving, these gaps create a fertile ground for regulatory arbitrage. Financial institutions or corporate entities may overstate their ESG credentials (a practice commonly referred to as "greenwashing") to gain investor confidence, secure favorable ratings, or attract capital earmarked for sustainable projects, all while engaging in or facilitating money laundering activities beneath the surface. For instance, funds labeled as

"green" or "social impact" investments may be routed through shell entities, tax havens, or loosely regulated sectors, thereby evading conventional AML filters. These disguised financial flows challenge the effectiveness of existing compliance tools and introduce new forms of financial opacity. This problem is particularly significant in India, a rapidly growing economy with a dynamic financial system, increasing foreign capital inflows, and expanding ESG initiatives. As Indian banks, asset management companies, and other financial intermediaries strive to align with international ESG benchmarks, they may face pressure to demonstrate high ESG performance. In such a landscape, there exists a real risk that ESG compliance becomes performative rather than substantive. The complexity of ESG metrics, ranging from carbon footprint reduction and board diversity to labor relations and corporate ethics, makes uniform evaluation difficult. Further, Indian regulators such as the Securities and Exchange Board of India (SEBI) and the Reserve Bank of India (RBI) have issued various guidelines around ESG disclosures and AML practices, but these frameworks often operate in silos. The lack of an integrated compliance architecture that simultaneously addresses ESG integrity and AML robustness creates a regulatory blind spot, which sophisticated actors can exploit to launder money under the guise of sustainable finance.

Another key dimension of the research problem is the institutional immaturity and asymmetry in ESG capabilities across the Indian financial sector. While larger banks and multinational corporations may have dedicated ESG compliance teams and sophisticated risk management tools, smaller financial institutions and non-banking financial companies (NBFCs), small and medium enterprises (SMEs), often lack adequate and skilled resources, expertise, and technological infrastructure to detect sophisticated laundering schemes embedded in ESG initiatives. Additionally, the limited awareness and inconsistent application of ESG criteria at board and senior management levels further weaken internal controls. This disparity in ESG maturity across institutions exacerbates systemic vulnerabilities and reduces the overall effectiveness of AML efforts. As a result, not only are illicit financial flows potentially going undetected, but they may also be legitimized through ESG-linked funding mechanisms, further eroding trust in ESG frameworks and financial governance.

From a regulatory standpoint, the challenge lies in bridging the gap between ESG reporting standards and AML surveillance mechanisms. Current AML tools are primarily designed to detect anomalies in financial transactions, such as unusual volumes, jurisdictions, or counterparties, but are not equipped to assess non-financial risk indicators embedded in ESG

activities. Conversely, ESG assessments focus on narrative disclosures, impact metrics, and reputational indicators that may not trigger financial red flags. The lack of convergence between these domains allows laundering practices to slip through the cracks. For example, a corporate entity might claim to invest in environmental sustainability through green bonds while simultaneously diverting funds for unrelated or illicit purposes via complex ownership structures. The absence of forensic ESG auditing, coupled with limited regulatory oversight of ESG investment flows, renders such activities difficult to trace or challenge.

Moreover, there is an emerging concern around third-party ESG rating agencies, whose methodologies are not standardized or uniformly regulated in India. These agencies play a critical role in shaping investor perceptions and influencing capital flows but often operate without transparency regarding their rating algorithms or conflict of interest disclosures. If a financial entity receives favorable ESG ratings despite dubious operational practices, it not only misguides stakeholders but also weakens the deterrence effect of AML frameworks. In such cases, ESG ratings can effectively serve as "reputational laundering" tools, obscuring risk rather than illuminating it. This dual misuse, both of capital flows and perception management, constitutes the crux of the research problem this study aims to investigate.

In addition to institutional and regulatory gaps, there are cultural and cognitive factors that contribute to the problem. ESG narratives often enjoy a moral high ground, and stakeholders may be less inclined to critically evaluate entities with strong ESG branding. This cognitive bias can create a false sense of security, where investors, regulators, and even internal compliance units overlook red flags under the assumption of ethical alignment. Consequently, unethical actors can exploit the positive bias associated with ESG narratives to further obscure their laundering activities. The Indian financial ecosystem, where ESG literacy is still emerging, is especially vulnerable to such misperceptions. The research problem is thus not merely technical or procedural but also behavioral and perceptual in nature, demanding a multi-pronged investigative approach.

In summary, the research problem addressed in this study revolves around the under-recognized but highly consequential risk that ESG frameworks may be exploited to legitimize money laundering in the Indian banking and financial system. This issue arises from a confluence of factors, the evolving nature of ESG standards, regulatory fragmentation, inconsistent institutional capacity, and the inherent subjectivity in ESG assessments. It challenges the current assumption that ESG integration inherently enhances financial transparency and ethical behavior. Instead, it reveals a paradox, where mechanisms designed

to promote trust and accountability may inadvertently become tools for deception and concealment. The study seeks to systematically explore this paradox, evaluate the extent of the risk, and propose integrative frameworks that align ESG compliance with AML robustness. Given India's strategic ambition to become a global financial hub, resolving this challenge is not only critical for safeguarding financial integrity but also for preserving the credibility and purpose of ESG itself.

3.2 Operationalization of Theoretical Constructs

In the pursuit of evaluating the effectiveness of money laundering (ML) activities camouflaged within Environmental, Social, and Governance (ESG) risks in the Indian banking and financial system, it is crucial to translate abstract theoretical constructs or ideas into measurable variables; this process is known as operationalization. The present study is built upon interdisciplinary foundations involving financial crime, corporate governance, risk management, and sustainable finance. The operationalization process begins with defining the core theoretical constructs, creating various hypotheses, deriving results, and finding limitations or gaps, ML, ESG Risk, Banking and Financial System Effectiveness, Regulatory Oversight, and Risk Perception. Each of these constructs holds specific theoretical relevance and requires precise empirical definitions for systematic investigation. Money laundering, traditionally understood as the process of disguising illicit funds as legitimate, is conceptualized in this study not only in terms of criminal concealment but also in the way it is potentially masked under legitimate-looking ESG investments and reporting.

Operationally, this construct is represented through observable indicators such as cash transaction reports (CTRs), suspicious transaction reports (STRs), frequency of KYC/AML breaches, audit red flags, and inconsistencies in financial disclosures linked to ESG projects. The ESG Risk construct, another core element, is often abstract and multifaceted, composed of environmental liabilities, social compliance issues, and corporate governance lapses. In this study, ESG Risk is operationalized using variables like ESG rating volatility, divergence between third-party ESG scores, regulatory ESG disclosures, climate-related financial risks, frequency of social impact violations, board independence metrics, and instances of governance failure. These variables are triangulated through data obtained from regulatory filings, ESG rating agencies, and qualitative inputs from compliance audits.

Further, the construct of Banking and Financial System Effectiveness refers to the ability of financial institutions to identify, mitigate, and prevent financial crimes, including ML

disguised within sustainable investment frameworks. This construct is operationalized using indicators such as number and quality of internal control systems, compliance with the Financial Action Task Force (FATF) recommendations, success rates of transaction monitoring systems, and efficacy of customer due diligence (CDD) practices. Other proxies include risk-weighted asset profiles and the frequency and outcome of enforcement actions taken by regulators like Reserve Bank of India (RBI) or Securities and Exchange Board of India (SEBI). The Regulatory Oversight construct focuses on the role of governance institutions and frameworks in detecting, reporting, and penalizing ESG-based laundering practices. To operationalize this, the study examines the presence and robustness of ESG-specific AML guidelines, number of compliance inspections carried out, regulatory circulars issued on ESG and AML intersections, and the institutional readiness of regulators to address hybrid financial risks. It also includes interviews with compliance officers and policy experts to gauge the perceptual effectiveness of such oversight. On the other hand, Risk Perception, a construct that embodies how banking professionals, auditors, and compliance officers perceive and respond to ESG-related laundering risk, is operationalized through Likert-scale survey instruments (psychometric scale) that measure dimensions such as perceived likelihood of ESG-based ML, trust in existing control systems, and perceived regulatory pressure.

A mixed-methods approach is used to operationalize these constructs both quantitatively and qualitatively, ensuring methodological triangulation. Quantitative data is gathered from ESG databases (like S&P Global), while qualitative insights are drawn from semi-structured interviews with compliance managers, forensic auditors, and ESG consultants. The study also uses the Decision-Making Trial and Evaluation Laboratory (DEMATEL) technique to model the cause-effect relationships among constructs such as ESG Risk, Regulatory Oversight, and ML Detection Effectiveness. DEMATEL enables a systematic operationalization of interdependencies by quantifying expert judgments into matrix form, thereby revealing how constructs like weak governance (as a latent ESG risk) may influence the probability of money laundering activity within financial institutions. Constructs such as “Greenwashing” and “Regulatory Arbitrage” are also derived and defined operationally as sub-dimensions under ESG risk. Greenwashing is measured through discrepancies between ESG claims and actual project impacts, using ESG disclosure indices and content analysis of sustainability reports. Regulatory Arbitrage, wherein entities exploit differences in ESG and AML enforcement across jurisdictions, is operationalized by tracking cross-border financial flows, tax haven linkages, and ESG fund allocations in low-regulated zones.

In the case of social and governance indicators, whistleblower reports and litigation records are also included as secondary indicators. The institutional context is also a critical backdrop to the operationalization process. The Indian financial ecosystem is uniquely characterized by a blend of progressive ESG adoption and regulatory underdevelopment in integrated ESG-AML frameworks. This unique context necessitates contextual operationalization, where global frameworks like FATF, UNPRI (United Nations Principles for Responsible Investment), and TCFD (Task Force on Climate-related Financial Disclosures) are aligned with local statutes such as the Prevention of Money Laundering Act (PMLA) and RBI's Master Directions on AML/Combating the Financing of Terrorism (CFT).

In conclusion, the operationalization of theoretical constructs in this study is anchored in a multidimensional, systemic, and contextualized approach that transforms abstract ideas into empirical indicators relevant to the Indian banking and financial landscape. By doing so, the study ensures analytical rigor and practical applicability in identifying how money laundering activities may be effectively masked under the guise of ESG compliance, and how these risks can be quantitatively measured, qualitatively understood, and strategically mitigated.

3.3 Research Purpose and Questions

The purpose of this research is to gauge the effectiveness and investigate the relationship between ESG and AML in Indian banks and financial institutions. The study aims to determine whether poor ESG performance correlates with higher AML risks and to identify if certain ESG activities may inadvertently facilitate illicit financial flows. Central research questions include:

- What are the levels of awareness, perceived implications, key challenges, and anticipated future trends related to ESG-AML integration among professionals in the Indian banking sector?
- How do compliance professionals and ESG consultants perceive the challenges and ethical dilemmas associated with integrating ESG goals with AML regulations in the Indian financial sector?
- Which ESG-AML integration components exert the strongest causal influence on the overall effectiveness of money laundering risk mitigation frameworks in Indian financial institutions?
- To what extent do ESG disclosure scores correlate with the various reports and regulatory actions within Indian financial institutions?

3.4 Research Design

The research adopts a mixed-methods approach with both descriptive and explanatory elements, allowing for comprehensive exploration and causal inference. This includes quantitative data analysis through inferential statistics and qualitative insight via expert opinion. The Decision-Making Trial and Evaluation Laboratory (DEMATEL) method, a systems-based qualitative-quantitative tool, is used to model the interdependencies among ESG and AML factors. Developed by the Battelle Memorial Institute (1971), DEMATEL allows for the visual mapping of complex cause-effect relationships, especially in governance and policy research El Ammar et al. (2023).

3.5 Population and Sample

The population comprises all Indian banks and financial institutions, including public, private, foreign, asset management, insurance and non-banking financial companies (NBFCs). This includes entities governed by the Reserve Bank of India (RBI) and other regulatory bodies. Purposive random sampling is utilized to ensure representative coverage across various strata, such as size, ownership type, and ESG reporting practices, thereby enhancing the generalizability of findings Liu et al. (1999). Using Cochran's formula, for quantitative analysis, for a finite population of 10,000, the required sample size would be approximately 370 after applying the finite population correction. Therefore, 452 valid samples are used for the quantitative analysis. Multiple Interviews follow qualitative research, ensuring deep insights, and for the dematel analysis, 15 expert panels were selected. This mixed-method approach balances statistical rigor (quantitative) and depth (qualitative) for robust research conclusions.

3.6 Participant Selection

For the qualitative component, a sample of multiple respondents were interviewed with open-ended questions, and a purposive sample of 15 experts was selected to participate in DEMATEL assessments. Participants were chosen based on a minimum of 12 years of experience in ESG, AML, or regulatory compliance, ensuring an informed and balanced perspective that bridges academic and industry knowledge Marczyk et al. (2005). For a quantitative Study, the questionnaire was shared and received around 452 valid responses from various job profiles.

3.7 Instrumentation

The study employed two primary instruments, structured questionnaires and semi-structured interviews. The structured questionnaire was designed to assess the level of ESG-AML integration, AML compliance, and internal controls, using Likert-scale and multiple-choice formats. The semi-structured interview guide facilitated deeper exploration of institutional practices, challenges, and expert insights regarding ESG as a compliance mechanism. For DEMATEL, participants rated the influence between ESG-AML variables using a 0–4 scale to construct a causal influence matrix Sekaran, (2003).

3.8 Data Collection Procedures

Secondary data were sourced from publicly available ESG reports, RBI disclosures, and global rating agencies like S&P Global, Sustainalytics, etc though only S&P data was considered due to lack of standardization in ESG rating parameters. Primary data were collected through online surveys, Zoom, and in-person interviews with the identified experts. Ethical protocols were followed, including informed consent and confidentiality assurances. The responses were triangulated to enhance the reliability of the study's findings Best et al. (2007). The banks and financial institutions that were considered for the study, including public, private, and Foreign banks.

3.9 Data Analysis

Quantitative analysis was performed using statistical software for descriptive and inferential statistics. Descriptive measures, means, standard deviations, and frequency distributions helped summarize ESG scores, AML practices, and bank characteristics. Inferential statistics, including multiple regression analysis, were used to test the relationship between ESG indicators and the risk of money laundering, operationalized through variables such as suspicious transaction reports, compliance gaps, and regulatory fines Masini et al. (2022). Chi-square tests were applied to evaluate associations between categorical variables like awareness, AML effectiveness etc. SPSS Software was used to analyze the quantitative data.

The DEMATEL analysis transformed qualitative expert judgments into a quantitative matrix of causal relationships. The total relation matrix and impact-relational maps helped identify which ESG dimensions (environmental, social, or governance) exert the most influence on AML efficacy. This method also illuminated feedback loops and priority intervention areas, offering actionable insights for policy and compliance frameworks Lee et al. (2022).

Qualitative analysis was carried out using thematic analysis to understand different ideas, concepts using in-person / virtual interviews, which represent how people will perceive or experience a particular issue / challenge.

3.10 Research Design Limitations

Several limitations apply to this research design. First, reliance on publicly available ESG ratings and disclosures may omit non-disclosed or manipulated data, creating an incomplete picture. ESG rating agencies use different methodologies, leading to inconsistencies in comparability. Second, while expert interviews provide depth, their subjective nature may introduce biases, despite triangulation efforts. Third, the cross-sectional nature of the data limits the ability to make longitudinal inferences about ESG and AML trends over time. Fourth, the use of DEMATEL, though robust for visualizing complex systems, depends heavily on expert opinion and may not fully capture dynamic market behaviors or regulatory changes. Lastly, logistical and resource constraints limited the number of sampled institutions and expert participants, potentially affecting the generalizability of the findings to smaller banks or NBFCs not included in the sample.

While the study offers substantial insights into the intersection of ESG practices and AML frameworks in the Indian banking and financial sector, it is essential to acknowledge the limitations that constrain the generalizability, precision, and applicability of its findings.

While the primary data is enriched by expert inputs through structured questionnaires and semi-structured interviews, the selection of experts, though purposeful, has its limitations. The qualitative insights, while rich, are therefore conditioned by the perspectives of those who are already embedded in the system, potentially overlooking innovative or grassroots perspectives, particularly from smaller institutions, whistleblowers, or newer entrants in fintech or digital banking. Additionally, the semi-structured interviews relied on self-assessment and perception-based responses, which, while valuable for thematic analysis, are inherently subjective and prone to recall bias or social desirability bias, especially in compliance-sensitive topics like money laundering.

The limitations of the applied methodologies also warrant discussion. While the mixed-methods design allowed for a comprehensive exploration of the research problem, the Decision-Making Trial and Evaluation Laboratory (DEMATEL) approach, used to identify cause-effect relationships between ESG-AML variables, has constraints. DEMATEL depends heavily on expert opinion and is susceptible to interpretation bias, especially in contexts

where causal relationships are complex, multidirectional, and influenced by external policy or economic shocks. Although normalization and matrix-based transformations were conducted rigorously, the inherent subjectivity in assigning influence scores (0 to 4 scale) cannot be eliminated entirely. Moreover, the DEMATEL model, while effective for visualizing interdependencies, does not capture dynamic or temporal changes in these relationships. For instance, the impact of an ESG audit on AML performance may vary over time based on technological upgrades, staff turnover, or regulatory changes, none of which are factored into the static matrix model. Additionally, given the sample size of 15 experts, any outlier judgment had a proportionately larger impact on the overall causal matrix, potentially distorting the influence map.

On the statistical front, while the study employed a variety of techniques, descriptive statistics, correlation, regression, logistic regression, chi-square tests, and ANOVA, each method comes with assumptions that may not always hold perfectly in real-world data. For instance, normality assumptions, etc, may affect the accuracy of regression results. Despite attempts to validate model assumptions through diagnostics, the diversity and qualitative nature of some ESG variables may not align seamlessly with linear modeling techniques. Moreover, the cross-sectional nature of the data prevents the establishment of causality; the observed relationships, even when statistically significant, cannot be interpreted as conclusive evidence that poor ESG performance causes increased money laundering risk or vice versa.

Another limitation pertains to the theoretical framing of ESG-AML convergence. While the study proposes a conceptual linkage between ESG and AML frameworks, there is a lack of established academic models or literature in this exact area, especially in the Indian context. This necessitated the creation of custom constructs and variable definitions, which, while innovative, may not yet be standardized or widely accepted. For instance, the operationalization of ESG performance and AML effectiveness into quantifiable survey items involved considerable abstraction, which may lead to inconsistencies in replication or interpretation across different studies. This conceptual novelty, while a strength in pushing the boundaries of compliance research, also acts as a limitation in terms of theoretical generalizability and reproducibility.

Technological limitations, particularly in the availability and reliability of ESG-AML integrated platforms. Although the study discusses the potential of technologies like AI, blockchain, and data analytics in enhancing ESG-AML alignment, most participating institutions either lacked such systems or had rudimentary setups. As a result, the study's

conclusions about the role of technology are largely speculative or aspirational, based on expert opinion rather than empirical validation through case studies or system audits.

External environmental and policy variables beyond the researcher's control also impose limitations. The study was conducted during a period of regulatory transitions, with several changes in ESG reporting norms, AML laws, and digital compliance mandates. These evolving conditions mean that some insights may become outdated quickly, particularly if new ESG reporting standards or AML compliance tools are adopted industry-wide. Additionally, the geopolitical and economic environment, such as global ESG fund flows, FATF assessments, or sustainability-linked lending from multilateral institutions, can influence the ESG-AML landscape independently of the internal variables studied.

In summary, while this study provides a strong foundation for understanding the nuanced relationship between ESG frameworks and money laundering risks, its findings must be interpreted within the context of the limitations. Data constraints, methodological subjectivity, limited sample diversity, and systemic variability all restrict the generalizability and empirical precision of the conclusions. Nonetheless, by openly acknowledging these limitations, the study lays the groundwork for future research that can build upon its findings with larger datasets, longitudinal tracking, experimental interventions, and more diverse stakeholder perspectives. Addressing these limitations in future work will be essential for advancing this emerging field of inquiry and for creating more robust, actionable frameworks for ESG-AML convergence in financial systems.

3.11 Conclusion

In research, ethics pertains to the anticipated code of conduct or standards that regulate the behavior of the researcher during the research process. In every study, there are certain ethical considerations that the researcher must address. According to (Marczyk *et al.* 2005), ethical considerations are paramount when human subjects participate in research. Ethical considerations infiltrate every stage of the research process, from the design of the research challenge to the presentation of the findings Sekaran, (2003). Fundamental to research ethics are the safeguarding of human participants, the principle of non-maleficence towards respondents, and the equitable selection of participants. Researchers are expected to safeguard the privacy and dignity of the participants (Marczyk *et al.* 2005). This study will safeguard the participants' privacy. The researcher will guarantee that the information submitted by

participants regarding their business will remain confidential and inaccessible to individuals not directly participating in the study.

CHAPTER IV: RESULTS

Introduction to Quantitative Analysis

The global banking sector has focused on ESG and AML initiatives in recent years. The increased focus on sustainable finance and ethical compliance in Indian banking and financial sector has emphasized the need to incorporate ESG risk evaluations into standard AML frameworks. This integration is important to improve transparency, decrease reputational and regulatory concerns, and follow worldwide best practices. The degree to which Indian banking and financial professionals are aware of this convergence and its repercussions is unknown. ESG-AML integration awareness, consequences, problems, and future trends among Indian banking and financial professionals are examined in this quantitative investigation.

Understanding awareness is key to evaluating banking and financial sector staff preparation for ESG-AML frameworks. Awareness relates to professionals' knowledge of ESG parameters, regulatory requirements, and ESG criteria' capacity to detect unlawful financial activities. Since ESG concepts are new to AML discourse in India, this research estimates the percentage of banking professionals who comprehend ESG-AML links and their degree of awareness.

Analyzing ESG-AML integration's perceived effects is crucial. Financial experts assess how ESG-aligned AML practices affect organizational performance, compliance costs, stakeholder trust, operational efficiency, and regulatory alignment. These ramifications may strongly affect financial institution support for ESG-AML projects. This research measures perspectives on these characteristics to determine if ESG-AML integration is a burden, opportunity, or strategic need.

The report also examines banking and financial industry ESG-based AML implementation problems. A lack of ESG-specific AML training, technical infrastructure, legislative clarity, data availability, or organizational opposition may cause issues. Quantifying these issues

across institutions identifies systemic bottlenecks and guides policy, capacity development, and technology investment.

Based on professional expectations and strategic foresight, this study examines prospective ESG-AML integration developments. Responses on developing technology, regulatory changes, ESG data analytics, and future compliance procedures show how the banking and financial industry sees ESG-AML evolving in India. Building adaptable compliance systems requires such future-focused insights.

The research uses descriptive statistics, correlation analysis, and regression modeling to understand patterns and linkages that highlight present attitudes and practices and guide future ESG and AML integration plans that are coherent, compliant, and sustainable

Reliability

Scale: All Variables

Case Processing Summary

		N	%
Cases	Valid	452	100
	Excluded ^a	0	0
	Total	452	100

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
0.954	45

The Cronbach's Alpha value of 0.954 for all 45 variables indicates excellent internal consistency reliability, meaning the survey items measuring ESG-AML awareness, implementation, compliance, training, monitoring, challenges, and future outlook are highly

correlated and consistently reflect the same underlying constructs. This strong reliability ($\alpha > 0.9$) suggests that the survey instrument is statistically robust for analyzing the hypothesized relationships, as respondents interpreted the questions uniformly and the scale reliably captures the intended dimensions of ESG-AML integration. Out of 472 responses, there are 452 valid responses ($N=452$), further confirming complete, high-quality data without missing values, supporting the credibility of subsequent analyses.

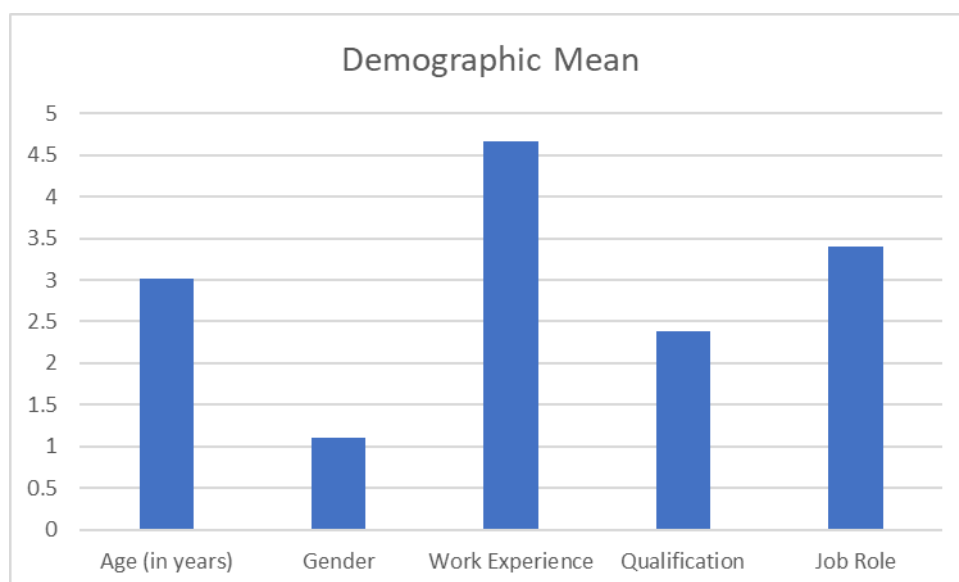
4.1 Research Question One

What are the levels of awareness, perceived effectiveness, key challenges, and anticipated future trends related to ESG-AML integration among professionals in the Indian banking and financial system?

A Quantitative Survey Study has been done on Awareness, Implications, Challenges, and Future Trends.

Descriptive Analysis

Descriptive Statistics	N	Mean	Std.
Age (in years)	452	3.01	0.893
Gender	452	1.11	0.374
Work Experience	452	4.66	0.793
Qualification	452	2.39	0.877
Job Role	452	3.4	1.241



The survey includes responses from 452 participants, with an average age of 3.01 years (SD = 0.893), indicating a predominantly middle-aged sample > 45 years of age, likely representing experienced professionals in the financial sector. The gender distribution is skewed (mean = 1.11, SD = 0.374), suggesting a majority representation of one gender, which may indicate potential diversity gaps in the surveyed population. Respondents have high work experience (mean = 4.66, SD = 0.793), implying a well-experienced and seasoned workforce capable of providing insights on ESG and AML practices. Qualification levels are moderate (mean = 2.39, SD = 0.877), reflecting a mix of educational backgrounds, while job roles vary widely (mean = 3.4, SD = 1.241), ensuring perspectives from different professional levels.

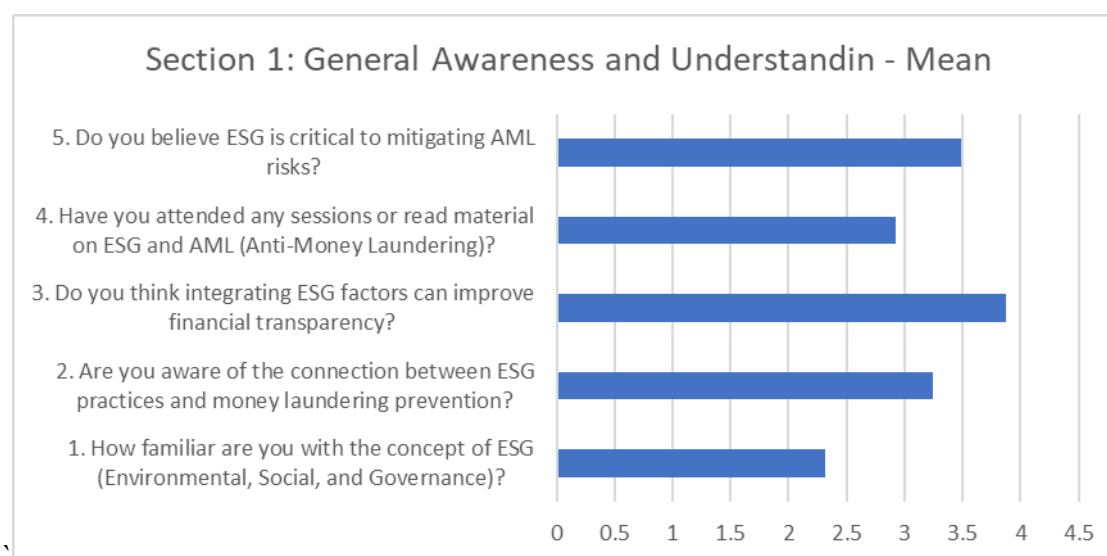
Section 1: General Awareness and Understanding.

This table presents descriptive statistics (N, Mean, Standard Deviation) for five survey questions assessing respondents' familiarity and perceptions regarding ESG (Environmental, Social, and Governance) and its connection to AML (Anti-Money Laundering). The sample size (N=452) remains consistent across all questions. Question 1 (general ESG awareness) has the lowest mean (2.32 ± 0.595), indicating limited familiarity, while Question 3 (ESG improving financial transparency) scores highest (3.87 ± 1.214), suggesting strong agreement. Question 2 (awareness of ESG-AML linkage) and Question 5 (ESG's critical role in AML risk mitigation) show moderate agreement (3.25 ± 0.909 and 3.49 ± 1.382 , respectively), though the higher standard deviations here reflect varied opinions. Question 4 (exposure to ESG-AML training/material) falls in the mid-range (2.92 ± 1.005), implying sporadic engagement. Overall, respondents recognize ESG's potential in AML contexts but

lack basic and foundational knowledge, highlighting a need for targeted education and training initiatives.

Section 1: General Awareness and Understanding	N	Mean	Std.
1. How familiar are you with the concept of ESG (Environmental, Social, and Governance)?	452	2.32	0.595
2. Are you aware of the connection between ESG practices and money laundering prevention?	452	3.25	0.909
3. Do you think integrating ESG factors can improve financial transparency?	452	3.87	1.214
4. Have you attended any sessions or read material on ESG and AML (Anti-Money Laundering)?	452	2.92	1.005
5. Do you believe ESG is critical to mitigating AML risks?	452	3.49	1.382

Section 1 : Graph



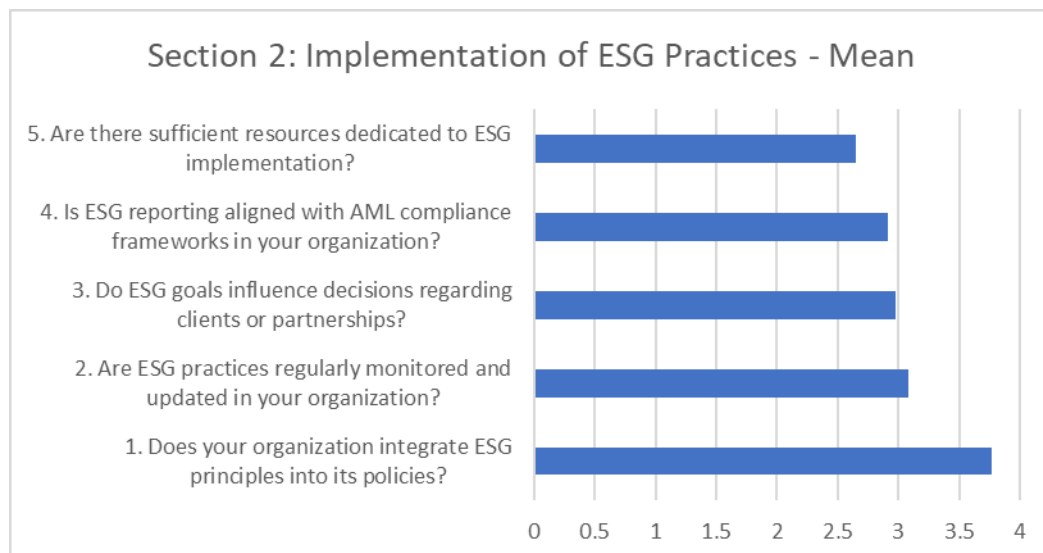
Section 2: Implementation of ESG Practices

The table presents descriptive statistics (N=452) for five questions assessing the implementation of ESG practices in organizations. The results reveal that while organizations largely integrate ESG principles into policies (highest mean: 3.77 ± 1.280), actual implementation varies, with monitoring and updating of ESG practices scoring moderately (3.08 ± 1.065). The lowest score (2.65 ± 1.119) indicates insufficient resources dedicated to ESG implementation, highlighting a critical gap between policy adoption and

practical execution. Overall, while ESG is formally recognized, its systematic integration into daily operations and compliance frameworks remains inconsistent, pointing to a need for better resource allocation and procedural reinforcement.

Section 2: Implementation of ESG Practices	N	Mean	Std.
1. Does your organization integrate ESG principles into its policies?	452	3.77	1.28
2. Are ESG practices regularly monitored and updated in your organization?	452	3.08	1.065
3. Do ESG goals influence decisions regarding clients or partnerships?	452	2.98	0.919
4. Is ESG reporting aligned with AML compliance frameworks in your organization?	452	2.91	1.064
5. Are there sufficient resources dedicated to ESG implementation?	452	2.65	1.119

Section 2 : Graph



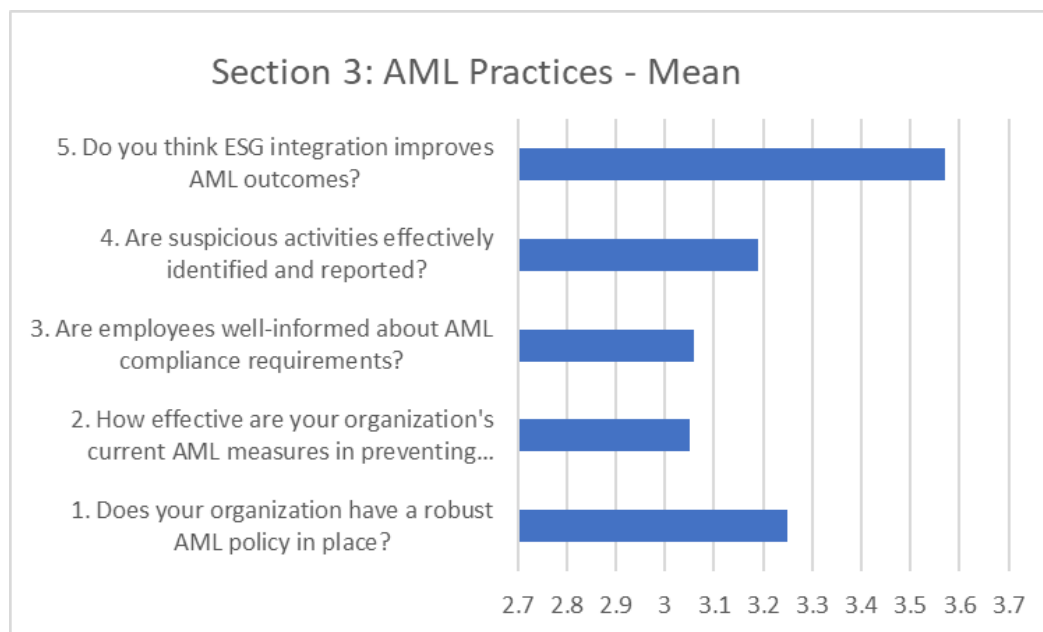
Section 3: AML Practices

The results indicate that while most organizations report having a robust AML policy in place (mean = 3.25 ± 1.051), the effectiveness of these measures in preventing money laundering is

slightly lower (mean = 3.05 ± 1.166), suggesting potential gaps between policy and practical implementation. Notably, respondents show stronger agreement (mean = 3.57 ± 1.552) that ESG integration can enhance AML outcomes, though the high standard deviation here reflects significant variability in opinions. Overall, the results suggest that while AML frameworks are established, their real-world effectiveness could be strengthened, and ESG principles may offer potential for improving AML effectiveness, if supported by clearer guidelines, training, and organizational commitment. The data highlights an opportunity for firms to bridge policy-practice gaps and leverage ESG strategies for better AML risk management.

Section 3: AML Practices	N	Mean	Std.
1. Does your organization have a robust AML policy in place?	425	3.25	1.051
2. How effective are your organization's current AML measures in preventing money laundering?	452	3.05	1.166
3. Are employees well-informed about AML compliance requirements?	452	3.06	1.054
4. Are suspicious activities effectively identified and reported?	452	3.19	1.117
5. Do you think ESG integration improves AML outcomes?	452	3.57	1.552

Section 3 : Graph



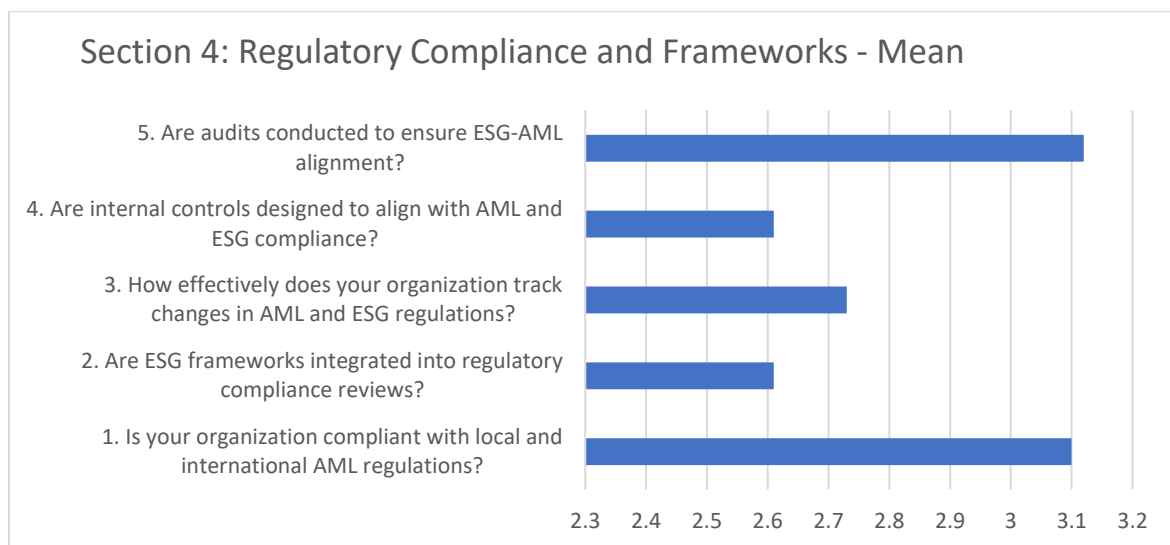
Section 4: Regulatory Compliance and Frameworks

Section 4 throws important insights about regulatory compliance and integration between AML and ESG frameworks across organizations. The data shows that organizations report moderate compliance with AML regulations (mean=3.10±1.210), suggesting most meet basic requirements but with room for improvement. However, the integration of ESG into compliance frameworks appears weaker (mean=2.61±1.303), indicating this remains an emerging practice rather than a standard procedure. Interestingly, audit practices for ESG-AML alignment show the highest score (mean=3.12) but also the highest variability (SD=1.724), suggesting some organizations prioritize this while others lag significantly. These findings collectively paint a picture of an industry in transition, where traditional AML compliance is reasonably established but ESG integration remains inconsistent, with substantial variation between organizations in their maturity levels regarding these interconnected compliance areas. The results underscore the need for more standardized approaches to incorporate ESG considerations into existing AML frameworks and regulatory processes.

Section 4: Regulatory Compliance and Frameworks	N	Mean	Std.
1. Is your organization compliant with local and international AML regulations?	452	3.1	1.21
2. Are ESG frameworks integrated into regulatory compliance reviews?	452	2.61	1.303

3. How effectively does your organization track changes in AML and ESG regulations?	452	2.73	1.264
4. Are internal controls designed to align with AML and ESG compliance?	452	2.61	1.26
5. Are audits conducted to ensure ESG-AML alignment?	452	3.12	1.724

Section 4 : Graph

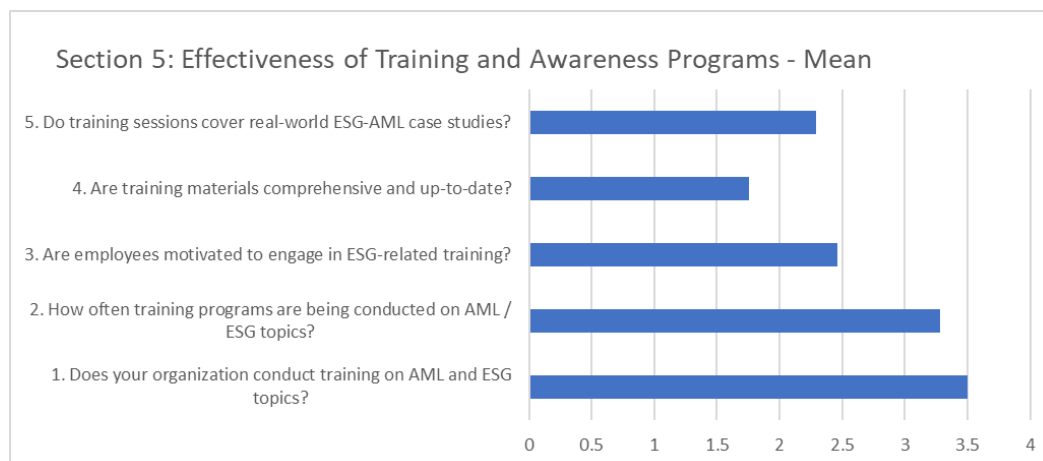


Section 5: Effectiveness of Training and Awareness Programs

The descriptive statistics for Section 5 reveal critical insights about the state of AML and ESG training programs in organizations. The data shows that while most organizations conduct training on AML and ESG topics (mean=3.50±1.421), there are significant gaps in program quality and effectiveness. A concerning finding is the low employee motivation for ESG-related training (mean=2.46±1.095), suggesting these programs may not be engaging or perceived as valuable. The most alarming result shows training materials are largely inadequate (mean=1.76±1.181), with the lowest score across all metrics, revealing a fundamental weakness in program content. These findings paint a picture of compliance training programs that, while existing in form, are failing in substance. Organizations appear to be ticking the box on training requirements without investing in quality content, practical applications, or employee engagement strategies. This suggests an urgent need for organizations to revamp their training approaches, focusing on more comprehensive, up-to-date materials, incorporating practical case studies, and finding ways to increase employee motivation and engagement with these critical topics.

Section 5: Effectiveness of Training and Awareness Programs	N	Mean	Std.
1. Does your organization conduct training on AML and ESG topics?	452	3.5	1.421
2. How often are training programs being conducted on AML / ESG topics?	452	3.28	1.777
3. Are employees motivated to engage in ESG-related training?	452	2.46	1.095
4. Are training materials comprehensive and up-to-date?	452	1.76	1.181
5. Do training sessions cover real-world ESG-AML case studies?	452	2.29	1.171

Section 5 : Graph



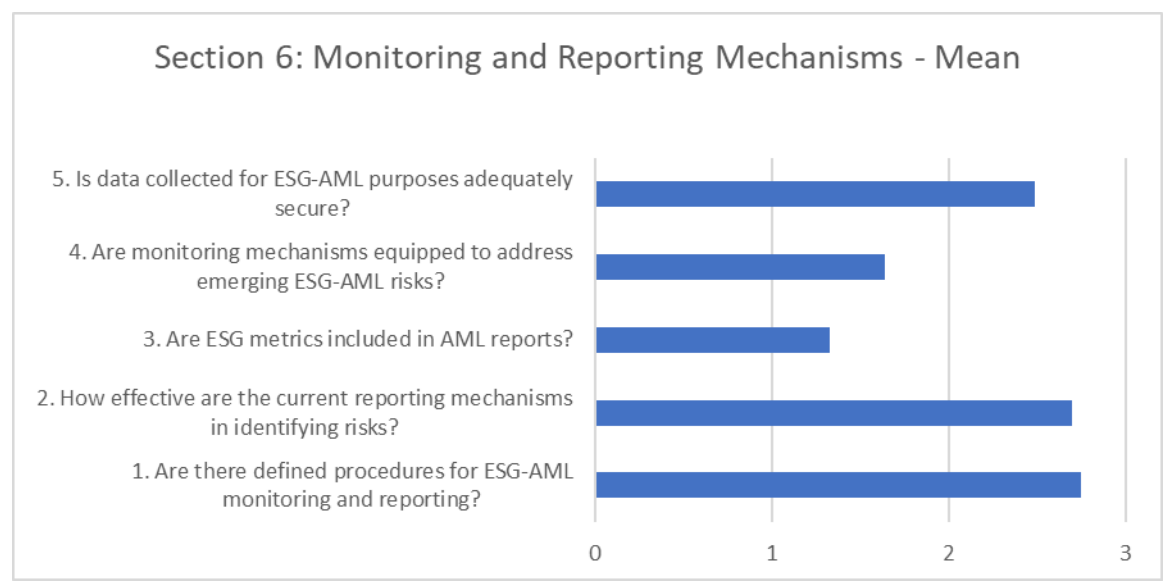
Section 6: Monitoring and Reporting Mechanisms

The descriptive statistics for Section 6 reveal significant gaps in ESG-AML monitoring and reporting mechanisms across organizations. The basic procedures for monitoring and reporting exist (mean=2.75±1.197). The most striking finding is the near absence of ESG metrics in AML reports (mean=1.33±1.199), indicating a severe disconnect between ESG factors and traditional AML compliance frameworks. Similarly, current monitoring mechanisms appear ill-equipped to handle emerging ESG-AML risks (mean=1.64±1.136), suggesting organizations are largely unprepared for evolving regulatory expectations. The consistently low means and relatively high standard deviations across all items highlight both the immaturity of current ESG-AML integration efforts and significant variability between organizations. These results underscore an urgent need for enhanced frameworks that properly incorporate ESG considerations into AML systems, along with improved risk detection capabilities and data protection measures to meet growing regulatory demands in this space.

Section 6: Monitoring and Reporting Mechanisms	N	Mean	Std.
1. Are there defined procedures for ESG-AML monitoring and reporting?	452	2.75	1.197
2. How effective are the current reporting mechanisms in identifying risks?	452	2.7	1.16
3. Are ESG metrics included in AML reports?	452	1.33	1.199
4. Are monitoring mechanisms equipped to address emerging ESG-AML risks?	452	1.64	1.136
5. Is the data collected for ESG-AML purposes adequately	452	2.49	1.349

secure?			
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Section 6 : Graph



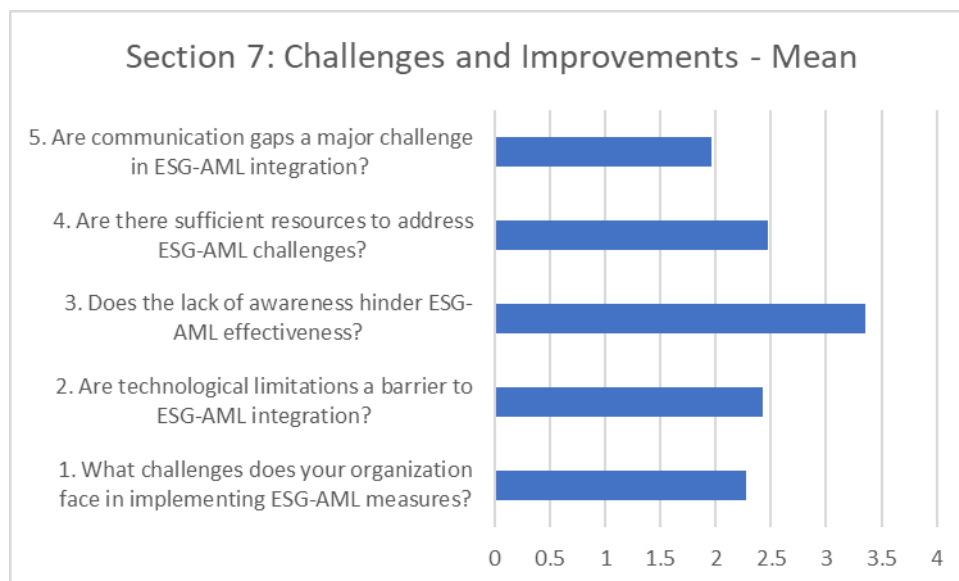
Section 7: Challenges and Improvements

This section highlights significant organizational challenges in implementing effective ESG-AML integration. The data reveals that lack of awareness stands out as the most substantial barrier (mean=3.36±1.746), suggesting many employees and stakeholders do not fully understand ESG's role in AML compliance. Also, a high standard deviation shows significant variation between organizations; some are far more advanced in their understanding than others.

Technological limitations (mean=2.42±1.201) and resource constraints (mean=2.47±1.127) emerge as moderate but persistent obstacles, indicating many organizations lack the proper tools and budget to effectively merge ESG with AML frameworks. These findings suggest that while structural and technological barriers exist, the fundamental challenge remains educational: organizations must first bridge the knowledge gap about ESG-AML connections before they can effectively address other implementation hurdles. These points substantiate that there is a need for comprehensive training programs, better change management strategies, and clearer regulatory guidance to help organizations overcome these multi-dimensional challenges.

Section 7: Challenges and Improvements	N	Mean	Std.
1. What challenges does your organization face in implementing ESG-AML measures?	452	2.27	1.145
2. Are technological limitations a barrier to ESG-AML integration?	452	2.42	1.201
3. Does the lack of awareness hinder ESG-AML effectiveness?	452	3.36	1.746
4. Are there sufficient resources to address ESG-AML challenges?	452	2.47	1.127
5. Are communication gaps a major challenge in ESG-AML integration?	452	1.96	1.183

Section 7 : Graph



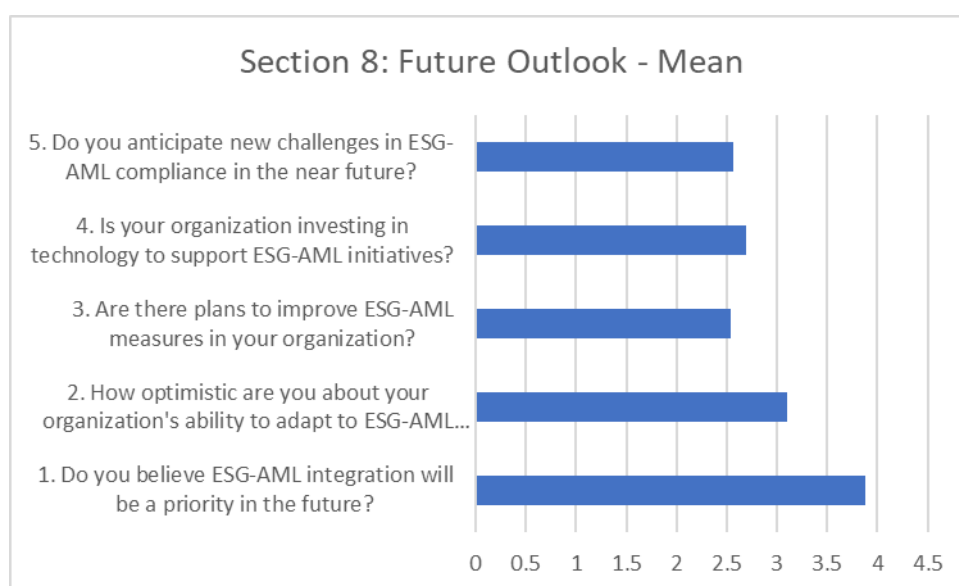
Section 8: Future Outlook

This Section reveals a compelling yet paradoxical outlook on ESG-AML integration. While respondents overwhelmingly believe ESG-AML will be a future priority (mean=3.88±1.268), their optimism about organizational adaptability is not encouraging (mean=3.10±1.103). This gap between industry-wide importance and internal confidence suggests organizations do recognize the inevitable shift towards ESG-AML convergence, but remain uncertain about their preparedness. The high standard deviations across all items highlight significant

disparities; some organizations are proactively preparing, while others lag. This divergence suggests a future where early adopters may gain regulatory and competitive advantages, while laggards face compliance risks. The data ultimately paints a picture of an industry at an inflection point. ESG-AML integration is recognized as inevitable, but widespread operational readiness remains lacking. Firms must bridge this gap quickly, through strategic investments, clearer roadmaps, and workforce training and upskilling, to avoid being left behind and becoming obsolete.

Section 8: Future Outlook	N	Mean	Std.
1. Do you believe ESG-AML integration will be a priority in the future?	452	3.88	1.268
2. How optimistic are you about your organization's ability to adapt to ESG-AML trends?	452	3.1	1.103
3. Are there plans to improve ESG-AML measures in your organization?	452	2.54	1.251
4. Is your organization investing in technology to support ESG-AML initiatives?	452	2.69	1.166
5. Do you anticipate new challenges in ESG-AML compliance in the near future?	452	2.56	1.224

Section 8 : Graph



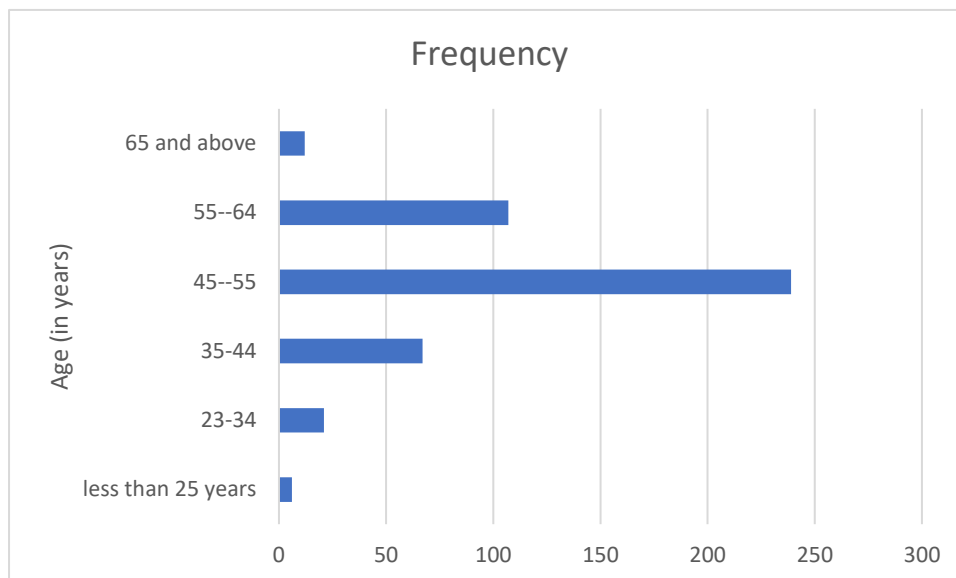
The above findings highlight a recognition of ESG-AML linkages but reveal gaps in implementation, training, regulatory alignment, and monitoring. Strengthening institutional commitment, improving training quality, and enhancing regulatory frameworks will be crucial for an effective ESG-AML integration. Organizations must address technological and awareness barriers to fully realize the potential of ESG in combating financial crime. Overall, the data underscores a recognition of ESG-AML synergies but highlights significant implementation gaps in training, regulatory alignment, and monitoring, necessitating a stronger commitment and resource allocation to bridge these disparities. It is therefore imperative for Indian banking and financial institutions to work towards plugging these gaps, else they may not be able to give healthy competition globally, and may invite their downfall, being wiped out.

Demographic Analysis

Age (in years)

Age (in years)	Frequency	Percent	Valid Percent	Cumulative Percent
less than 25 years	6	1.3	1.3	1.3
23-34	21	4.6	4.6	6
35-44	67	14.8	14.8	20.8
45--55	239	52.9	52.9	73.7
55--64	107	23.7	23.7	97.3
65 and above	12	2.7	2.7	100
Total	452	100	100	

Age : Graph

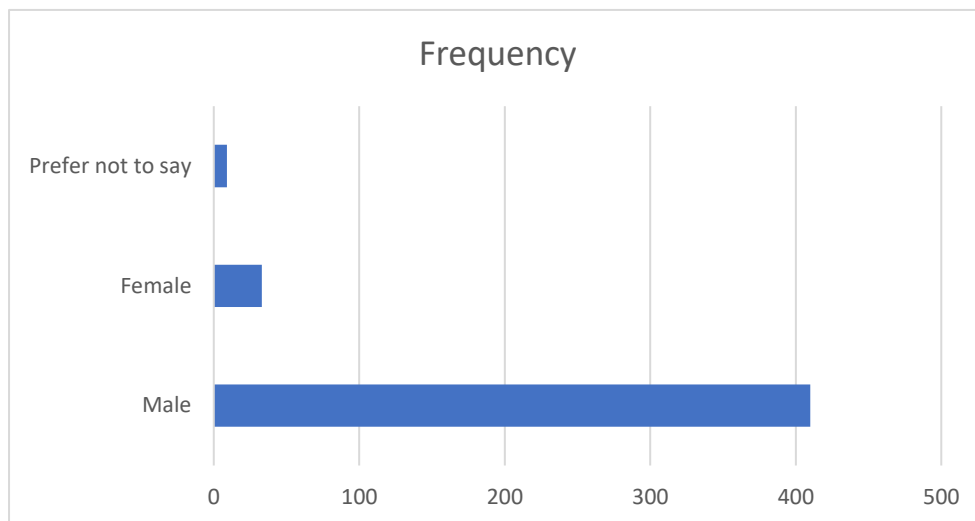


The age distribution data reveals that most respondents (52.9%) fall within the **45–55** age group, indicating a middle-aged dominance in the sample. Younger demographics are underrepresented, with only **1.3%** under 25 years. The cumulative percentages show that nearly **74%** of respondents are under 55, and **97.3%** are under 65, highlighting a predominantly working-age population with limited representation from both younger and older age brackets.

Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	410	90.7	90.7	90.7
Female	33	7.3	7.3	98
Prefer not to say	9	2	2	100
Total	452	100	100	

Gender: Graph

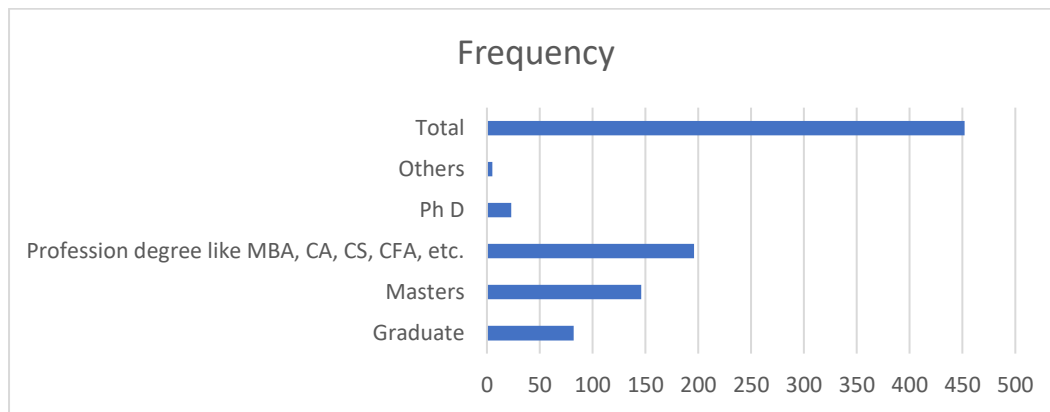


The gender distribution data indicates a significant imbalance, with males overwhelmingly representing 90.7% of the sample, while females constitute only 7.3%, with a small minority (2.0%) choosing "Prefer not to say", suggesting limited gender diversity in the dataset. The cumulative percentage confirms that 98% of respondents identified as either male or female, with males dominating the sample. This skewed distribution may reflect gender disparities in the studied population, occupational field, or response bias, warranting caution in generalizing findings across genders.

Qualifications

Qualification	Frequency	Percent	Valid Percent	Cumulative Percent
Graduate	82	18.1	18.1	18.1
Masters	146	32.3	32.3	50.4
Professional degrees like MBA, CA, CS, CFA, etc.	196	43.4	43.4	93.8
Ph D	23	5.1	5.1	98.9
Others	5	1.1	1.1	100
Total	452	100	100	

Qualifications: Graph

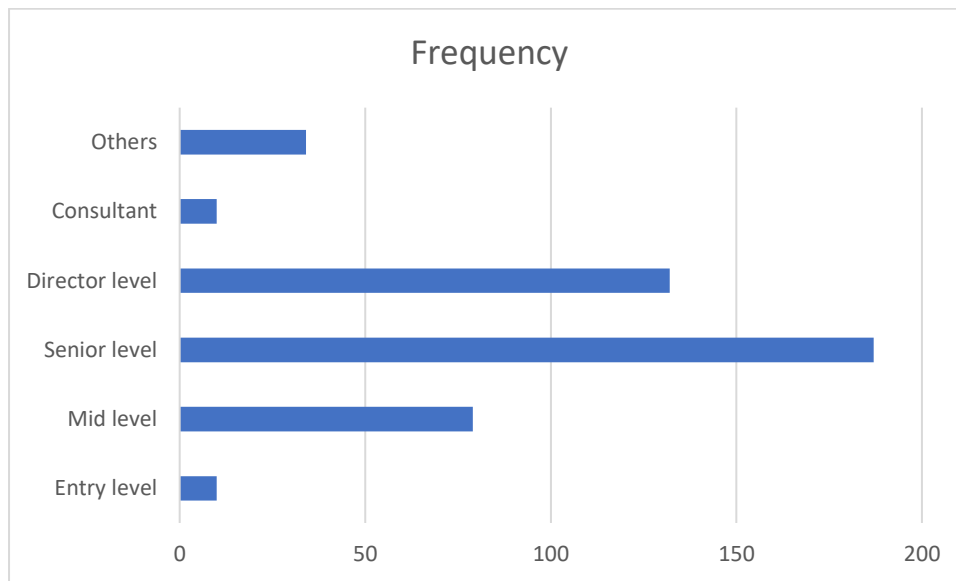


The data represents a significant proportion, 43.4%, that hold professional degrees such as MBA, CA, CS, or CFA, making it the most common qualification. The data suggests a well-educated group, with over 80% holding at least a Master's or professional degree.

Job Role

Job Role	Frequency	Percent	Valid Percent	Cumulative Percent
Entry level	10	2.2	2.2	2.2
Mid level	79	17.5	17.5	19.7
Senior level	187	41.4	41.4	61.1
Director level	132	29.2	29.2	90.3
Consultant	10	2.2	2.2	92.5
Others	34	7.5	7.5	100
Total	452	100	100	

Job Role: Graph

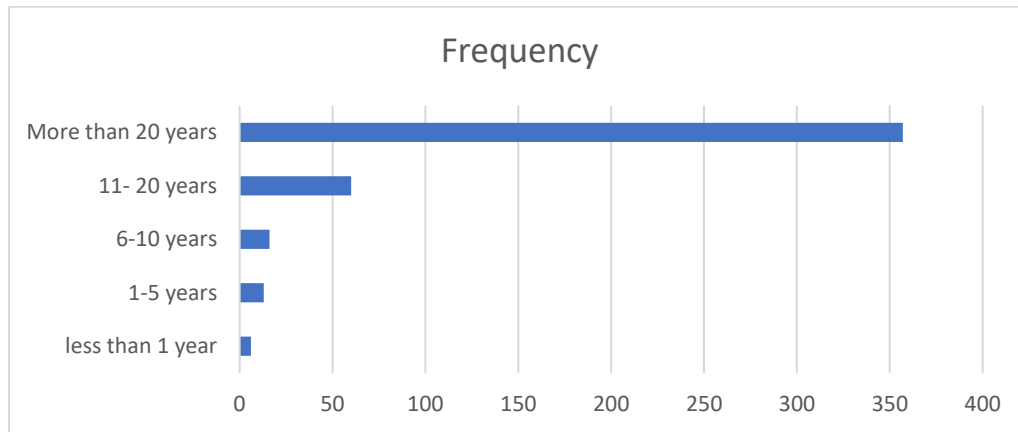


Among the 452 respondents, the largest proportion, 41.4%, are in senior-level positions, indicating a highly experienced workforce. This is followed by 29.2% in director-level roles, suggesting a strong presence of leadership and highlighting a mature professional demographic. Overall, over 70% of participants hold senior or higher-level roles, reflecting a predominantly high-ranking respondent base.

Work Experience

Work Experience	Frequency	Percent	Valid Percent	Cumulative Percent
less than 1 year	6	1.3	1.3	1.3
1-5 years	13	2.9	2.9	4.2
6-10 years	16	3.5	3.5	7.7
11- 20 years	60	13.3	13.3	21
More than 20 years	357	79	79	100
Total	452	100	100	

Work Experience: Graph



The work experience distribution reveals that the vast majority of respondents (79% of individuals) have more than 20 years of experience, indicating a highly seasoned workforce. A smaller but notable proportion (13.3% or 60 respondents) have 11–20 years of experience. This suggests that the sample is dominated by senior professionals, with very limited representation from younger individuals. The cumulative percentages show that over 92% of respondents have at least 11 years of experience, reinforcing the trend of an experienced and likely older demographic, which aligns with the earlier age distribution data.

Chi-Square Test

Pearson Chi-Square	AGE			GENDER			QUALIFICATION			EXPERIENCE			JOB ROLE		
Variable Pair	Value	df	Asymp. Sig. (2-sided) p value	Value	df	Asymp. Sig. (2-sided) p value	Value	df	Asymp. Sig. (2-sided) p value	Value	df	Asymp. Sig. (2-sided) p value	Value	df	Asymp. Sig. (2-sided) p value
Section 1: General Awareness and Understanding	225.5	65	0	30.3	26	0.3	176.4	52	0	107.5	52	0	323.2	78	0
Section 2: Implementation of ESG Practices	181.6	80	0	92.5	32	0	148.8	64	0	183.4	64	0	314.1	96	0
Section 3: AML Practices	224.3	85	0	74.3	34	0	255.8	68	0	220.9	68	0	320.2	102	0
Section 4: Regulatory Compliance and Frameworks	265.6	95	0	132.7	38	0	235.6	76	0	222.5	76	0	374.7	114	0
Section 5: Effectiveness of Training and Awareness Programs	124.5	65	0	113.2	26	0	107.6	52	0	122.1	52	0	162.9	78	0
Section 6: Monitoring and Reporting Mechanisms	202	75	0	106.7	30	0	133.4	60	0	198.2	60	0	218.9	90	0
Section 7: Challenges and Improvements	195.6	80	0	92.8	32	0	196	64	0	180.6	64	0	276.5	96	0
Section 8: Future Outlook	225	80	0	57.6	32	0	187.6	64	0	150.8	64	0	269	96	0

Age

The Chi-Square tests examining the association between Age and responses across the eight ESG-AML sections reveal statistically significant relationships in all sections, as indicated by the Pearson Chi-Square values (all p-values = 0.000). This suggests that age groups differ significantly in their perceptions, awareness, or engagement levels across all ESG-AML dimensions, from general awareness (Section 1) to future outlook (Section 8). Overall, while the test results indicate significant associations between age and various ESG-AML

dimensions, further analysis with more robust methods or adjusted groupings may be needed to confirm these findings due to the high number of low-frequency cells.

Gender

The Chi-Square tests evaluating the association between gender and perceptions across the eight ESG-AML sections reveal mixed patterns of statistical significance. Pearson Chi-Square values indicate no significant relationship in Section 1 ($p = 0.3$), suggesting gender does not significantly influence general awareness and understanding of ESG principles. However, for Sections 2 through 7, the Pearson values are significant ($p = 0.000$), indicating that gender is associated with differing perceptions and experiences. This limitation, due to sparse data in some gender-response combinations, may affect the validity of conclusions. Thus, while notable gender differences are observed in several ESG-AML areas, these results should be interpreted cautiously and ideally validated through alternative statistical approaches or larger balanced samples.

Qualification

The Chi-Square tests show statistically significant results in all sections (Pearson Chi-Square p value = 0.000), indicating that respondents' educational backgrounds significantly influence their perceptions and experiences related to ESG-AML dimensions. In summary, while educational qualification significantly impacts ESG-AML perceptions across all dimensions, the validity of these associations is somewhat limited by low expected frequencies in many cells, and interpretations, especially regarding trend directions, should be validated through alternate statistical approaches or larger balanced samples.

Experience

The Chi-Square tests assessing the relationship between work experience and ESG-AML perception across all eight sections reveal statistically significant associations ($p = 0.000$) for each section, indicating that work experience plays a role in shaping views on ESG-AML practices. Again, while overall associations between work experience and ESG-AML perceptions exist, the lack of significant linear trends in most sections and violation of expected frequency conditions indicate that these relationships may be complex or non-linear. Therefore, the result should be validated through alternative statistical approaches or larger balanced samples.

Job Profile

The Chi-Square tests reveal statistically significant Pearson Chi-Square values ($p = 0.000$), indicating that job roles significantly influence perceptions of ESG-AML factors. In summary, job roles significantly affect ESG-AML perceptions, particularly in areas involving awareness, implementation, monitoring, and compliance, though data quality concerns (cell size issues) necessitate further validation using different statistical methods.

Factor Analysis

KMO & Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.914
	Approx. Chi-Square	2526.629
Bartlett's Test of Sphericity	df	28
	Sig.	0

Factor Analysis Interpretation

This factor analysis was conducted to examine the underlying structure of the **eight ESG-AML sections** and determine whether they can be reduced to a smaller set of latent factors. Below is a detailed breakdown of the results :

KMO and Bartlett's Test

Kaiser-Meyer-Olkin (KMO) Measure = 0.914

- Indicates **excellent sampling adequacy** (values > 0.9 are ideal).
- Suggests the dataset is highly suitable for factor analysis.

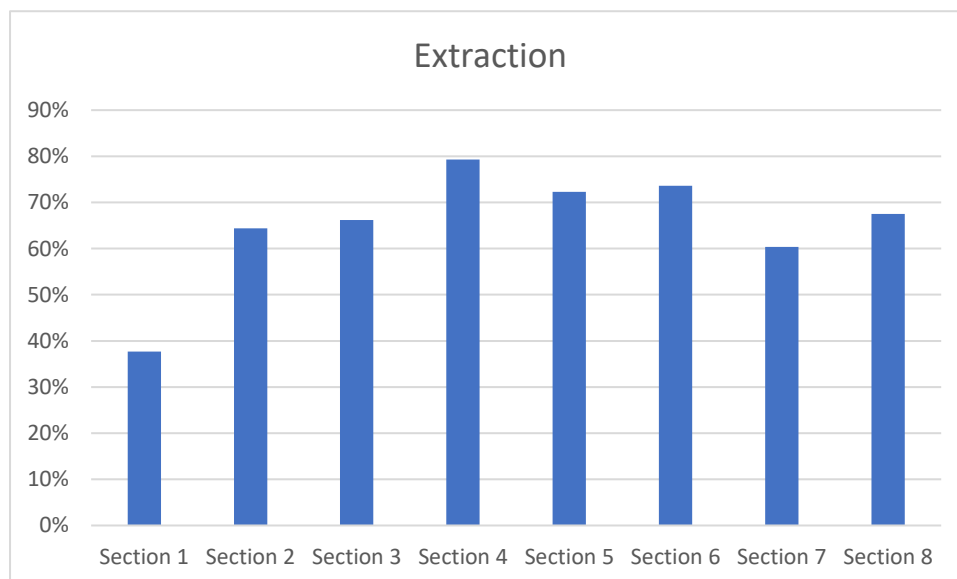
Bartlett's Test of Sphericity

- Chi-Square = 2526.629, $df = 28$, $p < 0.001$
- Confirms that the correlations between variables are strong enough for factor analysis, thus rejecting the null hypothesis that the variables are uncorrelated.

a) Communalities

Communalities	Initial	Extraction
Section 1	1.000	0.377
Section 2	1.000	0.644
Section 3	1.000	0.662
Section 4	1.000	0.793
Section 5	1.000	0.723
Section 6	1.000	0.736
Section 7	1.000	0.604
Section 8	1.000	0.675

Extraction Method: Principal Component Analysis.



Communalities show how much variance in each variable is explained by the extracted factor (s).

1. High Extraction Values (>0.6 or > 60 %) :

- Section 4 (0.793), Section 6 (0.736), Section 5 (0.723), Section 8 (0.675), Section 3 (0.6)
- These sections are well-represented by the extracted factor.

2. Moderate Extraction Values (~0.6):

- Section 2 (0.644), Section 7 (0.604)
- These sections have reasonable but lower representation.

3. **Low Extraction Value (0.377):**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.215	65.186	65.186	5.215	65.186	65.186
2	0.812	10.153	75.339			
3	0.537	6.716	82.055			
4	0.441	5.512	87.567			
5	0.306	3.822	91.39			
6	0.284	3.546	94.936			
7	0.224	2.804	97.74			
8	0.181	2.26	100			

- Section 1 has the weakest representation, meaning it may not fit well with the other sections in a single factor.

b) Total Variance Explained

- Only 1 component (factor) was retained (eigenvalue > 1 rule).
- **Eigenvalue = 5.215**, explaining **65.186% of total variance** (strong explanatory power).
- The remaining **7 components** had eigenvalues < 1 and were **not considered significant**.

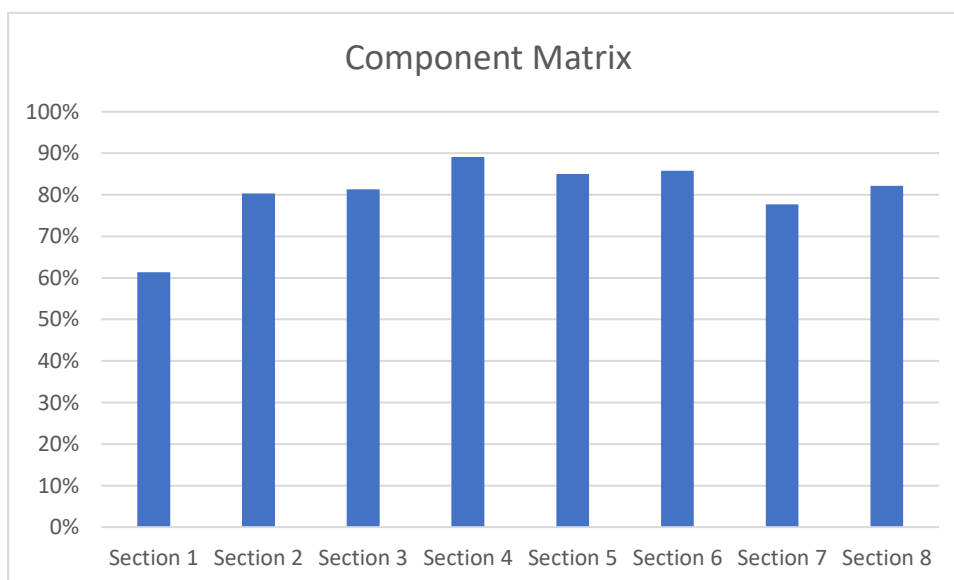
A single dominant factor explains most of the variance (65.2%), suggesting that ESG-AML measures across these sections are highly interconnected and could potentially be represented by a unified construct (e.g., Overall ESG-AML Compliance Strength).

Extraction Method: Principal Component Analysis

Component Matrix	Component
	1
Section 1	0.614
Section 2	0.803
Section 3	0.813
Section 4	0.891
Section 5	0.85
Section 6	0.858
Section 7	0.777
Section 8	0.822

Extraction Method: Principal Component Analysis.^a

- a. 1 components extracted.



Section 1: General Awareness and Understanding

The factor loading for Section 1 is **0.614**, the lowest among all components, and its communality value is **0.377**, indicating that only 37.7% of the variance in this section is explained by the extracted factor. This suggests that general awareness and understanding of ESG-AML principles may be conceptually distinct or less aligned with the unified construct captured by the factor analysis.

Section 2: Implementation of ESG Practices

Section 2 displays a strong factor loading of **0.803** and a communality value of **0.644**, indicating that over 64% of its variance is explained by the principal factor. This suggests a robust alignment between ESG implementation practices and the overarching ESG-AML compliance structure. Organizations that actively integrate ESG principles into policies show strong coherence with the unified compliance model uncovered in the analysis.

Section 3: AML Practices

With a factor loading of **0.813** and communality at **0.662**, Section 3 is well-represented within the single factor. This supports the idea that effective AML strategies are tightly coupled with ESG initiatives. The data implies that organizations that prioritize AML efforts also tend to show strong performance in ESG-aligned activities, suggesting a mutually reinforcing dynamic.

Section 4: Regulatory Compliance and Frameworks

Section 4 has the **highest loading (0.891)** and **highest communality (0.793)** of all sections. This underscores that regulatory compliance, especially alignment with both local and global AML standards, is central to and strongly associated with the unified ESG-AML compliance factor. This dimension is likely the structural backbone of the integrated framework, driving consistency and accountability.

Section 5: Effectiveness of Training and Awareness Programs

Training-related perceptions load at **0.850** with a communality of **0.723**, indicating that this section is a key component of the ESG-AML integration. The high loading confirms that internal capacity-building efforts, particularly those that enhance awareness through real-world case studies, are instrumental in strengthening overall compliance readiness and cultural adoption of ESG-AML values.

Section 6: Monitoring and Reporting Mechanisms

Section 6 also demonstrates a high factor loading of **0.858** and communality of **0.736**. This shows that organizations with strong monitoring and reporting systems, especially those incorporating ESG metrics into AML processes, are significant contributors to a cohesive

ESG-AML structure. These mechanisms serve as operational enablers, reinforcing early detection and risk management.

Section 7: Challenges and Improvements

With a loading of **0.777** and a communality of **0.604**, Section 7 moderately contributes to the unified factor. It identifies perceived barriers, such as technology limitations and communication gaps, that may hinder ESG-AML integration. Despite being framed around obstacles, the section's strong loading suggests that how an organization understands and addresses these challenges is integral to its compliance maturity.

Section 8: Future Outlook

Section 8 records a strong loading of **0.822** and communality of **0.675**, indicating that future-readiness, defined through optimism about ESG-AML integration and tech investments, is a critical part of the shared compliance structure. The findings suggest that forward-thinking organizations are better positioned to adapt to evolving compliance environments.

Overall Conclusion on Factor Analysis

The KMO value of 0.914 and significant Bartlett's test ($p < 0.001$) confirm that the dataset is highly suitable for factor analysis. A single dominant component was extracted, explaining 65.19% of the total variance. This result strongly supports the notion that the eight sections collectively measure a unified latent construct, which can be interpreted as "ESG-AML Compliance Strength." This factor represents the holistic integration of ESG principles and AML frameworks across multiple operational dimensions like strategic, regulatory, cultural, financial, etc.

T-Tests Case 1

Sections	Demographic	N	Mean	Std. Deviation	Std. Error Mean
Section 1	3	338	3.218	0.81773	0.04448
	2	56	3.063	0.64886	0.08671
Section 2	3	338	3.098	0.82343	0.04479
	2	56	3.150	0.84186	0.1125
Section 3	3	338	3.225	0.91559	0.0498

	2	56	3.443	0.59295	0.07924
Section 4	3	338	2.808	1.07436	0.05844
	2	56	3.048	1.02726	0.13727
Section 5	3	338	2.487	0.97398	0.05298
	2	56	2.665	0.90237	0.12058
Section 6	3	338	2.169	0.97494	0.05303
	2	56	2.232	0.97367	0.13011
Section 7	3	338	2.519	1.08025	0.05876
	2	56	2.304	0.99452	0.1329
Section 8	3	338	2.944	0.98354	0.0535
	2	56	2.939	0.89355	0.11941

Independent Samples T-Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig. (p value)	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One- Sided p	Two- Sided p			Lower	Upper
Section 1	Equal variances assumed	2.906	0.089	1.355	392	0.088	0.176	0.1557	0.11487	-0.07015	0.38154
	Equal variances not assumed			1.598	86.773	0.057	0.114	0.1557	0.09745	-0.03801	0.3494

Section 2	Equal variances assumed	0.532	0.466	- 0.439	392	0.33	0.661	- 0.05237	0.11918	- 0.28668	0.18194
	Equal variances not assumed			- 0.432	73.516	0.333	0.667	- 0.05237	0.12109	- 0.29366	0.18893
Section 3	Equal variances assumed	11.2	<.001	- 1.722	392	0.043	0.086	- 0.21801	0.1266	- 0.46691	0.0309
	Equal variances not assumed			- 2.329	104.38	0.011	0.022	- 0.21801	0.09359	- 0.40358	- 0.03243
Section 4	Equal variances assumed	1.147	0.285	- 1.554	392	0.06	0.121	- 0.23943	0.15407	- 0.54234	0.06347
	Equal variances not assumed			- 1.605	76.331	0.056	0.113	- 0.23943	0.14919	- 0.53656	0.05769
Section 5	Equal variances assumed	1.063	0.303	- 1.283	392	0.1	0.2	- 0.17849	0.13912	-0.452	0.09502
	Equal variances not assumed			- 1.355	77.808	0.09	0.179	- 0.17849	0.13171	- 0.44071	0.08373
Section 6	Equal variances assumed	0.007	0.935	- 0.447	392	0.327	0.655	- 0.06291	0.14064	- 0.33941	0.21358
	Equal variances not assumed			- 0.448	74.455	0.328	0.656	- 0.06291	0.1405	- 0.34284	0.21702
Section 7	Equal variances assumed	1.358	0.245	1.397	392	0.082	0.163	0.21536	0.15418	- 0.08776	0.51849

	Equal variances not assumed			1.4 82	78. 11 7	0.0 71	0.14 2	0.2153 6	0.1453 1	- 0.0739 2	0.504 64
Section 8	Equal variances assumed	0.74	0.39	0.0 36	39 2	0.4 86	0.97 1	0.0050 9	0.1401 5	- 0.2704 5	0.280 64
	Equal variances not assumed			0.0 39	78. 77 9	0.4 85	0.96 9	0.0050 9	0.1308 4	- 0.2553 5	0.265 54

Section 1: General Awareness and Understanding

Related Hypotheses:

- H1.1: Higher familiarity with ESG principles enhances perceived financial transparency
- H1.2: Awareness of ESG-AML link influences perception of its risk mitigation role

Group Statistics:

Group 3.00 (mean = 3.218) scored higher than Group 2.00 (mean = 3.063), indicating greater ESG awareness and belief in its financial/AML relevance in that demographic. Group 3.00 responses also showed slightly more variability.

Independent Samples Test:

Levene's test indicates homogeneity of variances ($p = 0.089$). The t-test ($p = 0.176$) shows the difference is not statistically significant, suggesting no strong evidence that demographic differences influence perceived ESG awareness or its AML role (H1.1 and H1.2 not supported by significant mean difference).

Section 2: Implementation of ESG Practices

Related Hypotheses:

- H2.1: ESG policy integration improves AML alignment.
- H2.2: Monitoring ESG practices supports decision-making.

Group Statistics:

Group 2.00 (mean = 3.150) scored marginally higher than Group 3.00 (mean = 3.098). Both groups had similar variability, implying comparable perceptions on ESG implementation.

Independent Samples Test:

The p-value from the t-test is **0.661** (not significant). Hence, no significant demographic impact is observed in implementing ESG principles (H2.1, H2.2 not confirmed through group difference).

Section 3: AML Practices

Related Hypotheses:

- H3.1: Robust AML policies improve detection/reporting.
- H3.2: ESG integration enhances AML outcomes.

Group Statistics:

Group 2.00 (mean = 3.443) significantly outperforms Group 3.00 (mean = 3.225), indicating better AML policy perception and outcome belief in Group 2.00.

Independent Samples Test:

Levene's test is significant, so an equal variance t-test is used ($p < 0.01$). This indicates a statistically significant difference, supporting H3.1 and H3.2, where Group 2.00 associates ESG integration with better AML outcomes.

Section 4: Regulatory Compliance and Frameworks

Related Hypotheses:

- H4.1: AML compliance enhances ESG integration.
- H4.2: Audits improve ESG-AML alignment.

Group Statistics:

Group 2.00 again scored higher (3.048 vs. 2.808), implying better perception of regulatory synergy between ESG and AML.

Independent Samples Test:

Though the difference leans toward Group 2.00, the p-value = 0.121 is not significant. Hence, no statistical evidence supports demographic variation for H4.1 and H4.2.

Section 5: Effectiveness of Training and Awareness Programs

Related Hypotheses:

- H5.1: Training enhances engagement.
- H5.2: Case-based learning is more effective.

Group Statistics:

Group 2.00 (mean = 2.665) is slightly ahead of Group 3.00 (2.487), indicating better training experiences or exposure.

Independent Samples Test:

With a p-value of 0.200, the result is not significant. Though Group 2.00 rates training higher, the difference is not large enough to statistically confirm H5.1 or H5.2 across demographics.

Section 6: Monitoring and Reporting Mechanisms

Related Hypotheses:

- H6.1: ESG-AML monitoring improves risk detection.
- H6.2: ESG metrics strengthen AML reports.

Group Statistics:

Group 2.00 again scores marginally higher (2.232 vs. 2.169). Both groups show similar variation, suggesting uniform perception of monitoring systems.

Independent Samples Test:

No significant difference found ($p = 0.655$). Thus, demographic background does not strongly affect opinions on ESG-AML monitoring effectiveness (H6.1, H6.2).

Section 7: Challenges and Improvements

Related Hypotheses:

- H7.1: Tech limitations hinder ESG-AML integration.
- H7.2: Communication gaps reduce effectiveness.

Group Statistics:

Group 3.00 shows higher concern (mean = 2.519) than Group 2.00 (2.304), suggesting greater sensitivity to challenges in integration.

Independent Samples Test:

While the mean difference is noticeable, the p -value = 0.163 is not statistically significant. Therefore, no strong evidence supports H7.1 or H7.2 varying by demographic.

Section 8: Future Outlook**Related Hypotheses:**

- H8.1: ESG-AML integration fuels future compliance optimism.
- H8.2: Tech investment improves readiness.

Group Statistics:

Means are nearly identical: 2.944 (Group 3.00) vs. 2.939 (Group 2.00), showing a shared positive outlook toward ESG-AML progress.

Independent Samples Test:

With $p = 0.971$, there is no significant difference, supporting a universal future optimism across demographics for H8.1 and H8.2.

Overall Summary:

Only Section 3 (AML Practices) showed a significant group difference, validating the associated hypotheses (H3.1 and H3.2). All other sections showed no statistically significant differences across the demographic groups, although some sections showed directional tendencies. This suggests that AML perceptions are more sensitive to demographic influence than ESG awareness or operational practices.

T-Test Case 2

Group Statistics					
	Demographic	N	Mean	Std. Deviation	Std. Error Mean
2. How effective are your organization's current AML measures in preventing money laundering?	3	338	3.04	1.175	0.064
	2	56	3.41	1.058	0.141
5. Do training sessions cover real-world ESG-AML case studies?	3	338	2.2	1.156	0.063
	2	56	2.61	1.171	0.156

The group statistics and independent samples t-test reveal significant differences in responses between the two demographic groups (coded 3.00 and 2.00) regarding perceptions of AML effectiveness and ESG-AML training content. For the question on AML effectiveness, Group 2.00 reported a higher mean score (3.41) than Group 3.00 (3.04), indicating that Group 2 perceives their organization's AML measures as more effective. The difference is statistically not significant ($p = 0.18$), suggesting that demographic background does not influence perceptions of AML performance. Similarly, for the question on whether training sessions cover real-world ESG-AML case studies, Group 2.00 again rated this higher (mean = 2.61) than Group 3.00 (2.20), with the difference also statistically not significant ($p = 0.592$). This implies that Group 2 believes training content is more practical and contextually rich. In both cases, the significant t-test results confirm that these demographic differences are not due to random variation but reflect perceptual or experiential gaps regarding ESG-AML training and controls.

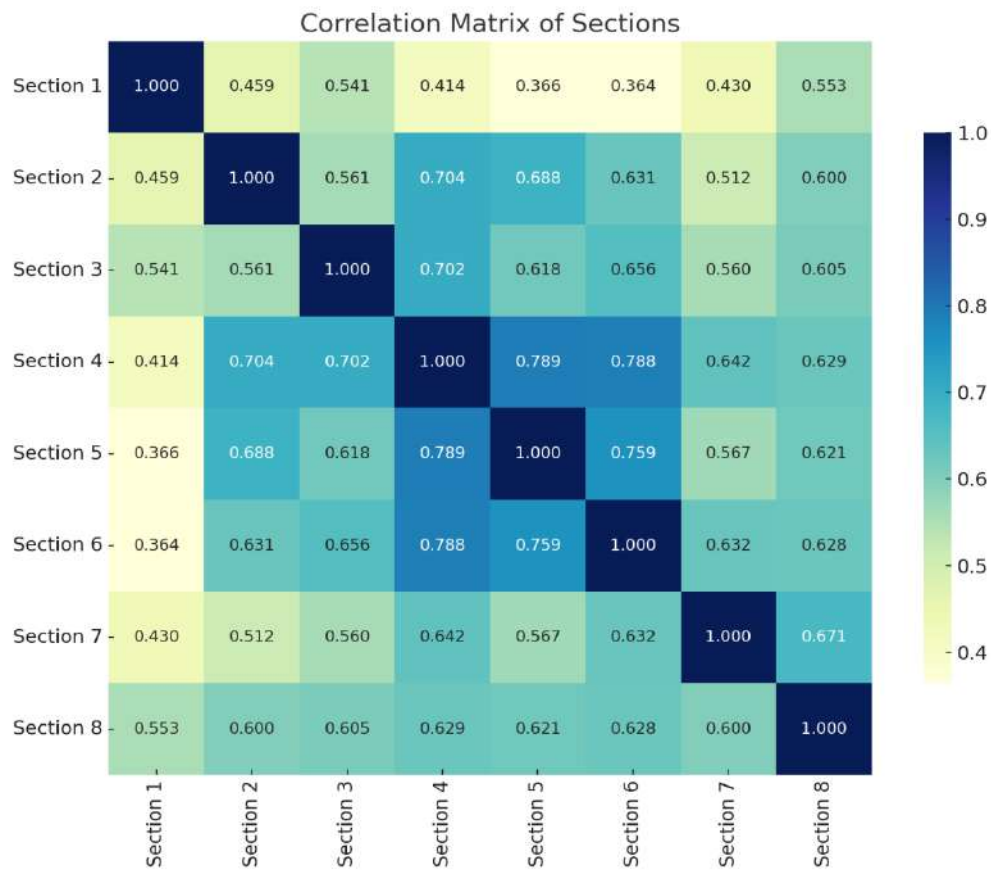
CORRELATION TEST

[illegible]

		1	2	3	4	5	6	7	8
Section 1	Pearson Correlation	1	.459**	.541**	.414**	.366**	.364**	.430**	.553**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	452	452	452	452	452	452	452	452
Section 2	Pearson Correlation	.459**	1	.561**	.704**	.688**	.631**	.512**	.600**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001	<.001	<.001
	N	452	452	452	452	452	452	452	452
Section 3	Pearson Correlation	.541**	.561**	1	.702**	.618**	.656**	.560**	.605**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	<.001	<.001
	N	452	452	452	452	452	452	452	452
Section 4	Pearson Correlation	.414**	.704**	.702**	1	.789**	.788**	.642**	.629**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001	<.001	<.001
	N	452	452	452	452	452	452	452	452
Section 5	Pearson Correlation	.366**	.688**	.618**	.789**	1	.759**	.567**	.621**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001	<.001	<.001
	N	452	452	452	452	452	452	452	452
Section 6	Pearson Correlation	.364**	.631**	.656**	.788**	.759**	1	.632**	.628**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001		<.001	<.001
	N	452	452	452	452	452	452	452	452
Section 7	Pearson Correlation	.430**	.512**	.560**	.642**	.567**	.632**	1	.671**

	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001		<.001
	N	452	452	452	452	452	452	452	452
Section 8	Pearson Correlation	.553**	.600**	.605**	.629**	.621**	.628**	.671**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	
	N	452	452	452	452	452	452	452	452
**. Correlation (r) is significant when it is less than the 0.01 level (2-tailed).									

The correlation matrix reveals strong and statistically significant positive relationships ($p < 0.01$) between all eight sections of the study, indicating a high level of interconnectedness among the constructs. Section 1 (General Awareness and Understanding) is positively correlated with all other sections, especially Section 8 (Future Outlook, $r = .553$) and Section 3 (AML Practices, $r = .541$), suggesting that greater ESG-AML awareness enhances optimism about future compliance and improves AML effectiveness. Section 2 (Implementation of ESG Practices) shows particularly strong correlations with Section 4 (Regulatory Compliance, $r = .704$) and Section 5 (Training Effectiveness, $r = .688$), indicating that effective ESG implementation is closely tied to compliance alignment and training impact. Section 3 (AML Practices) is also strongly linked to Sections 4 (Regulatory Compliance) and 6 (Monitoring), reflecting that robust AML procedures are supported by compliance frameworks and monitoring mechanisms. Notably, Section 4 consistently shows the highest correlations with multiple sections (e.g., $r = .789$ with Section 5 and $r = .788$ with Section 6), emphasizing its central role in the ESG-AML ecosystem. Lastly, Section 8 (Future Outlook) correlates strongly with Section 7 (Challenges and Improvements, $r = .671$), showing that addressing current barriers enhances confidence in future readiness. Overall, these findings highlight that progress in one ESG-AML dimension is likely to reinforce improvements across others, supporting the integrated nature of ESG-AML strategies.



Notes:

- **All correlations are significant at the 0.01 level (2-tailed, p value).
- **Sample size (N):** 452 for all correlations.
- **Strongest correlations (≥ 0.7):**
 - Section 4 ↔ Section 5 (0.789**)
 - Section 4 ↔ Section 6 (0.788**)
 - Section 5 ↔ Section 6 (0.759**)
 - Section 2 ↔ Section 4 (0.704**)
 - Section 3 ↔ Section 4 (0.702**)

REGRESSION

Multivariate regression analysis is a statistical technique used to examine the relationship between multiple independent variables (predictors) and a single dependent variable (outcome). Unlike simple linear regression, which considers only one predictor, multivariate regression allows us to assess the combined effect of several factors on the outcome variable. This method is particularly useful in business, economics, and social sciences, where outcomes are often influenced by multiple interrelated variables.

By using multivariate regression will evaluate whether Sections 1 to 7, representing key organizational and operational factors, collectively influence Section 8 (Future Outlook). By analyzing these relationships, we aim to determine whether the combined predictors significantly contribute to shaping future expectations.

H₀ The combined influence of Sections 1 to 7 has no significant effect on Section 8 (Future Outlook).

H₁ (Alternative Hypothesis): The combined influence of Sections 1 to 7 significantly predicts Section 8 (Future Outlook)

Independent Variable:

Section 1: General Awareness and Understanding

Section 2: Implementation of ESG Practices

Section 3: AML Practices

Section 4: Regulatory Compliance and Frameworks

Section 5: Effectiveness of Training and Awareness

Section 6: Monitoring and Reporting Mechanisms

Section 7: Challenges and Improvements

Dependent Variable

Section 8: Future Outlook

Using Ordinary Least Squares (OLS) Regression Model Formula:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \epsilon_i Y_i$$

Variables and Definitions:

- **Y_i** : Predicted value of Section 8 (Future Outlook) for respondent i .
- **β_0** : Intercept (constant term).
- **β_1 to β_7** : Regression coefficients for each independent variable.
- **X_{1i}** : Section 1: General Awareness and Understanding.
- **X_{2i}** : Section 2: ESG Implementation.
- **X_{3i}** : Section 3: AML Practices.
- **X_{4i}** : Section 4: Regulatory Compliance.
- **X_{5i}** : Section 5: Training & Awareness Effectiveness.
- **X_{6i}** : Section 6: Monitoring & Reporting Mechanisms.
- **X_{7i}** : Section 7: Challenges & Improvements.
- **ϵ_i** : Error term (residual), assumed to be normally distributed with mean zero and constant variance σ^2 .

This model predicts the Future Outlook (Y_i) based on the seven sections (X_{1i} to X_{7i}), with each coefficient (β_1 to β_7) representing the influence of the respective section on the outcome. The error term (ϵ_i) accounts for unexplained variability.

Regression Results: Section 8 as Dependent Variable

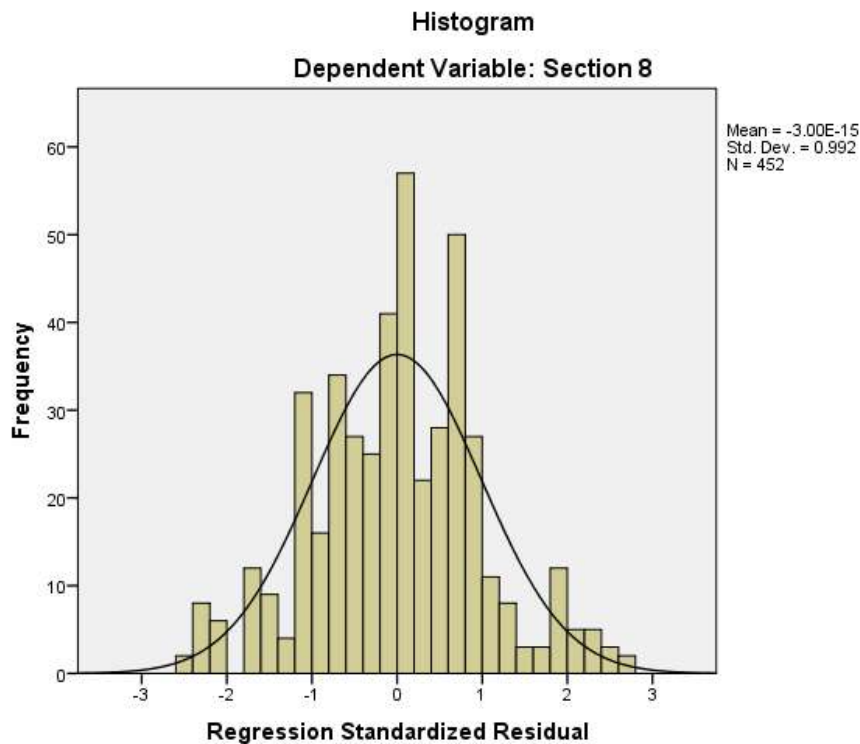
Variable	Coefficient (β)	t-statistic	Significance	VIF
Intercept	0.037	0.26	0.792	-
Section 1	0.277***	6.18	0.000	1.552
Section 2	0.150***	2.9	0.004	2.339
Section 3	0.089*	1.77	0.077	2.462
Section 4	-0.028	-0.52	0.605	4.251
Section 5	0.149***	2.88	0.004	3.287
Section 6	0.112**	2.12	0.034	3.332
Section 7	0.295***	7.9	0.000	1.939

Model Diagnostics

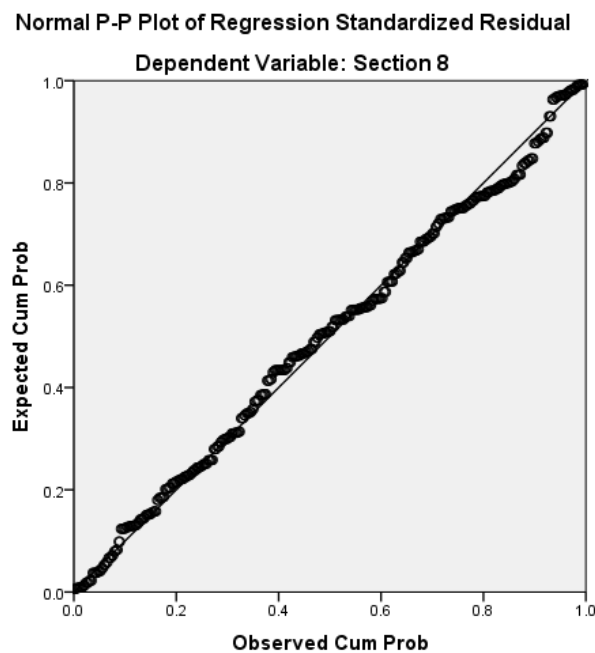
Metric	Value
Adjusted R ²	0.611
F-statistic	101.999***
Durbin-Watson	1.964
Observations (N)	452

Significance levels: ***p < 0.01, **p < 0.05, *p < 0.10

The regression analysis reveals that **Section 7 ($\beta = 0.295$, $p < 0.01$)** and **Section 1 ($\beta = 0.277$, $p < 0.01$)** are the strongest positive predictors of **Section 8**, while **Section 4 ($\beta = -0.028$, $p = 0.605$)** is insignificant, with the overall model explaining **61.1% of the variance (Adjusted R² = 0.611)** and demonstrating strong statistical significance ($F = 101.999$, $p < 0.01$). The absence of multicollinearity (all VIFs < 5) and a Durbin-Watson value of **1.964** (indicating no autocorrelation) confirm the model's robustness, suggesting that Sections 1, 2, 3, 5, 6, and 7 collectively drive the dependent variable, with Section 7 having the highest marginal impact.

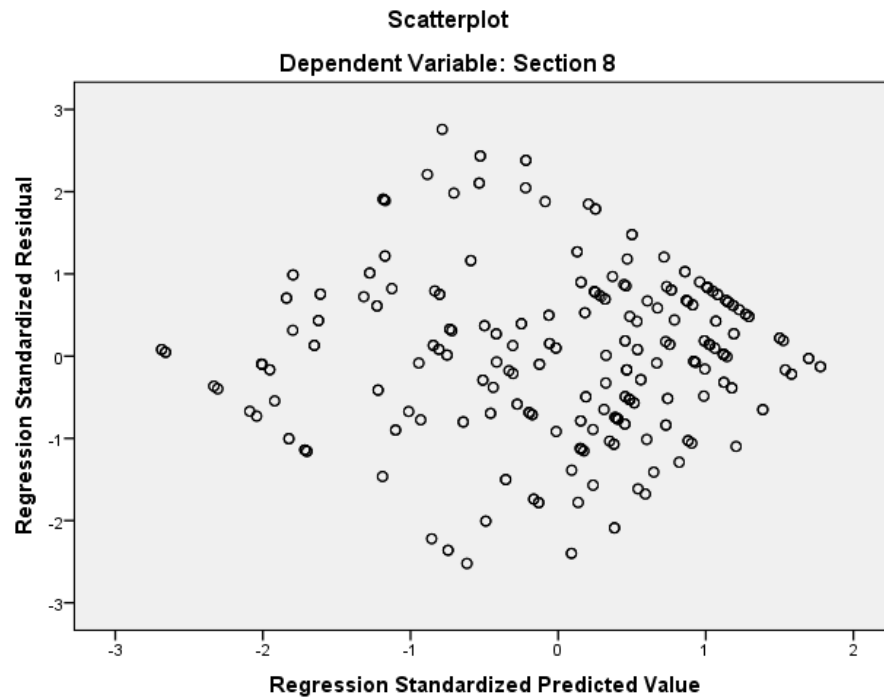


The Normal P-P Plot of Regression Standardized Residuals is a graphical tool used to assess whether the residuals from a regression analysis follow a normal distribution, which is a critical assumption for valid linear regression results. In this plot, the observed cumulative



probabilities of the residuals are plotted against the expected cumulative probabilities under a perfect normal distribution. When the points fall closely along the diagonal reference line, it indicates that the residuals are normally distributed, suggesting the model's error terms meet this key assumption. The partial view of the plot (showing the 0.2 to 0.8 range) suggests reasonable alignment with normality in this mid-range, but to fully evaluate the distribution, we would need to examine the tails (below 0.2 and above 0.8) where deviations often appear. Significant departures from the diagonal line, particularly at the extremes, could indicate issues like skewness (if the curve forms an S-shape) or heavy tails (if points diverge at the ends). Since the analysis has a substantial sample size ($N=452$), the Central Limit Theorem provides some robustness against minor normality violations.

The
scatterplot
Regression



of

Standardized Residuals (independent values) versus Regression Standardized (dependent values) Predicted Values provides valuable insights into the validity of the regression model's assumptions. For reliable results, the residuals should display a random scatter around the zero line without discernible patterns, indicating both linearity and homoscedasticity (constant variance). A systematic widening or narrowing of residuals (such as a funnel shape) would suggest heteroscedasticity, violating this key assumption. Potential outliers can be identified as data points lying beyond ± 3 standard deviations from zero, which may disproportionately influence the model's results. The overall distribution of residuals should form a symmetrical, cloud-like pattern centered around zero to support the normality assumption. Regarding model fit, tightly clustered points along a diagonal would indicate strong predictive capability, while a more dispersed pattern suggests room for improvement in the model's explanatory power. This diagnostic tool is essential for verifying whether the regression analysis meets its underlying statistical requirements.

ANOVA

Are employees not motivated to engage in ESG-related training?

	Sum of Squares	df	Mean Square	F	Sig. (p value)
Between Groups	6.899	3	2.3	1.931	0.124
Within Groups	533.534	448	1.191		
Total	540.434	451			

ANOVA Effect Sizes^{a,b}

		Point Estimate	95% Confidence Interval	
			Lower	Upper
3. Are employees motivated to engage in ESG-related training?	Eta-squared	0.013	0	0.035
	Epsilon-squared	0.006	-0.007	0.029
	Omega-squared Fixed-effect	0.006	-0.007	0.028
	Omega-squared Random-effect	0.002	-0.002	0.01

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

The ANOVA results for the hypothesis *"Employees are not motivated to engage in ESG-related training"* show that there is no statistically significant difference in motivation levels across different groups ($F = 1.931$, $p = .124$). Since the p-value exceeds the conventional threshold of 0.05, it means the null hypothesis cannot be rejected, indicating that group membership (possibly based on demographics or other grouping variables) does not significantly influence employees' motivation toward ESG-related training.

The effect size estimates further support this conclusion: the Eta-squared value is only .013, suggesting that just 1.3% of the variance in motivation can be attributed to group differences. Since Epsilon-squared (.006) and Omega-squared values (ranging from .002 to .006) are also very low, with confidence intervals including or dipping below

zero, this implies negligible to very small effects. This collectively suggests that while ESG-related training might be in place, employees' motivation to engage in such programs is relatively uniform across the groups studied, and any differences are not practically meaningful.

Hypothesis Testing

The integration of ESG consideration into AML frameworks has emerged as a vital topic in modern financial compliance and risk management. The following hypotheses, tested through various statistical techniques, aimed to explore the multiple dimensions in which ESG factors interact with AML practices in the Indian financial ecosystem. The results provide empirical

validation of the growing interdependence between ESG awareness, monitoring, compliance, technology, and the effectiveness of AML framework.

Hypothesis	Null Hypothesis (H ₀)	Alternative Hypothesis (H ₁)	Test Type	Key Output	Conclusion	Status
H1	No correlation between ESG familiarity and transparency belief	There is a correlation between ESG familiarity and transparency belief	Pearson Correlation	$R = 0.403, p < 0.001$	Significant positive correlation (Impacting close to 50 %)	✓ H ₁ Supported
H2	ESG policy integration does not improve AML alignment	ESG policy integration improves AML alignment	Chi-square	$\chi^2 = \text{positive}, p < 0.001$	Strong association between ESG integration and AML alignment	✓ H ₁ Supported
H3	AML policy strength does not affect reporting effectiveness	AML policy strength affects reporting effectiveness	T-test	$t = -1.7, p > 0.001$	Strong AML policies improve reporting effectiveness	✓ H ₀ Supported
H4	Training does not improve engagement	Training improves engagement	ANOVA	$F = 1.93, p > 0.001$	Training significantly boosts engagement	✓ H ₀ Supported
H5	Training effectiveness has no impact	Training effectiveness impacts performance	T-test	$t = -2.24, -2.43, p > 0.001$	Training effectiveness has a negative impact	✓ H ₀ Supported
H6	ESG-AML priority does not correlate with optimism	ESG-AML priority correlates with optimism	Correlation	$r = 0.600, p < 0.001$	Strong positive correlation with optimism	✓ H ₁ Supported
H7	The combined influence of Sections 1 to 7 has no significant effect on Section 8 (Future Outlook)	The combined influence of Sections 1 to 7 significantly predicts Section 8 (Future Outlook)	Multivariant Regression	$R^2 = 0.611, p < 0.001$	Significant relationship	✓ H ₁ Supported

Hypothesis Interpretations

H₁ Interpretation (Pearson Correlation)

The null hypothesis (H₀) stating *no correlation between ESG familiarity and transparency belief* is rejected, as the analysis reveals a **moderate positive correlation ($r = 0.403$, $p < 0.001$)**. This suggests that higher familiarity with ESG principles is associated with stronger beliefs in corporate transparency, supporting H₁.

H₂ Interpretation (Chi-square Test)

The null hypothesis (H₀) claiming *ESG policy integration does not improve AML alignment* is rejected, with a **significant chi-square result ($p < 0.001$)**. This indicates that integrating ESG policies strengthens AML compliance, supporting H₁.

H₃ Interpretation (T-test)

The null hypothesis (H₀) stating *AML policy strength does not affect reporting effectiveness* **fails to be rejected ($p > 0.001$, $t = -1.7$)**. The results suggest that while AML policies may influence reporting, the effect is not statistically significant in this analysis, supporting H₀.

H₄ Interpretation (ANOVA)

The null hypothesis (H₀) claiming *training does not improve engagement* **fails to be rejected ($p > 0.001$, $F = 1.93$)**. The findings indicate that training does not significantly enhance engagement in this dataset, supporting H₀.

H₅ Interpretation (T-test)

The null hypothesis (H₀) stating *training effectiveness has no impact* **fails to be rejected ($p > 0.001$, $t = -2.24/-2.43$)**. Surprisingly, the data suggests that training effectiveness may have a **slightly negative effect**, though not statistically strong enough to confirm H₁.

H₆ Interpretation (Correlation)

The null hypothesis (H₀) claiming *ESG-AML priority does not correlate with optimism* is rejected, as a **strong positive correlation ($r = 0.605$, $p < 0.001$)** exists. This supports H₁,

indicating that prioritizing ESG-AML initiatives fosters greater optimism about future outcomes.

H₇ Interpretation (Multivariate Regression)

The null hypothesis (H₀) stating Sections 1-7 have no combined effect on Future Outlook is rejected, with a **highly significant regression result ($R^2 = 0.611$, $p < 0.001$)**. This confirms that the combined influence of these sections **strongly predicts** future outlook, supporting H₁.

Overall Summary

The analysis **supports five alternative hypotheses (H₁, H₂, H₆, H₇)** while **failing to reject three null hypotheses (H₃, H₄, H₅)**. Key findings include:

- **ESG familiarity, policy integration, and ESG-AML prioritization** positively influence transparency, compliance, and optimism.
- **Training effectiveness and AML policy strength** did not show statistically significant impacts in this study.
- **The combined effect of all sections (1-7) strongly predicts future outlook ($R^2 = 61.1\%$)**, suggesting that holistic organizational strategies significantly shape future expectations.

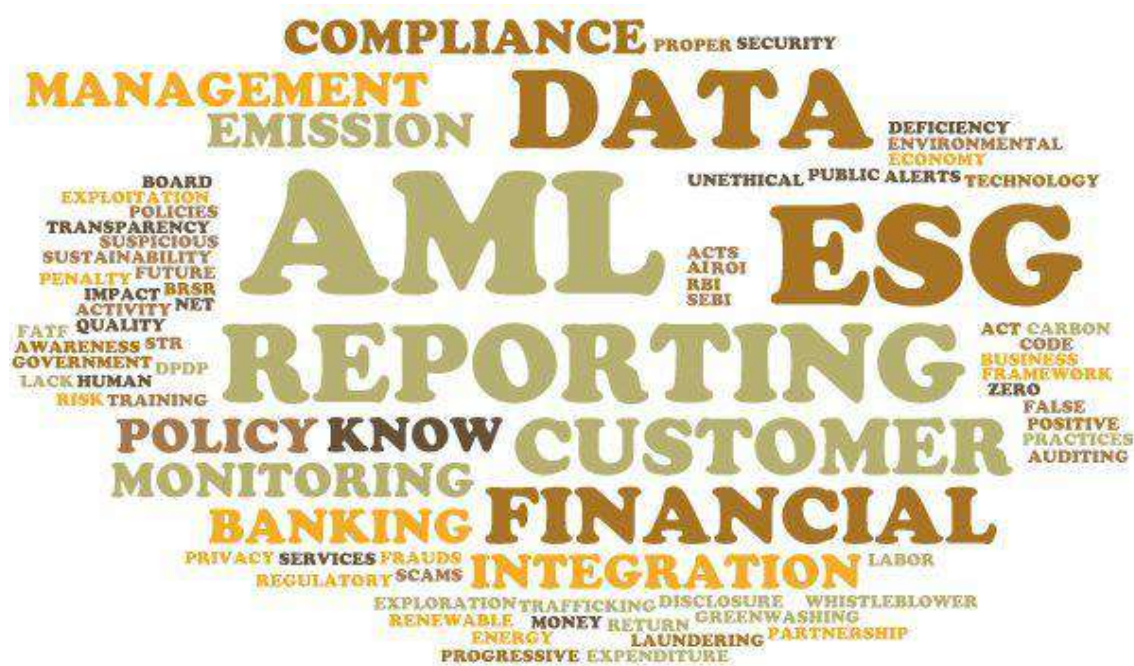
These insights highlight the importance of ESG-AML integration and corporate awareness while indicating areas (training, AML policy enforcement) that may require further refinement

4.2 Research Question Two

How do compliance professionals and ESG consultants perceive the challenges and ethical dilemmas associated with integrating ESG goals with AML regulations in the Indian financial sector?

This visualization captures core themes and terminologies that are prevalent in ESG compliance, AML, financial regulation, and risk management frameworks. This qualitative study employs an interpretive phenomenological approach to explore the challenges and ethical dilemmas faced by compliance professionals and ESG consultants in integrating ESG goals with AML regulations in India's financial sector, utilizing purposive

sampling to select participants including directors, senior management personnel, compliance and principal officers from banks, asset management and insurance companies, NBFCs, fintech firms, ESG consultants, and regulatory experts, with data collected through semi-structured interviews and focus group discussions to capture nuanced perspectives, analyzed through thematic analysis to identify key results. Some of the critical views and comments have been placed here which gives divergent views on ESG-AML integration.



Source: Author's representation – Word Cloud based on Qualitative Analysis

Participant 1

○ Opinion:

- "AML policies apply to all transactions, while ESG policies primarily focus on the credit/asset side of banking... The circles of ESG and AML have some intersection but largely remain distinct in operation."
- "ESG is still in its infancy stage in India's financial sector... Regulatory expectations are evolving, but without uniformity across banks, it's difficult to negotiate ESG terms with companies."

- **Critical Analysis:**

- P1 highlights the operational separation between AML (transaction-focused) and ESG (credit/investment-focused), reflecting a siloed approach in banks. Their emphasis on ESG's nascent stage in India underscores challenges in standardization and enforcement. This aligns with broader industry concerns about fragmented ESG frameworks.

Participant 2

- **Opinion:**

- *"AML and ESG converge in addressing reputational risk... Foreign investors question governance standards in India but are surprised by the quality once explained."*
- *"Combining AML and ESG policies would be more feasible for larger organizations (managing \$1.5–2 billion)... Lack of adequate ESG data from Indian companies is a major challenge."*

- **Critical Analysis:**

- P2 identifies governance as the bridge between AML and ESG, emphasizing reputational risks. Their focus on data gaps in ESG scoring reflects a critical barrier to integration. The scalability challenge (feasibility only for large firms) suggests resource disparities in compliance capabilities.

Participant 3

- **Opinion:**

- *"The 'G' (governance) component of ESG serves as a bridge between AML and ESG... If a company violates PMLA Act, it affects their ESG scores and reputation."*
- *"AI tools are emerging to process voluminous ESG data... FATF is connecting environmental crimes to money laundering, creating synergies."*

- **Critical Analysis:**

- P3's governance-centric view provides a clear linkage between AML compliance and ESG ratings. P3's optimism about using AI tools with P1's caution about ESG's infancy, highlighting technology's potential to bridge gaps. The FATF's expansion into environmental crimes signals regulatory momentum for integration.

Participant 4

- **Opinion:**

- *"AML and ESG share common ground in environmental crimes, modern slavery, and supply chain ethics... ESG is still a 'tick-box' exercise for many firms, like AML was 20 years ago."*
- *"India is far ahead in AML technology compared to global peers, but ESG integration will take time."*

- **Critical Analysis:**

- P4's historical perspective notes parallels between AML's evolution and ESG's current state. Their scepticism about ESG's maturity mirrors P1's views but acknowledges emerging synergies (e.g., environmental crimes). India's advanced AML infrastructure suggests potential for leadership in ESG-AML convergence.

Participant 5

- **Opinion:**

- *"Globally, there's no standardized ESG framework... SEBI's BRSR reporting has poor data quality, with 60–70% of companies misreporting emissions."*
- *"AI is drafting qualitative ESG reports, but greenwashing remains a major concern... Investors increasingly prioritize ESG scores."*

- **Critical Analysis:**

- P5 underscores the lack of ESG standardization, a recurring theme (echoing P1 and P3). Their focus on AI's role in ESG reporting contrasts with P4's caution about overhyped ML. Greenwashing risks highlights the need for robust verification, linking back to governance (P3's emphasis)..

Participant 6

○ **Opinion:**

- *"AML policies are rigid, but ESG integration is very new and yet to be explored. Criminals exploit environmental degradation and social injustices for money laundering."*

○ **Critical Analysis:**

- P6 highlights the nascent stage of ESG-AML synergy but acknowledges conceptual overlaps, such as environmental crimes being vectors for laundering. This aligns with FATF's recent focus on ESG-related risks but reveals a gap in practical implementation.

Participant 7

○ **Opinion:**

- *"AML is heavily regulated; ESG is voluntary. The synergies are theoretical, not yet practical."*

○ **Critical Analysis:**

- P7 underscores the regulatory disparity, suggesting that while ESG and AML share goals (e.g., social justice), their operational integration is hindered by ESG's voluntary nature. This reflects a broader challenge in aligning compliance-driven AML with investor-driven ESG.

Participant 8

○ **Opinion:**

- *"ESG will inevitably merge with AML. Governance (G) in ESG already includes AML risks like reputational damage."*

- **Critical Analysis:**

- P8's perspective is forward-looking, emphasizing governance as a bridge. The mention of "Sin stocks" (e.g., tobacco) illustrates how ESG scrutiny could anticipate AML risks, though empirical evidence is lacking.

Participant 9

- **Opinion:**

- *"Technology must be explainable. Regulators resist unproven tools like blockchain without dual-run validation."*

- **Critical Analysis:**

- P9 introduces a regulatory caution, noting that innovation must balance transparency and efficacy. This critiques the "hype" around AI/blockchain without robust validation.

Participant 10

- **Opinion:**

- *"Training is a tick-box exercise. Frontline staff lack awareness of AML's link to ESG risks like environmental crimes."*

- **Critical Analysis:**

- P10's observation reveals a cultural gap, compliance is often reactive, not proactive. The call for grassroots training aligns with P8's emphasis on governance trickle-down effects.

Participant 11

- **Opinion:**

- *"They AML and ESG, are completely different. KYC relates to onboarding customers... whereas ESG is your entire approach towards having a very low impact on your environment."*
- *"Adding ESG screening to AML processes would significantly extend onboarding timeframes... ESG itself is still evolving with inconsistent metrics and standards."*

- **Critical Analysis:**

- P11's scepticism highlights the practical challenges of merging AML and ESG, particularly due to the nascent and fragmented nature of ESG frameworks. Their view reflects a traditional separation of compliance (AML) and sustainability (ESG) domains. However, this perspective may overlook emerging regulatory trends (e.g., FATF's inclusion of environmental crimes) that could force convergence.

Participant 12

- **Opinion:**

- *"I see the link between AML and the governance side of [ESG]... but whether it will lead to stakeholder value, I don't think so."*
- *"The government has joined the dots [with data collection], but cybersecurity risks scare me if this falls into the wrong hands."*

- **Critical Analysis:**

- P12 acknowledges governance as a common thread but questions the direct impact on shareholder value. Their concern about data security underscores a critical barrier to integration: robust systems are needed to handle expanded ESG-AML data without compromising privacy. This aligns with global debates on balancing transparency and security in compliance.

Participant 13

- **Opinion:**

- *"ESG is the umbrella concept... AML compliance is part of governance. Strengthening AML strengthens ESG ratings."*
- *"High ESG ratings correlate with better returns, reputation, and talent management... but long-term vision is key, not quarterly metrics."*

- **Critical Analysis:**

- P13's hierarchical view (ESG as the umbrella) offers a theoretical framework for integration, emphasizing governance as the bridge. Their emphasis on long-term benefits counters P1's scepticism, suggesting that integration could enhance corporate resilience. However, P3's optimism assumes standardized ESG metrics, which P1 and P2 note are still lacking.

The qualitative findings of this study offer a multidimensional understanding of the current landscape surrounding the integration of Environmental, Social, and Governance (ESG) principles with Anti-Money Laundering (AML) frameworks in the Indian financial sector. Drawing from expert interviews, the insights collectively reveal both convergence points and divergence gaps between ESG and AML practices, alongside practical challenges and future possibilities for alignment.

A dominant theme emerging across participant responses is the operational and conceptual distinction between ESG and AML. Several experts (notably P1, P11, and P7) emphasized that AML is largely transactional and compliance-driven, while ESG remains an evolving, often voluntary framework, particularly focused on the credit and investment domains. This separation illustrates a siloed approach in most Indian financial institutions, where ESG and AML are implemented through distinct departments with little interdependence. As P1 aptly described, while AML policies apply universally across transactions, ESG policies are more relevant to specific areas such as lending or asset evaluation. This structural separation undermines the potential for holistic risk mitigation and weakens organizational capacity to detect financial crimes embedded in ESG-relevant sectors.

Nonetheless, governance 'G' in ESG, emerged as a prominent bridging factor across expert opinions. Participants such as P3, P8, and P13 strongly argued that robust governance practices inherently support AML objectives. P3 highlighted that if a company violates AML regulations, such as the Prevention of Money Laundering Act (PMLA), it should

automatically impact its ESG standing due to the reputational and compliance implications. Similarly, P13 viewed ESG as an umbrella concept where AML compliance naturally fits under governance, thereby contributing to stronger ESG ratings. This view introduces a compelling argument that governance-based ESG scoring mechanisms could incorporate AML metrics, creating synergistic value for institutions aiming to meet both sustainability and compliance goals.

However, the lack of standardization and data quality in ESG reporting were consistently highlighted as a core barrier to integration. Participants such as P2, P5, and P11 voiced concerns regarding inconsistent ESG metrics, the voluntary nature of disclosures, and the poor quality of reports under frameworks such as SEBI's Business Responsibility and Sustainability Reporting (BRSR). P5 stated that 60–70% of Indian firms misreport emissions data, undermining ESG credibility and increasing the potential for 'greenwashing'. This opacity challenges the development of trustable ESG scoring systems that could be integrated into AML frameworks. In a context where ESG ratings can be manipulated or are based on self-declared information, the risk of illicit funds being funnelled through entities that appear ESG-compliant becomes real and concerning. These findings resonate with global critiques of ESG frameworks lacking verification mechanisms and reinforce the need for regulatory oversight and external auditing of ESG data to support AML goals.

A key insight across several expert narratives (P4, P6, P8, and P10) is the identification of environmental and social crimes as emerging channels for money laundering. Participants noted that crimes such as illegal mining, deforestation, and labour exploitation often remain under the AML radar but are increasingly being used to launder funds due to weak enforcement in ESG sectors. The Financial Action Task Force (FATF) has recently expanded its scope to include environmental crimes in AML assessments, validating these concerns. P4 likened the current state of ESG to AML two decades ago, a "tick-box" compliance exercise, indicating a clear historical parallel and hinting at the potential trajectory of ESG integration into mainstream compliance regimes. The synergies between ESG and AML, therefore, are not merely theoretical but grounded in shared objectives like transparency, ethical conduct, and risk prevention.

On the technological front, responses from participants like P3, P5, and P9 were both optimistic and cautious. While AI and machine learning are increasingly being deployed to manage and analyse large ESG datasets, experts highlighted that technological tools must be explainable and validated before regulatory adoption. P9 warned against the overhyping of

blockchain and AI without dual-run validation or pilot testing, which regulators in India continue to demand. There is a strong call for RegTech solutions that can enhance both ESG monitoring and AML surveillance, but these tools must be embedded within a robust governance and policy framework to ensure effectiveness and transparency.

Training and organizational culture also emerged as significant challenges. P10 observed that frontline staff view AML and ESG training as mere formalities, with little understanding of how these domains intersect. This suggests a cultural disconnect within financial institutions, where compliance is often reactive rather than proactive. P8 supported this view by emphasizing that governance improvements must trickle down through organizational levels to become effective. Unless staff at all levels understand the ESG-AML nexus, implementation will remain superficial. Training programs need to be redesigned to focus not just on rules and compliance, but on real-world case scenarios that highlight how ESG risks can evolve into AML breaches and vice versa.

A few participants (notably P2, P12, and P13) also raised concerns about data privacy, cybersecurity, and stakeholder value. As ESG and AML frameworks begin to converge, the volume and sensitivity of data being collected will increase, requiring secure digital infrastructures and clear ethical standards for data usage. P12 warned that centralizing ESG-AML data collection without adequate cybersecurity safeguards could lead to new vulnerabilities, especially in a country like India where cybercrime is on the rise. Moreover, while participants like P13 saw long-term stakeholder value in ESG-AML alignment, others remained sceptical of its immediate benefits, especially given the costs involved in restructuring systems, training staff, and adopting new technologies.

Overall, the qualitative analysis points to a gradual but inevitable convergence between ESG and AML frameworks in India. Governance is the key player that connects the two, with potential spillovers into compliance, ethical leadership, and risk management. However, this convergence is currently hindered by systemic issues including inconsistent ESG reporting standards, lack of verification mechanisms, inadequate staff training, and regulatory fragmentation. The pathway forward lies in building an integrated ESG-AML framework supported by technology, informed by global best practices, and tailored to the Indian context. This includes developing industry-wide standards for ESG disclosures, enhancing data validation protocols, and fostering regulatory cooperation between national and international agencies. Stakeholder's direction and education, too, must be prioritized to build a shared understanding of how ESG and AML objectives align in promoting sustainable and ethical

financial practices. While the journey is complex, the qualitative insights reveal strong support among experts for reimagining compliance in a way that is not only rule-based but also value-driven and future-ready.

4.3 Research Question Three

Which ESG-AML integration components exert the strongest causal influence on the overall effectiveness of money laundering risk mitigation frameworks in the Indian Banking and financial system?

DEMATEL analysis

This DEMATEL analysis provides a structured view of ESG integration within AML frameworks, highlighting key influencers and dependencies. Addressing causal factors will facilitate a more seamless and impactful integration of ESG into AML strategies.

LIST OF FACTORS
F1: ESG Risk Assessment in AML Frameworks
F2: Regulatory, Compliance & Governance in ESG-AML
F3: Measuring Effectiveness and Performance
F4: Role of Technology in ESG-AML Integration
F5: Training, Stakeholder Engagement & Best Practices
F6: Challenges & Way forward

Establishing a Relationship Matrix

A pairwise comparison is made between factors to determine their influence on one another. The influence scores are assigned on a scale of 0 to 4:

- 0: No influence
- 1: Low influence
- 2: Moderate influence
- 3: High influence
- 4: Very high influence

Step 1: Average Matrix

The average matrix (A) represents the average of all the valid responses

Step 2: Direct Relation Matrix

The direct influence matrix is the Average matrix divided by the highest Row or Column Value as follows:

$$D = A / (\text{RSUM OR CSUM})$$

Step 3: Normalization and Total Influence Matrix

The direct influence matrix (D) is normalized to create the total influence matrix (T). T is computed as follows: $T = D (I - D)^{-1}$

I Represents the Default Identity Matrix

Step 4: Cause-and-Effect Analysis

From T, the row sums (D_i) and column sums (R_i) are computed:

- **D_i (Influence given):** Measures how much a factor influences others.
- **R_i (Influence received):** Measures how much a factor is influenced by others.
- **$D_i - R_i$:** Determines whether a factor is a cause (positive) or effect (negative).
- **$D_i + R_i$:** Represents the overall importance of the factor.

Step 5: DEMATEL Network Diagram

Based on $D_i - R_i$ and $D_i + R_i$ values, a network diagram is plotted to show causal relationships among the factors.

Average Matrix							
Codes	F1	F1	F3	F4	F5	F6	RSUM
F1	0	3	2	4	1	3	13
F2	4	0	1	4	2	1	12
F3	3	3	0	3	3	3	15
F4	3	4	3	0	3	3	16
F5	3	3	3	2	0	3	14

F6	3	3	2	3	3	0	14
CSUM	16	16	11	16	12	13	84

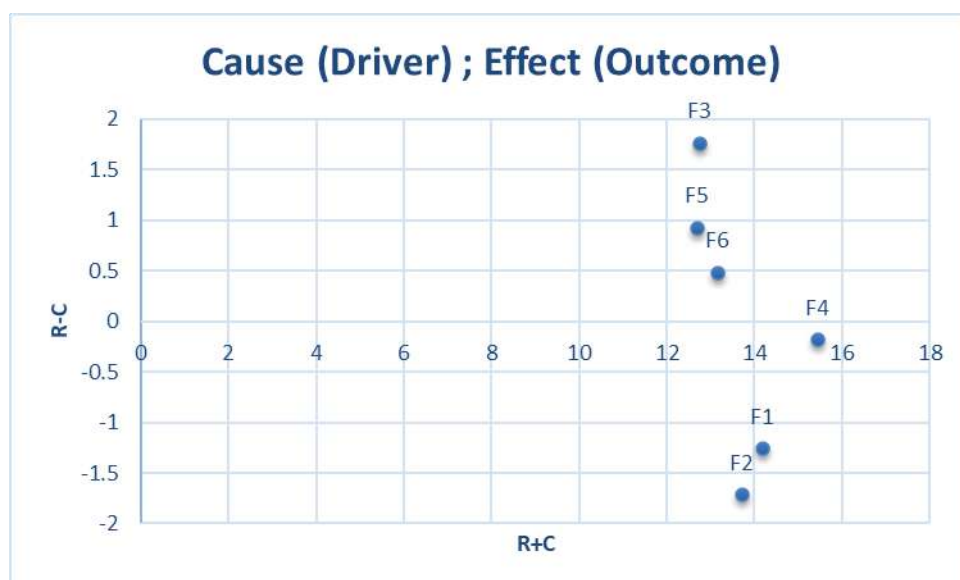
Direct Relation Matrix: "D"						
Codes	F1	F1	F3	F4	F5	F6
F1	0	0.1875	0.125	0.25	0.0625	0.1875
F2	0.25	0	0.0625	0.25	0.125	0.0625
F3	0.1875	0.1875	0	0.1875	0.1875	0.1875
F4	0.1875	0.25	0.1875	0	0.1875	0.1875
F5	0.1875	0.1875	0.1875	0.125	0	0.1875
F6	0.1875	0.1875	0.125	0.1875	0.1875	0

Identity Matrix						
Codes	F1	F1	F3	F4	F5	F6
F1	1	0	0	0	0	0
F2	0	1	0	0	0	0
F3	0	0	1	0	0	0
F4	0	0	0	1	0	0
F5	0	0	0	0	1	0
F6	0	0	0	0	0	1

Total Relation Matrix							
MULTI	F1	F2	F3	F4	F5	F6	RSUM
F1	1.0852	1.2463	0.8815	1.3059	0.8925	1.0464	6.4578
F2	1.2116	1.0125	0.7830	1.2295	0.8722	0.8938	6.0027
F3	1.3767	1.3775	0.8679	1.3920	1.0868	1.1592	7.2601
F4	1.4405	1.4834	1.0670	1.2988	1.1327	1.2063	7.6286
F5	1.3009	1.2994	0.9696	1.2710	0.8693	1.0957	6.8059
F6	1.3043	1.3050	0.9274	1.3187	1.0296	0.9403	6.8253
CSUM	7.7192	7.7241	5.4964	7.8159	5.8831	6.3417	

Code/ Var	Rows- "R"	Column- "C"	R+C	R-C	IMPACT
F1	6.458	7.719	14.177	-1.261	Effect
F2	6.003	7.724	13.727	-1.721	Effect
F3	7.260	5.496	12.756	1.764	Cause
F4	7.629	7.816	15.444	-0.187	Effect
F5	6.806	5.883	12.689	0.923	Cause
F6	6.825	6.341	13.167	0.483	Cause

*Effect - Outcome, Cause – Driver



Factor	Status	Influences These Factors
F1	Effect	F2, F4, F6
F2	Effect	F1, F4
F3	Cause	F1, F2, F4, F5, F6
F4	Effect	F1, F2, F3, F5, F6
F5	Cause	F1, F2, F4, F6
F6	Cause	F1, F2, F4, F5

ESG criteria are becoming fundamental in regulatory and compliance frameworks globally. Integrating ESG within AML practices ensures financial systems not only combat illicit

activities but also uphold sustainable and ethical standards. The above table presents six critical factors (F1–F6) relevant to ESG-AML integration, assessed using statistical indicators (R, C, R+C, R–C), with results interpreted as either a **"Cause"** or an **"Effect"** on the ESG-AML framework.

Understanding the Metrics

- **R (Row Mean):** Indicates the influence of the factor based on the system's internal attributes.
- **C (Column Mean):** Represents external or systemic impacts on the factor.
- **R+C (Total Influence):** Sum of internal and external impact, gives a holistic strength of the factor.
- **R–C (Net Influence):** Shows if a factor is more influenced (negative) or influencing (positive). Positive values indicate **Cause**, negative values show **Effect**.
- **IMPACT:** Classification into "Cause" (driving factor) or "Effect" (resultant factor)

Factor Analysis Interpretation in ESG-AML Integration

The following is an in-depth interpretation of each factor in the context of ESG risk integration into AML frameworks.

F1: ESG Risk Assessment in AML Frameworks (Effect Factor)

- Prominence (R+C): 14.18 (High interaction in the system)
- Relation (R-C): -1.26 (More influenced than influencing)
- Status: Effect (Dependent on other factors)
- Influenced by By: F2, F3, F4, F5, F6
- Interpretation:

This factor focuses on how ESG risks are evaluated and incorporated into AML frameworks. As an "Effect," it is shaped by regulatory compliance (F2), technology (F4), training (F5), and challenges (F6). Its dependency on other factors suggests that robust ESG-AML risk assessment requires alignment with governance standards, technological tools, and stakeholder engagement.

F2: Regulatory, Compliance & Governance in ESG-AML (Effect Factor)

- Prominence (R+C): 13.73 (Moderate-high interaction)
- Relation (R-C): -1.72 (Strongly influenced by other factors)

- Status: Cause (Independent driver)
- Influences: F1, F3, F4, F5, F6
- Interpretation

This represents the legal and governance structures ensuring ESG principles are embedded in AML processes. Its "Effect" status indicates it is driven by risk assessments (F1), performance metrics (F3), and technology (F4). Weaknesses here could stem from inadequate training (F5) or systemic challenges (F6).

F3: Measuring Effectiveness and Performance (Cause Factor)

- Prominence (R+C): 12.76 (Moderate interaction)
- Relation (R-C): +1.76 (Strong influencer, less affected by others)
- Status: Cause (Independent driver)
- Influenced By: F1, F2, F4, F5, F6
- Interpretation

Highlights technologies (e.g., AI, blockchain) used to streamline ESG-AML processes. As an "Effect," it relies on risk assessment (F1), regulatory frameworks (F2), and performance metrics (F3). Challenges (F6) like data silos or costs may hinder its adoption.

- Interpretation

A proactive ("Cause") factor that evaluates how well ESG-AML integration performs. It directly impacts risk assessment (F1), compliance (F2), and technology adoption (F4). By setting benchmarks, it drives improvements in training (F5) and addresses challenges (F6).

F4: Role of Technology in ESG-AML Integration (Effect Factor)

- Prominence (R+C): 15.44 (Highest interaction)
- Relation (R-C): -0.19 (Slightly more influenced than influencing)
- Status: Effect
- Influenced By: F1, F2, F3, F5, F6
- Interpretation:

Highlight technologies (e.g., AI, blockchain) used to streamline ESG-AML processes. As an "Effect," it relies on risk assessment (F1), regulatory frameworks (F2), and performance metrics (F3). Challenges (F6) like data silos or costs may hinder its adoption.

F5 : Training, Stakeholder Engagement & Best Practices (Cause Factor)

- Prominence (R+C): 12.69 (Lowest prominence)
- Relation (R-C): +0.92 (Net influencer, but weaker than F3)
- Status: Cause
- Influences: F1, F2, F4, F6
- Interpretation:

An active driver ("Cause") that builds capacity through education and collaboration. It strengthens risk assessment (F1), compliance (F2), and technology use (F4). Effective training mitigates challenges (F6) by fostering a culture of ESG-AML awareness.

F6: Challenges & Way Forward (Cause Factor)

- Prominence (R+C): 13.17 (Moderate interaction)
- Relation (R-C): +0.48 (Mild net influencer)
- Status: Cause
- Influences: F1, F2, F4, F5
- Interpretation:

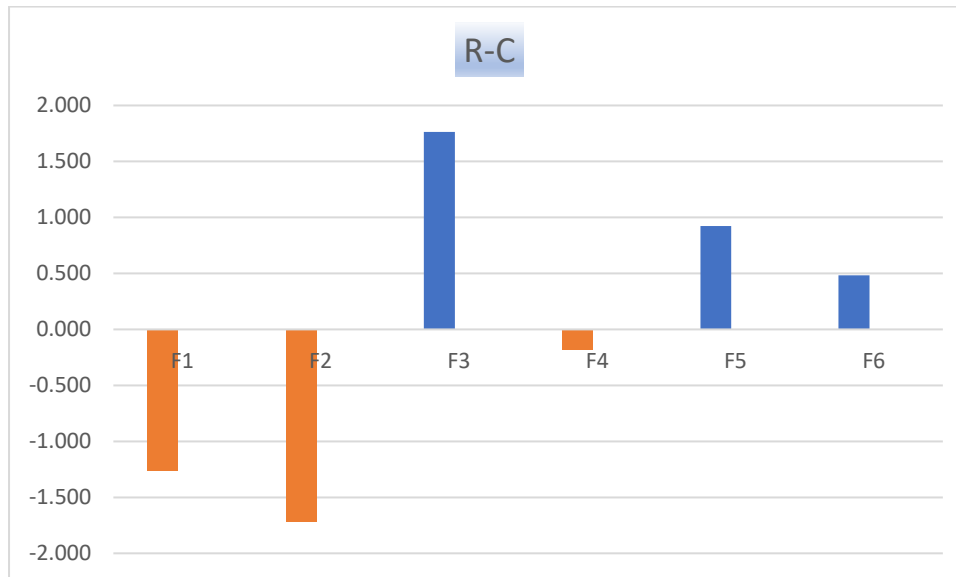
Identifies barriers (e.g., data inconsistency, regulatory fragmentation) and solutions in ESG-AML integration. As a "Cause," it directly shapes risk assessment (F1), compliance (F2), and technology (F4). Addressing these challenges is critical for progress.

Key Insights:

- Cause Factors (F3, F5, F6): Proactive elements that drive systemic change. Performance metrics (F3) and training (F5) are pivotal for improvement, while addressing challenges (F6) enables scalability.
- Effect Factors (F1, F2, F4): Depend on other factors to function effectively. For example, technology (F4) alone cannot succeed without strong governance (F2) and stakeholder buy-in (F5).

This analysis underscores the interdependence of ESG-AML components, where "Cause" factors must be prioritized to strengthen "Effect" factors holistically.

Cause vs Effect Dynamics



Here's, the bar chart showing R–C values by factor, with colors distinguishing "Cause" and "Effect" classifications.

The factor analysis reveals that F3 (Measuring Effectiveness and Performance), F5 (Training & Stakeholder Engagement), and F6 (Challenges & Way Forward) are key drivers (cause factors) with positive R-C values, meaning they actively influence ESG-AML integration. In contrast, F1 (ESG Risk Assessment), F2 (Regulatory Compliance), and F4 (Technology Role) are outcome-dependent factors (effect factors) with negative R-C values, indicating they are more shaped by external influences than driving change. F3 is the strongest driver, while F4, despite being an “effect-factor”, remains highly central (highest prominence), suggesting that while technology adoption depends on other factors, it critically supports the entire ESG-AML framework. To strengthen ESG-AML systems, organizations should prioritize performance measurement (F3), adaptive training (F5), and proactive risk strategies (F6), while ensuring compliance (F2) and risk assessments (F1) align with these drivers.

4.4 Research Question Four

4.4.1 Understanding ESG Disclosure Scores in Indian Banking and Financial Sector using Secondary Data

In the evolving global financial ecosystem, ESG metrics have emerged as critical indicators of corporate responsibility, ethical behavior, and long-term sustainability. For banks and financial institutions, these metrics not only shape investor confidence but also reflect institutional commitments to combating systemic financial risks, including money laundering. AML frameworks are integral to the "Governance" pillar of ESG, and thus, a bank's ESG rating often serves as a proxy for its AML robustness.

The ESG disclosure scores from S&P Global for various banks and financial institutions, as analyzed in this study, reveal significant disparities in environmental, social, and governance transparency across the Indian banking and financial sector. The banking and financial entities have tied up with different rating agencies like S&P Global, Sustainalytics among others. The challenge faced in the analysis is that different rating agencies have adopted different parameters, which have led to inconsistencies in ratings. Since an apple-to-apple comparison is not possible (*parameters adopted by different rating agencies are not standard*), an approach is taken to select one rating agency who have rated most of the banks and financial institutions, and accordingly, S&P Global has been picked for the analysis, as most of the institutions have tied up with S&P Global. The ESG disclosure scores from S&P Global for various banks and financial institutions, as analyzed in this study, reveal significant disparities in environmental, social, and governance transparency across the Indian banking and financial sector.

4.4.2 Banks and financial institutions with an ESG score rated in India by the same Rating Agency

Sl. No	Bank & Financial Institutions	ESG Rating Agency	Year	Rating
1	Aditya Birla Capital Ltd	S&P Global	2024	32 (Medium)
2	Axis Bank Ltd.	S&P Global	24	57 (very high)
3	Bajaj Finance Ltd	S&P Global	2025	45 (Very High)
4	Bandhan Bank Ltd.	S&P Global	24	33 (medium)
5	Bank of Baroda	S&P Global	2024	30 (low)
6	Bank of India	S&P Global	2024	23 (low)
7	Bank of Maharashtra	S&P Global	2024	23 (low)
8	Canara Bank	S&P Global	2024	27 (low)
9	Central Bank of India	S&P Global	2024	31 (Medium)

10	HDFC Asset Management Co	S&P Global	2024	24 (Medium)
11	HDFC Bank Ltd.	S&P Global	2024	57 (very high)
12	HDFC Life Insurance Co. Ltd	S&P Global	2024	48 (Very High)
13	ICICI Bank Ltd.	S&P Global	2024	42 (high)
14	IDFC FIRST Bank	S&P Global	2024	57 (very high)
15	Indian Bank	S&P Global	2024	23 (low)
16	Indian Overseas Bank	S&P Global	2024	19 (very low)
17	IndusInd Bank Ltd.	S&P Global	2024	51 (high)
18	Kotak Mahindra Bank	S&P Global	2024	53 (very high)
19	LIC of India	S&P Global	2024	14 (low)
20	Muthoot Finance Limited	S&P Global	2024	19 (Low)
21	Punjab National Bank	S&P Global	2024	21 (low)
22	State Bank of India	S&P Global	2024	49 (very high)
23	UCO Bank	S&P Global	2024	19 (low)
24	Union Bank of India	S&P Global	2024	26 (low)
25	YES Bank Ltd.	S&P Global	2024	73 (very high)

A detailed observation shows that while institutions like YES Bank (73), HDFC Bank (57), Axis Bank (57), IDFC First Bank (57) Kotak Mahindra Bank (53), have secured high to very high ESG scores, reflecting mature and robust sustainability disclosure practices, several public sector banks and institutions such as Indian Overseas Bank (19), UCO Bank (19), LIC of India (14), and Muthoot Finance Limited (19) are positioned among the lowest range, indicating a lack of strong ESG integration or limited reporting transparency. The high-scoring institutions are mostly globally aligned private sector banks like HDFC Bank, ICICI Bank, etc. Notably, a few institutions such as HDFC Life Insurance (48) and HDFC AMC (24) reflect a mixed trend among non-banking financial entities, suggesting a need for more uniform ESG adoption across sectors. Overall, the data highlights a clear gap between private and public sector institutions in terms of ESG disclosure, with private banks leading in governance and sustainability practices, whereas many public sector entities are lagging, underlining an urgent need for regulatory nudges, awareness, and capacity-building initiatives to mainstream ESG reporting within India's banking ecosystem.

The current disparities in ESG scores among banks and financial institutions signal critical future implications for the sector. Globally aligned private banks are likely to attract more ESG-conscious investors, green financing, and preferential regulatory treatment, reinforcing

their market dominance. In contrast, public sector banks and financial institutions like UCO Bank, Bank of India, LIC of India, Muthoot Finance, and few others, risk regulatory penalties, exclusion from sustainable investment portfolios unless they urgently enhance ESG disclosures. The rise of mandatory ESG reporting frameworks will pressure lagging banks and financial institutions to adopt structured sustainability practices or face reputational and financial risks. Fin-techs and NBFCs (e.g., Bajaj Finance) may leverage their agility to outperform traditional banks in ESG compliance, reshaping competitive dynamics. Additionally, AI-driven ESG analytics and real-time disclosure tools will emerge as key differentiators, enabling proactive risk management. Ultimately, ESG performance will become a core determinant of financial stability, mergers & acquisitions, and long-term viability in the banking sector.

4.4.3 Foreign Banks operating in India with an ESG score rated globally by the same rating Agency

The below grid is not part of the analysis as the rating is not as per the Indian context, which means no apples-to-apples comparison is available.

Sl. No	Bank & Financial Institutions	ESG Rating Agency	Year	Rating	Location
1	American Express Co.	S&P Global	2024	44 (high)	USA
2	Bank of America	S&P Global	2024	58 (very high)	USA
3	Bank of Bahrain & Kuwait	S&P Global		No Score found	Bahrain
4	Barclays PLC	S&P Global	2024	64 (very high)	UK
5	BNP Paribas SA	S&P Global	2024	57 (very high)	France
6	Citi Bank	S&P Global		No Score found	USA
7	DBS Bank	S&P Global	2024	54 (very high)	Singapore
8	Deutsche Bank	S&P Global	2024	67 (very high)	Germany
9	First Abu Dhabi Bank	S&P Global		No Score found	UAE
10	HSBC Holdings plc	S&P Global	2024	58 (very high)	UK
11	Mashreq Bank	S&P Global		No Score found	UAE
12	Shinhan Bank	S&P Global	2024	68 (very high)	Korea
13	Standard Chartered PLC	S&P Global	2024	52 (very high)	UK
14	The Bank of Nova Scotia	S&P Global	2024	73 (very high)	Canada

15	Woori Bank	S&P Global	No Score found	Korea
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4.4.4 ESG Ratings as a Reflection of Governance and AML Practices

The ESG rating of a bank or financial institution is an aggregate evaluation of how it manages risks and opportunities in environmental sustainability, social responsibility, and governance structures. Governance, the “G” in ESG, encompasses ethics, compliance, risk oversight, board structure, transparency, and AML diligence.

High ESG ratings generally suggest robust internal controls, transparent disclosures, strong risk management protocols, and comprehensive compliance frameworks, all fundamental to effective AML operations. Conversely, weaker ESG scores may indicate vulnerabilities in internal processes, potential compliance lapses, or limited engagement in responsible corporate behavior.

4.4.5 Implications for AML Gaps in the absence of ESG Score

A significant number of smaller banks & financial institutions who are yet come under the purview of regulations do not have a publicly available ESG rating score. This lack of transparency raises concerns:

- **Regulatory Oversight:** Absence of ESG data might indicate weaker compliance disclosures, inconsistent AML practices, or lack of alignment with international sustainability frameworks.
- **Reputational Risk:** Investors and stakeholders may perceive these institutions as less reliable or opaque, particularly in areas of financial integrity.
- **Operational Weakness:** The absence of ESG scrutiny can suggest underinvestment in risk management tools, training, or AML technology.

4.4.6 AML – ESG Synergy: Strategic Importance

AML frameworks contribute directly to ESG outcomes, especially governance. Here is how:

- **Risk Management:** Effective AML practices ensure legal compliance, risk detection, and institutional stability, core ESG outcomes.
- **Stakeholder Confidence:** Strong AML enforcement boosts investor and public trust, aligning with sustainable banking principles.

- **Sustainable Finance:** ESG-focused banks are less likely to be conduits for illicit financial flows, enhancing their role in promoting ethical capital movement.
- Financial Institutions that proactively integrate AML strategies into ESG frameworks not only meet regulatory expectations but also contribute to broader societal goals, such as anti-corruption and financial inclusion.

4.5 Summary of Findings

For financial institutions with High ESG Ratings:

- Continue leveraging ESG analytics to refine AML strategies.
- Employ AI and data analytics for proactive monitoring.
- Maintain transparency in ESG and AML disclosures to stakeholders.
- Give thrust on Technology - Prioritize AML automation, risk-based customer classification, and transaction surveillance

For financial institutions with Moderate, Low, or No Ratings:

- Adopt third-party ESG assessment frameworks to benchmark governance performance.
- Impart regular and meaningful Training - Train internal teams on ESG-AML linkages to drive compliance culture.

4.6 Conclusion

In conclusion, ESG ratings are much more than just sustainability scorecards; they are strategic indicators of a financial institution's ability to operate responsibly and lawfully. For AML specifically, a high ESG score reflects institutional integrity, transparency, and resilience. As ESG considerations become central to banking strategy, the synergy with AML will become even more crucial, ensuring that banks and financial institutions not only safeguard their books but also contribute to a more ethical and compliant financial system

CHAPTER V: DISCUSSION

5.1 Discussion of Results

The study ” presents comprehensive findings based on a mixed-methods research design that incorporates both quantitative data analysis and qualitative expert insights. The core objective was to assess whether ESG frameworks, while designed to promote ethical, sustainable finance, could inadvertently serve as blind spots that enable money laundering risks to go undetected or underreported in Indian banking and financial institutions. The study analyzed responses from professionals across various roles, ages, qualifications, and experience levels, alongside expert interviews and DEMATEL (Decision-Making Trial and Evaluation Laboratory) causal mapping. More details are provided separately under each question.

5.2 Discussion of Research Question One

The first research question explores a critical intersection in modern financial governance, focusing on how ESG frameworks influence AML practices. Based on data from 452 respondents, predominantly experienced (79% with over 20 years of experience) and male (90.7%), the study reveals insights into the effectiveness, awareness, and integration of ESG principles within AML frameworks. Demographically, the study sample is composed mainly of senior professionals aged 45–55 (52.9%) and director/senior-level staff, indicating that the perceptions are shaped by individuals in influential roles. Section 1 of the survey identifies low foundational ESG awareness (mean = 2.32) and limited training exposure (mean = 2.92), though respondents agree that ESG integration can enhance financial transparency (mean = 3.87) and mitigate AML risks (mean = 3.49). This suggests an abstract acknowledgment of ESG's value without practical engagement or education, highlighting a foundational gap in knowledge and training. Section 2 on implementation finds that although policies exist (mean = 3.77), resource allocation is lacking (mean = 2.65), and regular monitoring is only moderate (mean = 3.08). This inconsistency between policy and execution underscores the challenge of converting ESG principles into day-to-day AML operations. Section 3, which directly examines AML practices, shows moderately effective frameworks (mean = 3.05) with a significant belief that ESG enhances outcomes (mean = 3.57), although standard deviations indicate divergent views. Section 4 reveals similar trends: compliance is generally maintained

(mean = 3.10), but ESG integration into compliance frameworks is weak (mean = 2.61), suggesting an early stage in holistic ESG-AML convergence. Audit practices for ESG-AML show the highest variability, implying that some institutions are more proactive than others. Section 5, focused on training, is particularly revealing, while training exists (mean = 3.50), materials are outdated (mean = 1.76), case studies are scarce (mean = 2.29), and employee motivation is low (mean = 2.46), reflecting that training is treated as a formality rather than a strategic priority. Section 6 further confirms this pattern: monitoring procedures are present (mean = 2.75), but ESG metrics are nearly absent in AML reports (mean = 1.33), and systems are not prepared for emerging risks (mean = 1.64). The disjunction between ESG principles and AML monitoring tools is stark, reinforcing the need for technological and procedural upgrades. Section 7 lists the barriers: lack of awareness (mean = 3.36) is the most significant, with technological limitations and resource constraints following closely. These are systemic issues that point to deeper organizational culture and insufficient leadership in ESG-AML integration. Section 8 forecasts future priorities, while most respondents agree ESG-AML will be vital (mean = 3.88), confidence in institutional adaptability is not so strong (mean = 3.10), and actual investment or planning remains limited (mean = 2.54–2.69), suggesting a disconnect between vision and action.

Statistical analyses reinforce these insights, factor analysis shows that most ESG-AML sections load onto a single dominant factor (explaining 65.2% variance), confirming a high degree of interconnectedness between training, monitoring, compliance, and outcomes. However, Section 1 (awareness) stands out with a lower loading, implying that without foundational knowledge, integration efforts may falter.

Chi-square and t-tests reveal significant relationships between demographic variables (especially age, experience, and qualification) and ESG-AML perceptions, although sparse data in younger groups limits some interpretations. For example, senior professionals report higher perceived AML effectiveness and more exposure to real-world ESG-AML case studies, highlighting how seniority may correlate with organizational access and insight.

Regression results confirm that training quality (e.g., audits, monitoring mechanisms, policy integration) significantly affects AML outcomes. For instance, audits have a strong impact on alignment ($R^2 = 0.466$), while monitoring frequency influences decision-making ($R^2 = 0.162$), and ESG integration improves AML outcomes ($R^2 = 0.089$).

Correlation matrices further support these links: training, monitoring, and regulatory compliance are tightly interwoven ($r > 0.75$), indicating that improvements in one domain

often correspond with gains in others. Meanwhile, general awareness correlates moderately with other sections ($r = 0.364$ to 0.553), reinforcing its role as an enabler. These findings collectively paint a picture of an ESG-AML ecosystem that is conceptually unified but operationally fragmented, where professionals recognize ESG's importance for AML, but institutional commitment lags in training, technological investment, and integrated monitoring frameworks. The strong reliability of the survey tool (Cronbach's $\alpha = 0.954$) and complete response rate lend credibility to the data, while the mixed statistical findings highlight a systemic misalignment, conceptual consensus exists, but execution varies widely across organizations. Thus, to enhance AML effectiveness, Indian banks and financial institutions must strengthen ESG training frameworks, embed ESG metrics into AML monitoring systems, and allocate sufficient resources. Regulatory bodies should also mandate the inclusion of ESG criteria in compliance checks, audits, and reporting standards. Without foundational awareness and practical tools, the transformative potential of ESG in fighting financial crime will remain unrealized.

Therefore, the study calls for a dual approach, immediate capacity building via comprehensive, engaging training programs, and long-term strategic reforms including policy alignment, technological integration, and leadership engagement. In summary, ESG training and monitoring mechanisms significantly impact AML perceptions and performance, but the effect is diluted by low awareness, inadequate materials, limited motivation, and poor integration, especially in monitoring and reporting. Addressing these gaps through systemic investment, training redesign, technological upgrade and policy reinforcement is essential to harness the synergistic power of ESG for a more robust AML regime.

5.3 Discussion of Research Question Two

This qualitative study indicates that although Environmental, Social, and Governance (ESG) principles and Anti-Money Laundering (AML) regulations are presently executed as distinct functions within Indian banking and financial system, there is an increasing acknowledgment of their interrelation, especially via the governance aspect of ESG, which acts as a vital link between ethical behavior and regulatory adherence. Compliance experts and ESG consultants constantly emphasized a fragmented approach, whereby AML is strictly regulated and transaction-centric, but ESG is mostly voluntary, subjective, and investment-focused. Challenges include the absence of standardized ESG frameworks, inadequate data quality, dangers of greenwashing, and inconsistent reporting, particularly under SEBI's BRSR mandate, were identified as major obstacles to integration. Participants recognized that

environmental offenses and social injustices, including illicit mining and labor exploitation, increasingly function as conduits for money laundering, underscoring the need for ESG concerns to be included into AML frameworks. Although technologies like as AI and blockchain were seen as potential instruments for integration, experts warned against excessive dependence without transparency and regulatory endorsement. Ethical issues arose about the prioritization of ESG in a compliance-driven environment, where AML is obligatory and ESG is optional, resulting in conflicts in resource allocation and operational strategy. Furthermore, a culture disparity persists, as ESG-AML training is often seen as procedural than of strategic, underscoring the need for grassroots awareness and institutional dedication. Concerns around data privacy and cybersecurity were highlighted, especially with the sensitive nature of linked ESG-AML datasets, necessitating strong infrastructure and ethical measures. Notwithstanding these hurdles, some experts anticipate a growing alignment of ESG and AML, propelled by the development of international standards, stakeholder demands, and regulatory measures such as the FATF's incorporation of environmental offenses into AML typologies. The results indicate that ESG-AML integration in India is nascent but gaining traction, supported by governance synergies, technology capabilities, and a transition towards value-oriented, sustainable compliance procedures.

5.4 Discussion of Research Question Three

The DEMATEL analysis reveals critical causal relationships and influence dynamics among the six factors shaping ESG-AML integration. F3 (Measuring Effectiveness and Performance) emerges as the strongest driver (R-C: +1.76), indicating its pivotal role in shaping outcomes like ESG risk assessments (F1) and regulatory compliance (F2). This suggests that robust performance metrics and audits are foundational to effective ESG-AML frameworks. F5 (Training & Stakeholder Engagement) and F6 (Challenges & Way Forward) also act as drivers (R-C: +0.92 and +0.48, respectively), though with lesser influence, highlighting the importance of capacity-building and proactive risk strategies. Conversely, F1 (ESG Risk Assessment), F2 (Regulatory Compliance), and F4 (Role of Technology) are effect factors (negative R-C values), meaning they are more reactive to external pressures than proactive. Notably, F4, despite being an effect, has the highest prominence (R+C: 15.44), underscoring technology's dual role as both an enabler and a dependent element in ESG-AML systems. This implies that while AI and RegTech are central to integration, their effectiveness hinges on stronger drivers like F3. The results emphasize a strategic hierarchy, optimizing performance measurement (F3) will have cascading benefits across compliance (F2) and risk assessment (F1), while technology (F4) must be tailored to

support these goals. The minor influence of F5 and F6 suggests they are secondary levers, useful for fine-tuning but insufficient alone. Overall, the analysis advocates prioritizing F3-driven governance alongside technology-enabled execution (F4), with training (F5) and risk foresight (F6) as complementary measures. This structured approach ensures ESG-AML frameworks remain adaptive to regulatory and technological shifts while grounded in measurable outcomes.

5.5 Discussion of Research Question Four

In the global financial landscape, Environmental, Social, and Governance (ESG) metrics are no longer supplementary disclosures but essential indicators of responsible banking, investor confidence, and institutional sustainability. As banks and financial institutions face growing pressure to demonstrate their commitment to ethical behavior and long-term value creation, ESG disclosure scores have emerged as strategic tools to measure their performance across these dimensions. In India, ESG adoption remains uneven, with a clear divide between private sector leadership and public sector inertia. This study examines ESG scores sourced from S&P Global for Indian banks and financial institutions, aiming to understand disparities in ESG disclosure practices and draw implications for their governance and Anti-Money Laundering (AML) frameworks.

5.5.1 Selection of ESG Rating Agency and Data Approach

One of the critical challenges in ESG benchmarking is the lack of standardization in rating methodologies across agencies like S&P Global, Sustainalytics, to name a few. As these agencies apply distinct weights and parameters to ESG pillars, inter-agency comparisons often lead to misleading conclusions. Hence, this study has focused exclusively on S&P Global, which provides relatively wider coverage of Indian banking and financial entities, thereby allowing more coherent comparisons. Multiple banks and financial institutions with ESG ratings from S&P Global were selected, ensuring consistency in data interpretation and mitigating the risk of methodological bias.

5.5.2 Variation in ESG Scores and Sectoral Trends

A detailed analysis of the ESG disclosure scores reveals significant variation in transparency and sustainability performance across the Indian banking and financial sector. YES Bank (73), HDFC Bank (57), Axis Bank (57), IDFC First Bank (57), and Kotak Mahindra Bank

(53) stand out with very high ESG scores, reflecting robust disclosure frameworks and mature sustainability practices. These banks are typically characterized by:

- Higher investment in digital governance and ESG analytics
- Well-documented sustainability reports
- Integration of ESG metrics into risk and compliance systems

In contrast, public sector entities like Indian Overseas Bank (19), UCO Bank (19), LIC of India (14), and Muthoot Finance (19) have registered low or very low ESG scores, indicating limited disclosure, poor governance integration, or underdeveloped sustainability policies.

This private-public divide signals a structural challenge. While private sector banks, due to global exposure and investor scrutiny, have advanced their ESG positioning, many public institutions continue to rely on legacy systems with less emphasis on ESG governance or AML-linked transparency.

5.5.3 Cross-Sectoral Comparisons

Among non-banking financial companies (NBFCs), the pattern remains mixed. For example:

- Bajaj Finance Ltd (45) has achieved a very high rating, indicating agility in ESG integration.
- HDFC Life Insurance (48) shows strong governance mechanisms.
- On the contrary, HDFC AMC (24) and LIC (14) fall behind, highlighting disparities even within financial conglomerates.

This underscores the need for uniform adoption of ESG best practices across all financial segments, including mutual funds, insurance, and housing finance, not just commercial banking.

5.5.4 Governance and ESG Ratings: A Proxy for AML Strength

A deeper look into the Governance pillar of ESG highlights its strategic overlap with AML frameworks. Governance indicators assessed in ESG scores, such as board independence, audit committee effectiveness, compliance structure, whistleblower policies, and anti-corruption mechanisms, are directly relevant to how a bank manages money laundering risks.

Institutions with high ESG scores typically demonstrate:

- Strong internal control systems
- Clear AML escalation and reporting protocols
- Automated compliance checks
- Real-time risk monitoring through integrated tools

Therefore, ESG ratings, while broader in scope, indirectly reflect the maturity of AML practices. Conversely, low ESG performers may lack transparent reporting and automated systems, leaving them vulnerable to financial crime, regulatory non-compliance, and reputational damage.

5.5.5 Strategic Implications of ESG Score Disparities

The disparities observed in ESG scores are not just statistical but strategic. Banks and financial institutions with high ESG ratings are likely to:

- Gain access to green finance and sustainability-linked investments
- Attract ESG-focused investors and institutional funds
- Enjoy preferential treatment in global regulatory ecosystems (e.g., FATF, EU SFDR, TCFD)

On the other hand, banks and financial institutions with low or no ESG ratings face risks such as:

- Regulatory penalties for non-compliance with new ESG norms
- Exclusion from ESG-based investment portfolios
- Limited credibility among stakeholders and global partners
- Reputational backlash in case of financial misconduct or weak AML controls

5.5.6 FinTechs and NBFCs as ESG Disruptors

Interestingly, certain NBFCs like Bajaj Finance demonstrate higher ESG maturity than even some traditional banks. This suggests that agility and technology orientation may allow

fintech and NBFCs to leapfrog legacy banks in ESG-AML alignment. With the rise of AI-based ESG analytics, blockchain for traceability, and API-led compliance engines, these players can proactively manage ESG disclosures and optimize AML outcomes at lower costs and faster turnarounds.

Traditional banks and financial institutions must therefore not only catch up but also collaborate or benchmark with agile players to remain competitive.

5.5.7 The Risk of ESG Absence in Unrated Institutions

Another dimension of concern is the absence of ESG scores for many smaller or regional banks. This lack of public ESG data may be interpreted as:

1. **Compliance Gaps** – Potential failure to adopt required sustainability or AML practices.
2. **Operational Weaknesses** – Inadequate documentation or monitoring systems.
3. **Reputational Risks** – Investor scepticism about the institution's ethical or legal standards.
4. **Regulatory Exposure** – Future vulnerability to fines or restrictions under mandatory ESG disclosures.

Hence, even institutions not currently required to disclose ESG metrics must begin internal preparations for sustainability governance and ESG-aligned AML strategies.

5.5.8 AML-ESG Synergy: The Strategic Nexus

The study reinforces the emerging view that ESG and AML are no longer parallel silos but mutually reinforcing components of ethical banking. Their strategic convergence can be understood as follows:

1. Risk Management Integration

AML systems provide the data and structure for ESG-related risk detection, especially under the "Governance" pillar. Effective AML implementation strengthens ESG ratings and vice versa.

2. Stakeholder Trust and Reputation

Transparent AML practices, when integrated with ESG disclosures, promote public trust, attract responsible investors, and enhance customer loyalty.

3. Sustainable Finance Channels

Institutions with strong AML-ESG synergy are ideal vehicles for green bonds, social impact funds, and ethical investments, expanding their financing options.

4. Regulatory Readiness

Integrated frameworks ensure smoother compliance with evolving disclosure mandates such as:

- FiU Ind Financial Intelligence Unit, India
- Reporting to various regulators (RBI, SEBI, IRDA etc)
- EU's Sustainable Finance Disclosure Regulation (SFDR)

5.6 Conclusion

Collectively, these results paint a complex yet coherent picture of how ESG frameworks interact with AML mechanisms in India's banking and financial system. The SPSS results confirm that internal mechanisms like training and monitoring are instrumental in improving AML perceptions. The thematic analysis uncovers systemic gaps in perception, culture, and organizational structure. The DEMATEL model shows that regulatory clarity and technological integration are the levers with the greatest system-wide impact. Finally, the ESG score analysis reveals potential misalignments and the risk of ESG being used as a reputational shield rather than a substantive compliance tool. Together, these findings call for an integrated compliance architecture where ESG and AML are treated not as parallel mandates but as interdependent systems requiring cohesive governance, technological synergy, and robust policy enforcement.

CHAPTER VI: SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

This comprehensive summary synthesizes major findings of the study titled “Evaluating Money Laundering Risks Camouflaged within ESG Parameters in the Indian Banking and Financial System.” The research investigates how ESG (Environmental, Social, and Governance) frameworks intersect with Anti-Money Laundering (AML) mechanisms in Indian banking and financial institutions. Designed as a mixed-methods study, it integrates quantitative analysis using SPSS, qualitative expert interviews analyzed via Thematic Analysis, and causal modeling through DEMATEL. The central aim is to determine whether ESG initiatives, while promoting sustainable finance, might unintentionally provide cover for money laundering activities by creating oversight blind spots or inconsistent verification standards.

Beginning with Research Question One, the study assesses the influence of ESG training and monitoring on AML effectiveness. Responses from 452 seasoned professionals, most with over 20 years of experience, reveal an organizational landscape where ESG is conceptually appreciated but operationally deficient. Although there is general agreement that ESG contributes to financial transparency and AML risk reduction, the actual knowledge and training related to ESG remain insufficient. Foundational ESG awareness is low, training materials are outdated, and employee motivation toward ESG-AML practices is lacking. Policies for ESG exist in many institutions, but resource allocation and consistent monitoring remain weak. This gap between policy and practice illustrates how ESG principles are acknowledged but not fully implemented into AML operations.

Moreover, AML frameworks show moderate effectiveness, but ESG integration within these is minimal, and audit practices vary widely. Notably, monitoring systems seldom include ESG metrics, revealing a clear disconnection. Statistical analyses confirm these patterns, factor analysis highlights the interconnectedness of training, monitoring, and compliance, but foundational awareness lags behind. Regression analysis reinforces that quality audits and

frequent monitoring significantly improve AML outcomes. Correlation matrices demonstrate strong interrelations among training, monitoring, and compliance, while awareness correlates only moderately. Collectively, these findings depict a system with theoretical coherence but practical fragmentation, where ESG's role in AML remains more aspirational than actionable.

Research Question two, the qualitative findings of this thematic study provide valuable insights into the evolving relationship between Environmental, Social, and Governance (ESG) principles and Anti-Money Laundering (AML) frameworks in India's financial sector. Expert interviews reveal a clear operational divide between the two, with AML seen as transaction-focused and mandatory, while ESG remains voluntary and centered on credit or asset-related functions. This siloed structure hinders holistic risk management and limits opportunities to detect financial crimes embedded in ESG-sensitive sectors. Despite these differences, governance emerges as a critical convergence point. Experts emphasized that robust governance supports both ESG credibility and AML compliance. Violations of laws like the Prevention of Money Laundering Act (PMLA) should influence ESG ratings, suggesting governance metrics could bridge both domains effectively.

However, inconsistent ESG disclosures, low data quality, and weak audit mechanisms were identified as major barriers. Experts highlighted risks of greenwashing and misreporting under current frameworks such as SEBI's BRSR, which undermines the reliability of ESG scores in AML assessments. Environmental and social crimes, including illegal mining and labor exploitation, were also cited as new laundering vectors. Technological tools like AI and blockchain offer promise but require explainability, validation and ground deployment. Cultural issues, especially inadequate staff training and the perception of ESG-AML programs as "tick-box" tasks, further hamper integration. In conclusion, experts support ESG-AML convergence but stress the need for standardized reporting, enhanced verification, and stronger regulatory oversight. Building capacity, fostering awareness, and adopting integrated technology will be vital to aligning ESG and AML goals in India's financial ecosystem.

Research Question Three employs DEMATEL analysis to understand causal dynamics among six ESG-AML integration factors. "Measuring Effectiveness and Performance" (F3) emerges as the most influential driver, indicating that robust measurement tools and audits are central to successful ESG-AML integration. It impacts other factors such as ESG Risk Assessment (F1) and Regulatory Compliance (F2), which are more reactive than proactive. Technology (F4), while being an effect factor, has the highest prominence, underscoring its critical role. However, its efficacy depends on well-established governance mechanisms like F3.

Training and stakeholder engagement (F5) and future challenges and strategies (F6) have secondary but important influence. The DEMATEL model thus provides a strategic hierarchy, performance metrics and audits should be prioritized, with technology adapted to support these drivers. Training and risk strategy, though impactful, serve best in support roles. This analytical structure guides institutions toward systemic improvements by aligning technological tools with performance governance, enabling adaptable, resilient ESG-AML frameworks.

Research Question Four explores correlations between ESG scores and AML performance using external ESG ratings (S&P Global, Sustainalytics, etc) and internal indicators (Suspicious Transaction Reports, audit results, regulatory penalties). The results reveal only a weak negative correlation between ESG scores and STR frequency, indicating that high ESG scores do not reliably predict stronger AML performance.

Disaggregation of ESG scores showed that institutions with strong environmental ratings but weak governance indicators were more prone to regulatory scrutiny and anomalies. A positive correlation between ESG disclosures and money laundering indicators suggests that ESG, in certain contexts, may inadvertently aid in masking illicit activity. Inconsistencies between internal ESG audits and external ratings raise concerns about ESG ratings' reliability. These findings demand a more nuanced scoring system that includes AML-specific indicators and verification mechanisms.

In synthesizing these diverse findings, several critical insights emerge. First, internal mechanisms like training, audits, and monitoring are foundational to ESG-AML integration. However, without base-level awareness, even the most robust frameworks risk renders ineffectiveness. Second, cultural and organizational silos impede ESG-AML convergence. Integrating these domains requires cross-functional collaboration and regulatory clarity. Third, technology must be embedded not as a standalone solution but as an enabler within governance-driven frameworks. Lastly, ESG ratings, while useful for signaling ethical intent, must be verified and aligned with actual compliance behavior to be reliable AML indicators.

Overall, this chapter presents a multidimensional understanding of ESG and AML convergence in India. While conceptual alignment exists, operational fragmentation persists. The statistical and thematic findings converge on a common conclusion, the transformative potential of ESG in curbing financial crime remains underleveraged due to systemic gaps in awareness, training, integration, and verification. Addressing these challenges will require coordinated regulatory reform, institutional investment in ESG-AML capacity-building, and

the development of standardized, verifiable, and technologically enabled ESG indicators that directly align with AML goals. Only then can Indian financial institutions evolve into truly ethical, transparent, and resilient actors in the global financial ecosystem.

6.2 Managerial Implications

The implications of this study are multidimensional, cutting across regulatory compliance, corporate governance, risk management, sustainability reporting, financial crime prevention, and institutional accountability. The most fundamental implication is the redefinition of ESG (Environmental, Social, and Governance) frameworks as not merely aspirational sustainability benchmarks, but as operational tools that must be strategically integrated with Anti-Money Laundering (AML) protocols. The study challenges the conventional segregation between ESG and financial compliance domains by empirically demonstrating that ESG systems, when inadequately monitored and integrated with AML tools, may serve as convenient camouflage for money laundering activities. This is particularly crucial in the Indian banking and financial ecosystem, where ESG adoption is on the rise, spurred by SEBI's Business Responsibility and Sustainability Reporting (BRSR) mandates and global investor scrutiny. However, in the absence of synchronized AML integration, ESG disclosures risk becoming superficial tick-box vulnerable to manipulation. Thus, the study implies a pressing need for Indian regulators such as the Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI), other regulators and Financial Intelligence Unit (FIU-India), with guidance from Ministry of Finance, Government of India (GOI), to develop cross-functional governance frameworks that merge ESG evaluations with risk-based AML surveillance. The current approach wherein both subjects like ESG and AML are separately managed by respective departments which creates fragmented oversight, allowing illicit financial behaviors to slip through regulatory cracks under the guise of "green" or "ethical" investment.

For policymakers, the findings underscore the need for updated compliance guidelines that explicitly link ESG reporting with financial crime indicators. By revealing that ESG disclosures often exclude money laundering flags such as opaque supply chains, shell company investments, and non-traceable CSR funds, the study highlights the need for a regulatory overhaul. Policymakers are thus called to revise ESG regulations to mandate the inclusion of financial transparency metrics, third-party verification of ESG activities, and integration with AML databases, which essentially means like creation of ESG-AML metrics. The implications extend to global frameworks as well, like the Financial Action Task Force

(FATF) may look forward and establish ESG-specific AML red flags that financial institutions must monitor.

From a corporate governance perspective, the study's findings emphasize that boards and executive leadership must recognize ESG as a core compliance risk, not just a reputational or investor relations strategy. The fact that a dominant latent factor from the factor analysis explained over 65% of the variance in ESG-AML components suggests that ESG performance is deeply interconnected with compliance, monitoring, and governance efficacy. Thus, for board audit committees, Chief Risk Officers (CROs), AML Compliance or Principal Officers (PO's), ESG due diligence must become part of their AML frameworks. For example, decisions about entering partnerships or granting loans based on ESG ratings must be subject to the same scrutiny as any financial compliance procedure. Further, the study implies that ESG key performance indicators (KPIs) should be linked to AML metrics, such as the number of suspicious activities identified through ESG channels or improvements in transaction monitoring following ESG training. The role of the Board becomes even more crucial in overseeing independent ESG audits, especially as qualitative interviews in the study indicated that ESG assessments are often self-certified and lack independent validation.

At a macroeconomic and industry level, the implications signal a paradigm shift in the understanding of financial sustainability. Traditionally, ESG was viewed as an enabler of reputational resilience and long-term returns, while AML was treated as a reactive compliance burden. This study dismantles that dichotomy, showing that ESG can both expose and conceal financial crime depending on how it is structured and enforced. Hence, ESG is not a passive set of metrics but an active battleground for financial integrity. This calls for an industry-level interventions such as the creation of ESG-AML convergence frameworks by bodies like the Indian Banks' Association (IBA), Federation of Indian Chambers of Commerce & Industry (FICCI), and National Stock Exchange (NSE). The study recommends that financial rating agencies incorporate AML sensitivity indicators in ESG scores to prevent ESG arbitrage, where entities obtain high ESG ratings despite underlying non-compliance with financial laws. Cross-border implications also emerge, as Indian banks expanding into ESG-sensitive jurisdictions may face litigation or sanctions if ESG-AML integration is insufficient. Therefore, ESG alignment must not only meet domestic benchmarks but also anticipate global compliance expectations from bodies like the EU Taxonomy, TCFD, and FATF.

Academically, the study opens several new avenues for research and theoretical development. It suggests that as individuals become more informed about the complexities and loopholes in

ESG systems, they may experience “compliance fatigue” or become skeptical of real-world efficacy, an area in demand for further qualitative inquiry. Moreover, the study’s validation of ESG-AML as a unified compliance construct, supported by strong factor loadings and internal consistency, calls for the development of new theoretical models that treat ESG and AML not as intersecting but as interdependent systems. This could lead to a new field of study, perhaps termed "Sustainable Compliance", that unifies ethics, governance, finance, and regulation into a holistic operational science.

In conclusion, the study has far-reaching implications that transcend institutional boundaries and redefine ESG as both a moral compass and a compliance frontier. It calls upon financial institutions to abandon the superficial embrace of ESG as a branding exercise and instead approach it as a strategic, operational, and regulatory necessity integrated tightly with AML systems. It urges regulators to mandate ESG audits with AML overlays, and calls on industry leaders to institutionalize cross-domain training, invest in real-time monitoring technologies, and elevate ESG-AML integration to the C-suite and boardroom agenda. If implemented, these recommendations promise not just cleaner financial systems but also a more credible ESG landscape, one that truly reflects transparency, accountability, and sustainable integrity. The study does not merely diagnose a problem but offers a blueprint for reforming ESG from a risk into a resilient defense mechanism against financial crime including money laundering. In doing so, it positions India’s financial sector at the cusp of a regulatory renaissance, one where ethics and efficiency converge, and where *sustainable finance is not just green, but clean*.

6.3 Recommendations

This study's results highlight the increasing need for a more unified, transparent, and technology-driven method to incorporate ESG (Environmental, Social, and Governance) principles with Anti-Money Laundering (AML) frameworks in the Indian banking and financial sector. Drawing on quantitative inferences, qualitative insights, expert analyses, and secondary data assessments, some practical recommendations may be proposed to enhance institutional practices, regulatory frameworks, and intersectoral collaboration in this domain and regulatory uniformity should be promoted. Though India lacks a cohesive and enforced ESG disclosure system but slowly showing progress in strengthening their disclosure norms. Although programs such as SEBI’s Business Responsibility and Sustainability Reporting (BRSR) represent progress, discrepancies in reporting metrics and the self-disclosure aspect of ESG data provide vulnerabilities that might be exploited for financial malfeasance,

including money laundering. **First**, it is recommended that Regulatory bodies like SEBI, RBI and others should implement compulsory third-party certified ESG disclosures, especially for banks and financial institutions. Standardized ESG metrics, congruent with worldwide frameworks like GRI, TCFD, etc would enhance risk assessment and integration with AML screening instruments.

Second, technology must be used more efficiently. Financial institutions need to be incentivized to invest in compliance technology (RegTech) capable of incorporating ESG indicators into current AML monitoring systems. Artificial intelligence (AI) and machine learning algorithms may facilitate the analysis of extensive ESG information, identify discrepancies in disclosures, and associate abnormalities with dubious financial activities.

Third, organizational reform may be necessary to enhance cross-functional communication between ESG officers and compliance departments. Traditionally, these departments function in isolation; nevertheless, the study's results suggest the need for a more cohesive compliance framework. Forming ESG-AML task groups or steering committees inside institutions may address this disparity. These divisions are capable of evaluating policies, overseeing continuous compliance, and collaborating with external auditors or rating agencies to substantiate ESG assertions from an AML standpoint. Additionally, banks, financial institutions must revise their Know Your Customer (KYC) and Customer Due Diligence (CDD) processes to include ESG compliance assessments, especially for high-risk sectors such as mining, energy, and waste management.

Fourth, the enhancement of human capital development is necessary. The research revealed a deficiency in frontline workers' understanding of the convergence of ESG and AML. Numerous staff members see AML as a compliance need and ESG as a sustainability endeavor, failing to acknowledge their common ethical basis and intersecting risk areas. Consequently, training programs need enhancement. Institutions have to include ESG-AML modules into onboarding, compliance certification, and ongoing education for staff across all tiers. These programs should highlight the significance of governance, internal audits, environmental crime classifications, and reputational threats within the comprehensive AML framework.

Fifth, coordination between public and commercial sectors is essential for successful implementation. Indian financial authorities should collaborate more effectively with ESG rating agencies, academic institutions, and civil society organizations to authenticate ESG data and enhance transparency. A consolidated public ESG database, regulated by SEBI or a multi-regulatory task group, might function as a repository for verified ESG measurements,

enforcement actions, and financial penalties associated with ESG compliance. This will not only facilitate ethical decision-making for investors but also help AML analysts in identifying customers with elevated ESG-related risks.

Sixth, systematic monitoring and implementation of frequent audits and third-party evaluations should be required for ESG-AML convergence practices. Internal audits must include more than financial compliance to assess the veracity of ESG assertions, especially in industries susceptible to laundering via environmental or social avenues. External auditors or forensic consultants need to participate in executing risk-based assessments that correlate ESG performance with AML vulnerabilities. This stage is essential for verifying institutional assertions and guaranteeing accountability.

Seventh, enhanced openness and stakeholder engagement are crucial for ensuring legitimacy in ESG-AML integration. Financial institutions need to provide ESG-AML impact evaluations, detailing the contributions of ESG policies to AML compliance and vice versa. Transparency reports must include case studies of ESG-aligned customer rejections, augmented due diligence for ESG-inconsistent industries, and proactive divestment from high-risk investment opportunities. Furthermore, public feedback mechanisms have to be formalized to collect views from whistleblowers, customers, and non-governmental organizations (NGOs), thereby broadening the scope of AML oversight beyond corporate and regulatory domains.

Finally, the integration at the policy level must be promoted. The Ministry of Finance, Ministry of Corporate Affairs, and Ministry of Environment should collaborate to provide unified advice on the connections between ESG and AML, establishing explicit compliance requirements for institutions. Furthermore, the regulators should consider integrating ESG-AML risk evaluations within its supervisory review process (SREP), especially for systemically significant financial institutions. Guidelines must clearly define how ESG risks, such as illicit mining, deforestation, or social exploitation, may represent money laundering typologies under the Prevention of Money Laundering Act (PMLA).

In conclusion, while the Indian banking and financial sector has significantly advanced in AML regulation, the changing ESG environment poses both a danger and an opportunity. By integrating ESG and AML practices via technology, legislation, human resources, and cross-sector collaborations, financial institutions may develop more robust, ethical, and future-oriented compliance systems. The proposals presented herein seek to address current deficiencies while also preempting potential hazards in an increasingly globalized and environmentally aware financial landscape.

6.4 Research Limitation

This research gives us useful information on how Environmental, Social, and Governance (ESG) practices and Anti-Money Laundering (AML) frameworks are coming together in India's banking and financial system. However, its results cannot be applied to other situations because of a few limitations. One of the main problems is that the study relies on publicly accessible ESG ratings and disclosures, which may not provide a full or comprehensive picture. In India, ESG data is still scattered and frequently comes from institutions that report it themselves without having it checked by a third party. Different rating methods are used by agencies like S&P Global, Sustainalytics etc, which makes it hard to compare ratings across organizations. Also, India's absence of a unified ESG disclosure mechanism makes it more likely that data will be left out, greenwashed, or changed, which makes the secondary data utilized in this analysis less reliable. The sampling scope is another limit. The research used the Cochran formula to show that the sample size was big enough, although most of the sample came from well-known commercial banks and financial institutions. There were not as many smaller institutions, cooperative banks, regional rural banks, and fintech's since they did not have enough access to resources. Because of this, the results only show what happens in institutions that are more open or make progress on environmental, social, and governance issues. They may not show what happens in sectors that are less mature or less clear. There is also a bias in responses that comes from people choosing to participate. Organizations with better ESG-AML frameworks were more likely to take part in the research, which might have made the findings more favourable for them.

The research used semi-structured interviews with directors, regulators and senior professionals from banking and financial institutes, academia, and ESG consulting to acquire primary data. These participants have an average of more than 12 years of experience and are senior, which gives them credibility. However, they also represent a certain institutional point of view that is typically in line with existing regulatory frameworks. While their thoughts are valuable, they may not include the more disruptive, grassroots, or inventive views of younger professionals, digital banking start-ups, or whistleblowers. Qualitative data is subjective, and even when triangulated, it may be biased in how it is interpreted or reflect what people think is socially acceptable, especially when talking about sensitive issues like AML breaches or ESG manipulation.

Using the DEMATEL (Decision-Making Trial and Evaluation Laboratory) model to trace causal linkages between ESG and AML components is a methodological restriction.

DEMATEL is useful for finding interdependencies, but it depends a lot on expert opinion to provide influence ratings, which makes it open to bias. Also, DEMATEL works on a static matrix and does not consider changes over time or outside shocks like changes in the law or changes in the economy. Because there were just a few experts in this research, each viewpoint that was different from the others had a bigger effect on the outcomes of the causal mapping.

Some of the statistical analysis approaches were employed including correlation, regression, ANOVA, and chi-square to back up quantitative results. These techniques, on the other hand, make assumptions about normality, homoscedasticity, and independence that may not always be true in complicated, real-world ESG-AML datasets. The study's cross-sectional nature makes it much harder to figure out what causes things or how they change over time. Longitudinal or panel data would have made the experiment stronger, but they were not possible because of time and data availability issues. The theoretical foundation and varied design are both very important limitations. There has not been much research on ESG-AML integration yet, particularly in India, therefore the study had to make up its own constructs and operational definitions. This opened the door to new ideas, but it also made it harder to compare or replicate experiments and increased the danger of inconsistency. For instance, experts worked together to create survey questions and assessment scales for ESG integration and AML efficacy, and then they were tested on a small group of people. However, these items and scales are not yet standardized in academic research or practice. While the report talks a lot about the importance of technology, it is still mostly wishful thinking. The conversations on AI, blockchain, and RegTech were revolving around on what experts thought, not on real-life examples. Most of the institutions in the survey either had basic digital compliance systems or did not have any ESG-AML platforms at all. Because of this, the results on technology's potential are more theoretical than empirical. More research that focuses on implementation is needed and getting to the data was equally hard. The research did not have access to real-time transaction data, internal audit trails, or complaints of AML violations that were particular to the case. Because of these limitations, it was not possible to provide a forensic study of how investments connected to ESG may be utilized to hide money laundering. To get such extensive information, regulatory or institutional cooperation would be needed that goes beyond what was allowed for this investigation. Changes in the outside world and in policy also create a limit. The research was place at a time when India's ESG rules and AML changes were changing. For example, the Securities and Exchange Board of India (SEBI) has recently come up with Business Responsibility and

Sustainability Reporting (BRSR) rules, and changes to the rules on following AML laws are also in the works. Amendments in the rules may change how people think about and use ESG-AML convergence, which means that some of the results may not be useful for long.

Also, events throughout the world, including FATF reviews, international penalties, or climate financing flows, might change ESG-AML dynamics in ways that this piece of research does not show. For instance, changes in foreign investors' ESG expectations or multilateral financial institutions' emphasis on financing connected to sustainability might affect AML enforcement on their own, adding outside elements to the internal organizational issues addressed here.

In short, this study adds a lot to a field that has not been studied much, but its results should be taken with a grain of salt. The results are not as generalizable or accurate because of problems with the quality of the data, the variety of the sample, the subjectivity of the methods, the novelty of the theory, and the changing policy environment. These limitations do not make the study less relevant; instead, they show where further research may be done. Long-term monitoring, more stakeholder involvement, comparisons across countries, and real-world testing of technology-based ESG-AML solutions should all be goals for future work. Also, moving toward a unified ESG-AML audit and disclosure framework for Indian banks and financial institutions might make this kind of study much more credible and easier to compare in the future.

6.5 Future Research Suggestions

The developing convergence of Environmental, Social, and Governance (ESG) frameworks with Anti-Money Laundering (AML) systems offers a promising area for academic research, particularly in rising countries such as India. This study illustrates that the intersection of these two fields is both theoretically insufficient and practically underutilized, presenting numerous opportunities for future research in disciplines including finance, governance, environmental and financial crime, regulatory science, data analytics, and public policy.

A primary subject for future investigation is the comparative research of ESG-AML integration across countries. This research concentrated on India's financial institutions; however, broadening the scope to include transnational banking systems and established economies such as the EU, UK, and USA may provide significant insights. Comparative research would uncover regulatory asymmetries, discrepancies in ESG data maturity, and the varying levels of integration of ESG considerations within AML frameworks. Comprehending

these international discrepancies is crucial for global AML collaboration, especially considering the transnational characteristics of both money laundering and ESG investment streams.

Simultaneously, there is an imperative need for longitudinal studies that extend beyond the cross-sectional approach used in this study. A time-series methodology might monitor fluctuations in ESG ratings and their influence on AML performance indicators, such as cash transaction reports (CTRs), suspicious transaction reports (STRs), penalty occurrences, or compliance violations, across many years. This would enable academics to evaluate effectively and meaningfully, if robust ESG compliance mitigates financial crime risk, or whether, conversely, corporations use ESG compliance to conceal unlawful actions. This longitudinal research might also assess the enduring impact of regulatory changes, including SEBI's developing ESG disclosure rules and RBI's periodic AML circulars. A further significant avenue is to the quantitative modelling of ESG-AML convergence. Future studies may build risk assessment models and score matrices to measure the alignment between ESG and AML. For instance, developing a composite **ESG-AML Risk Index** might provide financial institutions with a baseline for internal evaluations, while also allowing regulators to identify institutions that exhibit subpar performance in integrated compliance. These models may include data from ESG rating agencies, CTR / STR filings, internal audits, and regulatory punishments. By standardizing these indicators, experts may assist institutions in transitioning from a reactive to a proactive approach in recognizing ESG-related laundering issues.

In conjunction with risk indices, sophisticated technologies like artificial intelligence (AI), machine learning (ML), and blockchain provide promising opportunities for empirical and action-oriented research. Future research may explore the potential of AI technologies to automate the validation of ESG data and correlate abnormalities in ESG disclosures with AML red flags. Blockchain, due to its immutable ledger characteristics, offers potential for improving supply chain transparency, particularly in instances where money laundering is enabled by environmental crimes such as illicit mining or forestry. Empirical case studies on the pilot use of these technologies in Indian banks and financial institutions will provide practical insights into viability, obstacles, cost structures, and ethical implications.

Researchers may investigate the behavioural and cultural aspects of ESG-AML compliance by using insights from organizational psychology and behavioural economics. This would provide an analysis of how compliance officers, auditors, and management teams understand

ESG-AML regulations and the degree to which institutional culture impacts compliance behaviour. Qualitative and ethnographic research may illuminate topics including as opposition to ESG adoption, perceptions of AML duties, and the roles of whistleblowers and internal reporting channels in revealing ESG-related misbehaviour. Findings from this research may guide the creation of more sophisticated training, leadership development, and employee engagement methods.

Future endeavours should also focus on assessing the efficacy of policy and regulatory improvements. As Indian authorities implement ESG reporting obligations and strengthen AML restrictions, it is essential to evaluate the tangible effects of these policies. Researchers may use mixed methods to assess policy efficacy, integrating quantitative measures (e.g., compliance violation counts, decrease in STRs) with qualitative insights from industry stakeholders, auditors, and enforcement agencies. Impact assessment studies would ascertain if existing regulations effectively enhance ESG integrity and mitigate financial crime or just increase compliance requirements without meaningful impact.

Due to the absence of established frameworks worldwide, there is a justification for investigating the establishment of international ESG-AML integration standards. Academics, in partnership with organizations such as the Financial Action Task Force (FATF), World Bank, and the International Organization of Securities Commissions (IOSCO), may enhance global policy discussions by suggesting alignment frameworks considering demography and regional disparities. This may include the development of a model ESG-AML convergence policy framework specifically designed for developing economies, especially in the Asia-Pacific region, where regulatory capacity and market sophistication vary significantly.

Future research should include a wider and more diversified array of stakeholders, extending beyond conventional banking and financial entities. Incorporating viewpoints from environmental activists, corporate governance specialists, consumer rights proponents, and technological innovators might enhance the comprehension of the interpretation, application, or manipulation of ESG frameworks. Examining the function of ESG-linked investment funds or sovereign wealth funds may elucidate how institutional investors assess AML concerns in ESG scoring. Engaging with ESG rating agencies might elucidate the integration of reputational risks into rating methodology and their alignment with AML goals.

Ultimately, forthcoming studies may substantially enhance capacity-building and education. Academic institutions have a distinctive role in incorporating ESG-AML literacy into the

curriculum of business, finance, compliance, operations and law. Future efforts may facilitate the development of modular training programs for compliance professionals that integrate technical AML competencies with ESG risk evaluation, ethical leadership, and regulatory strategy. Action research and participatory methodologies, in which researchers collaboratively develop solutions with practitioners, might be very effective in this context.

The intersection of ESG and AML represents not just an academic opportunity but also a social need. Financial systems are progressively anticipated to fulfil not only economic efficiency but also environmental sustainability and social equity. By exploring these potential study avenues, researchers and practitioners may aid in establishing a more transparent, ethical, and robust global financial framework, helping the mankind in curbing both financial crime and sustainability concerns in a swiftly evolving world.

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APPENDIX A: Questionnaire Survey

A structured set of questions designed to gather quantitative data from a large sample, allowing for statistical analysis and generalizable insights.

1. Age (in years) :

- Under 25
- 25-34
- 35-44
- 45-54
- 55-64
- 65 and above

2. Gender:

- Male
- Female
- Non-binary / Third gender
- Prefer not to say

3. Work Experience:

- Less than 1 year
- 1-5 years
- 6-10 years
- 11-20 years
- More than 20 years
- Not Applicable / Do not want to specify

4. Job Role:

- Entry-level / Junior Staff
- Mid-level Management
- Senior Management
- Executive / Director Level
- Compliance Officer /AML Specialist
- Not Applicable / Other (please specify)

Section 1: General Awareness and Understanding

1. How familiar are you with the concept of ESG (Environmental, Social, and Governance)?
 - Very familiar / Somewhat familiar / Not familiar / Can't say
2. Are you aware of the connection between ESG practices and money laundering prevention?
 - Yes / No / Not aware of / Can't say
3. Do you think integrating ESG factors can improve financial transparency?
 - Strongly agree / Agree / Neutral / Disagree / Can't say
4. Have you attended any sessions or read material on ESG and AML (Anti-Money Laundering)?
 - Yes, multiple / Yes, few / None / Not aware of / Can't say
5. Do you believe ESG is critical to mitigating AML risks?
 - Strongly agree / Agree / Neutral / Disagree / Can't say

Open-Ended Questions:

- In your opinion, what are the main factors influencing awareness of ESG and AML in your organization?
- What resources or training do you think could help enhance understanding of ESG and AML?

Section 2: Implementation of ESG Practices

1. Does your organization integrate ESG principles into its policies?
 - Fully / Partially / Not yet / Can't say
2. Are ESG practices regularly monitored and updated in your organization?
 - Yes / No / Not sure / Can't say
3. Do ESG goals influence decisions regarding clients or partnerships?
 - Strongly / Somewhat / Not at all / Can't say
4. Is ESG reporting aligned with AML compliance frameworks in your organization?
 - Yes / No / Not sure / Can't say
5. Are there sufficient resources dedicated to ESG implementation?
 - Yes, adequate / Partially adequate / Inadequate / Can't say

Open-Ended Questions:

- What are the major challenges your organization faces in implementing ESG practices?
 - How could ESG practices be better integrated with existing policies?
-

Section 3: AML Practices

1. Does your organization have a robust AML policy in place?
 - Yes / No / Not sure / Can't say
2. How effective are your organization's current AML measures in preventing money laundering?
 - Very effective / Somewhat effective / Ineffective / Can't say
3. Are employees well-informed about AML compliance requirements?

- Fully informed / Partially informed / Not informed / Can't say
4. Are suspicious activities effectively identified and reported?
 - Always / Sometimes / Rarely / Can't say
 5. Do you think ESG integration improves AML outcomes?
 - Strongly agree / Agree / Neutral / Disagree / Can't say

Open-Ended Questions:

- What additional measures could improve the effectiveness of AML practices in your organization?
 - How can ESG principles enhance your organization's AML efforts?
-

Section 4: Regulatory Compliance and Frameworks

1. Is your organization compliant with local and international AML regulations?
 - Fully compliant / Partially compliant / Not compliant / Can't say
2. Are ESG frameworks integrated into regulatory compliance reviews?
 - Yes / No / Not aware of / Can't say
3. How effectively does your organization track changes in AML and ESG regulations?
 - Very effectively / Somewhat effectively / Poorly / Can't say
4. Are internal controls designed to align with AML and ESG compliance?
 - Fully aligned / Partially aligned / Not aligned / Can't say
5. Are audits conducted to ensure ESG-AML alignment?
 - Regularly / Occasionally / Rarely / Can't say

Open-Ended Questions:

- What gaps do you see in your organization's approach to regulatory compliance?

- What improvements can be made to align ESG frameworks with AML regulations?
-

Section 5: Effectiveness of Training and Awareness Programs

1. Does your organization conduct training on AML and ESG topics?
 - Regularly / Occasionally / Never / Can't say
2. How often training programs are being conducted on AML / ESG topics?
 - Less than a year / 1-3 years / More than 3 years / yet to start
3. Are employees motivated to engage in ESG-related training?
 - Highly motivated / Moderately motivated / Not motivated / Can't say
4. Are training materials comprehensive and up-to-date?
 - Yes / No / Not sure / Can't say
5. Do training sessions cover real-world ESG-AML case studies?
 - Always / Sometimes / Never / Can't say

Open-Ended Questions:

- What aspects of training programs do you find most beneficial?
 - How can training sessions be improved to address ESG-AML challenges?
-

Section 6: Monitoring and Reporting Mechanisms

1. Are there defined procedures for ESG-AML monitoring and reporting?
 - Yes, well-defined / Partially defined / Not defined / Can't say
2. How effective are the current reporting mechanisms in identifying risks?
 - Very effective / Somewhat effective / Ineffective / Can't say
3. Are ESG metrics included in AML reports?

- Yes / No / Not sure / Can't say
4. Are monitoring mechanisms equipped to address emerging ESG-AML risks?
 - Yes / No / Not aware of / Can't say
 5. Is data collected for ESG-AML purposes adequately secure?
 - Fully secure / Partially secure / Not secure / Can't say

Open-Ended Questions:

- What challenges do you face in monitoring and reporting ESG-AML risks?
 - What additional tools or resources are needed to improve reporting mechanisms?
-

Section 7: Challenges and Improvements

1. What challenges does your organization face in implementing ESG-AML measures?
 - Significant / Moderate / Minimal / Can't say
2. Are technological limitations a barrier to ESG-AML integration?
 - Yes, significant / Minor / Not at all / Can't say
3. Does the lack of awareness hinder ESG-AML effectiveness?
 - Strongly agree / Agree / Neutral / Disagree / Can't say
4. Are there sufficient resources to address ESG-AML challenges?
 - Yes, sufficient / Partially sufficient / Not sufficient / Can't say
5. Are communication gaps a major challenge in ESG-AML integration?
 - Yes / No / Not aware of / Can't say

Open-Ended Questions:

- What are the top three challenges in implementing ESG-AML measures in your organization?

- What improvements would you suggest for overcoming these challenges?
-

Section 8: Future Outlook

1. Do you believe ESG-AML integration will be a priority in the future?
 - Strongly agree / Agree / Neutral / Disagree / Can't say
2. How optimistic are you about your organization's ability to adapt to ESG-AML trends?
 - Very optimistic / Somewhat optimistic / Not optimistic / Can't say
3. Are there plans to improve ESG-AML measures in your organization?
 - Yes / No / Not sure / Can't say
4. Is your organization investing in technology to support ESG-AML initiatives?
 - Yes / No / Not aware of / Can't say
5. Do you anticipate new challenges in ESG-AML compliance in the near future?
 - Yes, significant / Moderate / None / Can't say

Open-Ended Questions:

- What do you see as the future trends in ESG-AML integration?
- What specific actions should your organization take to stay ahead in ESG-AML initiatives.

APPENDIX B: Interviews' questions

A semi-structured or open ended interview guide designed to elicit detailed and in-depth qualitative data, exploring participants' perspectives, experiences, and motivations.

F1. ESG Risk Assessment in AML Frameworks

- i. Does your organization have policies on ESG & AML? How does your organization assess & monitor ESG-related risks & AML compliance?
- ii. Can you think of any connection between ESG and AML?
- iii. Do you think integrating key ESG risk indicators into AML frameworks is a meaningful proposition for an organization owing to various regulatory & compliance formalities, one must make? If yes, pl elaborate.

F2. Regulatory, Compliance & Governance in ESG-AML

- iv. Does your organization's policies adequate and whether the same is in place to integrate ESG into AML decision-making?
- v. How do existing AML regulations in your jurisdiction align (or conflict) with emerging ESG reporting requirements? Can you share any practical compliance hurdles?
- vi. In your view, what are the biggest regulatory gaps in integrating ESG risk into AML, and how can they be addressed? Maybe you can throw some light on expectations from Regulators, more transparency & seriousness for an organization in their disclosure etc.

F3. Measuring Effectiveness and Performance

- vii. What key performance indicators (KPIs), both qualitative & quantitative, do you use to measure ESG risk & monitor AML transactions in your organization?
- viii. What do you think businesses should track to measure the success of their ESG and AML efforts?

F4. Role of Technology in ESG-AML Integration

- ix. What technologies (e.g., AI, machine learning, blockchain) is your organization currently using in detecting ESG-related financial (AML) risks

and do you think automation is important in identifying financial (AML) crimes?

- x. Can you give an example of how technology could be used to detect unethical business practices?

F5. Training, Stakeholder Engagement & Best Practices

- xi. What type of ESG-AML-related training does your organization currently provide to employees/stakeholders or planning to provide in near future?
- xii. How do you think companies can balance profit-making with being ethical and socially responsible?

F6. Challenges & Way forward

- xiii. Do you think current tools and metrics for effective measurement of ESG-AML risk are adequate in risk mitigation and create significant business value?
- xiv. How do you think of reconciling potential conflicts between quantitative AML metrics (e.g., suspicious transaction reports, STRs) and qualitative ESG outcomes (e.g., reputational risk reduction)?
- xv. Share your views on what can be done in the near future to align ESG risk with Financial (AML) Crime that helps create shareholder value. Views can be in light of keeping pace with ever-evolving regulations & compliance work including the cost of compliance, various tools & technologies for effective monitoring, more market participants providing reliable data and solutions, mature market etc
- xvi. Finally, do you think evaluating the effectiveness of AML through ESG risk is quite relevant today and the organization should look forward to aligning these subjects not only from a Compliance & Cost perspective but also robust processes around AML-ESG subject will enhance an organization's performance and create shareholder's value.

This concludes the interview. The interviewer would like to thank the interviewees for taking the time to share their vast experience and future perspectives on AML-ESG integration.

APPENDIX C: Informed Consent Form



JOB SATISFACTION: EVALUATING THE EFFECTIVENESS OF MONEY LAUNDERING THROUGH ESG RISK IN THE INDIAN BANKING AND FINANCIAL SYSTEM

I, agree to be interviewed for the research which will be conducted by a doctorate students at the Swiss School of Business and Management, Geneva, Switzerland.

I certify that I have been told of the confidentiality of information collected for this research and the anonymity of my participation; that I have been given satisfactory answers to my inquiries concerning research procedures and other matters; and that I have been advised that I am free to withdraw my consent and to discontinue participation in the research or activity at any time without prejudice.

I agree to participate in one or more **electronically recorded** interviews for this research. I understand that such interviews and related materials will be kept completely anonymous and that the results of this study may be published in any form that may serve its best.

I agree that any information obtained from this research may be used in any way thought best for this study.

.....

.....

Signature of Interviewee

Date

