

EMBEDDING ESG VALUES IN INDIAN BANKING: REDEFINING FINANCIAL INSTITUTIONS FOR A SUSTAINABLE FUTURE

*Tanishka Jaiswal,
Mohammad Alijah Hasan
Varu Jaiswal
rsm2025003@iiti.ac.in
Harshita Singh
Vineet Tiwari*

*Department of Management Studies, Indian Institute of Information
Technology- Allahabad, India
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ABSTRACT

Across the world, countries are increasingly focusing on ESG values to promote responsible environmental, social and governance practices. In India, various sectors and industries have also begun to emphasize on ESG principles driven by strong regulatory mandates, global pressure and growing public awareness.

The Banking sector in India is also increasingly emphasizing the adoption of ESG practices to reduce risk, ensure regulatory compliance and meet the growing expectations of investor and consumer. In this study we seek to identify the key enablers that facilitate ESG compliance in Indian Banks. These enablers were first identified through a comprehensive review of the existing literature and subsequently validated through expert consultation. To achieve this, we employ ISM-MICMAC methodology that help to identify the key enabler and develop a structural model illustrating how these factors are interrelated. Furthermore, MICMAC analysis is used to classify these enablers based on their driving and dependence power. The findings shows that Regulatory Initiatives and Technological Advancement are the main enabler of

ESG adoption. Focusing and emphasizing on these areas help bank to reduce risks, ensure regulatory compliance, enhance brand image and effectively managing climate risk and challenges. Banks should embed ESG value into their core strategies and operational policies to achieve sustainable and long-term growth

Keywords: ESG, Sustainability, Indian banking, CSR, MCDM

INTRODUCTION

Environmental, Social, and Governance ESG concepts are being included in the daily operations of banks and financial institutions all around. It is now a major component of their company, not a minor issue as they once handled (Reichsteiner, R. 2020). They connect ESG with their financial decisions, handling of money, service delivery, and risk management. This change occurs because rules are becoming stricter, investors prefer responsible choices, and customers want banks to prioritize the well-being of people and the planet. Banks try to meet these expectations by bringing sustainability goals into their plans, actions, and systems. They employ responsible practices to mitigate risks and explore new avenues for growth. They now consider ethical principles when

lending money, choosing partners, or designing products, while also employing sustainable thinking to prepare for future challenges and remain resilient in a changing world. Many banks now invest in clean energy, green bonds, digital tools, and other projects that support long-term goals, such as the UN Sustainable Development Goals. They know that adopting these values helps them work more effectively and serve society at the same time. As this global shift continues, banks recognize that adopting such responsible frameworks is not a choice, but a necessity that they must employ to comply with regulations, meet market demand, and maintain long-term relevance.

The Importance of ESG in the Present Scenario

Banks and financial organizations now incorporate environmental, social, and governance (ESG) considerations into their daily operations. ESG is no longer just an extra concern. It influences how banks make decisions, manage finances, provide services, and manage risks. This change is occurring because rules are stricter, investors demand responsible choices, and customers expect banks to prioritize people and the planet. They are integrating ESG in their plans, actions, and systems to meet these new expectations. They consider ESG when lending money, selecting partners, and developing new products. It helps banks mitigate risks and explore new avenues for growth. For example, banks now offer green loans and sustainable investment products. They also utilize ESG to verify that their partners and clients adhere to

responsible practices. Banks utilize technology to track and report on ESG activities, making their work more transparent and helping them meet regulatory requirements and customer demands. By making it a core part of their business, banks enhance their reputation, foster trust, and remain prepared for future market changes and regulatory updates. Many banks now invest in clean energy, green bonds, digital tools, and other projects that support long-term goals, such as the UN Sustainable Development Goals. Banks recognize that ESG initiatives help them operate more effectively and also support society. As changes occur around the world, banks recognize that following ESG principles is now necessary, not optional. They must follow ESG principles to meet regulatory requirements, stay aligned with market expectations, and remain relevant in the future.

Incorporating ESG in the Indian Banking Sector

Indian banks have started focusing more on Environmental, Social, and Governance ESG ideas to match global trends and respond to rising expectations from investors, customers, and regulators (*2023 Global Status Report for Buildings and Construction*). The Reserve Bank of India RBI plays a key role in pushing banks to include these values in their daily work. Banks must upgrade their technological systems to accomplish this correctly. They must gather and oversee information on topics such as the societal impact of carbon emissions and their level of preparedness for climate change hazards. Banks also have to produce reports demonstrating their efforts. This implies upgrading internal rules and data

networks of IT systems, which requires funding and preparation. Banks that fail to have strong systems today may face problems later on. In their annual reports for 2020, banking institutions should provide information on their policies for handling climate-related risks and supporting sustainable development, the RBI advised. They also had to share how they help projects that protect the environment or support social good. The RBI is currently developing a new plan to promote green finance and ensure that Indian banks comply with global standards. Despite these steps, most banks in India continue to struggle with implementing ESG practices effectively. A 2023 study by the Indian Banks' Association finds that many banks are not thoroughly prepared. They deal with issues including unclear policies, inadequate decision-making systems, and insufficient means to monitor their activities. To address these challenges and support banks in achieving their green goals, the Reserve Bank of India is developing new policies. Some large banks, such as SBI and HDFC Bank, have already initiated projects in this direction. However, it remains challenging to ensure that all employees follow the same path or accurately track their progress. This change will take time and is likely to begin with larger banks before expanding to smaller ones. Step by step, the entire sector will transition towards a system that balances both profit and responsibility.

Current Implementation Strategies and Adoption Processes

Institutions in India are progressively incorporating Environmental, Social, and

Governance (ESG) concepts into their daily operations. This transition is influenced by the Reserve Bank of India's (RBI) stringent policies, increasing environmental concerns, and increasing investment and consumer pressure. Banks now consider ESG to be a critical component of their lending, investment, and decision-making processes. Financial institutions are upgrading their systems to facilitate this transition. They gather data on social impact, carbon emissions, and climatic hazards to satisfy reporting obligations. The Reserve Bank of India has urged banks to provide consistent reporting regarding their risk management and social and environmental initiatives. This promotes a more profound sense of assurance and clarity. In the past, specific private banks have supported renewable energy initiatives, provided green loans, and implemented global ESG guidelines. Additionally, a significant number of individuals employ digital methods to communicate with individuals in remote locations, thereby facilitating more egalitarian and straightforward banking. However, some institutions still face challenges, including unclear policies, inadequate training, and ineffective processes. The leadership of the RBI and increasing awareness of the problem help Indian banks move in the right direction. Utilizing this development will enable them to accelerate changes in the banking sector with more ethical and forward-thinking approaches.

LITERATURE REVIEW

Environmental, social, and governance (ESG) principles are being increasingly incorporated into the daily operations of Indian institutions. The Reserve Bank of

India's (RBI) strict policies, growing environmental concerns, and increasing investment and consumer pressure all contribute to shaping this change. Today, bank's view ESG as a fundamental component of their lending, investment, and decision-making processes. Financial institutions are being upgraded to enable this change. To fulfil reporting responsibilities, they compile information on social effects, carbon emissions, and climatic threats. The Reserve Bank of India has pushed banks to consistently report on their social and environmental projects as well as their risk management policies. This advances a strong sense of assurance and clarity. Specific private banks have historically supported global ESG policies, provided green loans, and independently funded renewable energy projects. Moreover,

many people use digital means of communication to interact with those living far away, thereby enabling more equal and simple banking. Still, some institutions have issues, including poorly defined policies, inadequate training, and ineffective procedures. Rising awareness of the issue, combined with RBI leadership, enables Indian banks to steer in the correct direction. Utilizing this development will enable them to accelerate improvements in the banking industry with more ethical and forward-thinking approaches.

Key Frameworks and Standards

Several global frameworks have been developed to support ESG integration and reporting:

Table 1. List of frameworks

Framework/Standard	Focus Area	Notable Features
Global Reporting Initiative (GRI)	Comprehensive ESG reporting	Widely adopted, voluntary, and used by many large firms
IFRS Sustainability Disclosure (ISSB)	Sustainability in financial disclosures	Builds on existing frameworks, voluntary
Task Force on Climate-related Financial Disclosures (TCFD)	Climate risk disclosure	Focuses on climate-related financial risks
Sustainability Accounting Standards Board (SASB)	Industry-specific ESG standards	Detailed, sector-specific metrics
United Nations Sustainable Development Goals (SDGs)	Universal sustainability targets	A broader global agenda, not a reporting standard

Although most ESG reporting is currently optional worldwide, authorities are increasing pressure on this process. For ESG disclosures, for instance, the U.S. Securities and Exchange Commission has proposed new guidelines (SEC, 2022). Investors, laws, and companies worldwide are giving ESG more consideration. Due to the Sustainable Development Goals and the Principles for Responsible Investment (PRI), ESG is becoming increasingly important in business and investment decisions. Many find investments in ESG as a means of risk management, transparency, and long-term value development (Friede et al., 2015). In India, banks are increasingly adopting ESG practices. This is happening due to both international trends and new regulations in India. The Reserve Bank of India has given banks guidelines to help them manage ESG risks and support sustainable finance (RBI, 2021). The Association of Indian Banks also encourages banks to prioritize sustainability and green loans (IBA, 2022). When banks in India are graded for ESG, they consider factors such as emissions associated with loan portfolios, lending to riskier sectors, financing green energy initiatives, community development in rural regions, achieving lending targets, and having diverse boards. Typically, ESG ratings for Indian banks allocate 35% weight to environmental factors, 25% to social aspects, and 40% to governance (KPMG, 2023). Studies on ESG adoption provide conflicting findings for Indian banks. According to some research, a rise in stock prices has a weak negative correlation with ESG ratings. But ESG appears to support profitability—that is, return on assets and return on equity—

Sharma & Gupta, 2022. As they migrate from old methods to more sustainable ones, banks run some risks. They also struggle with tracking indirect emissions, fully meeting the Net Zero target, and transitioning from voluntary to mandated ESG reporting (RBI, 2021; KPMG, 2023). The Reserve Bank of India has also shared its expectations for banks regarding ESG, and some banks have begun reporting their ESG strategies. Still, most banks in India are just starting this journey (IBA, 2022). The sector is evolving as regulations are becoming stricter, investors are closely monitoring developments, and sustainable finance is becoming increasingly integral to India's growth.

Table 2: ESG in Global Context vs. Indian Banking Sector

Aspect	Global ESG Practice	Indian Banking Sector ESG Practice
Regulatory Framework	Multiple voluntary global standards; some local mandates	RBI guidelines; IBA initiatives; mostly mandatory reporting
Key Focus Areas	Environment, Social, Governance (broad)	Financed emissions, green funding, governance, rural reach
Reporting Standards	GRI, ISSB, TCFD, SASB, SDGs, etc.	No single standard; mix of global and local practices
Adoption Level	Widespread, especially among large firms	Growing, but still at an early stage
Challenges	Lack of universal standards, regulatory uncertainty	Scope 3 emissions tracking, transition risks, and limited voluntary disclosure

Table 3. List of Enablers with References

S. No.	Enablers	References
1	Regulatory Initiatives	Rashmi Akshay Yadav, Dr. Premalatha K. P and Dr. Shrinivas Patil. (2024)
2	Technology Adoption	Rashmi Akshay Yadav, Dr. Premalatha K. P and Dr. Shrinivas Patil. (2024)
3	Investor Pressure	Albertini E (2013)
4	Consumer Sustainability Preference	Marin, L., Ruiz, S., & Rubio, A. (2009)
5	Financial Inclusion Potential	Badar Alam Iqbal, Shaista Samia,(2017)
6	Global Framework Alignment	Kishore Kumar, Ajai Prakash (2019)
7	Global Sustainability Trends	Kishore Kumar, Ajai Prakash (2019)
8	Financial Performance & Reputation	Ramesh Prasad, Amitava Mondal (2025)

9	Climate Risk Mitigation	Rashmi Akshay Yadav, Dr. Premalatha K. P and Dr. Shrinivas Patil. (2024)
10	ESG in Business Strategy	Rashmi Akshay Yadav, Dr. Premalatha K. P and Dr. Shrinivas Patil. (2024)
11	Government Support	Kishore Kumar, Ajai Prakash (2019)
12	Awareness & Recognition	Kumar and Prakash (2020)
13	Borrower Engagement on Emissions	Rashmi Akshay Yadav, Dr. Premalatha K. P and Dr. Shrinivas Patil. (2024)
14	Demand for Sustainable Banking	Corporate Governance and Sustainability Review (2021)

DATA AND METHODOLOGY

Two-Phase Approach for ESG Adoption in the Indian Banking Sector

Phase 1: Identification of ESG Enablers

Extensive Literature Review

(to identify key ESG enabler influencing strategic decision-making and transformation in Indian banking)

Expert Mining

Interviews with Industry Experts

Interviews with Academic Experts

VAXO Sheet Distribution

VAXO sheet floated among 11 experts

Final VAXO generated by averaging expert responses

Phase 2: Enabler Structuring & Analysis (ISM-MICMAC Method)

List of ESG Enablers Finalized

(Based on expert mean score > 3.5)

Establish Contextual Relationships between Enablers

Develop Structural Self-Interaction Matrix (SSIM)

Feed Final VAXO into ISM-MICMAC Software

Reachability Matrix Formation

A two-phase methodology has been applied in this investigation. In Phase One, 14 social Responsibility enablers were identified through a thorough literature analysis. Following a debate and expert interview, all 14 enablers were ultimately chosen. Only factors with an expert. A mean score of greater than 3.5 on their significance for constructive societal change is included in this study. Every one of the 14 facilitators in this study has a mean score higher than 3.5. As a result, every enabler has been taken into account for additional research. The position of the enablers and their relationships with one another were established in the next step or Second phase using the ISM-MICMAC technique

ISM and Structural self-interaction matrix

This study identified the 14 key enablers for developing the structured model, which determines how these enablers interact and the direction of their influence, input was sought from some of academicians, industry professionals, and social experts. Using their insights, a self-structured

An interaction matrix (SSIM) was constructed to map the relationship between enablers. The SSIM employs four symbols, each representing a specific

type of relationship:

‘V’ indicates that the enabler i supports enabler j;

‘A’ shows that enabler j supports enabler i;

‘X’ signifies mutual support between enablers i and j; and

‘O’ denotes no significant relationship between them. These symbols have been widely used in

previous applications of Interpretive Structural Modelling (ISM) to clarify the nature of interactions among variables.

The VAXO method helps us understand how different factors support the use of ESG in Indian banks. It gives a clear way to study how these factors are connected. The VAXO coding system is used to construct a specialized table known as the Structured Self-Interaction Matrix (SSIM). This table illustrates how each of the 14 key enablers interacts with or influences the others when banks strive to implement ESG practices. Some of these key enablers include government regulations, the adoption of new technology, pressure from investors, and customers who prefer eco-friendly and fair practices. These factors have become increasingly important as Indian banks strive to align with global sustainability standards.

Fig 1. Self-structured Interaction Matrix

Structural Self-Interaction Matrix (SSIM)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
E1		V	V	V	V	V	O	V	V	V	O	V	V	V
E2			V	V	V	V	O	V	V	V	O	V	V	V
E3				V	O	X	O	V	X	X	O	V	V	V
E4					O	A	A	O	O	O	O	A	O	O
E5						A	O	O	A	A	O	O	O	O
E6							O	V	X	X	O	V	V	V
E7								V	O	O	O	V	O	V
E8									A	A	A	A	A	O
E9										X	O	V	V	V
E10											O	V	V	V
E11												V	O	V
E12													V	V
E13														V
E14														

Table 4. Rules

SSIM Relationship (i,j)	Reachability Matrix (i,j) Entry	Reachability Matrix (j,i) Entry
i influences j (V)	1	0
j influences i (A)	0	1
Mutual influence (X)	1	1
No relationship (O)	0	0

After finalising the SSIM table, we create the reachability matrix. Here, the symbols are changed (V, A, X, and O) into numbers

1 if there is a direct link between two factors, and **0** if there is no link. Each symbol in the SSIM shows a type of relationship between two enablers. We use simple rules to make sure we convert these symbols correctly into numbers. This matrix helps us clearly understand how various factors, such as government regulations, technology usage, investor demands, and customer preferences, are

interconnected. It also helps banks decide which areas to focus on when they want to include ESG ideas in their main business and manage risks better

SSIM to Reachability Matrix

Conversion Rules

Rule Application

- $V \rightarrow (1, 0)$: Direct influence from i to j.
- $A \rightarrow (0, 1)$: influence from j to i.
- $X \rightarrow (1, 1)$: cross relationship.
- $O \rightarrow (0, 0)$: No influence.

This table aligns with ISM-MICMAC standards for deriving binary relationships from symbolic SSIM inputs.

Figure 2 : Reachability Matrix

Reachability Matrix(RM)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Driving Power
E1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	12
E2	0	1	1	1	1	1	0	1	1	1	0	1	1	1	11
E3	0	0	1	1	0	1	0	1	1	1	0	1	1	1	9
E4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
E5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
E6	0	0	1	1	1	1	0	1	1	1	0	1	1	1	10
E7	0	0	0	1	0	0	1	1	0	0	0	1	0	1	5
E8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
E9	0	0	1	0	1	1	0	1	1	1	0	1	1	1	9
E10	0	0	1	0	1	1	0	1	1	1	0	1	1	1	9
E11	0	0	0	0	0	0	0	1	0	0	1	1	0	1	4
E12	0	0	0	1	0	0	0	1	0	0	0	1	1	1	5
E13	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3
E14	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Dependence Power	1	2	6	7	6	6	1	11	6	6	1	9	8	11	

Figure 3. Final Reachability Matrix

Final Reachability Matrix(FRM)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Driving Power
1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	12
2	0	1	1	1	1	1	0	1	1	1	0	1	1	1	11
3	0	0	1	1	1*	1	0	1	1	1	0	1	1	1	10
4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6	0	0	1	1	1	1	0	1	1	1	0	1	1	1	10
7	0	0	0	1	0	0	1	1	0	0	0	1	1*	1	6
8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
9	0	0	1	1*	1	1	0	1	1	1	0	1	1	1	10
10	0	0	1	1*	1	1	0	1	1	1	0	1	1	1	10
11	0	0	0	1*	0	0	0	1	0	0	1	1	1*	1	6
12	0	0	0	1	0	0	0	1	0	0	0	1	1	1	5
13	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3
14	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Dependence Power	1	2	6	10	7	6	1	11	6	6	1	9	10	11	

Figure 4: Level Portioning

Level Partitioning(LP)				
Elements(Mi)	Reachability Set R(Mi)	Antecedent Set A(Ni)	Intersection Set R(Mi)∩A(Ni)	Level
1	1,	1,	1,	6
2	2,	1, 2,	2,	5
3	3, 6, 9, 10,	1, 2, 3, 6, 9, 10,	3, 6, 9, 10,	4
4	4,	1, 2, 3, 4, 6, 7, 9, 10, 11, 12,	4,	1
5	5,	1, 2, 3, 5, 6, 9, 10,	5,	1
6	3, 6, 9, 10,	1, 2, 3, 6, 9, 10,	3, 6, 9, 10,	4
7	7,	7,	7,	4
8	8,	1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13,	8,	1
9	3, 6, 9, 10,	1, 2, 3, 6, 9, 10,	3, 6, 9, 10,	4
10	3, 6, 9, 10,	1, 2, 3, 6, 9, 10,	3, 6, 9, 10,	4
11	11,	11,	11,	4
12	12,	1, 2, 3, 6, 7, 9, 10, 11, 12,	12,	3
13	13,	1, 2, 3, 6, 7, 9, 10, 11, 12, 13,	13,	2
14	14,	1, 2, 3, 6, 7, 9, 10, 11, 12, 13, 14,	14,	1

Analysis of Final Reachability Matrix

The final reachability matrix encompasses all direct and indirect links, enabling us to understand how various factors contribute to ESG adoption in Indian banks.

Driving Power Analysis

Bottom Level – Drivers (Strong Influencers): E1 and E2

These are the starting points. They push the entire system forward. In India, regulatory bodies such as the RBI and SEBI are actively promoting ESG through guidelines and disclosures (E1).

At the same time, banks are adopting digital tools (E2) to track ESG metrics, automate reporting, and better serve their customers.

Middle Level – Mediators (Bridge Factors) : E3, E6, E9, E10, E7, E11

These factors both influence and influence. They act as links between the strong base drivers and the outcomes.

Top Level – Outcomes : E4, E5, E8, E12, E13, E14

These are mostly results. They do not significantly influence other factors, but they change when the system (regulations, strategies, technology) changes.

FINDINGS AND ANALYSIS

ESG Implementation in Indian Banking

Banks in India have begun to modify their operations by incorporating ESG principles into their long-term plans. They now focus more on how their work affects the environment and society, as well as how fairly they run their business. This significant change is occurring because rules are becoming stricter, global standards are guiding actions, and stakeholders, including investors, customers, and the public, are demanding better, cleaner, and fairer banking. The present analysis employs Interpretive Structural Modelling (ISM) and Matrix of Cross-Impact Multiplications Applied to Classification (MICMAC) to explore the critical enablers influencing ESG adoption in Indian banks. These tools provide a structured framework that clarifies the relationships between

different ESG elements and highlights the driving and dependent forces within the system.

Hierarchical Mapping through ISM Analysis

Foundational Enablers (Base Level)

At the base of the ISM hierarchy lie the most influential elements:

- E1: Regulatory Initiatives
- E2: Technology Adoption

Regulatory frameworks (E1) form the bedrock of ESG integration. The Reserve Bank of India showed its strong support for green finance by joining the Network for Greening the Financial System in 2021. After that, it shared a new draft rule that requires all banks and financial firms it controls to disclose how they manage climate risks. This rule will begin from the financial year 2025–26. The RBI wants all financial groups to become more transparent and responsible in how they handle environmental risks.

Technology adoption (E2) complements regulatory drives by enabling digital systems that collect, analyse, and report ESG data. Through automated dashboards, carbon accounting tools, and integrated risk assessment platforms, banks can make their ESG operations

measurable and trackable, ensuring alignment with global standards.

Intermediary Influencers (Middle Level)

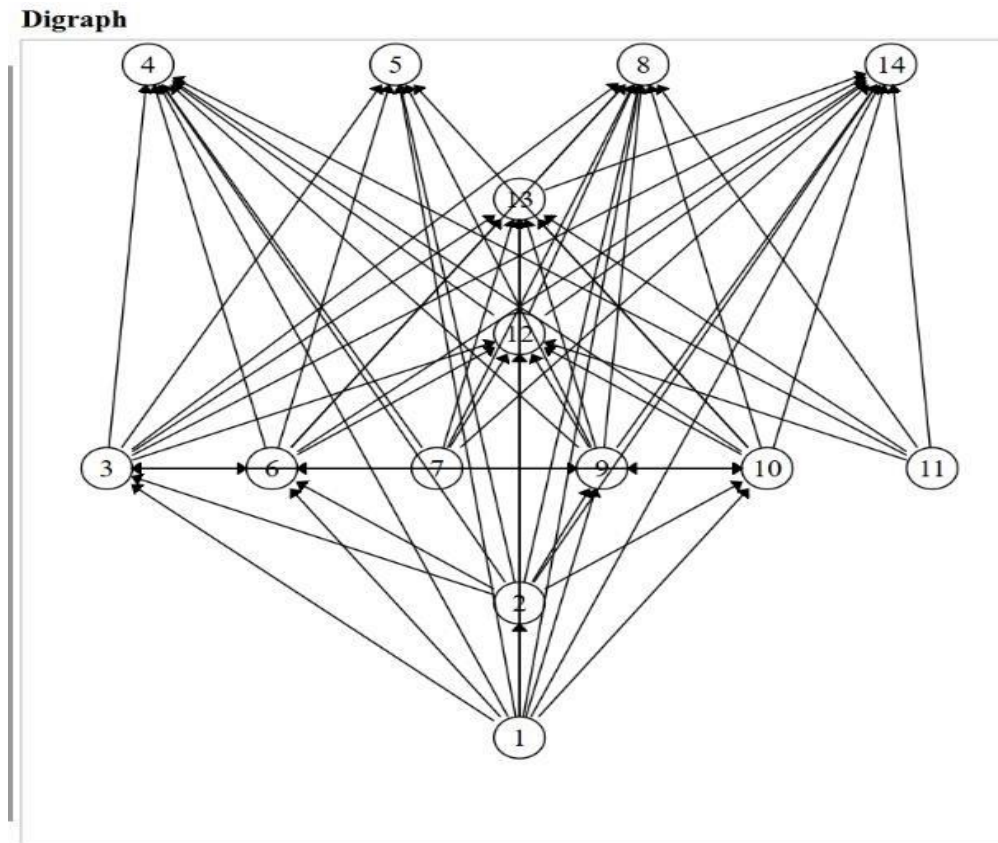
Positioned between core drivers and outcomes, the following factors act as bridges: E3, E6, E7, E9, E10, E11

Investor pressure (E3) now influences how banks set their ESG goals. Big investors now link their money decisions to ESG scores. This move requires banks to adhere to rules similar to those established by the Task Force on Climate-related Financial Disclosures (TCFD). Indian banks, such as ICICI and IDFC FIRST, already share their full ESG reports. These actions demonstrate that outside groups are beginning to influence how banks operate.

Climate risk mitigation (E9). Banks now view climate risk management as a necessity. They deal a lot with industries like energy and manufacturing that release high carbon. Therefore, they need to adjust their lending practices to align with long-term environmental goals. The RBI also sees that ignoring climate risks can harm the full economy and banking system. It urges both financial and government groups to collaborate and take prompt action.

Outcome-Oriented Factors (Top Level)

Figure 5: ISM MODEL



These factors reflect the long-term impacts and end goals of ESG practices:

- E4, E5, E8, E12, E13, E14

Recent findings by *IIM Lucknow* suggest that banks with significant exposure to green loans enjoy improved financial stability over time. This reinforces the role of E8 (Financial Performance & Reputation) as a vital outcome. Similarly, the RBI's *Green Deposits Framework*, effective June 2023, allows financial institutions to channel funds into green sectors, directly catering to evolving consumer preferences (E4) and market demand for sustainable offerings (E14).

MICMAC Analysis: Driving Power vs. Dependence

Independent Drivers (High Driving Power, Low Dependence)

E1, E2, E3, E6, E9, E10

These factors are instrumental in driving system-wide changes. The State Bank of India now follows an ESG Financing Framework that incorporates climate risk considerations when lending. This demonstrates that the bank has made ESG a central part of its daily operations. By incorporating climate concerns into lending, the bank demonstrates that it takes both business growth and the planet seriously. Moreover, regulatory frameworks, such as the RBI's climate-related disclosure mandates, ensure that ESG shifts from a voluntary gesture to a structural necessity.

Dependent Elements (Low Driving Power, High Dependence)

E4, E5, E8, E12, E13, E14

These are reactive and rely on proactive changes elsewhere. As banks expand ESG-compliant lending, they inadvertently increase borrower accountability (E13) and improve brand visibility (E12), eventually influencing consumer sentiment.

Autonomous Elements (Low Driving Power, Low Dependence)

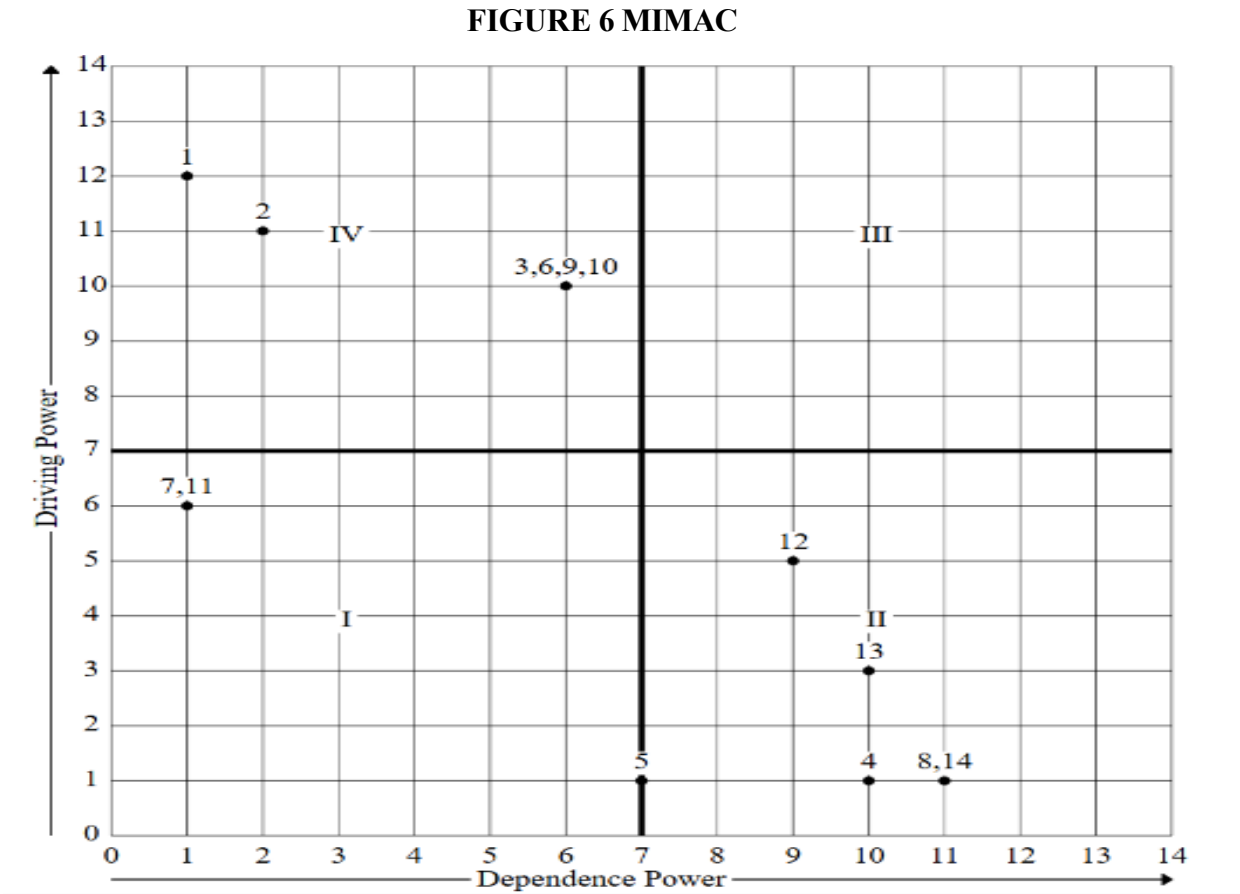
E7 and E11

These function more as background hierarchies and minimal cyclical dependencies.

influencers. While India’s national net-zero targets (by 2070) set the tone, their day-to-day influence on banking operations is indirect. They offer context rather than direct pressure or control.

Linkage Factors (High Driving Power, High Dependence)

The current analysis reveals no dominant factors within this quadrant. This suggests that ESG implementation within Indian banking is presently linear, with distinct



Strategic Implications for Indian Banks

The ISM ICMAC

analysis confirms that ESG integration in Indian banking is primarily top-down, beginning with regulations and technological reforms and flowing toward strategic adaptations and market responses. Without regulatory intervention, many banks may hesitate to fully embed ESG practices due to initial cost implications or uncertainty around returns.

Banks aiming to lead in ESG performance must prioritize:

- Compliance with emerging regulations
- Investments in digital ESG infrastructure
- Alignment with global disclosure standards
- Mainstreaming ESG within business strategy

The Task Force on Sustainable Finance, initiated by India's Department of Economic Affairs, is creating a sustainability taxonomy and policy recommendations. Banks that proactively respond to these initiatives will not only mitigate risk but also unlock new avenues for capital inflow and consumer trust.

The integration of ESG into Indian banking is no longer optional; it is a strategic imperative. ISM and MICMAC analyses provide a robust framework for navigating this shift. Regulatory and technological levers serve as the most influential catalysts, while intermediary pressures from investors and global trends help maintain momentum. Ultimately, the payoff is evident in improved consumer sentiment, enhanced

financial performance, and strengthened reputation.

By leveraging high-driving-power enablers and understanding the layered dependencies across the system, Indian banks can establish a credible, sustainable, and profitable ESG pathway. As emphasized by the RBI Governor, collaboration across stakeholders and development of scalable, green financial projects will be key to unlocking long-term value in India's ESG journey.

Strategic Implications for ESG Adoption in Indian Banking: Building on ISM and MICMAC Insights

The ISM and MICMAC studies clearly outline a step-by-step approach for implementing ESG in Indian banks. These tools highlight that government rules and new technologies form the foundation for this change. Banks need to utilize this knowledge to develop effective plans. They must integrate ESG ideas into their daily work, including how they handle risks and how they interact with people and groups connected to their business. The points shared below illustrate how various factors interact and their respective roles in advancing ESG.

Regulatory Compliance as a Strategic Catalyst

Regulatory steps (E1) hold the top spot in the ISM structure as the most powerful force driving ESG in the banking sector. This strong role requires banks to build systems that follow rules in advance. The Reserve Bank of India (RBI) has already shared draft rules requiring banks to report on how they manage climate risks. Along with this, SEBI's rule on Business Responsibility and Sustainability

Reporting (BRSR) requires banks to track and report ESG actions in a clear and consistent manner. These steps encourage banks to view ESG work as a core part of their daily operations. Strategic actions include:

- **Automating Compliance:** Banks now use automation to follow rules better. They utilize special tools called RegTech to streamline reporting and make it faster and easier. These tools help them align with Indian rules, such as BRSR, and global rules, including those from the Task Force on Climate-related Financial Disclosures (TCFD). For example, ICICI Bank started using smart AI tools that collect ESG data quickly and show results in real-time. This smart move helps them stay compliant with regulations and enhances their approach to sharing their ESG efforts.
- **Scenario Analysis Integration:** Embed climate stress-testing models into risk frameworks to assess physical and transition risks, as recommended in the RBI's 2023 report on sustainable finance.

Technology Adoption for ESG Scalability

Technology Adoption (E2) is pivotal for enabling transparency and efficiency. Banks must invest in digital infrastructure to track ESG metrics and mitigate the risks of greenwashing. Strategic steps involve:

- **AI and Blockchain Solutions:** Leverage AI for predictive analytics in carbon footprint measurement and blockchain for immutable ESG reporting. For example, Axis Bank's partnership with tech firms to develop a blockchain-based green loan tracking system demonstrates this.

- **Data Ecosystems:** Build centralized ESG data platforms, as seen in Capgemini's 890 platform, which consolidates internal and external data sources to model climate risks and opportunities.

Investor Engagement and Global Alignment

Investor Pressure (E3) and Global Framework Alignment (E6) emphasize the importance of aligning with international standards to attract ESG-focused capital. Key strategies include:

- **Adopting PCAF Standards:** Measure and disclose financed emissions using the Partnership for Carbon Accounting Financials (PCAF) framework, as implemented by Raiffeisen Bank International.
- **Sustainability-Linked Bonds (SLBs):** Issue SLBs tied to ESG KPIs, mirroring global trends where banks like BNP Paribas link bond terms to renewable energy financing targets.

Climate Risk Mitigation as a Core Competency

Climate Risk Mitigation (E9) demands integrating climate considerations into credit decisions. The RBI's emphasis on transition risks in high-carbon sectors like energy and automobiles necessitates:

- **Sector-Specific Decarbonization Plans:** Develop transition pathways for carbon-intensive borrowers, offering incentives for adopting clean technologies. State Bank of India's (SBI) climate finance loans for renewable projects exemplify this.
- **Green Asset Ratio (GAR)**

Disclosure: Align with the European Banking Authority's GAR framework to quantify green exposures, enhancing comparability for investors.

Embedding ESG into Business Strategy

ESG in Business Strategy (E10) requires cultural and operational shifts. Banks must:

- **Link Executive Compensation to ESG Metrics:** Tie leadership incentives to emission reduction targets and financial inclusion goals, as UniCredit's net-zero commitment illustrates.
- **Product Innovation:** Launch green deposits, sustainability-linked loans, and ESG-themed investment products. HDFC Bank's green bonds for solar projects and SBI's ESG-focused mutual funds are precedents.

Stakeholder Collaboration and Capacity Building

The absence of linkage factors in MICMAC suggests a linear system, emphasizing the need for external partnerships to address data gaps and skill shortages:

- **Academic-Industry Partnerships:** Collaborate with institutions like IIMs to develop ESG training modules for employees, addressing the skill deficit noted in CRISIL reports.
- **Regulator-Bank Task Forces:** Participate in RBI-led working groups to co-create sectoral taxonomies and transition finance frameworks.

Consumer-Centric ESG Positioning

Consumer Sustainability Preference (E4)

and Demand for Sustainable Banking (E14) are outcomes driven by awareness. Strategies to capitalize include:

- **Financial Literacy Campaigns:** Educate customers on green products through digital platforms, leveraging the RBI's Green Deposits Framework to promote eco-friendly savings instruments.
- **Personalized ESG Portfolios:** Use AI to offer tailored investment options based on customer sustainability preferences, similar to European models highlighted by Capgemini.

Governance and Anti-Greenwashing Measures

With greenwashing incidents rising globally, robust governance is critical:

- **Third-Party Audits:** Mandate independent verification of ESG claims, as mandated by SEBI's BRSR guidelines.
- **Whistleblower Mechanisms:** Implement channels for reporting discrepancies in sustainability disclosures, fostering accountability.

The strategic implications above position ESG not as a regulatory burden but as a lever for innovation and market leadership. Banks that operationalize these strategies will mitigate transition risks, enhance stakeholder trust, and tap into the \$9.2 trillion annual global green investment opportunity. As the RBI Governor emphasized, a collaborative approach combining regulatory foresight, technological agility, and stakeholder alignment will define the success of India's sustainable banking transformation. By prioritizing the high-

driving- power factors identified in the ISM-MICMAC analysis, Indian banks can secure long-term resilience while advancing national climate goals.

CONCLUSION

This research clearly identifies and organizes the most important factors that help Indian banks adopt ESG using the ISM-MICMAC method. The model and analysis provide useful insights for decision-makers. First, regulatory rules, such as the RBI's joining of the NGFS in 2021 and its climate risk rules for 2025–26, act as the strongest push. These forces banks to stop casual ESG actions and start real, rule-based changes, especially in high-emission sectors. Second, technology plays a major role. Banks need tools like AI and blockchain to gather ESG data and avoid fake green claims. ICICI Bank and Axis Bank utilize such tools to comply with regulations and enhance their operations. Third, investor pressure and climate risk awareness connect the main drivers to real actions. Global investors now link their investments to ESG scores, so banks must follow rules like the TCFD. Banks are adjusting their lending rules to mitigate climate risk. The RBI states that ignoring these risks could harm the entire economy, so banks need to develop action plans for each sector. Fourth, outcomes such as improved profits and increased demand for green banking demonstrate that ESG benefits businesses. IIM Lucknow links green loans to steady earnings. RBI's 2023 Green Deposit plan helps fund solar and wind projects, showing public interest in green finance. Fifth, strategy points from MICMAC are split into three groups. One, innovate for rules—use RegTech to follow BRSR and

TCFD. SBI achieves this by incorporating climate checks into its loan rules. Two, grow with tech—use AI to track carbon and blockchain to store ESG data safely. The RBI now requires banks to assess climate risks using these tools. Three, focus on people—tie leaders' pay to ESG goals and offer green products. HDFC gives green bonds for solar, and SBI runs ESG funds. Sixth, for policy, the RBI should collaborate with SEBI and IBA to establish a single set of ESG rules. Banks and IIMs should collaborate to train their staff. Additionally, banks should offer affordable loans for clean energy, backed by RBI funds. Seventh, some banks lack historical ESG data, making it challenging to analyze trends. Small banks also fall behind large ones, so they require special assistance. Later studies should investigate the impact of ESG on villages or explore how fintech can facilitate green banking for all. In short, the ISM-MICMAC model demonstrates that ESG in Indian banks begins with regulations and evolves with technology. While global trends provide a backdrop, real change stems from strong factors such as policy and tools. As the RBI Governor says, teamwork is crucial to the growth of green banking. Banks that follow these steps will mitigate risks and contribute to India's \$9.2 trillion green economy by 2030. The shift from just following rules to gaining business power has started. Fast action will decide who leads the change.

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