

EXPLORING SOCIAL DRIVERS OF CORPORATE CARBON EMISSIONS: A PRAGMATIC APPROACH TOWARDS SUSTAINABLE DEVELOPMENT

Fareeha Waseem (Corresponding Author)

Lecturer-Hailey College of Banking & Finance, University of the Punjab, Lahore.

fareeha.waseem@puhcbf.edu.pk

Dr. Waqas Baig

Assistant Professor - Hailey College of Banking & Finance, University of the Punjab, Lahore.

wagasbaig33@puhcbf.edu.pk

Veera Salman

Research Scholar – Kinnaird College for Women University, Lahore.

veerasalman242@gmail.com

Jannat Nazeer

Instructor – FAST National University of Computer and Emerging Sciences.

jannat.nazeer@lhr.nu.edu.pk

Abid Hussain

School of Education Department of Punjab

abidsed@gmail.com

Abstract

This research investigates the role of social sustainability goals in determining environmental sustainability initiatives. For this purpose, qualitative data for various SECP-based social indicators and emission reduction initiatives (ERI) from 19 listed banks of Pakistan were extracted and converted to quantitative ones using the word count approach and binary technique, respectively. fsQCA was employed to analyze the results, which showed that setting social sustainability in banks does not necessarily mean that they will also plan ERI. Theoretically, it challenges the stakeholders' theory, legitimacy theory, and resource-based view while supporting the institutional theory by stating that banks do not set carbon management goals because that is in their social strategy, but could be due to institutional pressures. The findings have implications for regulators, policymakers, banks, and investors. The scope of the study is limited to the banking sector of a developing nation, i.e., Pakistan, and the employed methodology. Future directions include cross-country analysis, integration of linear models, and investigation of exogenous factors leading to carbon mitigation goals.

Keywords: emission reduction initiatives; carbon management; environmental sustainability; social sustainability

1. Introduction

For several years, the United Nations, through its SDG 13, has urged countries at the macro-level, and firms and individuals at the micro-level, to take action not only to combat climate change but also to mitigate its impacts (Doni et al., 2020). It propelled the international institutions and national governments to develop decarbonization policies concerning climate change (Küfeoğlu, 2022). It was when the rising of global average surface temperature was still a threat. In 2024, the global temperature reached 1.55°C, making it the hottest year recorded (Cannon, 2025). If this remains unaddressed, the World Meteorological Organization foresees another year surpassing this record (United Nations, 2025). The climate change induced by the inhabitants cannot be denied, nor reversed, and it has already started to result in severe economic losses (IPCC, 2023). However, to reduce the intensity of ill effects, there is a dire need to lower the carbon footprint left by humans (Pan et al., 2026).

Amidst insufficient national-level climate commitments, collaborative efforts are urgently required to not only reduce carbon emissions but also set the world on a sustainable pathway (Pathak et al., 2024). Industry leaders and policymakers have advocated for decarbonization at more granular levels (Blanco et al., 2020). Particularly, it is the corporations that should be pressurized to decarbonize (Treepongkaruna et al., 2024). As numerous

organizations operate in an economy, literature has indicated that their sustainable actions could lead to a better future (Brunner et al., 2024). The irreversible impact of carbon emissions on driving climate change cannot be left to hindsight (Konadu et al., 2022). Therefore, organizations have started considering their carbon management as a crucial element to sustain their businesses because of the pressure from green-conscious stakeholders (Khatib & Al Amosh, 2024). Among them, the financial sector, though not directly contributing to carbon emissions, has also felt the global pressure to curb such impacts through green banking and climate financing (Rehman et al., 2021).

The umbrella term for such financial activities is Green Economy, which results in better human wellbeing and social equity, thus translating to lower environmental risk. Therefore, it assumes a system that is resource efficient, socially inclusive, and has lower environmental impacts (UNEP, 2014). As banks act as the major economic agents that lend and finance the non-financial sectors, which directly contribute to carbon emissions, hence its role is rather indirect (Rehman et al., 2021). Additionally, at the macro level, the financial institutions contribute to the economic stability, development, and policy implementation (Nicolo' et al., 2024). Therefore, it is crucial to evaluate and understand their role and how banks can be directed towards a sustainable future (Brescia et al., 2026). The banks disclose their sustainability efforts through ESG reporting, which conveys their commitment to various stakeholders. The financial institutions communicate the environmental, social, and governance activities undertaken by them, which enhances their transparency and accountability (Deegan, 2019; Veltri et al., 2023). Though these dimensions and the driving factors have been investigated previously, we aim to understand if the firms that actively implement social sustainability measures also demonstrate commitment towards environmental sustainability. The literature suggests a need to estimate the role of the banking system in addressing climate change through emission reductions. Additionally, it remains underexplored how the banks, though they have an indirect impact, can still curb the ill-effects (Abramova et al., 2026). Not many studies have highlighted how banks intervene or what motivates them to intervene (de Bandt et al., 2025; Friedrich et al., 2023).

The limited research (e.g., Busch, 2018) has focused on carbon emissions and their drivers. However, there is still a dearth of academic literature investigating the determinants of corporate carbon management despite the pressing need during rapid climate change. (Khatib & Al Amosh, 2024). Deeper insights regarding the cross-linkages of individual ESG pillars are still lacking. Previous research has widely discussed the role of governance indicators in driving environmental sustainability (Elsayih et al., 2021; König-Sykorova, 2026). However, whether the social sustainability measures participate in driving it as well is still an area to be explored (Issa & In'airat, 2024). (Olorunsola et al., 2024) found that among ESG pillars, the social pillar is the one given most weightage, despite the nature of the industry in which the company falls. This implies that implementing social initiatives can result in better sustainability performance. This factor in itself was integrated into the sustainability debate later, as the environment has been the priority since the beginning of this concept. (Eizenberg & Jabareen, 2017) provided a framework to protect the people involved in/affected by an organization's functions by discussing four crucial components for social sustainability. They advocated for equity, safety, eco-prosumption, and sustainable physical dimensions. The crux of this framework implies that social sustainability forms part of a wider scope where the sole purpose is not only to achieve social sustainability, but also to cope with the environmental risks (Eizenberg & Jabareen, 2017). Hence, as suggested, there is a need to dig deeper into understanding how it can influence emission management.

In their study from the investors' perspective, (Ehlers et al., 2024) suggested analyzing the influence of each component of the ESG pillars. It means that instead of establishing an

aggregate focus on ESG performance, they recommended studying it at a granular level. This research further explained the reason behind this need. Investors can use component-level emissions impacts to tailor their investment strategies. Otherwise, they often get doubtful with consolidated ESG scores because a socially responsible investor might be prioritizing firms focusing on human rights only, while aggregate ESG scores do not convey the component-level analysis. From the companies' perspective, this would help in targeting only those investors whose preferred sustainability themes match the company's initiatives. Therefore, considering the research gaps and suggestions, this study aims to analyze the role of the social pillar in determining the corporate carbon emissions, and for this, it aims to identify the combination of conditions under the social dimension of ESG that results in increased corporate carbon management. This research contributes to the literature by reconceptualizing ESG pillars as separate pillars affecting each other. Moreover, to address the asymmetry, causal complexity, and equifinality, it applies a non-linear, set-theoretic approach in the sustainability research and studies the configuration of conditions leading to better corporate carbon management.

2. Literature Review

This research establishes its foundation in several key theories. According to the stakeholder theory, companies are expected to cater to, if not all, then the majority of the stakeholders (Friedman, 1984). Among these are both the environment and social stakeholders, and firms' responsiveness to social sustainability can extend to addressing the environmental concerns simultaneously. The legitimacy theory states that firms aim to become legitimate in their stakeholders' view (Dowling & Pfeffer, 1975); hence, while building a strong social sustainability profile, it may also influence them to improve environmental performance. Resource-based theory also supports the conceptual framework because when companies strive to achieve social sustainability, it results in an ethical and efficient workforce, better products, and effective community engagement, which serves as a strategic asset (Barney, 1991). Lastly, institutional theory supports the adoption of emission reduction planning. According to this theory, financial institutions develop carbon management goals in response to external regulatory requirements, international, societal, and peer pressures (Dhanda et al., 2022; DiMaggio & Powell, 1983; Hahn et al., 2015; Haque & Ntim, 2022; Scott, 2013). These, in turn, can reshape the goals of the firms, and they may also aim to positively contribute to environmental sustainability.

2.1 Environmental Sustainability

Among the three-dimensional sustainability concepts, environmental sustainability, which links to SDG-13, is the most crucial for two reasons (Marrucci et al., 2024). Firstly, it helps companies identify the potential consequences of their business activities on the environment. Secondly, stakeholders, such as consumers, investors, and other practitioners, have recently increased their consideration regarding the environmental impacts of companies (Moneva et al., 2023; Scarpellini, 2022). This broad term has several dimensions, one of which is carbon management, concerned with the financial footprint of the banking sector. The banks disclose their carbon mitigation goals with target size, metric, and time frame. If they aim for higher emission reductions and set larger targets, the external stakeholders view them favorably. However, it is not easy to attain as compared to the smaller targets (Callery & Kim, 2025).

In one study from banks perspective, carbon management has been referred to as the financed emissions. It is because financial institutions play an indirect role in carbon emissions by financing activities/projects of other sectors that do not account for their footprint (Rizky & Firmansyah, 2024). This type of emission facilitation falls under Category 15 of Scope 3 emissions, which is about investments made by banks (Donnelly et al., 2023). Recently, banking institutions have started considering the climate-related effects of their investments

and lending (Issa et al., 2025). However, several internal or external factors could drive banks to pursue environmental sustainability, prompting them to devise plans.

2.2 Social Sustainability in ESG Architecture

Social sustainability is one of the ESG indicators that aims to protect the internal, as well as the external stakeholders of the organization (Qudah, 2026). Among other sustainability indicators, social sustainability is a less developed one due to its late introduction (Eizenberg & Jabareen, 2017). However, along with others, it is now widely recognized as playing a significant role in determining environmental initiatives taken in the contemporary corporate environment (Nugroho et al., 2024). In corporations, the social pillar of ESG receives less attention, even though its people serve as the greatest assets for them (Labuschagne et al., 2005; Mackey & Sisodia, 2018). This factor focuses on the humans working inside the organizations, and it aims to provide them with an inclusive, protective, and responsible environment (do Amaral et al., 2024).

One study provided a four-factor framework for social sustainability. It argued that organizations seeking social goals must achieve equity, create safety, ensure eco-prosumption, and provide a sustainable environment. This means that everyone should be given equal opportunity for involvement in the business, which helps develop a sense of community. The organization should adopt security measures to prevent any form of harm to its people. The operations of business should account for socially and environmentally responsible ways and strive for sustainability. Lastly, the culture and environment of the organization should foster a sense of security, community, and attachment (Eizenberg & Jabareen, 2017). Hence, from this framework, it can be inferred that literature has considered social and environmental goals to go hand-in-hand. This, in turn, boosts the overall ESG performance of the firm/bank and plays its part in community development (Ortas et al., 2019).

When people of the organization are given their due attention, it has a positive spillover effect on many business areas, one of which is the environmental pillar of ESG. For environmental sustainability, when social sustainability goals satisfy the people from the bottom to the top level, they tend to work towards environmental goals such as emission reduction (Piao et al., 2022). Moreover, investors also believe that inclusivity and employee protection have significant importance for ESG goals (Nielsen & Villadsen, 2023).

2.3 From Social Sustainability to Environmental Performance

Literature has shown mixed and contradictory results as to whether an organization pursuing social sustainability goals also tends to plan for ERI. Gender equality, which receives significant support from SDG 5 (Equality), has been found to boost the effectiveness of carbon emission mitigation policies (Sanchez-Olmedo et al., 2025). A higher chance of reduction in emission levels exists if females are included on the board or committee to develop such plans (Soku et al., 2023). Another study also argued that bringing women on board leads to better environmental performance (Galletta et al., 2022). Therefore, to attain climate goals, gender inclusivity can be an important factor (Rainard et al., 2023). However, research found that it is highly contextual and not always the case. Sometimes, if the gender equality exceeds a certain threshold its might not translate to ERI (Li et al., 2024). Corporate social responsibility is another factor of social sustainability, which captures several issues of environmental dimension. It is relevant to ERI (Li et al., 2024). However, (Pan et al., 2026) found that it is also context-based, and the intensity with which an organization performs CSR.

The employee development-related social indicators are rather a novel concept in the literature. It highlights the significance of human resource development, leading to better environmental practices (Bao et al., 2025). Hence, satisfied employees can play a major role in emission reduction initiatives (Hameed et al., 2020). Another study found that when employees are stimulated with strong relations, positive culture, and high engagement, they tend to do

their best; otherwise, not doing so could create obstacles in carbon emission-related issues (Mehta & Chugan, 2015).

3. Research Methodology

This quantitative research investigated whether the social sustainability initiatives in banks translate to environmental goals. For this purpose, the post-positivist research paradigm grounded in objectivist epistemology and critical realism was adopted. Thus, even though ESG disclosures are an observable banking practice, planning relevant activities does not always imply complete execution (Creswell & Creswell, 2017). This explanatory study extracted data from the annual reports of 19 banks listed on the Pakistan Stock Exchange from 2019-2024. **Figure 1** shows the outcome variable, Emission Reduction Initiatives (ERI), and the social indicators being tested:

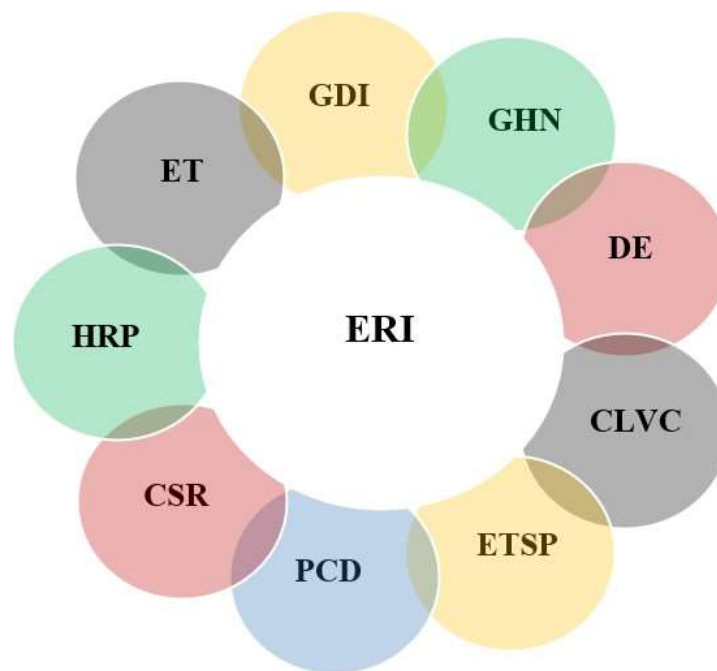


Figure 1 Conceptual Framework

3.1 Automated Content

The Securities and Exchange Commission of Pakistan (SECP) hosts ESG Sustain platform, where organizations voluntarily report their standardized ESG scores. However, commercial banks have not yet made disclosures on it, which led to an automated content analysis. Hence, a structured dictionary of pre-defined words for each social indicator, sourced from SECP-prescribed reporting categories, as mentioned in **Table 1**, was used. This helped ensure the construct validity and the regulatory alignment. These words were systematically analyzed using a Python-based script, and the frequency of each target word was recorded. The script involved a fuzzy string-matching technique, which helped in enhancing the word detection accuracy while accounting for minor textual variations. For the outcome variable, i.e., Emission Reduction Initiatives, a binary classification technique was used, where the presence of such targets implies environmental commitment of the institutions (Doś et al., 2023). Hence, the reports were analyzed to obtain data on whether a bank makes disclosures regarding these goals or not.

Table 1 Variables and their Description

Target Categories	Target Phrases	Measurement	Source
Emission Reduction Initiatives (ERI)	emission reduction initiatives, emission reduction goals, carbon reduction goals, CO2 emission reduction initiatives	1 if mentioned, otherwise 0	(Doś et al., 2023)

Gender diversity & inclusion (GDI)	gender diversity, women representation, female employees, female workforce, women empowerment, equal opportunity employer, diversity and inclusion		
Grievance, harassment, and non-discrimination (GHN)	grievance handling, grievance mechanism, sexual harassment policy, harassment free workplace, anti-harassment policy, non-discrimination policy, code of conduct		
Differently abled employees (DAE)	differently abled employees, persons with disabilities, inclusive workplace, special needs employees		
Child labor & vendor compliance (CLVC)	child labor, no child labor, vendor compliance, supplier code of conduct, ethical sourcing, third-party compliance	Keyword Frequency	SECP ESG Sustain
Employee training & succession planning (ETSP)	employee training, staff training, capacity building, talent development, succession planning, leadership development		
Promotion & career development (PCD)	employee promotion, career progression, performance-based promotion, internal promotion, equal promotion opportunities		
CSR activities (CSR)	corporate social responsibility, CSR activities, community investment, donations, education initiatives, healthcare initiatives		
Human rights policy (HRP)	human rights policy, respect for human rights, labor rights, employee rights		
Employee turnover (ET)	employee turnover, staff turnover, attrition rate, employee retention		

3.2 Data Preprocessing

The output from automated content analysis was exported to structured data files. The individual document-level frequency outputs were combined to form a master dataset consisting of 114 bank-year observations. The raw keyword frequency served as a proxy for thematic emphasis and disclosure intensity of each bank's social sustainability indicators. These were then structured as the causal conditions for further analysis.

3.3 Fuzzy Set Qualitative Comparative Analysis

The seminal work on the set-theoretic approach by (Ragin, 1987) introduced qualitative comparative analysis (QCA), which has served as an asymmetric analysis tool in various fields. It provides a middle ground by leveraging the richness of logic in contextual information from qualitative approaches and combining it with the generalizable empirical analysis in the quantitative methods. Thus, it differs from the symmetric data analysis tools such as correlation and regression, which aim to determine the effect of independent variables on the dependent variable (Elliott, 2013). One of its types is Fuzzy Set Qualitative Comparative Analysis, which provides richer insights by integrating fuzzy logic into QCA principles (Ragin, 2000). This configurational approach is based on three primary assumptions. Firstly, fsQCA assumes set

relations as asymmetrical, i.e., the conditions leading to the presence of the outcome can be different from those leading to its absence. Secondly, causal complexity exists, according to which the outcome variable results from various interactions of conjunctions. Thirdly, equifinality holds, i.e., multiple pathways can lead to the same outcome (Pappas & Woodside, 2021).

3.3.1 Data Calibration

This study employs fsQCA v.4.1 to process the results with the necessary and sufficiency analysis. The technique can be applied to any sample size and data types on the condition that they can be transformed to fuzzy sets, assuming values between [0,1] (Pappas et al., 2019). Hence, data calibration is the first and foremost step. Direct calibration was carried out using three qualitative anchors, termed as full non-membership, crossover point, and full membership (Elliott, 2013). The observed minimum, mean, and maximum values of each variable utilized to set these anchors are presented in *Table 2*.

Table 2 Calibration Anchors

Variables	Full Non-Membership (0)	Crossover (0.5)	Full Membership (1)
GDI	18	153.017	632
GHN	8	79.526	281
DE	3	47.280	187
CLVC	35	116.763	375
ETSP	15	151.526	586
PCD	18	214.429	674
CSR	48	623.096	2273
HRP	2	74.807	268
ET	20	160.596	542

3.3.2 Necessary Conditions Analysis

A prominent method to identify the must-have factors for the outcome variable is the necessary conditions analysis. Hence, a condition is said to be necessary if, without which, the resultant variable cannot occur (Becker et al., 2026).

3.3.3 Configurational (Sufficiency) Analysis

The fuzzy set algorithm involves the truth table analysis, also known as sufficiency analysis or configuration analysis, which provides all possible configurations of conditions that can lead to the outcome variable. It operates on the Boolean logic, where the fuzzy set values assume 2^n rows, where n is the number of conditions (Kraus et al., 2018). For small samples, such as in the case of this research, a frequency cutoff value of 1 is appropriate (Rihoux, 2013). Each condition in the configuration is either present (*) or absent (~), while some are do-not-care conditions. The truth table analysis presents three types of solutions, where the intermediate solutions only consist of the theoretically plausible conditions (Pappas & Woodside, 2021; Ragin, 2007). It consists of both core and peripheral conditions. Additionally, it includes the parsimonious solution while itself being part of the complex solution, hence often included in the analysis (Pappas & Woodside, 2021).

3.4 Parameters of Fit

To assess empirical relevance and strength of the conditions and configurations for the outcome variable, two parameters of fit were assessed:

3.4.1 Consistency

(Elliott, 2013) defines consistency as a parameter that presents a score reflecting the extent to which a configuration of conditions or an individual condition in the necessary conditions analysis leads to the outcome variable. It can assume any value between 0 and 1; however, a common threshold of 0.90 is used. On the other hand, a configuration is considered sufficient

for the outcome variable if the consistency score is above 0.80 (Ragin, 2007). For fuzzy sets, the consistency score is calculated using the following equation:

$$\text{Consistency}(X < Y) = \frac{\sum \min(X, Y)}{\sum X}$$

3.4.2 Coverage

The second parameter, defined by (Ragin, 2007), is used to assess the extent to which the outcome variable is explained by the conditions. Hence, with the coverage score, the empirical relevance, similar to R-squared used in regression analysis, can be evaluated (Veri, 2018). It can assume a value between 0 and 1, but ideally it should range between 0.25 and 0.65. For fuzzy sets, the coverage score is calculated using the following equation:

$$\text{Coverage} = \frac{\sum \min(X, Y)}{\sum Y}$$

4. Results and Discussion

4.1 Descriptive Analysis of Social Sustainability

Table 3 presents summary statistics of all variables operationalized as count-based measures; these statistics show the extent to which Pakistan's banking sector prioritizes the social dimension of ESG indicators.

Table 3 Descriptive Statistics

Variables	Obs	Mean	Std Dev	Min	Max
GDI	114	153.0175	104.8617	18	632
GHN	114	79.5263	51.6790	8	281
DE	114	47.2807	34.0630	3	187
CLVC	114	116.7632	64.6437	35	375
ETSP	114	151.5263	109.4714	15	586
PCD	114	214.4298	118.7984	18	674
CSR	114	623.0965	372.7422	48	2273
HRP	114	74.8070	46.5542	2	268
ET	114	160.5965	93.6836	20	542

The results for 114 bank-year observations reveal that CSR activities (Mean=623.09) were the most emphasized aspect, suggesting that banks allocate more attention to factors visible to external stakeholders to enhance their legitimacy, as public accountability is often tied to sustainability narratives. However, the variation highlights non-standardization and strategic differences across banks, as CSR is not mandatory under regulatory requirements. The means of Gender Diversity & Inclusion (153.02) and Child Labor & Vendor Compliance (116.76) compared to the range presented the diversity in banks by putting emphasis on these two factors. The substantial attention and diversity in human resource management practices are observed in Promotion & Career Development (Mean = 214.43), Employee Training & Succession Planning (Mean = 151.53), and Employee Turnover (Mean = 160.59). This implies that the banking sector focuses on workforce management, but it varies with their governance capacities. On the other hand, Grievance, Harassment & Non-Discrimination (Mean = 79.52), Differently-abled Employees (Mean = 47.28), and Human Rights Policy (Mean = 74.81) demonstrated less extensive reporting practices with lower dispersion across banks. This raises a concern about employee protection, which is crucial for organizations' integrity. Therefore, the analysis unraveled an asymmetric focus of banks on the social sustainability indicators. Lastly, for ERI/initiatives, a bar chart in **Figure 2** shows a year-by-year increase in adoption of these goals in the banking system:

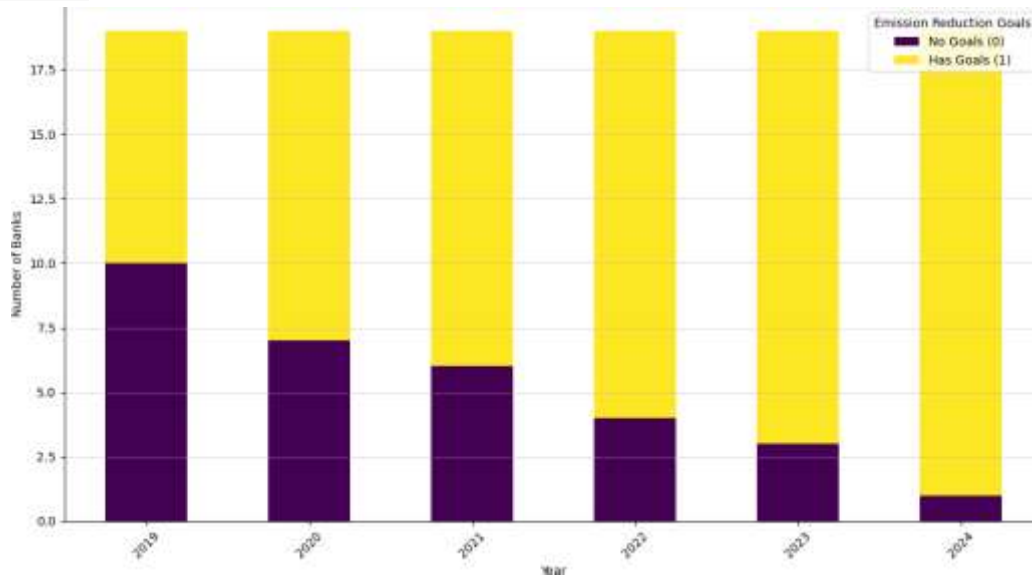


Figure 2 Distribution of ERI by Year

4.2 Necessary Conditions Analysis

Table 4 shows whether the individual social sustainability measures serve as a must-have for banks to develop ERI. Both the presence and absence of conditions, as well as the outcome variable is tested to account for the causal asymmetry.

Table 4 Necessary Conditions Analysis

Conditions	For the presence of ERI		For Absence of ERI	
	Consistency	Coverage	Consistency	Coverage
GDI	0.560361	0.657571	0.781290	0.342429
~GDI	0.439639	0.843310	0.218710	0.156691
GHN	0.545181	0.655322	0.767742	0.344678
~GHN	0.454819	0.839822	0.232258	0.160178
DE	0.557470	0.659775	0.769678	0.340225
~DE	0.442530	0.837246	0.230323	0.162754
CLCV	0.560843	0.661880	0.767097	0.338120
~CLCV	0.439157	0.834669	0.232903	0.165331
ETSP	0.567349	0.662586	0.773548	0.337414
~ETSP	0.432651	0.836478	0.226452	0.163522
PCD	0.525904	0.662166	0.718387	0.337834
~PCD	0.474096	0.818428	0.281613	0.181572
CSR	0.547952	0.670994	0.719355	0.329006
~CSR	0.452048	0.811770	0.280645	0.188230
HRP	0.537349	0.666966	0.718387	0.333034
~HRP	0.462651	0.814768	0.281613	0.185232
ET	0.546867	0.674242	0.707419	0.325758
~ET	0.453133	0.805698	0.292581	0.194302

The presence of none of the conditions turned out to be crucial for ERI to occur, and neither hampering it. Similarly, the absence of conditions is also not deemed necessary for both

sorts of outcomes. This is based on the consistency below 0.90. However, the consistency values are slightly higher for the presence of conditions leading to the absence of ERI in the banks. This could imply that banks prioritizing one type of sustainability measure do not tend to emphasize the other.

4.3 Truth Table Analysis

Table 5 shows the truth table analysis depicting the presence/absence of different combinations of social conditions leading to ERI in the banking sector of Pakistan.

Table 5 Truth Table Analysis

#	GDI	GHN	DE	CLVC	ETSP	PCD	CSR	HRP	ET	Cons.	Cov.
1	~		~	~	~	~	~	~	~	0.8636	0.3699
2	~	~	~	~	~	~	~		~	0.8668	0.3599
3	*	~	~	~	~	~	~	*	*	0.8028	0.2266

Solution Consistency: 0.8648, Solution Coverage: 0.3759

The results reveal that all three sufficiency pathways are absence-driven, with a few instances of present conditions in the combination. It means that if a bank does not adopt many of the social sustainability measures, it may still plan ERI. This could be due to external pressures to focus on environmentally-friendly investments and banking practices. Path 3 shows that in the presence of gender diversity & inclusion, human rights policy, and employee turnover disclosure, the absence of all other conditions can lead to ERI. The solution consistency (0.865) and coverage (0.376) are stronger for these three pathways. To account for the causal asymmetry, truth table analysis was performed for the absence of ERI; however, it resulted in extremely low consistency scores, implying that ERI is derived by complex conditions beyond the social dimension.

4.4 Configurational Analysis

Figure 3 depicts the configurational analysis for ERI based on the sufficiency analysis. Gender diversity & inclusion and human rights policy were the core conditions highlighted in blue in the third path, while employee turnover was observed to be the edge condition represented with yellow. The remaining conditions were absent in all three configurations, implying an absence-dominant pathway towards ERI.



Figure 3 Configurational Analysis

4.5 Discussion

This research was conducted to understand whether Pakistani banks with social sustainability goals also tend to foster better corporate carbon performance by introducing ERI. The descriptive statistics showed that banks undertake CSR activities to align with mimetic (peer practices), normative (industry standards), and coercive (regulations) pressures to attain legitimacy (Sorour et al., 2021). Additionally, the focus on workforce diversity and development by banks varies by capacity (Abubakar, 2024). The disclosures regarding ERI have increased in relevance to the regulations over the years (Qudrat-Ullah, 2022). Four types of results can be inferred from the necessary condition analysis. Firstly, banks that emphasize social sustainability do not necessarily translate their strategy towards environmental sustainability. Secondly, if the banks focus on social variables, it is not imperative that they would not plan for ERI because social focus alone does not prevent non-adoption. Thirdly, the banks that are not socially-oriented do not necessarily mean they would be environmentally-oriented. Lastly, the banks not prioritizing social initiatives does not mean that they would due to this reason not emphasize environmental initiatives. This shows that the bank's social and environmental goals move independently of each other (Bătae et al., 2021; Drago et al., 2024). The results of configurational analysis also presented similar insights, i.e., banks' social sustainability goals do not mean that ERI would also be planned. Both type of goals moves separately.

5. Conclusion

In the banking sector, ERI as a way of carbon management play an important role in attaining climate change goals. This research investigated whether Pakistani-listed banks setting social sustainability goals also tend to focus on environmental goals. The data collected for 19 banks over the period of 5 years was analyzed using fuzzy set qualitative comparative analysis. The necessary conditions analysis revealed that the presence/absence of a single social condition alone does not guarantee the adoption/non-adoption of ERI. The findings from the truth table analysis showed that banks do not adopt many of the social sustainability measures; they may still plan ERI due to some exogenous factors. ERI adoption is based on a compliance-driven pathway instead of a socially-oriented strategy. Therefore, the social orientation of banks is neither necessary nor sufficient for ERI.

Theoretically, the results challenge the stakeholders' theory, which advocates for overall increased sustainability outcomes for organizations responding to broader stakeholder pressures. However, in Pakistan's banking sector, the environmental commitments are decoupled from social sustainability goals. This implies that the climate-related expectations do not arise from internal stakeholders but from the external pressures from regulatory or international bodies. The findings also argue that the banks' social and environmental legitimacy operate as parallel legitimacy channels. Moreover, social sustainability goals do not serve as strategic resources for environmental commitments. Lastly, the outcomes of this study suggest that coercive institutional pressure dominates in Pakistan's banking sector. Hence, their environmental commitment is primarily driven by compliance pressures instead of being socially integrated.

On practical grounds, regulators, policymakers, banks, and investors can benefit from the results. The regulators should discontinue treating ESG indicators in aggregation. Separate regulatory pathways for all types of sustainability goals should be developed. Since environmental commitment is institutionally-driven, the compliance orders shall be added to the prudential regulations. One of the reasons social goals do not translate to environmental goals could be due to the absence of executive compensations tied to emission-related KPIs, or because environmental strategy may not be part of risk architecture. Hence, the banking sector is suggested to do so. These will aid in going beyond symbolic compliance to actual

implementation. Investors are advised not to rely on aggregated ESG scores, but rather to conduct a dimension-level ESG due diligence. It is because sometimes the banks could be planning compliance-driven ERI, as in the case of Pakistan's banking system, instead of strategy-integrated ERI.

The scope of this research covers the use of fsQCA, which identifies configurations and not linear causality. It also does not estimate the effect size and significance. Furthermore, it is sensitive to the calibration thresholds. Hence, these results covered necessity and sufficiency and not probabilistic causality. The current study is specific to a single emerging market, i.e., Pakistan. Hence, the results are context-specific and cannot be generalized to developed economies. Another significant limitation is that the study investigated the sustainability goals/initiatives that represent symbolic reporting, and not actual performance. The conceptual model did not explicitly include exogenous requirements or pressures that could serve as the crucial drivers of environmental commitments. Future studies can examine which specific institutional variables influence environmental goal setting in banks. Moreover, a cross-country comparative study, such as with GCC economies or other emerging economies, is suggested. The ERI of banks is a relatively new concept where banks' role is indirect. An in-depth analysis of how these goals capture the attention of socially responsible investors can be carried out. Furthermore, from the methodological point of view, future research can combine fsQCA with linear models or employ qualitative techniques to understand the drivers of environmental goals in the banking sector.

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