



Climate change governance, Shariah governance quality, and financed emission mitigation: Evidence from Islamic banks in Southeast and West Asia

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ABSTRACT

The financial sector holds major responsibility in climate mitigation, as the proliferation of environmental damage within the real economy largely stems from the negative externalities of the financial economy. Islamic banking, as a subset of the global financial market, is often adjudged as a promoter of ethical practices. This study investigates how climate governance mechanisms and Shariah governance quality influence Islamic banks' mitigation of financed emissions. Data was obtained from the LSEG database and the annual reports of 28 sampled Islamic banks covering the period of 2019–2023. The results of logistic regression indicate that sustainability committees, sustainability reporting, and Shariah governance quality positively affect financed emission mitigation in Islamic banks. This study therefore recommends for Islamic banks to adopt robust climate governance mechanisms, as well as for regulators to institutionalize policies mandating sustainable finance.

1. Introduction

After decades of irresponsible economic practices, global stakeholders have realized that unsustainable supply chain and consumption patterns threaten both the planet and its inhabitants. Policymakers now recognize that climate change poses major risks worldwide (Reghezza et al., 2022), extending across environmental, social, and economic parameters—all of which are imperative for biodiversity protection and economic prosperity for both present and future generations. Corollary to this awakening, forging a new sustainable economic pathway has arguably become among the most widely discussed issues by global stakeholders in recent years. Several internationally coordinated efforts, including the Kyoto Protocol (United Nations, 1997), the Paris Agreement (United Nations, 2015), and the Glasgow Climate Pact (United Nations, 2021), have sought to find solutions to mitigate greenhouse gas emissions and enhance adaptation strategies. While such emissions mostly originate from real economic operations, financial actors also contribute negative externalities by funding those operations.

A robust financial system serves as the lifeblood responsible for the survival and development of the real economy. The financial sector plays a significant role in ensuring that the financial resources for

economic activities are made available from those who possess them to those who need them. Without this exchange process, it is impossible to attain a well-functioning economy. This viewpoint corresponds with that of Schumpeter (1934), who stated that an effective financial sector enables real sector development, thereby promoting economic growth. Thus, given its impact on the economy, society, and the sustainable development agenda (Helleiner, 2011; Rahman et al., 2023), the financial sector is critical in mitigating emissions in other sectors and ultimately, addressing the global environmental crisis (Atlason et al., 2023).

The need to reduce the carbon footprint associated with their financing decisions and facilitate the transition to a low-carbon economy is driving substantial transformations in the financial sector. However, the Time to Green Finance report by CDP found that 49 % of financial institutions do not analyze the climatic effect of their portfolio, highlighting the urgency for corporations across all sectors to expedite emission mitigation efforts within their supply chains (Manyach et al., 2021). Similarly, the 2022 S&P Global Corporate Sustainability Assessment revealed that while many financial institutions have pledged to achieve net-zero emissions, fewer than 25 % are actively pursuing emission reduction across their entire value chain (Laidlaw et al., 2023).

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Weber (2014) stated that the motivation for the conventional financial sector to pursue sustainability is extrinsic rather than intrinsic, driven by external factors like regulatory instructions and client demands. This natural misalignment between the sustainability agenda and the conventional financial sector explains why many institutions struggle to 'green' their operations.

Notably, the role of banks in transitioning to a carbon-friendly economy is an issue of growing international interest (Liu et al., 2024). The banking sector is crucial in advancing sustainable development, as it can mobilize funding towards sustainable causes (Khaer & Anwar, 2022). However, the 2022 Fossil Fuel Finance Report by the Rainforest Action Network revealed that the world's 60 largest banks financed approximately \$4.6 trillion in fossil fuel-related activities between 2015 and 2021. As such, it is not inaccurate to opine that the carbon-intensive nature of the global economy has received robust backing from banks.

Efforts to ensure sustainable business practices in the banking sector date back to the mid-2000s, when stakeholders began holding banks accountable for emissions related to their financing activities (Dupré et al., 2013). To fulfill the demand for environmental responsibility in the banking sector, the Net Zero Banking Alliance (NZBA) was launched in 2021. This consortium of leading global banks have pledged to align their financial services and lending activities with global net-zero targets. To further support the transition to the low-carbon economy, they are also committed to maintaining transparency in their emission-related actions and strategies. With over 140 member banks managing US\$74 trillion in total assets—representing more than a quarter of global banking assets—the NZBA's commitment to implementing policies that support the Net Zero agenda does not only mitigate climate change through financing decisions but also ensure capital mobilization for decarbonization purposes (UNEP, 2024).

To address environmental concerns, banks should integrate sustainability in their governance at the strategic level (Yunus et al., 2016), particularly via environmental strategies, green management practices, and monitoring mechanisms. The ADB Institute 2023 report highlights the importance of corporate governance improvement in addressing climate issues (Shirai, 2023). A climate-friendly governance model can mitigate firms' carbon footprint and align the interests of main stakeholders on climate issues. Governance variables associated with climate commitment and environmental sustainability include the presence of committees dedicated to sustainability issues, sustainability reporting, and sustainability-linked compensation structures (Shirai, 2023; Walls et al., 2012; Yunus et al., 2016). Sustainability committees typically develop strategies to improve a company's carbon performance to safeguard its legitimacy and reputation (Yunus et al., 2016). Consequently, the existence of such a committee at the board level showcases the board's dedication to promoting environmentally responsible behaviors. Moreover, a recent global survey revealed that 38 % of companies currently link executive compensation to Environmental, Social, and Governance (ESG) goals, leading to significant improvements in their environmental performance (Cohen et al., 2023).

Within the banking industry, Islamic finance is often adjudged to support the ESG movement, as both share the principles of pro-sustainability (Nasution et al., 2023). Islamic financial institutions (IFIs) recognize environmental responsibility to be in compliance with the Maqasid al-Sharia. Islamic law, the guiding constitution for IFIs, embeds principles prioritizing the safety of both people and the environment. For instance, Islamic jurisprudence includes tenets such as "Harm must be removed" (Al-Dararu Yuzal) and "Preventing harm takes precedence over deriving benefit" (Dar al-Mafasid Muqaddam 'ala Jalb al-Masalih), both of which are particularly relevant when examining the role of Islamic finance in climate action. Indeed, according to UNEP (2023), scholars have acknowledged the conceptual connection between Maqasid al-Shariah and climate action.

With regard to governance in Islamic finance, Shariah governance is an internal mechanism that ensures firms comply with Shariah

principles in their operating and business activities, thereby supporting the goal of Maqasid al-Shariah (Choudhury & Alam, 2013). Sairally (2015) contends that ESG is a fundamental component of Maqasid al-Shariah; hence, IFIs should concurrently fulfil both ESG and Shariah compliance goals. This further shows the versatility and adaptability of the Maqasid al-Shariah in addressing environmental concerns. The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) highlights that the role of the Shariah Supervisory Board (SSB) in an IFI transcends ensuring Shariah compliance, incorporating environmental, social, and cultural considerations essential for fulfilling Maqasid al-Shariah as well (Saeed Mohammed & Mansor, 2021). Therefore, established Shariah principles provide a direction for environmental sustainability within Islamic economics and finance.

Climate change is one of the most critical issues threatening global safety and welfare. In this context, financed emissions from projects or activities financed by financial institutions (Rizky & Firmansyah, 2024)—are an issue of material importance to IFIs. These emissions raise concerns about compliance with the ethical and environmental ethos embedded in their guiding Shariah framework. While researchers around the world have looked into environmental sustainability and green banking practices in Islamic banks (Cahyadin et al., 2020; Issa et al., 2022; Khan et al., 2023; Masukujaman et al., 2016), none have considered financed emissions—the most critical area where banks can contribute to climate change mitigation.

There is generally a dearth of research on financed emissions globally, with the few existing studies having focused on how it affects firms' outcomes. In contrast, there is limited evidence on the factors affecting financed emission mitigation. This study is, therefore, among the first to empirically explore the determinants of financed emissions, particularly within the banking sector. Moreover, there is no existing evidence on the influence of Shariah governance on the financed emissions of Islamic banks. Only a few attempts have been made to examine its effects on Islamic banks' environmental performance; for example, Boudawara et al. (2023) found that Shariah governance positively influences Islamic banks' ESG performance. However, most studies on Shariah governance focus on issues unrelated to environmental outcomes (Alam et al., 2022; Embi & Shafii, 2018; Khan & Zahid, 2020).

In response to these gaps in the literature, this study investigates how climate governance mechanisms (i.e., sustainability committee, sustainability-linked compensation, and sustainability reporting) and Shariah governance influence Islamic banks' commitment to financed emission mitigation. As articulated in the 2008 Ceres report on corporate governance and climate change in the banking sector, climate governance is an essential managerial mechanism that enables banks to handle environmental responsibility holistically. Given that the impact of climate governance on banks' financed emissions and overall environmental performance remains understudied, this study is one of the few pioneers in this area.

By examining these relationships, this research makes significant contributions to current knowledge on banks' consideration of environmental factors in their financing decisions. First, it is the first to empirically establish the determinants of financed emissions in the banking industry. Second, it introduces climate governance as an explanatory factor of financed emission mitigation, allowing inferences to be drawn from the conventional angle of corporate governance. Finally, by incorporating Shariah governance as an explanatory factor, the study offers an Islamic finance governance perspective in the discourse on financed emission mitigation.

2. Literature review and research framework

2.1. Stakeholder Theory

The Stakeholder Theory is widely applied by scholars in the corporate environmental sustainability domain. Propounded by Edward Freeman in 1984, the theory defines stakeholders as individuals or

groups who can affect or are affected by the daily operations of a firm (Freeman, 1984). Acknowledging the association between the behavior of the firm and its stakeholders, Stakeholder Theory asserts that an organization endeavors to align its operations with stakeholder expectations (Barako & Brown, 2008).

Stakeholders, including environmental activists, eco-conscious buyers, and green investment funds, are actively pressuring businesses to understand the environmental consequences of their operations and subsequently, develop strategies to achieve global sustainable development (Lacy et al., 2010). Based on the Stakeholder Theory, firms may adopt environmentally responsible practices to meet these expectations, as a proactive approach to stakeholder demands is anticipated to engender more social responsibility initiatives (Ullmann, 1985). Corresponding to Ullmann's (1985) examination of how management strategy influences an organization's reaction to societal pressures, Deegan and Blomquist (2006) posited that corporations modify their operational and reporting practices to align with stakeholder expectations. Likewise, Ibrahim and Angelidis (1995) and Haque (2017) contended that the implementation and oversight of climate change initiatives constitute a more complex decision-making process due to the presence of conflicting interests among various stakeholders.

2.2. Financed emissions

Among the initiatives that have emerged to aid financial institutions in addressing climate change, the mitigation of financed emissions is becoming more and more important. This topic is gaining prominence due to growing stakeholder pressure on financial institutions to address climate issues and align their portfolios with the Paris Agreement. Financed emissions refer to greenhouse gas (GHG) emissions resulting from financial institutions' provision of capital and financing to firms, projects, or activities that produce carbon emissions (Rizky & Firman-syah, 2024). This concept has arisen from the substantial influence of financial institutions in allocating funds to high-emission or high-carbon-footprint industries (Granoff & Lee, 2024).

Financed emissions are the most relevant category of emissions associated with the operational activities of financial institutions. They fall under Category 15 (Investments) of Scope 3 emissions as defined by the GHG Protocol (Donnelly et al., 2023). The measurement and disclosure of financed emissions are supported by global industry initiatives such as the Task Force on Climate-Related Financial Disclosures (TCFD), the UN Net-Zero Coalition, the NZBA, and the Partnership for Carbon Accounting Financials (PCAF). In recent years, financial institutions have demonstrated a growing readiness to integrate climate-related factors into their lending and investment decisions (PCAF, 2022).

PCAF (2022) provides an overview and categorization of existing financed emission mitigation initiatives, which include methodologies and guidelines for measuring financed emissions (carbon accounting) as well as strategies for aligning financial activities with Paris Agreement objectives. According to this standard, financed emissions are calculated by multiplying the attribution factor by the actual GHG emissions of the financed entity. The attribution factor quantifies the proportion of the client's emissions attributable to the financial product provided (PCAF, 2022). The PCAF standard, which is the most recognized and accepted carbon accounting standard among international financial institutions, aligns with the requirements of the GHG Protocol for firms' value chain and investment reporting standards. According to the CDP Financial Services Disclosure Report, 79 % of financial institutions that reported financed emissions to CDP used the PCAF methodology for estimation (Granoff & Lee, 2024).

The NZBA is another prominent initiative to alleviate financed emissions. Its member banks have committed to reducing financed emissions in specific sectors by aligning their financing activities with the net-zero emission goal. Established in April 2021 as part of the Global Financial Alliance for Net Zero, the NZBA includes seven sector-

specific alliances (UNEP, 2024). A fundamental characteristic of the NZBA is its mandate for member banks to set targets for their lending and investment portfolios within 18 months of joining. These targets must align with net-zero emissions by 2050, with interim targets set for 2030 and reviewed every five years. Thus, banks can explain how they plan to mitigate their financed emissions and how this planned trajectory lines up with the Paris Agreement. The NZBA has 144 member banks from 44 nations, accounting for approximately 40 % of global banking assets (UNEP, 2024).

2.3. Climate governance mechanisms

By reconciling the objectives of long-term stakeholders with those of management, Stakeholder Theory explains the link between corporate governance and sustainability efforts. Consistent with this theory, companies adopt sustainability-oriented governance mechanisms to address stakeholder demands and maintain their corporate reputation and legitimacy (Mahoney et al., 2013; Michelin & Parbonetti, 2012). Corporate governance effectiveness is thus crucial in shaping a firm's reaction to stakeholders' demand for environmental practices (Haque, 2017).

For instance, scholars have found that the establishment of sustainability committees and the provision of sustainability reports primarily serve the purpose of enhancing environmental responsibility, addressing stakeholder concerns, and maintaining corporate legitimacy (Bui et al., 2020; Mahoney et al., 2013). Similarly, Michelin and Parbonetti, 2012 reported that effective corporate governance structures, by promoting sustainability, serve as balancing mechanisms for enhanced stakeholder management. Bui et al. (2020) further argued that climate governance helps organizations improve their sustainability commitment and reporting transparency.

This study examines three climate governance mechanisms that may promote banks' financed emission mitigation: the presence of a sustainability committee, sustainability-linked compensation, and sustainability reporting.

2.3.1. Sustainability committee

From the stakeholder perspective, the existence of a sustainability committee in an organization demonstrates its dedication to prioritizing stakeholder interests (Michelin & Parbonetti, 2012; Ullmann, 1985). The monitoring and advisory role of the sustainability committee facilitates performance by offering expert insights into diverse climate change risks and opportunities (Dietz et al., 2007; Jaggi et al., 2018; Peters & Romi, 2014), enabling boards to better address environmental concerns (Liao et al., 2015; Michelin & Parbonetti, 2012). Ultimately, the presence of a sustainability committee is a robust governance mechanism that enhances a firm's environmental performance and demonstrates its responsibility to stakeholders.

Studies have consistently supported this positive relationship. Agnese et al. (2023), using data from 311 banks from 2015 to 2020, found that the presence of a sustainability committee improves banks' environmental performance. Oyewo (2023) also showed that ESG committees are negatively associated with the rate of carbon emissions of multinational enterprises. Likewise, Narsa Goud (2022), Saeed et al. (2021), and Elsayih et al. (2021) reported that environmental committees enhance carbon performance, while Lu and Wang (2021), Velte (2024), and Liu (2024) demonstrated that ESG committees boost environmental performance. Li et al.'s (2023) analysis of Australian firms further indicated that sustainability committee presence and sustainability committee effectiveness both positively impact carbon performance. Drawing from Stakeholder Theory and the empirical evidence above, the following hypothesis is proposed.

H1. The presence of a sustainability committee has a positive impact on financed emission mitigation.

2.3.2. Sustainability-linked compensation

Sustainability has gained prominence on corporate boards' agendas, evolving from mere social efforts to contemporary ESG-based initiatives that are integrated into firms' strategic planning. Given that executive compensation is considered an effective mechanism for resolving stakeholder concerns (Freeman, 2010), senior executives' compensation structures have been modified to include both financial and non-financial indicators for a more accurate evaluation of long-term success (Eccles et al., 2020). Accordingly, Stakeholder Theory suggests that incorporating sustainability targets into executive compensation is a valid response to stakeholder demands (Al-Shaer & Zaman, 2019), in line with Ng and Nathwani's (2012) assertion that conflict between managers and stakeholders may be addressed using a sustainable performance framework.

Empirical studies have established that executive compensation linked to ESG targets engenders higher environmental performance (Baraibar-Diez et al., 2019; Berrone & Gomez-Mejia, 2009; Minciullo et al., 2022). For example, Kanashiro (2020) found that compensation based on ESG performance aids carbon footprint reduction. In a study of 494 listed firms from 13 industrialized European countries between 2002 and 2016, Haque and Ntim (2020) also showed that executive compensation has a positive effect on process-oriented carbon performance. Similarly, using data from 2630 non-financial firms in Europe from 2014 to 2021, Velte (2024) found that sustainability committees and sustainability-related compensation significantly and positively influence corporate environmental performance.

Additionally, Al-Shaer and Zaman (2019) reported that establishing a sustainability committee and offering sustainability reporting assurance positively influence the sustainability-linked compensation of the Financial Times-Stock Exchange 350 companies, thus providing insights into conventional financial institutions in the United Kingdom. From the Agency Theory perspective, Liu (2024) analysis of S&P500 firms from 2001 to 2022 revealed that CSR-linked compensation and CSR committees jointly improve corporate environmental performance.

By motivating and aligning the interests of top management towards the environment, sustainability-linked compensation encourages corporations to pursue sustainability objectives (Abdelmotaal & Abdel-Kader, 2016). Nevertheless, some scholars caution that senior managers can manipulate ESG performance metrics, implying that tying their compensation to these indicators may not equate to actual involvement (Qin & Yang, 2022). Furthermore, executive compensation may be increased without adequately addressing the genuine motives of CEOs (Bebchuk & Tallarita, 2022). Nuber and Velte (2021) and Oyewo (2023) further discovered that ESG-based remuneration correlates positively with firms' carbon intensity, indicating worse carbon performance. Thus, drawing from Stakeholder Theory and the empirical literatures, the following hypothesis is proposed.

H2. Sustainability-linked compensation has a positive impact on financed emission mitigation.

2.3.3. Sustainability reporting

According to Stakeholder Theory, companies provide sustainability reports to mitigate their external costs and reduce both stakeholder and regulatory pressures (Adams, 2002; Ballou et al., 2006). Stakeholders are increasingly demanding firms to practice corporate environmental disclosure; in response to this pressure, firms are compelled to provide information on their environmental activities (Gray et al., 1995; Khatri & Kjørland, 2023). Using 2002 to 2020 data from 210 listed companies across Denmark, Finland, Norway, and Sweden, Khatri and Kjørland (2023) found that issuing sustainability reports has a positive impact on environmental performance. A similar result has been reported by other studies (Al-Shaer & Hussainey, 2022; Belkhir et al., 2017). Therefore, the following hypothesis is proposed.

H3. Sustainability reporting has a positive impact on financed emission mitigation.

2.4. Shariah governance quality (SGQ)

Shariah governance is an internal mechanism that ensures firms comply with Shariah principles in their operating and business activities (Choudhury & Alam, 2013). Its main role is to help firms attain the paramount goal of Shariah compliance and demonstrate their adherence to the moral principles of the Maqasid al-Shari'ah (Sencal & Asutay, 2021a). Prior research has shown that the effectiveness of Shariah governance is contingent upon the characteristics of the SSB (Grassa, 2016; Nomran et al., 2016; Puspitasari & Kasri, 2023). Also known as the Shariah Advisory Council and the Shariah Committee within the governance structure of IFIs, SSBs are tasked with ensuring the Shariah conformity of the institutions' operations, investments, and financial services (Ginena, 2014; Grassa, 2016; Hassan & Raza Rabbani, 2023). The SSB serves as an internal religious advisor, enabling IFIs to heighten their sensitivity to societal and environmental concerns (Hashim et al., 2015).

The SSB incorporates ethical and moral considerations derived from the Maqasid al-Shariah framework, acting as an internal catalyst for banks' environmental responsibility (Muhmad et al., 2021). It is tasked with ensuring that the bank's actions are not detrimental to sustainability efforts, environmental protection, ecological well-being, and human safety (Jan et al., 2021). The combination of financial expertise and Shariah knowledge provides SSB members with a multifaceted experience, equipping them to address social and environmental concerns while optimizing economic returns; in doing so, they align the expectations of various stakeholders (Jan et al., 2021). In fact, Wijayanti and Setiawan (2022) noted that competent, reputable, and experienced SSB members with relevant educational backgrounds are more effective in promoting social disclosure among Islamic banks.

Given the SSB's vital role in IFIs' corporate governance mechanism, it is important to examine how its governance quality affects Islamic banks' environmental performance (Puspitasari & Kasri, 2023). In this regard, scholars have provided evidence on the relationship between the SSB and sustainability practices (Bukhari et al., 2021; Chouaibi et al., 2021; Farook et al., 2011). Among them, Mallin et al. (2014) found that SSBs positively influence sustainability practices among 91 IFIs across 13 countries. Similarly, Jan et al. (2021) revealed that the existence of a Shariah board in Islamic banks entails better sustainability performance. Mollah and Zaman (2015) also established that SSBs play a positive role in driving the organizational performance of IFIs. On the other hand, Haron et al. (2022) reported that Islamic governance does not influence corporate sustainability performance in the Shariah compliant manufacturing sector in Malaysia and Indonesia.

Underpinned by Stakeholder Theory, this study proposes that the quality of the SSB's governance, i.e., SGQ, can enhance IFIs' financed emission mitigation. Global banks are under significant pressure from various stakeholders to operate in an environmentally friendly manner (Puspitasari & Kasri, 2023). As a stakeholder-oriented system, SGQ via the SSB performs the auxiliary function of aligning banks' activities with the principles of Maqasid al-Shariah (Sencal & Asutay, 2021b). Sairally (2015) contended that ESG is a fundamental component of Shariah law; hence, Islamic banks should simultaneously fulfil both ESG and Shariah compliance goals. Accordingly, high-quality Shariah governance harmonizes diverse stakeholder interests, rights, and expectations in shaping banks' corporate structure and environmental sustainability strategies (Grassa, 2016). Consequently, SGQ is expected to enhance Islamic banks' environmental commitment and performance, particularly financed emission mitigation. Accordingly, this study proposes the following hypothesis.

H4. SGQ has a positive impact on financed emission mitigation.

3. Methods

This study aimed to investigate how climate governance mechanisms

and SGQ influence the mitigation of financed emissions in Islamic banks. To meet this objective, a quantitative approach grounded in positivism was employed, which is the most appropriate methodology for empirical studies that assess the effects of various factors on specific outcomes (Creswell & Creswell, 2018). The chosen approach is justified as the variables described in the research model could be quantified and observed objectively, allowing for increased rigor and validity.

3.1. Sample and data

The study's population consisted of all Islamic banks in Southeast Asia and Western Asia that are listed on the LSEG Eikon database. After excluding those with incomplete data on the research variables, we selected a sample of 28 Islamic banks for analysis. The banks are located across nine countries, with 17.86 % from the United Arab Emirates, 14.29 % each from Indonesia, Qatar, and Saudi Arabia, 10.71 % from Bahrain and Kuwait, and 7.14 % from Jordan and Oman (see Table 1).

Data for the variables was gathered from multiple sources. Financed emission mitigation data was obtained from the LSEG Eikon database, a prominent provider of data solutions tailored to financial market professionals and researchers. Formerly called Refinitiv and Asset 4, LSEG Eikon is widely recognized for its extensive and trustworthy collection of data, ensuring a comprehensive and impartial evaluation of ESG-related information. Scholars such as Baraibar-Diez et al. (2019) and Birindelli et al. (2018) have attested to the credibility and validity of this database, strengthening the conclusions drawn in a study. Additional data sources included the annual reports of the sampled banks and the World Bank's Database.

3.2. Variables

Financed emission mitigation was measured as a dummy binary variable, with a value of '1' assigned if the bank evaluates project financing decisions based on environmental criteria before providing funding, and '0' otherwise. Similarly, the three climate governance variables (sustainability committee, sustainability-linked compensation, and sustainability reporting) were binary in nature (see Table 2). In line with Puspitasari and Kasri (2023), SGQ was measured using an index developed via principal component analysis (PCA). A higher index score indicates higher SGQ and vice versa.

The SGQ index combined four key SSB attributes sourced from the annual reports of the sampled Islamic banks: SSB size, SSB reputation, SSB interlocking, and SSB commitments. Each of these indicators was binary, indicating whether a firm had engaged in the specific governance metric over the study period. As presented in Table 2, PCA was subsequently utilized to condense these variables into fewer components, generating an SGQ index that retained maximum data variance while simplifying analysis and interpretation.

The four SSB attributes within the SGQ index were defined as follows.

Table 1
Distribution of Islamic banks in selected countries.

	Freq.	Percent	Cum.
Bahrain	3	10.71	10.71
Indonesia	4	14.29	25.00
Jordan	2	7.14	32.14
Kuwait	3	10.71	42.86
Malaysia	1	3.57	46.43
Oman	2	7.14	53.57
Qatar	4	14.29	67.86
Saudi Arabia	4	14.29	82.14
United Arab Emirates	5	17.86	100.00
Total	28	100.00	

Source: Authors' Compilation

Table 2
PCA results.

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	1.38402	0.105706	0.346	0.346
Comp2	1.27831	0.42088	0.3196	0.6656
Comp3	0.857431	0.377193	0.2144	0.8799
Comp4	0.480239	.	0.1201	1
Scoring coefficients				
Variable	Comp1	Comp2	Comp3	Comp4
sbsiz	0.7335	−0.0611	0.2844	0.6143
sbsrepd	0.4747	0.6143	0.1994	−0.598
sbsintp	−0.1272	0.7131	−0.5132	0.4604
sbscomt	−0.4695	0.3324	0.7848	0.2304

Source: Authors' Computation

1. SSB size: '1' if the bank has three or more SSB members, '0' otherwise.
2. SSB reputation: '1' if at least one SSB member sits on the Shariah board or council of AAOIFI, '0' otherwise.
3. SSB interlocking: '1' if any SSB member serves on another SSB, '0' otherwise.
4. SSB commitment: '1' if SSB meeting attendance exceeds 75 %, '0' otherwise.

Table 2 presents the eigenvalues and proportion of variance from the PCA. The first component (Comp1) has an eigenvalue of 1.384 and accounts for 34.6 % of the total variance, capturing a significant portion of the information from the original variables. The second component (Comp2) captured an additional 31.96 %. Together, these two components accounted for over 66 % of the variance, effectively summarizing the Shariah governance indicators, as corroborated by previous studies (Greenacre et al., 2022; Mishra et al., 2017).

To address omitted variable bias, we included several control variables. In line with existing literature, firm-level characteristics such as return on equity (ROE) and leverage were considered. Additionally, two country-level variables, namely GDP growth and inflation, were incorporated. Lastly, a time variable was included to account for potential temporal differences. Controlling for both firm-level and country-level variables is crucial to accurately assess relationships within a model, thus ensuring that findings are robust and generalizable. The

Table 3
Variable measurements.

Operational Definition	Measurement	Sources
Dependent variable		
Financed emission mitigation	Value of 1 if the bank claims to evaluate project financing decisions using environmental criteria prior to funding.	LSEG Eikon
Independent variable		
Sustainability committee	Value of 1 if the bank has a sustainability committee and 0 otherwise	LSEG Eikon
Sustainability-linked compensation	Value of 1 if the bank links senior executive compensation to sustainability targets and 0 otherwise	LSEG Eikon
Sustainability report	Value of 1 if the bank publishes a separate sustainability report or publishes a section on sustainability in its annual report and 0 otherwise	LSEG Eikon
SGQ	Index consisting of four SSB attributes	Annual report
Control variables		
ROE	Measure as profit after tax/total equity	LSEG Eikon
Leverage	Total debt percentage of total equity	LSEG Eikon
Economic growth	GDP growth rate	WDI
Inflation	Consumer Price index	WDI

Source: Authors' Compilation

measurement of each variable used in this study's model is presented in Table 3.

3.3. Model

The hypotheses were tested using fractional logistic regression analysis, due to the dependent variable (i.e., financed emission mitigation) being binary in nature. Since binary variable values are constrained between '0' and '1', logistic regression is appropriate as it is specifically designed for such data and effectively handles the bounded nature of the dependent variable. It models relationships using a logit link function while ensuring that the predicted values remain within the [0, 1] range, making it particularly suited for outcomes that are proportions or probabilities. By accounting for the distribution of proportions, this method avoids biases that could arise from applying traditional methods, such as Tobit models or linear/logit regressions, which may not be able to address the bounded nature of the data. Thus, the logistic regression method more accurately estimates the effects of the independent variables on the dependent variable (Ramalho & da Silva, 2009), as confirmed in previous studies (Muttaqin et al., 2023; Triyanto, 2022).

The binary variable (Y) was used to denote the dependent variable, which assumes the value of '1' if the bank claims to evaluate project financing decisions using environmental criteria prior to funding, and 0 otherwise. The logistic model is presented in Equation (1):

$$P(\text{finemi}_{it} = 1) = \Phi(\beta_0 + \beta_1 \text{suscomm}_{it} + \beta_2 \text{sumcomp}_{it} + \beta_3 \text{susrep}_{it} + \beta_4 \text{ssb}_{it} + \beta_5 X_{it} + \beta_6 U_{it} + e_{it}) \dots \dots \dots (\text{Equation 1})$$

Where $\Phi(\cdot)$ denotes the cumulative standard normal distribution; β_0 denotes the constant; and β_1 to β_4 indicate the coefficients. *Finemi* stands for financed emission mitigation, *suscomm* denotes sustainability committee, *suscomp* refers to sustainability-linked compensation, *susrep* indicates sustainability report, and *ssb* indicates SGQ. Additionally, x is the vector of firm-level control variables (ROE and leverage), u represents the country-level control variables (GDP growth and inflation), and e_i is the error term.

4. Results and discussion

4.1. Descriptive statistics

The results presented in Table 4 summarize the descriptive statistics, bivariate correlation coefficients, and variance inflation factor (VIF) results for all variables included in the analysis. These findings illustrate the complex landscape of climate change governance mechanisms, SGQ, and their potential influence on financed emissions among the sampled Islamic banks.

The descriptive statistics reveal an average financed emission mitigation score of 0.23, indicating that, on average, the sampled Islamic

Table 4
Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Finems	140	0.23	0.42	0	1
Suscomm	140	0.4	0.49	0	1
Suscomp	140	0.23	0.42	0	1
Susrep	140	0.46	0.5	0	1
sgq	140	0.79	0.17	0.33	1
ssbsiz	140	3.59	1.04	2	6
ssbrepd	140	0.53	0.5	0	1
ssbintp	140	0.75	0.31	0	1
ssbcomt	140	0.98	0.04	0.76	1
roe	140	0.06	0.24	−2.09	0.34
Lev	140	0.69	0.77	0	3
gdpg	140	1.77	3.57	−5.46	8.65
Infla	140	1.54	2.15	−2.54	5

Source: Authors' Computation

banks exhibit a relatively low level of proactive financing toward emissions mitigation. This suggests that many of these banks do not prioritize climate initiatives in their financing decisions. Additionally, the substantial standard deviation of 0.42 emphasizes the wide variation among Islamic banks, with some actively mitigating financed emissions while others show minimal efforts. This disparity highlights the diverse approaches Islamic banks take in implementing climate governance and mitigation strategies.

Looking at the climate governance variables, the presence of a sustainability committee has an average score of 0.4, indicating that only 40 % of Islamic banks have established such committees. This suggests a moderate commitment to integrating sustainability into their governance structures. The high standard deviation (0.49) reflects significant variability in the establishment of these committees, meaning that some Islamic banks are far more proactive than others. Similarly, sustainability-linked compensation has an average score of 0.23, implying that linking compensation to sustainability outcomes is not yet a widespread practice among Islamic banks. This could limit incentives for management to prioritize sustainability efforts. In contrast, sustainability reporting has a higher average of 0.46, indicating that nearly half of the sampled Islamic banks engage in sustainability disclosures. This higher engagement level suggests that many Islamic banks recognize the importance of transparency and accountability, which may positively contribute to their climate governance practices.

With respect to Shariah governance, the SGQ index reveals a mean score of 0.79 with a standard deviation of 0.17, indicating a generally high level of SGQ across the sampled Islamic banks. As shown in Table 4, the SGQ is based on the weighted average of four SSB attributes. Strong governance in this area may enhance the positive effects on financed emission mitigation, particularly in Islamic banks where ethical considerations are paramount. Examining the individual components of SGQ, the average number of SSB members per institution is approximately 3.6, with a minimum of two and a maximum of six members. The relatively low standard deviation (1.038) suggests that most institutions have similar SSB sizes. In terms of SSB reputation, the mean value of 0.529 indicates that about 52.9 % of institutions have at least one highly reputable SSB member. Additionally, the mean value for SSB interlocking (0.749) suggests that 74.9 % of SSB members serve on multiple boards, implying that interlocking is a common practice in Islamic finance. Regarding SSB commitment, the mean score of 0.982 indicates that most SSB members demonstrate a high level of commitment, as the value is close to one.

For the control variables, ROE shows a positive average, suggesting that Islamic banks are generating moderate profits. However, the high standard deviation in ROE (0.24) indicates considerable disparities in profitability, which may impact banks' ability and willingness to invest in emission mitigation. More profitable banks would be able to allocate more resources toward sustainable initiatives, potentially improving their financed emission mitigation scores. In terms of financial structure, the average leverage ratio of 0.69 indicates a moderate reliance on debt financing. This could constrain banks' ability to invest in new sustainability projects, particularly if high debt levels limit their financial flexibility.

Additionally, country-level variables such as GDP and inflation provide important insights. The mean GDP value reflects the varying economic scales of the countries in which these Islamic banks operate, suggesting that economic stability may facilitate investments in sustainability. Conversely, the average inflation rate (1.54) and its substantial standard deviation (2.15) imply that some Islamic banks are operating under challenging economic conditions, which could negatively affect their financing decisions regarding emissions mitigation.

In the pairwise correlation matrix presented in Table 5, the climate governance variables show positive correlations with financed emission mitigation. However, the weak correlation of sustainability-linked compensation suggests a limited impact, while sustainability committee and sustainability reporting have stronger positive associations.

Table 5
Correlation matrix.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	VIF	1/VIF
(1) Finems	1.00														
(2) Suscomm	0.32	1.00												1.84	0.54
(3) Suscomp	0.03	0.01	1.00											1.16	0.86
(4) Susrep	0.38	0.61	−0.06	1.00										2.03	0.49
(5) sgq	0.21	−0.06	0.21	−0.14	1.00									2.26	0.44
(6) ssbsiz	0.38	0.11	0.18	0.09	0.54	1.00								1.75	0.57
(7) ssbrepd	0.17	−0.11	0.11	−0.24	0.63	0.31	1.00							2.24	0.45
(8) ssbintp	−0.05	0.23	−0.23	0.24	0.02	−0.17	0.26	1.00						1.74	0.57
(9) ssbcomt	−0.18	−0.20	−0.08	−0.22	−0.08	−0.24	0.02	0.09	1.00					1.16	0.87
(10) roe	0.13	0.15	0.08	0.16	0.11	0.03	0.00	−0.07	−0.08	1.00				1.10	0.91
(11) Lev	0.17	−0.28	0.18	−0.11	0.03	−0.06	0.13	−0.31	0.01	0.10	1.00			1.40	0.71
(12) gdpq	0.12	0.13	0.04	0.18	−0.08	0.06	−0.13	0.04	−0.01	0.05	−0.18	1.00		1.48	0.68
(13) Infla	0.08	0.16	0.10	0.12	−0.16	−0.02	−0.13	−0.04	0.08	0.10	−0.08	0.53	1.00	1.51	0.66

Source: Authors' Computation

These results indicate that enhanced governance structures contribute more to emissions mitigation efforts. A similar positive correlation can be observed in the relationship between SGQ and financed emission mitigation.

Furthermore, all variable coefficients are below the threshold of 0.8, raising no concerns regarding multicollinearity. To further rule out multicollinearity, we computed the VIF, which measures how much the variance of an estimated regression coefficient increases when predictors are correlated. A VIF value above five is often considered problematic, indicating significant multicollinearity. However, all reported individual VIF values in this study, including the overall mean VIF of 1.82 (excluding the interaction term), fall well below this threshold. These results support the conclusion that multicollinearity is unlikely to distort our findings (Johnston et al., 2018). By demonstrating that all VIFs are within the critical thresholds, the study provides additional evidence that the relationships among the independent variables are sufficiently distinct.

4.2. Regression analysis results

Table 6 presents the regression results, divided into seven models. The division of these models follows a logical process that aligns with econometric practices (Johnston et al., 2018; Wooldridge, 2010), progressively building upon previous models to isolate effects, control for potential confounders, and assess the robustness of the findings regarding the role of climate change governance and SGQ in financed emissions mitigation. Following Bendig et al. (2023), we began by conducting a regression analysis with a control-only model before sequentially adding the factors of interest individually. Notably, when comparing the direction, size, and statistical significance of effects across the regression models, the results remained consistent.

Table 6 reveals that the presence of a sustainability committee consistently shows a positive and significant relationship with financed emission mitigation across models (coefficients ranging from 1.499 to 1.981). Hence, H1 is supported, suggesting that firms with sustainability committees are more likely to avoid financed emissions. The significance of this effect increases as the control variables and other governance measures are introduced, indicating the stronger role of

Table 6
Results of logistic regression.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Controls only	Main effect					
Suscomm		1.499** (0.666)	1.627** (0.684)			1.802** (0.746)	1.981** (0.796)
Suscomp		−0.127 (0.587)	−0.197 (0.604)			−1.085 (0.697)	−1.326* (0.741)
Susrep		1.706*** (0.615)	1.592*** (0.617)			1.715*** (0.629)	1.587** (0.639)
sgq				0.989*** (0.244)	1.041*** (0.254)	1.123*** (0.288)	1.204*** (0.308)
roe	4.925* (2.905)	3.911 (2.929)	3.344 (2.936)	4.341 (3.341)	4.272 (3.604)	2.770 (3.942)	2.065 (4.067)
Lev	0.546* (0.291)	1.167*** (0.380)	1.282*** (0.408)	0.684** (0.297)	0.794** (0.311)	1.504*** (0.432)	1.710*** (0.485)
gdpq	0.0653 (0.134)		0.0894 (0.0869)		0.0678 (0.0766)		0.0537 (0.0949)
Infla	−0.256 (0.164)		−0.0278 (0.135)		0.130 (0.128)		0.137 (0.159)
Constant	−3.836*** (0.940)	−4.299*** (0.817)	−4.454*** (0.858)	−2.531*** (0.575)	−2.984*** (0.691)	−4.789*** (0.950)	−5.236*** (1.066)
LR chi2	23.70***	37.49***	38.77***	30.72***	34.16***	60.04***	62.35***
Log likelihood	−63.404722	−56.510449	−55.870804	−59.898592	−58.176763	−45.234261	−44.07928
Pseudo R2	0.1575	0.2491	0.2576	0.2041	0.227	0.3989	0.4143
Number of firms	28	28	28	28	28	28	28
Observations	140	140	140	140	140	140	140

Note: Standard errors in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1.

Source: Authors' Computation

sustainability committees. This finding supports Stakeholder Theory and corresponds with Saeed et al. (2021), Elsayih et al. (2021), Narsa Goud (2022), and Oyewo (2023), all of whom reported a positive link between sustainability committees and carbon performance. Agnese et al. (2023) also argued that the presence of a sustainability committee positively impacts environmental performance.

In contrast, sustainability-linked compensation yields contradictory results. Across all models, it remains non-significant, with negative coefficients ranging from -0.127 to -1.326 . Therefore, H2 is not supported, meaning that Islamic banks implementing sustainability-linked compensation have lower odds of mitigating financed emissions. This finding implies that merely tying compensation to sustainability outcomes without a robust governance structure may not elicit significant outcomes. Despite diverging from Stakeholder Theory, this result corroborates prior studies by Haque and Ntim (2020) and Kanashiro (2020), which reported a significant negative link between ESG-based compensation and carbon performance.

Sustainability reporting consistently exhibits a positive and significant influence on financed emission mitigation, with coefficients ranging from 1.587 to 1.715. Hence, H3 is supported. This emphasizes that transparent sustainability reporting fosters accountability and encourages firms to follow through on emission mitigation strategies. This finding is in line with Stakeholder Theory as well as prior studies by Al-Shaer and Hussainey (2022), Belkhir et al. (2017), and Khatri and Kjørland (2023), which found that issuing sustainability reports positively impacts environmental performance.

Regarding SGQ, the results repeatedly demonstrate a strong positive and significant effect across all models (coefficients ranging from 0.989 to 1.204). Thus, H4 is supported, whereby adherence to Shariah principles is positively correlated with emissions mitigation. Embedding ethical governance frameworks is evidently crucial in promoting sustainability practices. Consistent with this finding, Jan et al. (2021) and Hashim et al. (2015) also found a positive link between SSBs and Islamic

banks' sustainability performance, while Wijayanti and Setiawan (2022) established that SSB quality influences Islamic banks' engagement in social disclosure.

For the control variables, ROE displays no significant relationship with financed emission mitigation across any of the models, indicating that profitability may not directly drive emission mitigation efforts in this context. However, leverage shows a strong positive association with financed emission mitigation, particularly in Models (2) to (7), with significant coefficients increasing from 0.546 to 1.710. This suggests that banks with higher leverage make greater investments in sustainability initiatives, possibly due to increased scrutiny from debt investors. In contrast, the country-level control variables, such as GDP and inflation, do not display strong effects, underscoring that macroeconomic factors may be less relevant to financed emissions.

Overall, the models show progressively higher pseudo- R^2 values, particularly from Model (5) to Model (7). These values reiterate that governance variables significantly enhance model fit and illustrate their influential role in mitigating emissions.

4.3. Robustness testing results

To further validate the findings, we employed a series of robustness tests. First, a probit regression was utilized as an alternative estimation. Probit and logistic regression are both relatively similar and widely used methods for modeling binary outcomes, but differ primarily in their assumptions about the distribution of error terms. Logistic regression assumes a logistic distribution, while probit regression assumes a normal distribution. As shown in Table 7, the results of probit regression are consistent with the logistic regression across all models, indicating that the findings are robust. This verifies that the observed relationships are genuine and not caused by a specific binary modeling approach.

Second, to improve interpretability, the study disaggregated the compiled SGQ index into four distinct dimensions: SSB size, SSB

Table 7
Results of probit regression.

Variables	(1) Controls only	(2) Main effect	(3)	(4)	(5)	(6)	(7)
Suscomm		0.936** (0.383)	1.068*** (0.392)			1.233** (0.479)	1.354*** (0.509)
Suscomp		−0.157 (0.349)	−0.247 (0.362)			−0.984** (0.453)	−1.111** (0.476)
Susrep		0.831** (0.345)	0.759** (0.353)			1.245*** (0.459)	1.200** (0.472)
ssbsiz				0.660*** (0.182)	0.685*** (0.192)	0.509** (0.203)	0.513** (0.218)
ssbrepd				0.402 (0.359)	0.386 (0.364)	1.630*** (0.524)	1.671*** (0.542)
ssbintp				0.139 (0.591)	0.0811 (0.590)	−1.907** (0.863)	−2.076** (0.896)
ssbcomt				−7.835** (3.335)	−7.535** (3.306)	−5.159 (4.167)	−4.993 (4.220)
roe	2.585 (1.574)	2.578 (1.863)	2.559 (1.874)	2.459 (2.431)	2.476 (2.391)	0.639 (1.780)	0.735 (1.589)
Lev	0.318** (0.156)	0.715*** (0.227)	0.729*** (0.237)	0.601*** (0.218)	0.598*** (0.219)	0.831*** (0.279)	0.880*** (0.292)
gdp	0.0478 (0.0424)		0.0202 (0.0856)		−0.0177 (0.0962)		0.0233 (0.110)
Infla	0.0107 (0.0681)		−0.212* (0.112)		−0.161 (0.108)		−0.210 (0.140)
Constant	−1.343*** (0.266)	−3.329*** (0.652)	−3.435*** (0.693)	2.082 (3.302)	1.691 (3.304)	−0.439 (4.060)	−0.802 (4.126)
Time fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LR chi2	11.19**	46.19***	50.13***	51.08***	53.43***	78.68***	81.33***
Log likelihood	−69.6606	−52.1596	−50.1901	−49.7183	−48.5417	−35.9176	−34.5930
Pseudo R2	0.0744	0.3069	0.3331	0.3393	0.3550	0.5227	0.5403
Number of firms	28	28	28	28	28	28	28
Observations	140	140	140	140	140	140	140

Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors Computation

reputation, SSB interlocking, and SSB commitment. We sought to determine whether each component captures distinct aspects of SGQ, allowing for a clearer understanding of how these factors individually contribute to financed emission mitigation. We also controlled for time fixed effects to add credibility to the models. Upon testing the SGQ components individually, the findings were consistently significant with those of the main logistic regression (Table 7).

Specifically, SSB size was found to be positive and statistically significant across all models. This signifies that a larger Shariah board enhances oversight, ensuring that IFIs align their operations with sustainability principles. This subsequently boosts efforts to mitigate financed emissions. Similarly, SSB reputation yielded statistically significant results, indicating that SSB members' good reputations contribute significantly to emission mitigation efforts, particularly when broader governance factors are considered. However, SSB interlocking appears to have a negative and significant effect, implying that SSB members serving on multiple boards may hinder financed emission mitigation. A possible explanation is that interlocked board members face conflicts of interest, constraining their ability to enforce strict sustainability standards. Lastly, SSB commitment also showed a negative and statistically significant result, suggesting that excessive commitments (e.g., taking on multiple roles) may reduce the effectiveness of SSB members in ensuring emissions mitigation.

Overall, the results from the disaggregated SGQ components underscore the critical role of Shariah governance in reducing financed emissions. Disaggregating the SGQ variable not only reinforces the robustness of the study's findings but also provides a clearer picture of how each governance aspect affects financed emission mitigation.

5. Conclusion

Managing financed emissions within the financial sector remains a key issue to be addressed for the global progress in climate change goals. This study investigated the impact of climate change governance and SGQ on financed emission mitigation in 28 Islamic banks. The findings show that two climate governance variables—sustainability committees and sustainability reporting—positively influence financed emission mitigation, while sustainability-related compensation was found to have an insignificant impact. The findings also highlight the significant role of SGQ in ensuring that IFIs align their portfolios with the global net-zero agenda. This research thus provides new insights into how institutionalizing strong climate governance and high-quality Shariah governance can aid Islamic banks in mitigating financed emissions. In doing so, it makes a valuable theoretical contribution by corroborating Stakeholder Theory in the context of Islamic banks.

The study's results also proffer practical implications and policy recommendations for stakeholders, including bank management, policymakers, regulators, investors, and other relevant institutional or governmental parties. First, Islamic banks and other IFIs should implement internal mechanisms to manage financed emissions. Indeed, our findings on climate governance's impact on financed emissions are also relevant to conventional financial institutions, especially in guiding their internal policy actions towards stronger climate oversight. From a corporate governance perspective, institutionalizing climate governance initiatives allows banks to adopt effective strategies for integrating climate risks and opportunities into their core operations. Such governance entails establishing a sustainability committee responsible for oversight and leadership in effectively managing the banks' financed emissions and other environmental concerns.

Second, Islamic banks should ensure high-quality Shariah governance. Maintaining an appropriately sized SSB and appointing highly reputable members can increase the quality and relevance of board decisions. The robustness tests from this study further indicate that appointing AAOIFI board members to SSBs improves banks' commitments to financed emission mitigation. This is because AAOIFI, as a global standard-setting institution for IFIs, consists of scholars who are

exceptionally qualified in Islamic jurisprudence and are likely well-informed about global issues such as climate change. Their expertise enables them to make informed and relevant decisions within banks' SSBs. While it may be difficult for all banks to include AAOIFI members on their SSB, they should ensure they select high-quality and reputable scholars with similar qualifications to those on the AAOIFI board.

Third, internal strategies such as Know Your Customer should be leveraged by banks to gather detailed information about their clients and facilitate the due diligence process. While most banks already implement this strategy, they should expand the process to include an environmental risk profile. In doing so, banks can easily screen clients based on carbon emission intensity and avoid financed emissions.

Furthermore, governments should make financed emission reporting mandatory. To alleviate the risk of greenwashing, authorities should also mandate independent assurance of such reports by reputable organizations. This would enable regulators to monitor how banks are faring in managing financed emissions. Additionally, environmental taxation can serve as a fiscal tool to discourage financed emissions. For instance, banks or financial institutions exceeding certain benchmarks should be subjected to taxation, with the proceeds invested into carbon-absorbing projects to attain carbon neutrality. On the other hand, banks that perform exceptionally well in managing their financed emissions can be awarded tax incentives.

Lastly, central banks and ministries of finance should collaborate to create a taxonomy that classifies economic activities based on their environmental impact. A clear taxonomy would help banks distinguish between environment-friendly and non-friendly projects, enabling them to better align their financing activities with environmental goals. This classification would also be instrumental in promoting sustainable finance across the economy.

Despite its contributions, this study has some limitations. First, it focused only on listed Islamic banks in Southeast Asia and Western Asia, which may not fully represent the characteristics of all Islamic banks, particularly those not listed on stock exchanges. Second, the sample included only Islamic banks; future research could extend the scope by examining other IFIs such as Takaful insurance and Islamic micro-finance. Third, studies should consider analyzing a dataset covering more than five years to enhance the accuracy of model estimations. Fourth, the current study proxied financed emissions using only project financing. Future studies should explore other sources of financed emissions. Finally, this study evaluated only the presence of climate governance mechanisms, not their quality. Scholars should therefore investigate the impact of climate governance quality on financed emission mitigation.

CRedit authorship contribution statement

Saheed Olanrewaju Issa: Conceptualization, Methodology, Resources, Writing – original draft, Writing – review & editing. **Abdul-kadri Toyin Alabi:** Methodology, Formal analysis, Visualization, Writing – original draft, Writing – review & editing. **Abdulbaki Teniola Ubandawaki:** Conceptualization, Resources, Writing – original draft, Writing – review & editing.

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