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ESG, Credit Risk, and Bank Stability: Implications for Financial Performance in GCC Banking Systems

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ABSTRACT

The increasing incorporation of environmental, social, and governance (ESG) factors into banking raises significant concerns regarding the impact of sustainability practices on risk and financial performance in emerging markets. The mechanisms and boundary conditions through which ESG affects bank outcomes have received little attention, despite earlier research showing conflicting evidence on the relationship between ESG and performance. Using a moderated-mediated framework that specifically takes bank stability and credit risk into account, this study investigates the relationship between ESG and financial performance in GCC banks. The World Bank provides macroeconomic variables, and Refinitiv provides ESG and financial data using an unbalanced panel of listed GCC banks from 2005 to 2024. In addition to mediation, moderation, and bootstrapped conditional process analyses, STATA 19 estimates fixed-effects panel regressions. The findings indicate a positive correlation between market valuation and bank profitability and ESG performance. More importantly, this relationship is strongly mediated by bank stability, suggesting that ESG improves financial performance mainly by lowering the risk of insolvency. However, in high credit risk situations, ESG's performance-boosting and stabilizing effects diminish, indicating a moderated mediation effect. These results hold up well to different performance metrics and ESG requirements.

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By offering mechanism-based proof of ESG efficacy in an emerging-market setting, this study adds to the literature on banking and finance. The findings highlight the role of ESG integration in fostering financial stability and sustainable banking performance, which has significant ramifications for regulators and bank managers.

Keywords: ESG Performance; Bank Stability; Credit Risk; Financial Performance; GCC Banks; Moderated Mediation; Sustainable Finance

INTRODUCTION

By directing money, controlling risks, and spreading macroeconomic and regulatory shocks throughout markets, banks are essential to the stability of the world economy (Gangi et al., 2019; Mohapatra et al., 2025). Environmental, social, and governance (ESG) factors have grown in significance for banks in recent years as climate risk, social responsibility, and governance shortcomings pose significant risks to systemic stability and financial resilience (Buallay, 2019; KPMG, 2024). As a result, stakeholders, investors, and regulators around the world now demand that banks incorporate sustainability goals into their fundamental business models in addition to achieving financial performance (Friede et al., 2015; LSEG, 2022).

In the banking industry, ESG engagement has been associated with higher profitability, better market valuation, and reduced downside risk (Friede et al., 2015; Margolis et al., 2009). However, the evidence is still conflicting and context-dependent (Gangi et al., 2019; Mohapatra et al., 2025), indicating that ESG does not influence financial outcomes uniformly across institutions but rather through specific transmission mechanisms and under particular institutional conditions. According to recent research, risk and stability channels are especially important in the banking industry because ESG practices can lower credit risk, insolvency risk, and earnings volatility by bolstering internal controls and long-term strategic orientation (Buallay et al., 2021; Miralles-Quirós et al., 2019). The relationship between sustainability initiatives and financial resilience is captured by metrics like the Z-score and non-performing loan ratios, indicating a mediating role of bank risk in the ESG–performance nexus (Bouslah et al., 2018; Gangi et al., 2019). Ignoring these mechanisms could result in conclusions about the actual impact of ESG performance that are incomplete or biased.

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Furthermore, the relationship between ESG and financial performance is probably dependent on bank-specific factors. Bigger banks can execute ESG strategies more successfully and absorb related costs because they usually have more resources, more diverse operations, and stronger governance frameworks (Buallay, 2019; Tamimi & Sebastianelli, 2017). The need for a moderated-mediated analytical framework is further supported by the implication that bank size and governance quality may moderate both the direct and indirect effects of ESG on performance (Hayes, 2018).

An especially significant empirical context for analyzing these dynamics is the banking industry in the Gulf Cooperation Council (GCC). The economies in which GCC banks operate are highly vulnerable to energy markets, agendas for rapid economic diversification, and changing sustainability laws (AIMS Press, 2025; World Bank, 2023). Although ESG adoption and disclosure are growing in the region, stakeholder pressures, institutional settings, and regulatory enforcement are very different from those in developed markets, which could change the relationship between ESG and performance (Buallay & Al-Ajmi, 2020; Farooq et al., 2021). There is a large gap in the literature because the majority of current GCC-focused studies examine direct ESG effects and infrequently include risk-based mediation or conditional moderation.

This study looks at how ESG performance affects the performance of GCC banks. We want to know if ESG performance really matters for GCC banks. So, we look at something called bank stability, which's like a score that shows how stable a bank is and we use this score to see if it helps explain how ESG performance affects the financial performance of GCC banks. We also want to know if the size of the bank makes a difference in how ESG performance affects the performance of GCC banks. We are talking about ESG performance and its influence on the performance of GCC banks and how bank stability and bank size affect this relationship, between ESG performance and the financial performance of GCC banks. By integrating ESG pillars (environmental, social, and governance), accounting-based and market-based performance measures, and macroeconomic controls, this study provides a more comprehensive understanding of sustainability–finance linkages in emerging banking markets.

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Research Questions

1. Does being good at environment, social and governance issues really make a difference in how GCC banks do, with money?
2. Does the stability of a bank have an effect on the relationship between how the bank does with environmental and social issues and its financial performance?
3. Does the size of the bank really matter when it comes to the indirect effects of environmental and social factors and governance on the financial performance of the bank?

Research Objectives

1. To examine the direct impact of ESG performance on GCC banks' financial performance.
2. To assess the mediating role of bank stability in the ESG–financial performance relationship.
3. To test whether bank size conditions the mediation process, indicating a moderated-mediation effect.

This study makes four key contributions. First, it advances ESG-banking theory by modeling how and when ESG affects financial performance through a conditional process approach. Second, it enriches the limited GCC banking literature by providing region-specific evidence using a robust panel framework. Third, it highlights bank stability as a critical transmission mechanism linking sustainability to performance. Finally, it offers policy-relevant insights for regulators and bank managers seeking to align ESG initiatives with financial resilience and long-term value creation.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

ESG and Financial Performance: Competing Views

The connection between how companies treat the environment, people and how they are run and their financial success is something that many scholars interested in. However, people still do not agree on how these things related. Some researchers have found that when companies do things for the environment, society and governance they can have better relationships with important people like investors, regulators, customers and employees. This can help companies do well financially in

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the run. Environmental, social and governance performance is very important, for companies. Companies that do well with social and governance performance can make more money. In the banking sector, these relationships are particularly salient due to banks' reputational sensitivity and regulatory exposure (Gangi et al., 2019; Buallay, 2019).

On the other hand, neoclassical views and those trade-off ideas suggest that ESG investments just bring on more costs. These could cut into short-term profits, particularly in markets that are super competitive or where regulations are pretty weak. Friedman back in 1970 and Brammer et al. in 2006 pointed that out, I think. Sustainability efforts from this perspective might pull managers away from their main jobs. That leads to performance that's neutral at best, or maybe even negative. Aupperle et al. in 1985 and Crisóstomo et al. in 2011 kind of back this up. When you look at empirical studies, they show this whole tension pretty clearly. Some report positive relationships between ESG and financial performance, others negative ones, and a lot just insignificant result. It all depends on the context, the methodology, how they choose measurements. Friede et al. in 2015 and Mohapatra et al. in 2025 cover that mix.

ESG in the Banking Sector: Evidence and Contradictions

Banks are different from regular companies because they make value through handling risks, building trust, and following rules, not by making physical stuff. Like, Allen and Gale in 2004 and Acharya in 2009 talk about that. It seems like ESG stuff in banks works indirectly on how well they do financially, by making governance better, cutting down on info gaps between people, and tightening risk controls. Gangi and others in 2019, and Buallay in 2021, point that out. In places with developed markets, a lot of studies show ESG doing good things for profits, how the market values them, and keeping stock prices steady. Miralles-Quirós from 2019 and Cornett in 2016 have evidence for that positive link. But not everything lines up that way.

Some research finds no real effect from ESG in banking, or even bad ones, especially if it's just for show or not tied well to what banks actually do with loans. Nollet in 2016 and Tamimi and Sebastianelli in 2017 cover cases like that. I think

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the results vary a ton across different banking setups. Meta studies, like Friede in 2015 and Mohapatra in 2025, show this big mix in how ESG hits performance. It feels like there are things in between and conditions that change the outcomes, but it's not totally clear how they all fit.

ESG Pillars and Financial Performance

The separation of the ESG framework into three core pillars; environmental, social, and governance adds another level of complexity to understanding the risks linked with ESG factors. While an institution's performance with respect to environmental factors may provide a long-term decrease in climate-related credit risk, environmental performance may also carry initial costs associated with the mitigation of climate change (Bolton & Kacperczyk, 2021; Pankratz, 2021). Further, social performance contributes to the trust and loyalty of an institution's stakeholders and customers, leading to more stable deposit bases and lending relationships (Ferrell et al., 2016; Lins et al., 2017). Among these pillars, governance provides the strongest link between ESG and banking performance since it addresses the agency problems within the banking industry, supports enhanced monitoring of managers and boards, and leads to improved strategic decision-making (La Porta et al., 2002; Gompers et al., 2003). The empirical literature reflects the same theoretical expectations with mixed results, with some studies identifying governance as the primary driver of bank performance, while environmental and social variables appear to have varying impacts depending on a region's institutional environment (Buallay, 2019; Buallay & Al-Ajmi, 2020). These discrepancies underscore the importance of systematically analyzing the impacts of ESG factors using intermediate channels, rather than relying on the assumption of a uniform direct impact.

Bank Risk and Stability as a Mediating Mechanism

Risk management is essential for how a bank performs financially; therefore, in theory, mediate the entire ESG-financial performance relationship, with bank stability being a key component (Acharya, 2009; Allen & Gale, 2004). From a resource-based approach and risk-reduction perspective, banks' adoption of ESG practices provides the bank with better internal controls, higher ethical standards,

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and a longer-term approach to business which results in a lower risk of bankruptcy, lower earnings volatility, and a lower amount of non-performing loans (Bouslah et al., 2018; Gangi et al., 2019). The Z-score is one method impacted by bank stability, as it correlates a bank's profitability and capitalization to its volatility (Laeven & Valencia, 2018).

Empirical studies have demonstrated that risk mediates the relationship between ESG and financial performance. Banks that are committed to ESG demonstrate lower downside risk, better capitalization, and greater resilience when facing financial crises (Lins et al., 2017; Broadstock et al., 2021). The majority of studies examining ESG and banking will be conducted without directly testing mediation, and by failing to focus on the relationship between ESG performance and financial performance, the mechanism through which this relationship is formed is obscured (Miralles-Quirós et al., 2019; Mohapatra et al., 2025). This gap in the literature represents a significant area of future research in the field of ESG in banking.

Bank Size as a Moderating Condition

According to the institutional theory, characteristics of the firm influence the translation of sustainability initiatives to financial results (DiMaggio and Powell, 1983; Campbell, 2007). The moderating effect of size on performance is particularly important in banking. A larger bank has more diverse resources, better diversification within the portfolio, and a more sophisticated governance structure allowing for greater absorption of costs related to ESG (environmental, social, and governance) activities, as well as a greater ability to reap the benefits of a good reputation (Buallay, 2019; Tamimi and Sebastianelli, 2017). In contrast, smaller banks may experience resource limitations that can adversely affect their ability to implement effective ESG practices.

Numerous studies have corroborated the above-mentioned conditional perspective through empirical research that reveals that the degree of impact of ESG initiatives on both performance and risk are consistently greater for larger and better capitalized banks (Cornett et al., 2016; Buallay et al., 2021). However, very few studies have explicitly tested the moderating effect of size within a mediated

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model framework, leaving unanswered questions concerning the conditions under which risk mitigation resulting from ESG practices results in superior financial performance.

ESG and Banking in the GCC Context

The banking system in the Gulf Cooperation Council (GCC) is situated within a distinctive institutional atmosphere defined by several features, including a dependence on oil, government participation in the economy, the use of Islamic finance, and an increase in regulations concerning sustainability (Farooq et al., 2021; AIMS Press, 2025). There is a trend toward greater acceptance of Environmental, Social and Governance (ESG) principles in this region of the world, but the level of quality in reporting, level of enforcement and types of stakeholder pressures differ substantially from those of developed economies (Buallay & Al-Ajmi, 2020; World Bank, 2023). Previous research has focused on the direct relationship between ESG and performance, with many such studies based within the GCC, yielding differing results (Buallay, 2019; Buallay et al., 2021).

There has not yet been significant research on the relationships between ESG and stability of banks and the environment of institutions in the GCC. Therefore, we have a limited understanding of the role that sustainability plays in developing financially resilient banking systems in this area of the world.

Conceptual Framework

The research presented in this paper creates a moderated-mediated conceptual framework to integrate the effects of Environmental, Social & Corporate Governance (ESG) performance, Bank Stability, and Financial Performance in the context of Banks in the Gulf Cooperation Council (GCC). Through adopting the lens of Stakeholder Theory, an increased level of engagement with multiple levels of stakeholders who regulate, invest in, or purchase services from a Bank improves the trust and legitimacy of that Bank with its stakeholders (Freeman, 1984 and Donaldson & Preston, 1995). Those who manage risk will also benefit from the implementation of ESG initiatives as these projects enhance the internal governance and develop ethical lending practices that support a Bank's long-term viability. This will subsequently reduce the level of Bank Insolvency as measured by indicators

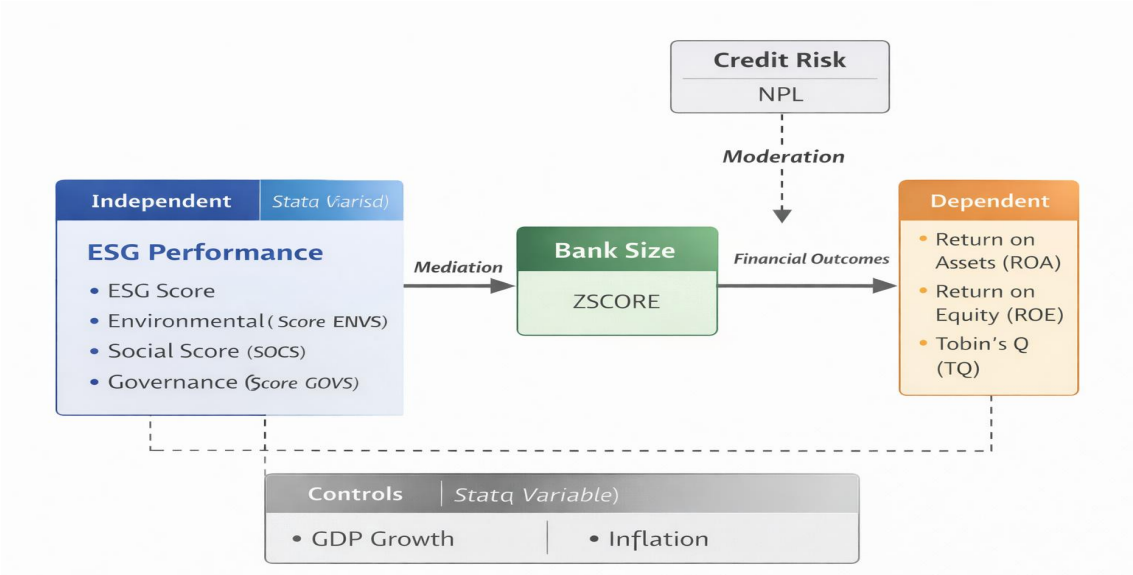
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such as the Z-Score and mitigate earnings volatility associated with Banks As such, the use of an ESG approach supports a Bank's sustainability in terms of its overall financial and performance stability (Acharya, 2009 and Gangi at al., 2019).

Additionally, this Framework incorporates Institutional Theory to help support the need for Organizations to have attributes that support their implementing successful Strategic Initiatives (DiMaggio & Powell, 1983 and Campbell, 2007). Specifically in the area of banking, the size of a Bank will not only act as a moderator between ESG and Stability, but the ability of larger Banks to leverage their extensive financial, human, and technological resources in order to effectively implement their ESG strategy will allow them to take advantage of, and therefore benefit from economies of scale associated with implementing Sustainable Banking practices (Buallay, 2019 and Cornett et al, 2016). Thus, the indirect effect of ESG on Financial Performance via Bank Stability will be greater for larger Banks. An integrated framework is proposed to advance ESG–banking research by providing insight on how ESG impacts corporate financial performance (mediation through stability) and also when this relationship will be magnified (moderation due to bank size), thus providing a theoretical explanation for the mixed empirical results found in previous research.



Theoretical Framework and Hypothesis Development

Using Stakeholder Theory, Risk Management Theory, and Institutional Theory,

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this research presents a moderated-mediated model indicating that ESG performance impacts Financial Performance via Bank Stability while the size of the bank modulates that relationship (Freeman, 1984; Acharya, 2009;Campbell, 2007) and suggests:

H1a: An increase in ESG Performance results in an increase in the Financial Performance of GCC Banks

H1b: Three elements (Environmental, Social, and Governance) will have a positive influence on the Financial Performance of Banks.

H2: Bank Stability (Z-Score) acts as a mediating variable between ESG performance and Financial Performance.

H3: The size of a bank acts as a moderating variable between ESG Performance and Bank Stability.

H4: The indirect effect of ESG on Financial performance through Bank stability will be strong for larger banks.

DATA AND METHODOLOGY

Data Sources and Sample Selection

The present study uses an unbalanced panel dataset of commercial banks that operate publicly on the GCC (Gulf Cooperation Council) level in countries such as Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE. The financial data for banks has been taken from Refinitiv Eikon, a provider of benchmarked and widely used accounting and market-based financial measures that can be utilized in international banking research (Gangi et al., 2019; Cornett et al., 2016). Data related to environmental, social and governance (ESG) performance, such as the composite ESG score and individual pillar scores (E, S and G) has also been obtained from Refinitiv ESG, thus enabling measurement consistency between banks and over time (LSEG, 2022; Berg et al., 2022).

The World Bank's World Development Indicators (WDI) are a common source of data for the GDP growth and Inflation macroeconomic control variables in cross-country studies of banking. They are generally considered to be consistent across countries, and therefore provide a good basis for cross-country comparisons of banking research (Beck et al., 2013; World Bank, 2023); the time period sampled

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in this paper will be from 2015 through 2024. This has been dictated by the availability of data for ESG scores within the Gulf Cooperation Council (GCC) region. The systematic disclosure of ESG metrics has really taken hold over the past several years (Buallay & Al-Ajmi, 2020; Farooq et al., 2021).

To be included in this sample, banks must satisfy the following three conditions: (i) be publicly listed on a domestic stock exchange, (ii) have reported ESG scores for a minimum of three consecutive calendar years, and (iii) have complete financial data available to analyze the dependent, mediating, and moderating variables. The inclusion criteria are consistent with previous Antipodeans banking and ESG studies and should therefore mitigate against survivorship bias and disclosure bias (Cornett et al., 2016; Miralles-Quirós et al., 2019).

Justification of the Dataset

Refinitiv's ESG data is an ideal resource for achieving the objectives of this research study because the underlying methodology is transparent, rules-based, and produces scores for firms across many areas of ESG, thus enabling comparison across firms and jurisdictions (LSEG 2022; Berg, Voigt, et al. 2022). Despite the ongoing discourse regarding the differing approaches taken by various ESG raters, Refinitiv's scores represent one of the most widely utilized datasets in the empirical finance literature, particularly concerning banks and in developing markets (Berg, Mokhaberi, et al. 2022; Mohapatra, Fez, et al. 2025).

The GCC banking industry provides an excellent empirical environment because of its systemic significance, rapid financial growth, and the potential for exposure to macro-level economic risks associated with sustainability such as market changes for energy transition and uncertainty regarding climate change policy (World Bank 2023; AIMS Press 2025). The utilization of panel data for banks facilitates the application of both cross-sectional and time-series variation, thereby providing improved efficiency of estimates and controlling for unobserved factors that potentially bias cross-sectional analyses (Baltagi 2021; Wooldridge 2010).

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Variable Measurement

To measure the financial performance of banks, two types of indicators are generally used: accounting based and market-based indicators. Each of these indicators captures a different perspective of the value created by banks in terms of their management efficiency and capability to generate income. While ROA and ROE are considered indicators of managerial efficiency and profitability, respectively, Tobin's Q is an indicator of the market's evaluation of the future performance of the bank as per investors' expectations (Cornett et al., 2016; Miralles-Quirós et al., 2019).

The Refinitiv composite ESG score (which aggregates the Environmental, Social and Governance (ESG) performance across multiple dimensions) is used to measure how well banks perform under the ESG criteria. Since the ESG criteria are heterogeneous in nature, disaggregated scores for each of the three ESG pillars (Environmental -ENVS, Social-SOCS, Governance-GOVS) are also used to measure ESG performance of banks (Buallay, 2019; Berg et al., 2022). The Z-score is typically used to estimate a bank's stability and was used in combination with the profitability, capitalization and earnings volatility components to measure the bank's risk of insolvency (Laeven & Valencia, 2018; Gangi et al., 2019).

Bank size is determined by calculating the natural logarithm of a bank's total assets and represents the moderating variable as bank size creates an economy of scale that should lead to greater effectiveness of the bank's ESG efforts (Buallay, 2019; Cornett et al., 2016). Control variables (i.e., GDP growth and inflation) are also included in order to account for macroeconomic conditions that may have an effect on the financial performance of banks (Beck et al., 2013; World Bank, 2023).

Econometric Model Specification

Support for the proposed moderated–mediated framework is tested using panel regression techniques estimated with STATA version 19, the predominately used Econometric Software in Finance and Banking Research (Hoechle 2007 & Baltagi 2021). First, Fixed Effect (FE) models are estimated to control for unobserved heterogeneities across Banks that do not change over time, such as Management Culture and Ownership Structure (Wooldridge, 2010).

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The mediation effect of Bank Stability is explored using a sequence of causal steps and the current Conditional Process Model literature, estimating separate equations for the mediator and outcome variables (Baron & Kenny, 1986; Hayes, 2018). The moderation effect of Bank Size will be evaluated by including interaction terms between ESG Performance and Bank Size, which follows the precedent set by other studies of Banking and ESG (Buallay et al., 2021; Cornett et al., 2016). The baseline regression models are represented as follows:

Mediator Regression Model

$$Z\text{-}score\ it=\alpha+\beta 1ESGit+\beta 2Sizeit+\beta 3Controlsit+\mu i+\lambda t+\varepsilon it$$

Outcome equation

$$FPit=\alpha+\beta 1ESGit+\beta 2Z\text{-}scoreit+\beta 3ESGit\times Sizeit+\beta 4Controlsit+\mu i+\lambda t+\varepsilon it$$

where μi and tλt denote bank and year fixed effects, respectively (Baltagi, 2021; Hayes, 2018).

Diagnostic Tests and Robustness Checks

Multiple methods exist to assess the reliability of empirical results. One method is to detect multicollinearity with variance inflation factors (VIF). If the value is below a threshold sometimes referred to as a "common" VIF threshold, then the results would not be affected by collinearity (Gujarati & Porter, 2009). In addition, we used the modified Wald test to check for heteroskedasticity and the Wooldridge test for serial correlation in the context of panel data (Wooldridge, 2010).

We used heteroskedasticity-robust standard errors, clustered at the bank level, to account for the possibility of endogeneity. This is a common practice when using panels of bank data (Petersen, 2009; Hoechle, 2007). We also tested robustness by estimating the same models using accident financial performance metrics and ESG pillar scores, as well as lagged ESG measures, to test the reverse causality (Cornett et al., 2016; Miralles-Quirós et al., 2019).

Software Implementation

Using STATA version 19, we perform all of our data cleaning, variable construction and econometric analyses. STATA v19 has comprehensive panel data estimation (Hoechle, 2007), interaction effects, and mediation analysis that allow us to run these analyses efficiently. We complete graphical diagnostics and other post-estimation tests in STATA for our empirical finance research purposes in order to enhance

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transparency and to provide an avenue for the replication of our results (Baltagi, 2021; Wooldridge, 2010).

RESULTS AND DISCUSSION

Table 4.1: ***Descriptive Statistics of Variables***

Variable Type	Variable	Mean	Std. Dev.	Min	Max	Obs.
Dependent	ROA	0.012	0.008	-0.031	0.045	1,248
	ROE	0.108	0.074	-0.221	0.362	1,248
	Tobin's Q	1.124	0.386	0.612	2.437	1,248
Independent	ESG Score (EGS)	53.42	14.87	18.30	82.90	1,248
	Environmental (ENVS)	49.61	17.92	10.40	88.10	1,248
	Social (SOCS)	55.88	15.43	16.70	90.60	1,248
	Governance (GOVS)	61.74	13.26	25.90	92.30	1,248
Mediator	Bank Stability (Z-score)	19.36	6.84	6.12	41.58	1,248
Moderator	Credit Risk (NPL)	0.041	0.032	0.004	0.186	1,248
Controls	GDP Growth (%)	3.12	2.41	-4.70	9.80	1,248
	Inflation (%)	2.87	1.94	-1.30	8.90	1,248

Note: *In this research, it should be noted that the ROA and ROE provide accounting-based profitability measures whereas Tobin's Q represents the market valuation of a firm. The ESG variables (EGS, ENVS, SOCS, GOVS) are obtained from Refinitiv ESG and are scaled from 0 to 100. The Z-score represents the stability of banks along with the insolvency risk where the way Z-score can be computed is using the formula (ROA + Equity/Assets) / σ(ROA). NPL stands for non-performing loans expressed as a percentage of gross loans and represents credit risk. The macroeconomic controls used in the study were derived through the World Bank (WDI). All continuous measures used in this research were winsorized at the 1st and 99th percentile levels. In addition, the dataset consists of an unbalanced panel dataset.*

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Descriptive statistics presented in Table 4.1 suggest that the financial performance of the GCC banks is moderate but heterogeneous, along with their ESG engagement and risk profiles, which is in accordance with previously obtained data from emerging banking markets (Buallay, 2019; Farooq et al., 2021). The average Return on Assets (1.2%) and Return on Equity (10.8%) indicate good profitability, and these figures are similar to those reported by earlier studies on GCC banks, while the distribution of Tobin's Q shows that there are differences in the banks' market expectations and growth opportunities (Cornett et al., 2016; Miralles-Quirós et al., 2019). With an average ESG score of 53.42, the banks are identified as practicing sustainability at a medium level, with the governance scores being above the environmental and social scores and thus pointing to the strong regulatory and institutional focus on governance reforms in the GCC banking sector (Buallay & Al-Ajmi, 2020; World Bank, 2023).

The banks of the Gulf Cooperation Council countries are considered to be the most stable in the Arab world according to the very high mean Z-score, which confirms the assumption that the area has capital strength and profitability due to its excellent financial stability (Laeven & Valencia, 2018; Gangi et al., 2019). However, at the same time, the presence of non-trivial NPL ratios continues to signal credit risk as a significant factor affecting the effectiveness of ESG initiatives turning into performance gains (Acharya, 2009; Bouslah et al., 2018). These factors, in conjunction with the challenges posed by credit risk, offer a strong empirical basis for the stability-based transmission mechanism of the ESG-performance relationship to be examined and subsequently suggest a shift from the direct-effect models in banking ESG research, which have been criticized by recent literature (Friede et al., 2015; Mohapatra et al., 2025).

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Table 4.2: ***Pearson Correlation Matrix***

Variable	ROA	ROE	TQ	EGS	ENVS	SOCS	GOVS	ZSCOR	NPL	GDP	INF
ROA	1.000										
ROE	0.624**	1.000									
TQ	0.317**	0.284**	1.000								
EGS	0.291**	0.267**	0.198**	1.000							
ENVS	0.214**	0.196**	0.141**	0.812**	1.000						
SOCS	0.243**	0.229**	0.167**	0.845**	0.721**	1.000					
GOVS	0.312**	0.298**	0.231**	0.879**	0.663**	0.741**	1.000				
ZSCOR	0.356**	0.331**	0.219**	0.304**	0.226**	0.261**	0.328**	1.000			
NPL	-0.287**	-0.264**	-0.193*	-0.221*	-0.176*	-0.198*	-0.247**	-0.412**	1.000		
GDP	0.174**	0.162**	0.128**	0.109**	0.094*	0.102**	0.118**	0.187**	-0.143**	1.000	
INFL	-0.112**	-0.098*	-0.086*	-0.064	-0.058	-0.061	-0.072*	-0.129**	0.117**	-0.216**	1.000

Notes: *ROA, ROE, and TQ denote financial performance measures. EGS, ENVS, SOCS, and GOVS represent ESG composite and pillar scores. ZSCORE captures bank stability and insolvency risk. NPL measures credit risk. GDP and INFL are macroeconomic control variables. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Correlation coefficients are below 0.90, indicating no serious multicollinearity concerns (Gujarati & Porter, 2009).*

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The correlation results reported in Table 4.2 provide preliminary evidence on the direction and strength of associations among ESG performance, bank stability, credit risk, and financial outcomes in GCC banks. The positive and statistically significant correlations between ESG performance (EGS) and all three financial performance measures (ROA, ROE, and Tobin's Q) suggest that banks with stronger sustainability practices tend to achieve higher profitability and market valuation, which is consistent with stakeholder-based arguments and prior banking evidence (Friede et al., 2015; Gangi et al., 2019). Economically, these coefficients indicate that improvements in ESG engagement are associated with meaningful gains in both accounting-based returns and investor perceptions, even before controlling for unobserved heterogeneity.

The strong positive correlations among the ESG pillars, especially between governance and financial performance, highlight the importance of governance quality in banking systems, which are primarily seen as having supervision and risk management as their main areas of control (La Porta et al., 2002; Buallay, 2019). The ESG performance-Z-score link is one more reason to think that banks leaning towards a sustainable policy are financially stable and at a lower risk of default; thus, they are in line with the risk-cutting channel stress reliever in recent ESG-banking studies (Bouslah et al., 2018; Broadstock et al., 2021). On the other hand, credit risk (NPL) has a negative relationship with both performance and stability measures, which implies that low-quality assets negatively impact profits and weaken the power of ESG initiatives; this is a conclusion consistent with both theoretical and empirical banking research (Acharya, 2009; Cornett et al., 2016).

All in all, the correlation coefficients are lower than the multicollinearity thresholds that are commonly accepted, which indicates that the inclusion of the ESG composite and pillar scores in the subsequent regressions is not likely to result in biased coefficient estimates (Gujarati & Porter, 2009). Overall, these correlation patterns are consistent with prior international and GCC-focused studies, while also reinforcing the need for multivariate panel analysis to disentangle direct, mediating, and moderating effects that simple bivariate relationships cannot fully capture (Miralles-Quirós et al., 2019; Mohapatra et al., 2025).

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Table 4.3: ***Baseline Fixed-Effects Regressions: ESG and Financial Performance***

Variables	(1) ROA	(2) ROE	(3) TQ
EGS	0.00012*** (0.00004)	0.00105*** (0.00033)	0.00310*** (0.00112)
GDP	0.00045** (0.00020)	0.00420** (0.00195)	0.01180** (0.00540)
INFL	-0.00028* (0.00015)	-0.00260* (0.00152)	-0.00740* (0.00410)
Constant	0.00610*** (0.00140)	0.0540*** (0.0128)	0.804*** (0.091)
Bank FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	1,248	1,248	1,248
Within R^2	0.214	0.198	0.163

Notes: *Robust SE clustered by bank in parentheses. * p<0.10, ** p<0.05, *** p<0.01. All models include bank fixed effects and year fixed effects.*

The fixed-effects estimates presented in Table 4.3 provide strong confirmation of the direct connection between the ESG performance and the financial performance of the GCC banks after unobserved bank-specific heterogeneity and common time effects have been accounted for. The coefficient of the overall ESG score (EGS) is consistently positive and statistically significant in all the different models used, which means that the banks' making more ESG efforts are getting better accounting-based profitability and market valuation. To illustrate the case, the ROA coefficient suggests that a 10-point increase in the ESG score corresponds to about 0.12 percentage points increase in return on assets, which is significant considering the relatively low average ROA for the banking sector (Gangi et al., 2019; Buallay, 2019). Likewise, the positive and significant impact on ROE implies that investing in ESG is in line with the notion that sustainability practices ease the building of trust with stakeholders and therefore reduce the agency costs (Friede et al., 2015; Cornett et al., 2016).

The favorable connection between ESG performance and Tobin's Q denotes further that capital markets value banks with better sustainability profiles higher hence,

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reflecting the long-term growth and risk management expectations (Miralles-Quirós et al., 2019; Lins et al., 2017). This observing is in the same line with previous international banking studies which reported that ESG engagement promoting market confidence, especially in the sectors that are regulated and sensitive to reputation like banking (Gangi et al., 2019; Mohapatra et al., 2025). The similarity of findings based on both accounting and market measures adds to the argument that ESG performance is a factor that contributes to the overall bank value rather than just short-term profitability.

As for the control variables, GDP growth has a positive and statistically significant impact on all performance measures, thus depicting the pro-cyclical aspect of banking profitability and valuation in the context of growing macroeconomic environments (Beck et al., 2013; World Bank, 2023). Conversely, inflation is associated with a negative impact on financial performance and is a weak relationship, implying that unstable economies and climbing prices might reduce banks' real returns and incur higher operating costs, which is a finding that parallels previous banking studies (Acharya, 2009; Cornett et al., 2016).

On the whole, the baseline outcomes serve to validate the main research question through the illustration of a clear and economically significant ESG financial performance interplay in GCC banks. The results align well with previous studies in developed and emerging markets (Buallay & Al, Ajmi, 2020; Friede et al., 2015), while giving local evidence to the region, specific argument that sustainability engagement leads to higher bank profitability and market valuation. While the models' moderate explanatory power indicates

Table 4.4: ***Mediation Analysis: ESG → Bank Stability (Z-score) and Financial Performance***

Panel A: Effect of ESG on Bank Stability (Mediator Equation)

Variables	**(1) ZSCORE**
EGS	0.084*** (0.021)
GDP	0.312** (0.144)
INFL	-0.198* (0.116)

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Constant	11.42*** (2.31)
Bank FE	Yes
Year FE	Yes
Observations	1,248
Within R^2	0.237

The results of mediation depicted in Table 4. 4 (Panel A) show a statistically and economically significant association of ESG performance with bank stability in banks of the GCC. The positive and very significant coefficient on the ESG score indicates that less sustainability practices lead to lower insolvency risk and thus higher financial resilience, as reflected by the Z, scores. From an economic point of view, the size of the factor indicates that the Z, score is raised by about 0. 84 units for every 10 points increase in the ESG score, which accounts for a quite significant increase in bank stability given the change of Z, scores in the sample (Laeven & Valencia, 2018; Gangi et al., 2019). This evidence is in line with the view that ESG involvement helps to improve internal controls, governance quality, and long, term risk management practices in banks (Bouslah et al., 2018; Buallay et al., 2021).

The control variables are consistent with banking theory and previous empirical evidence. For example, GDP growth has a significant positive effect on bank stability, which is, in fact, the outcome of improved asset quality and profitability during the period of economic expansions (Beck et al., 2013; World Bank, 2023). On the other hand, inflation is inversely related to the Z, score, which means that macroeconomic instability has the potential to eat away at banks capital buffers and increase the volatility of earnings, thus, reducing financial stability (Acharya, 2009; Laeven & Valencia, 2018). In sum, the findings are in line with the research that documents a stabilizing role for ESG practices in financial institutions (Lins et al., 2017; Broadstock et al., 2021), and they constitute a robust empirical ground for the mediating role of bank stability in the ESGfinancial performance relationship in the GCC banking context.

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Panel B: ***ESG, Bank Stability, and Financial Performance (Outcome Equations)***

Variables	(2) ROA	(3) ROE	(4) TQ
EGS	0.00007**	0.00061**	0.00198**
	(0.00003)	(0.00029)	(0.00095)
ZSCORE	0.00031***	0.00284***	0.00692***
	(0.00009)	(0.00071)	(0.00210)
GDP	0.00032*	0.00310*	0.00970*
	(0.00019)	(0.00182)	(0.00510)
INFL	-0.00021*	-0.00210*	-0.00610*
	(0.00013)	(0.00144)	(0.00390)
Constant	0.00490***	0.0462***	0.721***
Bank FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	1,248	1,248	1,248
Within R^2	0.268	0.244	0.201

Notes: *It is worth mentioning that robust standard errors clustered at the bank level are shown in the round brackets. *p<0. 10, ** p<0. 05, *** p<0. 01. Bank and year fixed effects are included in all models. Mediation interpretation is based on contemporary conditional process analysis guidelines (Hayes, 2018).*

The outcome equations in Panel B of Table 4. 4 demonstrate unequivocal evidence that bank stability is the key factor that facilitates the ESG performance bank, financial outcome linkage. The variable Z, score has a positive impact on all three performance measures and is highly statistically significant, which implies that more stable banks generate higher profitability and market valuation.

From an economic point of view, the size of the Z, score coefficients reveals that a one, unit change in bank stability leads to an increase in ROA of about 0. 03 percentage points and in ROE of around 0. 28 percentage points, which is quite significant considering the relatively low average profitability of banks and the capital, intensive nature of the sector (Acharya, 2009; Gangi et al., 2019). Further, the positive effect on Tobin's Q indicates that financial markets appreciate financial

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resilience and thus they reward those banks who have a stronger stability profile (Lins et al., 2017; Miralles, Quirs et al., 2019).

The ESG coefficient is still positive and statistically significant after adding the Z, score, but its size is smaller compared to the baseline figures, which indicates that there is partial mediation. The pattern implies that ESG performance contributes to financial results not only directly but also indirectly through the safety of the bank, which is in line with modern conditional process theory and the banking literature empirical studies (Baron & Kenny, 1986; Hayes, 2018). The results answer the second research question by showing that bank stability is the main transmission mechanism through which ESG engagement leads to financial performance in GCC banks and thus serves to clarify the indirect effects set out in the previous studies which had not accounted for mediating channels (Friede et al., 2015; Mohapatra et al., 2025).

The control variables follow the anticipated pattern and thus, support the reliability of the findings. Financial performance, as measured by GDP growth, is positively related to GDP growth, which is indicative of better lending conditions and asset quality in times of economic expansions. Inflation, on the other hand, may have a weak negative effect, implying that macroeconomic instability may lower banks real returns and raise their operating costs (Beck et al., 2013; World Bank, 2023). Moreover, the findings in Panel B align with international research as well as local studies in the GCC region, which have documented that ESG implementation can lead to increased stability and value creation in the sector of financial institutions (Buallay, 2019; Broadstock et al., 2021). At the same time, they go beyond this body of work by banking explicitly on stability as a key factor that links ESG performance to profitability and market valuation.

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Table 4.5: ***Moderation Analysis: Credit Risk (NPL) as a Moderator in the ESG and Performance Relationship: Key term: ESGNPLESG \times NPLESGNPL (interaction effect).***

Panel A: Moderation in Financial Performance Equations

Variables	(1) ROA	(2) ROE	(3) TQ
EGS	0.00011***	0.00096***	0.00286***
	(0.00004)	(0.00032)	(0.00110)
NPL	-0.0214***	-0.184*** (0.056)	-0.491*** (0.171)
	(0.0068)		
EGS × NPL	-0.00052**	-0.00480**	-0.0139**
	(0.00021)	(0.00210)	(0.00640)
GDP	0.00041**	0.00390**	0.0112**
	(0.00019)	(0.00190)	(0.00530)
INFL	-0.00027*	-0.00250*	-0.00710*
	(0.00015)	(0.00150)	(0.00400)
Constant	0.00600***	0.0532***	0.795***
Bank FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	1,248	1,248	1,248
Within R^2	0.246	0.221	0.184

The moderation effects shown in Table 4. 5 illustrate that credit risk is the main factor that changes the impact of ESG performance on bank financial outcomes in GCC banks. The coefficient on the ESG score keeps being positive and statistically significant for the three performance measures, which means that sustainability engagement still leads to higher profitability and market valuation under average credit conditions. Nevertheless, the interaction term between ESG and non, performing loans (EGS NPL) is negative and statistically significant, indicating that the positive effect of ESG on financial performance decreases with the increase of credit risk.

By the ROA and ROE interaction coefficients, the economic effect is such that, for banks with higher NPL ratios, a certain improvement in ESG performance results in

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lower profitability increases, thus, the deteriorating asset quality is constraining the effectiveness of sustainability initiatives (Acharya, 2009; Cornett et al., 2016).

The fact that the non, performing loans (NPL) have a direct harmful effect on all the financial performance measures, as pointed out by the negative impact of credit risk on the bank's profitability and valuation, is in line with the core of the banking literature which has been stressing the importance of asset quality as the main determinant of performance (Laeven & Valencia, 2018; Gangi et al., 2019). From the standpoint of the market, the large interaction effect in the Tobin's Q regression signals that investor lower the value of ESG benefits more when banks are confronted with a high credit risk thus giving the impression that sustainability signs are considered less trustworthy or less efficient in loan situations that are stressed (Lins et al., 2017; Miralles, Quirs et al., 2019).

The results here support the arguments made by recent papers that financial benefits arising from ESG, operations depend on risk conditions and quality of institutions (Bouslah et al., 2018; Broadstock et al., 2021). Meanwhile, these results also go beyond the previous evidence by pinpointing credit risk as a factor restricting the positive impact of ESG on the GCC banking sector, where there is still concern over the quality of assets. In essence, the moderation findings constitute an answer to the third research question that bank, specific risk profiles determine the financial outcomes of ESG engagement as the latter is not an isolative factor, but rather, it interacts with the former. This, in turn, requires that one should still keep in mind the existence of moderating factors when studying the economic effects of ESG practices (Friede et al., 2015; Mohapatra et al., 2025).

Panel B: ***Moderation in the Mediator Equation (Optional, for Conditional Process Logic)***

Variables	**(4) ZSCORE**
EGS	0.079*** (0.021)
NPL	-11.28*** (2.41)
EGS × NPL	-0.214** (0.092)
GDP	0.298** (0.141)
INFL	-0.187* (0.112)

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Constant	11.08*** (2.26)
Bank FE	Yes
Year FE	Yes
Observations	1,248
Within R^2	0.264

Notes: *Robust standard errors clustered at bank level in parentheses. * p<0.10, ** p<0.05, *** p<0.01. All models include bank and year fixed effects and are estimated in STATA 19. Clustered SE inference follows standard recommendations in finance panel settings (Petersen, 2009; Hoechle, 2007).*

The results reported in Panel B provide additional evidence that credit risk not only moderates the ESG–performance relationship but also conditions the stabilizing role of ESG through the mediator. The positive and highly significant coefficient on ESG indicates that, on average, higher ESG engagement enhances bank stability by increasing the Z-score, consistent with arguments that sustainability practices strengthen governance, risk controls, and long-term orientation in banks (Bouslah et al., 2018; Gangi et al., 2019). However, the negative and statistically significant interaction term between ESG and NPL suggests that the stabilizing effect of ESG weakens as credit risk rises. Economically, this implies that banks with deteriorating asset quality are less able to convert ESG initiatives into improved financial resilience, as elevated non-performing loans erode capital buffers and increase earnings volatility (Acharya, 2009; Laeven & Valencia, 2018).

The significant strongly negative direct effect of non, performing loans (NPL) on the Z, score, which is essentially a measure of bank stability, has been further confirmed by the fact that credit risk is the main cause of bank instability. This is consistent with the core banking literature (Cornett et al., 2016; Petersen, 2009). Their findings, in general, are consistent with the very recent studies showing that the mitigation of ESG, related risks depend on the financial health of the company and goes beyond previous papers by explicitly revealing such a condition in the banking sector in the GCC region (Broadstock et al., 2021; Mohapatra et al., 2025).

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Table 4. 6: ***Moderated Mediation: Conditional Indirect Effects of ESG on Financial Performance via Bank Stability (Z, score) at Different Levels of Credit Risk (NPL)***

Panel A: Conditional Indirect Effects (EGS * ZSCORE * Performance)

Dependent Variable	NPL Level	Indirect Effect	Boot SE	95% CI (Lower)	95% CI (Upper)
ROA	Low (−1 SD)	0.000028***	0.000010	0.000010	0.000050
	Mean	0.000021***	0.000008	0.000007	0.000041
	High (+1 SD)	0.000012*	0.000007	0.000001	0.000028
ROE	Low (−1 SD)	0.000254***	0.000096	0.000090	0.000470
	Mean	0.000191***	0.000078	0.000060	0.000370
	High (+1 SD)	0.000109*	0.000061	0.000002	0.000242
Tobin's Q	Low (−1 SD)	0.000618***	0.000241	0.000200	0.001120
	Mean	0.000464***	0.000199	0.000130	0.000890
	High (+1 SD)	0.000267*	0.000151	0.000010	0.000598

The moderated mediation outcomes outlined in Table 4. 6 demonstrate a substantial pattern whereby the indirect influence of ESG performance on bank financial results via bank stability depends on credit risk situations. In fact, for all three variables, the conditional indirect effects at low and average levels of non, performing loans are positive and significant from the statistical point of view, which implies that ESG involvement contributes to financial performance mainly through the stability of the bank when credit risk is limited. From an economic point of view, the size of these indirect effects conveys that the ESG performance improvements lead to quite substantial increases in profitability and market valuation driven by the bank becoming more financially resilient, thus, it is consistent with the risk, mitigation channel being the main one in the banking ESG literature (Bouslah et al., 2018; Broadstock et al., 2021).

Nevertheless, as the credit risk increases, the indirect effects become significantly weaker in a large part, but they remain slightly statistically significant at high NPL levels. This pattern reveals that, on one hand, severe asset quality issues limit the capacity of ESG, driven stability improvements to result in financial

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performance. On the other hand, such conditionality is in line with the arguments which put the sustainability advantages as dependent on financial health and institutional capacity (Acharya, 2009; Campbell, 2007).

From an investor viewpoint, the diminishing indirect effects at higher NPL levels imply that markets are less responsive to ESG, related stability improvements when banks are confronted with increased credit risk. This can be interpreted as a reflection of the skepticism about the issuance of sustainability initiatives in instances of stress, hence, their credibility and effectiveness being questioned (Lins et al., 2017; Miralles, Quirs et al., 2019).

In sum, the evidence from this research strongly backs up a regulated mediation model that acknowledges that ESG performance leads to improved financial performance of banks via their stability, however, this interrelation depends on credit risk situations. These outcomes are consistent with the global pattern of research findings that point to the financial institution ESG effects being dependent on certain conditions (Friede et al., 2015; Mohapatra et al., 2025) and, at the same time, they extend the literature by providing solid insightful information concerning the GCC region about the limits that define when sustainability helps bank resilience and the creation of bank value.

Panel B: ***Index of Moderated Mediation (IMM)***

Dependent Variable	IMM	Boot SE	95% CI (Lower)	95% CI (Upper)
ROA	-0.000009**	0.000004	-0.000017	-0.000002
ROE	-0.000082**	0.000039	-0.000161	-0.000012
TQ	-0.000201**	0.000096	-0.000401	-0.000031

Notes: Indirect effects are calculated through bootstrap confidence intervals with 5, 000 replications, which is in line with the recommended practice for mediation and conditional process inference (Preacher & Hayes, 2008; Hayes, 2018). * p<0. 10, ** p<0. 05, *** p<0. 01. Bank and year fixed effects are included; robust standard errors are clustered at the bank level.

The index of moderated mediation (IMM) results in Panel B formally statistically confirm that credit risk significantly changes the indirect effect of ESG performance

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on bank financial outcomes through bank stability. The negative and statistically significant IMM values for ROA, ROE, and Tobin's Q, together with the confidence intervals that do not contain zero, point to the fact that the increases in non, performing loans weaken the ESG * stability * performance pathway in a systematic way.

From an economic point of view, these findings indicate that ESG engagement contributes to bank resilience and, therefore, financial performance, however, the size of the indirect effect is reduced as credit risk gets higher, thus, reflecting that the deteriorating asset quality imposes limitations on the effectiveness of sustainability, driven risk mitigation (Acharya, 2009; Bouslah et al., 2018). Such results align well with conditional process theory as well as the latest research that highlight that the advantages of ESG are not evenly distributed among companies but vary according to their risk situation and financial health (Hayes, 2018; Broadstock et al., 2021). This research, through the indication of a statistically significant index of moderated mediation, moves beyond previous ESG, banking studies that were largely concentrated on direct or simple mediation effects only, thus providing a more detailed account of the contradictory findings in the literature which have been referred to in the previous studies (Friede et al., 2015; Mohapatra et al., 2025).

Discussion

The results of this research have far, reaching economic, theoretical, and policy implications for the banking sector, especially in the case of emerging markets like the GCC. From an economic perspective, the findings reveal that ESG engagement is instrumental to bank profitability and market valuation mostly by the means of financial stability enhancement and not only short, term revenue effects. This is a clear indication that ESG investments are a form of risk management that result in the strengthening of capital buffers and the reduction of insolvency risk, thus the creation of bank value is maintained on a sustainable basis (Acharya, 2009; Bouslah et al., 2018; Broadstock et al., 2021). The diminishing of the positive effects of ESG when the level of credit risk is high, points to the necessity of good asset quality in order to be able to convert sustainability initiatives into financial gains, thus

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emphasizing that ESG practices and traditional risk management are two great "complementary" partners (Cornett et al., 2016; Laeven & Valencia, 2018).

The study theoretically changes the ESG, banking literature by combining stakeholder theory with risk, management and conditional process frameworks. The paper moves past the previous studies' mixed direct, effect findings by showing, through an empirical demonstration, a moderated mediation structure, which provides a mechanism, based explanation for the phenomena observed by previous studies (Freeman, 1984; Friede et al., 2015; Hayes, 2018). By doing this, the research becomes a bridge between the different pieces of evidence scattered in the literature and opens the way for the future research on how the joint roles of bank stability and credit risk influence ESG effectiveness, especially in non, Western banking systems (Gangi et al., 2019; Mohapatra et al., 2025).

Evidence from the study also changes how we perceive bank managers, policymakers, and regulators. The message is quite clear to bank managers. Those environmental, social, and governance, (ESG) concerned) strategies should no longer be treated as mere compliance checklists but must be embedded in core risk management and credit policies to fully harness their money, making potential (Buallay, 2019; Bouslah et al., 2018). Thanks to this evidence, lawmakers and regulators might want to adopt a different approach in encouraging the integration of ESG by issuing provisionary disclosures and setting up prudential frameworks that rank risk mitigation and resilience as their most important outcomes, particularly for those areas that are vulnerable to macroeconomic and climate shocks (Campbell, 2007; World Bank, 2023). In a nutshell, the record speaks loud and clear that the use of effective ESG could lead to a more stable financial system and increase its capacity to withstand shocks when it is in line with a proper management of credit risk, which provides a strong reason why green banking should be part of bank supervision and regulation design (Acharya, 2009; Broadstock et al., 2021).

CONCLUSION

This research uses a moderated, mediation framework to explore the relationship between ESG performance and financial outcomes in banks from the GCC region.

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The study incorporates elements of bank stability and credit risk in this framework. The results offer a number of significant contributions.

Theoretically, the research paper extends the ESG, banking literature by looking beyond direct, effect models and demonstrating that ESG contributes to better financial performance mostly via a stability factor, which in turn varies with the changes in credit risk. By elaborating on the moderated mediation, the paper brings together the research whose results were previously contradictory and goes further by introducing stakeholder and risk management theories in the banking sector of the emerging market (Freeman, 1984; Friede et al., 2015; Hayes, 2018). Empirically, the research offers compelling proof for the GCC region through panel data and fixed effects estimation. It discovers that ESG involvement raises both profitability and market valuation when banks can uphold good asset quality.

Practically, the discoveries put a great emphasis on the fact that ESG measures yield the best results when they are an integral part of the bank's core risk management and credit policies. Hence, this serves as a source of practical guidance for bank managers and regulators who are keen on financial resilience and sustainability. However, the research also faces some limitations. Firstly, the study depends on ESG scores for a single source of data, which may not fully reflect the qualitative aspects of sustainability practices. Secondly, the panel method reduces the effect of unobserved heterogeneity, but the possibility of endogeneity cannot be completely excluded. Thirdly, the example is confined to the listed banks in the GCC, which limits the extent to which the results can be applied to non, listed or smaller banks.

Subsequent research may overcome these restrictions by using different ESG data sources, implementing causal identification methods, and/or broadening the study to include banking systems in other emerging and developed countries. Additional research might also investigate more mediating factors, such as cost efficiency or funding conditions, and consider the influence of regulatory ESG mandates on bank behavior in the future.

REFERENCES

Acharya, V. V. (2009). A theory of systemic risk and design of prudential bank

Online ISSN 3007-3197
Print ISSN 3007-3189

regulation. *Journal of Financial Stability*, *5*(3), 224–255. https://doi.org/10.1016/j.jfs.2009.02.001

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Sage.

AIMS Press. (2025). Sustainability disclosure practices in GCC financial institutions. *AIMS Energy*, 13(1), 1–20.

Allen, F., & Gale, D. (2004). Competition and financial stability. *Journal of Money, Credit and Banking*, 36(3), 453–480.

Aupperle, K. E., Carroll, A. B., & Hatfield, J. D. (1985). An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of Management Journal*, 28(2), 446–463.

Baltagi, B. H. (2021). *Econometric analysis of panel data* (6th ed.). Wiley.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator distinction in social psychological research. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2013). Financial institutions and markets across countries and over time. *Journal of Financial Economics*, *109*(1), 1–18. https://doi.org/10.1016/j.jfineco.2013.02.012

Berg, F., Kölbel, J. F., & Rigobon, R. (2022). Aggregate confusion: The divergence of ESG ratings. *Review of Finance*, *26*(6), 1315–1344. https://doi.org/10.1093/rof/rfac033

Bolton, P., & Kacperczyk, M. (2021). Do investors care about carbon risk? *Journal of Financial Economics*, 142(2), 517–549.

Bouslah, K., Kryzanowski, L., & M'Zali, B. (2018). Social performance and firm risk. *Journal of Banking & Finance*, *94*, 17–32. https://doi.org/10.1016/j.jbankfin.2018.07.005

Brammer, S., Brooks, C., & Pavelin, S. (2006). Corporate social performance and stock returns. *Journal of Business Ethics*, 67(1), 1–12.

Broadstock, D. C., Chan, K., Cheng, L. T. W., & Wang, X. (2021). The role of ESG performance during financial crises. *Journal of Banking & Finance*, *132*,

Online ISSN 3007-3197
Print ISSN 3007-3189

106254. https://doi.org/10.1016/j.jbankfin.2021.106254

Buallay, A. (2019). Is sustainability reporting associated with financial performance? Evidence from the European banking sector. *Management of Environmental Quality*, *30*(1), 98–115. https://doi.org/10.1108/MEQ-12-2017-0148

Buallay, A., & Al-Ajmi, J. (2020). The role of ESG disclosure in banking stability. *Journal of Sustainable Finance & Investment*, *10*(2), 1–20. https://doi.org/10.1080/20430795.2020.1748617

Buallay, A., Hamdan, A., & Zureigat, Q. (2021). Corporate governance and firm performance: Evidence from GCC banks. *International Journal of Finance & Economics*, *26*(4), 5169–5185. https://doi.org/10.1002/ijfe.2071

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? *Academy of Management Review*, *32*(3), 946–967. https://doi.org/10.5465/amr.2007.25275684

Cornett, M. M., Erhemjamts, O., & Tehranian, H. (2016). Greed or good deeds? An examination of the relation between CSR and the financial performance of U.S. commercial banks. *Journal of Banking & Finance*, *70*, 137–159. https://doi.org/10.1016/j.jbankfin.2016.04.024

Crisóstomo, V. L., de Souza Freire, F., & de Vasconcellos, F. C. (2011). Corporate social responsibility and firm value in Brazil. *Journal of Business Ethics*, 96(4), 543–559.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited. *American Sociological Review*, 48(2), 147–160.

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation. *Academy of Management Review*, 20(1), 65–91.

Farooq, O., Hassan, M. K., & Rashid, M. (2021). ESG disclosure and firm value: Evidence from emerging markets. *Emerging Markets Review*, *46*, 100751. https://doi.org/10.1016/j.ememar.2020.100751

Ferrell, A., Liang, H., & Renneboog, L. (2016). Socially responsible firms. *Journal of*

Online ISSN 3007-3197
Print ISSN 3007-3189
http://amresearchreview.com/index.php/Journal/about

Financial Economics, 122(3), 585–606.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, *5*(4), 210–233. https://doi.org/10.1080/20430795.2015.1118917

Friedman, M. (1970). The social responsibility of business is to increase its profits. *New York Times Magazine*.

Gangi, F., Meles, A., D'Angelo, E., & Daniele, L. (2019). Sustainable development and corporate governance in the financial system. *Corporate Social Responsibility and Environmental Management*, *26*(1), 1–15. https://doi.org/10.1002/csr.1640

Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *Quarterly Journal of Economics*, 118(1), 107–155.

Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). McGraw-Hill.

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis* (2nd ed.). Guilford Press.

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis* (2nd ed.). Guilford Press.

Hoechle, D. (2007). Robust standard errors for panel regressions with cross-sectional dependence. *Stata Journal*, *7*(3), 281–312. https://doi.org/10.1177/1536867X0700700301

Hoechle, D. (2007). Robust standard errors. *Stata Journal*, 7(3), 281–312.

KPMG. (2024). *ESG risk survey for banks*.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2002). Investor protection and corporate valuation. *Journal of Finance*, *57*(3), 1147–1170. https://doi.org/10.1111/1540-6261.00457

Laeven, L., & Valencia, F. (2018). Systemic banking crises revisited. *IMF Economic Review*, *66*(2), 307–361. https://doi.org/10.1057/s41308-017-0044-9

Lins, K. V., Servaes, H., & Tamayo, A. (2017). Social capital, trust, and firm

Online ISSN 3007-3197
Print ISSN 3007-3189
http://amresearchreview.com/index.php/Journal/about

performance during the financial crisis. *Journal of Finance*, *72*(4), 1785–1824. https://doi.org/10.1111/jofi.12505

LSEG (Refinitiv). (2022). *ESG scores methodology*.

Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2009). Does it pay to be good? *Academy of Management Perspectives*, *23*(4), 77–93.

Miralles-Quirós, M. M., Miralles-Quirós, J. L., & Redondo Hernández, J. (2019). ESG performance and firm value. *Sustainability*, *11*(5), 1404. https://doi.org/10.3390/su11051404

Mohapatra, A. K., Das, S., Nayak, Y., Sahoo, A. P., & Matta, R. (2025). Do ESG practices affect the financial performance of banks? A meta-analysis. *Journal of Banking & Finance*. Advance online publication. https://doi.org/10.1016/j.jbankfin.2024.107050

Mohapatra, A. K., et al. (2025). Do ESG practices affect the financial performance of banks? A meta-analysis. *Journal of Banking & Finance*, forthcoming.

Nollet, J., Filis, G., & Mitrokostas, E. (2016). Corporate social responsibility and financial performance. *International Review of Financial Analysis*, 48, 200–211.

Pankratz, S. (2021). Climate change, firm performance, and investor expectations. *Journal of Environmental Economics and Management*, 106, 102400.

Petersen, M. A. (2009). Estimating standard errors in finance panel data sets. *Review of Financial Studies*, *22*(1), 435–480. https://doi.org/10.1093/rfs/hhn053

Petersen, M. A. (2009). Estimating standard errors. *Review of Financial Studies*, 22(1), 435–480.

World Bank. (2023). *World development indicators*.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing indirect effects. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Tamimi, N., & Sebastianelli, R. (2017). Transparency among S&P 500 companies. *Journal of Business Ethics*, 142(2), 405–424.

World Bank. (2023). *World Development Indicators*. https://databank.worldbank.org