

-RESEARCH ARTICLE-

DOES ESG IMPACT BANKS' PROFITABILITY AND COST OF CAPITAL? EVIDENCE FROM THE MIDDLE EAST

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—Abstract—

Growing global concerns regarding Environmental, Social, and Governance (ESG) issues have compelled bank managers internationally to prioritise sustainability in environmental, social, and governance dimensions. However, for banks in the Middle East, the implications of such practices for profitability and the various elements of the cost of capital remain uncertain. This study examines the impact of ESG initiatives on both profitability and the cost of capital within Middle Eastern banks. To achieve this,

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a panel dataset of 54 banks, drawn from 11 countries, has been utilised over the period 2014–2023. The empirical assessment employs Ordinary Least Squares (OLS) and Generalised Method of Moments (GMM) estimators to enhance the robustness of the results. The outcomes indicate that ESG engagement is linked to reduced profitability and an increase in the cost of equity, implying that financial markets may interpret banks committed to ESG as carrying greater risk. Moreover, the evidence does not support the notion that ESG practices improve profitability or lessen the cost of capital, whether equity or debt, in the observed sample. These results have significant implications for both managers and policymakers, underscoring the need for banks and regulators in the region to carefully assess the strategic and financial impact of ESG adoption.

Keywords: ESG, Profitability, Cost of Capital, Cost of Equity, Cost of Debt, Banks.

INTRODUCTION

Financial institutions have increasingly incorporated ESG considerations into their operations and product portfolios. Effective ESG management enables banks to mitigate risks associated with poor governance, economic exclusion, and environmental degradation, while also generating opportunities to align their activities with sustainability objectives and develop innovative products that benefit both society and the environment. Successful integration of ESG into banking practices facilitates stronger stakeholder management, potentially enhancing reputation and creating a source of competitive advantage. Bank managers are particularly inclined to adopt ESG criteria in products and operations when such measures can improve financial performance and reduce funding costs. The interconnection between strategic direction, sustainability, and economic outcomes thus forms a compelling rationale for integrating ESG within the banking sector.

The financial implications of ESG are significant, as managerial commitment to these practices is influenced by the economic outcomes they yield. ESG adoption can be costly and, in the absence of robust regulation or stakeholder support, may initially lead to weaker performance. Nevertheless, as awareness expands and financial markets increasingly recognise its relevance, ESG could evolve into a significant differentiator for banks. This research seeks to investigate the effect of ESG practices on bank profitability and various components of the cost of capital in the Middle East. Several countries in the region are pursuing ambitious initiatives to diversify their economies, reduce dependence on oil, promote sustainable infrastructure, and address climate and social challenges. Banks play a central role in these transitions, and their contributions depend on their financial performance and stability. Despite this, there is limited empirical evidence on whether ESG reduces financing costs for banks in the Middle East. The present study, therefore, aims to determine whether ESG adoption can deliver mutual benefits for both banks and the broader economy.

The literature provides mixed evidence regarding the influence of ESG on bank profitability. Many studies highlight positive associations, although neutral or negative results are also reported. For instance, [Nizam et al. \(2019\)](#) and [Buallay \(2019\)](#) find that ESG enhances profitability in cross-country banking samples, while [Yuen et al. \(2022\)](#) demonstrate no significant impact on a global sample. Similarly, [Islam et al. \(2025\)](#) identify no effect in banks from OIC countries. Beyond profitability, scholars have linked ESG with financing costs. Banks with stronger ESG profiles often gain investor confidence by reducing the perceived risk, which can lower the cost of capital. In this respect, [Baek and Kang \(2025\)](#) demonstrate that ESG enhances asset quality and reduces interest costs in both developed and emerging markets, while [Algeri et al. \(2025\)](#) report a decline in overall capital costs for European banks. [Liu \(2023\)](#) further evidences reductions in the cost of capital for Taiwanese banks. Conversely, [Dua and Sharma \(2024\)](#) find that ESG practices raise the cost of capital for BRICS nations. Other research has examined the cost of debt and equity separately, revealing distinct perspectives among funders. For example, [Amarna et al. \(2024\)](#) conclude that ESG reduces the cost of debt but increases the cost of equity, reflecting differences between lenders and investors. Complementary studies suggest that ESG can positively influence share prices and lower expected equity returns. ([Dalò et al., 2023](#); [Dwomor & Mensah, 2024](#); [Wahyuningtyas et al., 2024](#)).

Given these dynamics, ESG-related activities are of significant importance to all capital providers, including lenders and shareholders. As institutional investors, such as pension funds and mutual funds, increasingly incorporate sustainability into their investment decisions, the role of ESG has become even more pronounced. This study, therefore, examines the effect of ESG on profitability, weighted average cost of capital (WACC), cost of debt, and cost of equity among banks in the Middle East. Despite growing attention to ESG practices, evidence from the region remains inconclusive, particularly regarding their impact on financial performance and financing costs. Considering the competitive and complex landscape of financial institutions, it is essential to assess whether ESG can generate long-term value for banks.

The remainder of the paper is structured as follows. Section 2 reviews theoretical and empirical literature, while Section 3 outlines the research methodology. Section 4 presents empirical findings on profitability, cost of equity, debt, and WACC, alongside robustness tests and theoretical interpretations. The final section concludes with a discussion of the study's implications, limitations, and contributions for stakeholders.

LITERATURE REVIEW

Theoretical Literature

Edward Freeman's stakeholder theory offers a valuable framework for understanding how banks' ESG activities impact their financial performance. According to this

perspective, aligning ESG practices with banking operations and products can enhance performance through the reputation channel (Freeman & McVea, 2001). Reputation functions as both a valuable resource and a source of competitive advantage, enabling banks to strengthen financial outcomes. Stakeholder theory highlights the role of ESG in generating value across multiple dimensions, including profitability, risk management, and the cost of capital. Banks that demonstrate firm ESG commitments are more likely to attract retail and institutional investors with sustainability mandates, thereby benefiting from greater demand for their securities and, in turn, reducing capital costs (Ramirez et al., 2022). Failure to comply with ESG standards can expose banks to reputational and financial risks. Increasingly, debt providers and equity markets are integrating ESG considerations into their pricing decisions, often offering favourable credit conditions to banks with robust ESG credentials. Such institutions are viewed as having lower credit risk because of their effective management of environmental, social, and governance-related challenges that might otherwise create substantial operational vulnerabilities.

In contrast, the trade-off hypothesis suggests that the advantages of ESG must be evaluated against its associated costs (McWilliams & Siegel, 2000). Banks that pursue comprehensive ESG adoption may face immediate challenges, as implementation often involves additional expenses, potential reductions in lending capacity, or investment in sustainable technologies. These upfront commitments may place pressure on profitability in the short run and lead to more cautious investor behaviour. Nevertheless, these temporary costs must be balanced against longer-term benefits, which include enhanced market competitiveness, reduced borrowing costs, and reduced exposure to environmental and social risks. By carefully weighing these short-term sacrifices against prospective rewards, banks can determine whether ESG initiatives ultimately deliver value to shareholders and contribute to improved overall performance over time.

The Impact of ESG on Bank Profitability

Within this line of inquiry, Nizam et al. (2019) examined data from banks across 75 countries and demonstrated that social and environmental sustainability have a positive influence on return on equity. Their findings further indicated that access to finance strengthens bank performance through enhanced loan growth and improved managerial quality. Comparable outcomes were reported for sub-Saharan African banks by Siueia et al. (2019), who established a positive association between financial performance and social sustainability. Conversely, a growing body of evidence suggests that ESG activities may exert either negligible or adverse effects on bank profitability. Yuen et al. (2022), using a dataset of 487 banks from 51 countries over the period 2000–2021, concluded that ESG engagement diminishes profitability. In line with this, Islam et al. (2025) examined banks in 11 OIC countries and reported that neither ESG nor its individual components enhance profitability, and instead contribute to higher levels of risk. These studies underscore the importance of improving the quality of ESG

initiatives through comprehensive, institution-wide strategies. Further insights from [Azmi et al. \(2021\)](#) reveal that, in emerging economies, limited ESG engagement enhances bank value, although the benefits exhibit diminishing returns as adoption increases. Their results also suggest that ESG reduces the cost of equity. Although substantial research has investigated ESG in global and regional contexts, there is limited evidence on its implications for banks in the Middle East. Addressing this gap, the present study formulates its first research objective: to evaluate the impact of ESG practices on the profitability of banks in the Middle East.

H1: *ESG performance by banks improves their profitability.*

The Impact of ESG on Cost of Debt, Cost of Equity and Weighted Average Cost of Capital (WACC)

Banks' ESG engagement can substantially influence their cost of capital, encompassing both equity and debt components. This occurs as investors and other stakeholders increasingly value sustainability and sound governance. Banks with strong ESG credentials are less exposed to reputational and environmental risks, making them more attractive to institutional investors who prioritise sustainability. Such dynamics can elevate stock prices and reduce the expected returns required by equity holders. Consequently, a higher ESG standing lowers the risk of equity devaluation during market downturns, thereby reducing the cost of raising capital through share issuance. In this regard, [Liu \(2023\)](#) analysed ESG practices within the Taiwanese banking sector using panel data from 2007 to 2022 and concluded that ESG adoption lowers debt costs, capital costs, and financial distress.

Similarly, [Amarna et al. \(2024\)](#) examined the relationship between ESG and both the cost of capital and equity financing, using data from 177 European firms between 2010 and 2019. Their findings suggest that while equity investors view ESG adoption as costly, lenders interpret it positively, leading to reductions in debt costs. On a broader scale, [Dalò et al. \(2023\)](#) demonstrated, using international firm-level data, that sustainability practices reduce the cost of equity. However, credit rating agencies appear not to integrate this factor into their risk assessments. In related work, [Dwomor and Mensah \(2024\)](#) examined 146 firms across 18 emerging markets from 2019 to 2022 and found that ESG improves profitability while reducing capital costs. [Wahyuningtyas et al. \(2024\)](#) focused on Indonesia and Malaysia, studying 59 Indonesian and 53 Malaysian firms between 2015 and 2020 using CSRHub data. Their findings reveal that ESG decreases the cost of equity but exerts no measurable effect on debt costs.

Contrasting evidence also exists, highlighting the potential for ESG to increase financing costs. For example, [Azmi et al. \(2021\)](#), drawing on a sample of 251 banks across 44 emerging economies, concluded that ESG enhances bank value only at lower levels, with diminishing returns as adoption expands. Their results also indicate that

ESG reduces equity costs but does not significantly influence debt costs. Taken together, the evidence suggests that ESG may impact different components of the cost of capital in varying ways, although its implications for banks in the Middle East remain underexplored. To address this gap, the present study develops the following three hypotheses.

H2: *ESG performance by banks reduces their weighted average cost of capital.*

H3: *ESG performance by banks east reduces their cost of equity.*

H3: *ESG performance by banks reduces their cost of debt.*

RESEARCH METHODOLOGY

Data and Its Sources

This study utilises the London Stock Exchange Group (LSEG) Refinitiv Sustainability Scores to measure banks' ESG performance and assess their relationship with profitability and the cost of capital. The LSEG framework provides both composite ESG scores and disaggregated component scores. Additionally, macroeconomic indicators have been sourced from the World Development Indicators (WDI). The dataset comprises 54 banks across 11 Middle Eastern countries, spanning the period from 2014 to 2023. The scope of the sample, in terms of both the number of banks and temporal coverage, is determined by the availability of ESG data within the LSEG Refinitiv database. All Middle Eastern banks with reported ESG scores in LSEG are included in the sample, and no additional filtering criteria have been applied due to the limited number of banks. The distribution of banks across countries is presented in [Table 1](#).

Table 1: Number of Banks Per Country

#	Country	No. of Banks	#	Country	No. of Banks	#	Country	No. of Banks
1	Bahrain	2	5	Kuwait	6	9	Qatar	7
2	Egypt	3	6	Lebanon	1	10	Saudi Arabia	9
3	Israel	4	7	Morocco	2	11	UAE	10
4	Jordon	4	8	Oman	6		Total	54

Model Development

The system GMM (Arellano & Bover, 1995; Blundell & Bond, 1998) has been employed as the primary estimation technique in this study. Given the sample size, conventional estimators may yield unreliable outcomes; however, system GMM offers more robust results by utilising instruments that enhance both accuracy and efficiency. This approach also mitigates econometric challenges such as endogeneity, heteroscedasticity, and unobserved heterogeneity. System GMM has been widely applied in panel data analyses of ESG practices in banks across emerging markets (Azmi et al., 2021). To ensure the robustness of the estimates, diagnostic tests, including AR(1), AR(2), and Hansen, have been conducted and reported. The following models

are estimated to evaluate the relationship between ESG, profitability, and the cost of capital.

$$\text{Profitability}_{i,j,t} = \beta_0 + \beta_1 \text{Profitability}_{i,j,t-1} + \beta_2 \text{ESG}_{i,j,t} + \beta_3 \text{Bank Controls}_{i,j,t} + \beta_4 \text{Macro Controls}_{j,t} + \epsilon_{i,j,t} \quad (1)$$

$$\text{Cost of Capital}_{i,j,t} = \beta_0 + \beta_1 \text{Cost of Capital}_{i,j,t-1} + \beta_2 \text{ESG}_{i,j,t} + \beta_3 \text{Bank Controls}_{i,j,t} + \beta_4 \text{Macro Controls}_{j,t} + \epsilon_{i,j,t} \quad (2)$$

$$\text{Cost of Equity}_{i,j,t} = \beta_0 + \beta_1 \text{Cost of Equity}_{i,j,t-1} + \beta_2 \text{ESG}_{i,j,t} + \beta_3 \text{Bank Controls}_{i,j,t} + \beta_4 \text{Macro Controls}_{j,t} + \epsilon_{i,j,t} \quad (3)$$

$$\text{Cost of Debt}_{i,j,t} = \beta_0 + \beta_1 \text{Cost of Debt}_{i,j,t-1} + \beta_2 \text{ESG}_{i,j,t} + \beta_3 \text{Bank Controls}_{i,j,t} + \beta_4 \text{Macro Controls}_{j,t} + \epsilon_{i,j,t} \quad (4)$$

Dependent Variables

Profitability is proxied by return on assets (ROA), a widely adopted indicator in banking research (Islam et al., 2025). The WACC, which incorporates all sources of financing, is employed in accordance with Ramirez et al. (2022). The cost of equity is defined as the return required by investors, estimated by adding the market risk premium to the inflation-adjusted risk-free rate. The cost of debt is derived from the weighted yields of both short-term (one-year) and long-term (ten-year) debt instruments along the yield curve. Both the cost of debt and the cost of equity have been applied as measures in prior studies, such as Azmi et al. (2021).

Table 2: Variables Description

Variable	Representation	Measurement/Description of Variables	Source
Dependent Variable/s			
Bank Performance	Profitability	ROA = Net Income/Asset	Islam et al. (2025)
	Cost of Capital (WACC)	A weighted average of the cost of all capital components such as debt, equity, preferred stock, etc.	Ramirez et al. (2022)
	Cost of Equity (CE)	A premium over the inflation adjusted risk free rate based on the beta of the stock and market risk premium.	Azmi et al. (2021)
	Cost of Debt (CD)	A weighted short-term and long-term debt cost based on an appropriate yield curve's 1-year and 10-year points.	Azmi et al. (2021)
Independent Variables			
Sustainability Practices	ESG Score	Composite ESG Score	Islam et al. (2025), Ersoy et al. (2022)
	Environment (ENV)	The environmental score comprises resource use, emissions, and innovation.	Islam et al. (2025), Nizam et al. (2019), Ersoy et al. (2022)
	Social (SOC)	Social score comprising workforce, human rights, community, social resource utilisation, and product responsibility.	Islam et al. (2025), Nizam et al. (2019), Ersoy et al. (2022)
	Governance	The environmental score comprises resource	Islam et al.

	(GOV)	use, emissions, and innovation.	(2025), Ersoy et al. (2022)
Risk	Beta	Historical Beta	Ersoy et al. (2022)
Interest Margin	NIM	Revenue on loans and investments minus the cost of deposits and money market instruments, divided by interest-earning assets.	Shabir et al. (2023)
Size	Assets	Total Assets	Islam et al. (2025)
Efficiency	EFF	Bank overheads as a percentage of its revenue.	Shabir et al. (2023)
Female on Board	FB	Percentage of females on the board.	Owen and Temesvary (2018)
COVID_19	COVID-19 Dummy Variable	Takes the value of 1 for years 2020-2023.	Shabir et al. (2023)
Income Level	GDP Growth Rate	Annual percentage growth rate of GDP at market prices based on constant local currency.	Islam et al. (2025), Shabir et al. (2023)
Price Level	Inflation	Inflation, as measured by the Consumer Price Index, reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services.	Islam et al. (2025), Shabir et al. (2023)
Governance	Aggregate Institutional Quality	Aggregate of 6 governance variables as per Worldwide Governance Indicators	Islam et al. (2025), Shabir et al. (2023)

Independent Variables

The ESG score is extensively employed as a proxy for banks' sustainability performance (Islam et al., 2025; Nizam et al., 2019). In this study, both the composite ESG score and the disaggregated environmental, social, and governance scores are utilised. The LSEG derives these measures from a range of sources, including annual reports, bank and NGO websites, stock exchange filings, and media coverage. Table 2 provides a detailed overview of the variables, their definitions, and their application in the literature. In addition to ESG measures, the analysis incorporates control variables such as bank size, efficiency, net interest margin, beta, female representation on the board, GDP growth, inflation, institutional quality, and the COVID-19 pandemic. The inclusion of these controls aligns with practices established in earlier studies.

RESULTS AND DISCUSSION

Descriptive Statistics and Correlation Analysis

Summary statistics and correlations are reported in Tables 3 and 4, respectively. The data indicate distinct trends between financial indicators and sustainability measures. For capital costs, the WACC averages 9.32%, with CE (10.83%) higher than CD (4.24%), consistent with standard capital structure dynamics. CD displays minimal variation (std. dev. ≈ 1.58) and a minimum value of 0%, suggesting that some banks operate with interest-free debt. In contrast, ESG performance reveals moderate overall

levels (mean ESG score: 44.34/100), but considerable variability across its components. GOV (mean 54.84) represents the strongest pillar, whereas ENV (mean 33.17) is relatively weak, with some banks reporting a score of 0. SOC (mean 42.55) and ENV also demonstrate wide ranges (ENV spans 0–88.83), reflecting significant disparities in sustainability practices.

Table 3: Descriptive Statistics

Variable	Obs.	Mean	Std. dev.	Min	Max
WACC	348	9.323739	3.52499	4.546682	23.37198
CE	348	10.83194	3.584779	4.397346	25.35857
CD	348	4.238475	1.579735	0	7.060273
ESG	326	44.34474	18.47221	5.999254	87.70498
ENV	326	33.16793	25.24104	0	88.82515
SOC	326	42.55177	23.37096	3.238623	92.59957
GOV	326	54.83974	21.29987	1.354167	94.90979
NIM	145	3.186821	1.562326	1.35	10.4
Size	348	24.32697	1.058236	22.00499	26.54562
BETA	348	1.043403	.2862897	.1208287	1.630013
DA	348	68.905	11.7114	26.97922	91.18172
ROAA	347	1.591647	.9253872	-.1654113	9.508618
EFF	285	.4110187	.157874	.0902732	1.545958
FB	325	7.588345	11.18357	0	40
COVID 19	348	.2068966	.405664	0	1
GDP Growth	323	2.172053	3.121193	-7.178207	8.61199
Inflation	323	1.992775	2.994655	-2.540315	24.65955
IQ	291	.1567408	.4239117	-1.180538	.7976166

The financial indicators (WACC, CE, CD) are more tightly clustered (standard deviation ≤ 3.58) than the ESG dimensions (standard deviation ≥ 18.47), underscoring greater stability in capital cost reporting compared to sustainability disclosure. GOV records the highest average among ESG pillars, implying a stronger emphasis on governance structures relative to environmental or social practices. Nevertheless, the lower number of observations for ESG (326 vs. 348 for financial metrics) points to potential gaps in sustainability reporting. These patterns highlight the dual challenge banks face: stable capital costs on one side and highly heterogeneous ESG outcomes on the other, with ENV standing out as an area requiring notable improvement. The correlation matrix in Table 4 shows interactions between financial, governance, and macroeconomic variables. WACC is strongly positively associated with CE (0.86***) and NIM (0.64***), indicating that higher equity costs and profitability increase overall capital costs. By contrast, WACC is negatively associated with ESG (-0.25*), GOV (-0.32***), and IQ (-0.67***), suggesting that better sustainability practices, governance quality, and institutional environments reduce financing costs. CD (0.28**) and Inflation (0.47***) are positively correlated with WACC, reflecting the effect of higher borrowing costs. Firm Size (-0.42***) and IQ (-0.67***) exhibit the most substantial negative correlations with WACC, implying that larger banks and those in stronger institutional settings face lower capital burdens.

Table 4: Correlation Matrix

	WACC	CE	CD	ESG	ENV	SOC	GOV	NIM	Size	BETA	DA	ROA	EFF	FB	COV19	GDP	Inflation	IQ
WACC	1																	
CE	10.86***	1																
CD	.28**	.35***	1															
ESG	-.25*	-.04	-.20*	1														
ENV	-.10	.05	-.07	.74***	1													
SOC	-.13	.08	-.14	.89***	.73***	1												
GOV	-.32***	-.19*	-.23*	.72***	.30**	.0371***	1											
NIM	.64***	.63***	.38***	-.20*	-.016	-.0164	-.0153	1										
Size	-.42***	-.18	-.20*	.63***	.58***	.0617***	.0330***	-.0294**	1									
BETA	.008	-.03	-.17	-.03	.08	0.0861	-.0220*	.0491***	0.0836	1								
DA	-.34***	.49***	-.08	-.024*	-.27**	-.0273**	-.0789	.0419***	-.0221*	.0324**	1							
ROA	.39***	.45***	.30**	-.08	-.11	-.0136	-.0149	.0613***	0.0666	.0378***	.0476***	1						
EFF	.20*	.19	-.13	-.08	.06	0.0180	-.0184	0.00131	.0330***	0.106	-.0314	-.0256*	1					
FB	.40***	.45***	.21*	-.01	.00	0.0712	-.0126	.0571***	-.0229*	.0372***	.0382***	.0364***	.0338***	1				
COV19	-.03	-.00	.03	.07	-.09	0.138	-.0474	-.0148	0.133	0.136	-.0110	0.0695	0.00412	.00826	1			
GDP	-.00	-.01	-.25*	.09	.01	0.0276	0.144	0.0292	0.104	-.0135	-.0158	0.0693	-.00997	0.0735	-.0298**	1		
Inflation	.47***	.46***	.28**	-.13	-.16	-.0977	-.0120	.0727***	-.0242*	.0498***	.0495***	.0637***	-.00635	.0481***	-.0175	.0303**	1	
IQ	-.67***	.44***	-.23*	.24*	.22*	0.226*	0.131	0.694***	.0498***	.0348***	.0272**	.0393***	-.0162	.0347***	0.0540	0.0950	-.057***	1

Note: Where *** denotes significance at 1%, ** at 5%, and * at 10% significance levels.

Table 5: Impact of ESG on Profitability

	<i>OLS</i>				<i>GMM</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA
L.ROAA					1.2494***	1.2194***	1.2508***	1.1768***
					(0.000)	(0.000)	(0.000)	(0.000)
ESG	-0.0173***				-0.0085**			
	(0.006)				(0.015)			
ENV		-0.0087*				-0.0024***		
		(0.073)				(0.000)		
SOC			-0.0110**				-0.0026***	
			(0.049)				(0.002)	
GOV				-0.0105**				-0.003***
				(0.018)				(0.000)
NIM	-0.0648	-0.0064	-0.0357	-0.0393	-0.0300	-0.1365***	-0.1175***	-0.119***
	(0.541)	(0.952)	(0.740)	(0.711)	(0.398)	(0.000)	(0.000)	(0.000)
Size	0.2932**	0.2450*	0.2594*	0.1552	-0.0787	-0.0098	-0.0235	-0.0295
	(0.027)	(0.078)	(0.062)	(0.184)	(0.236)	(0.692)	(0.432)	(0.207)
BETA	-0.1372	0.0613	0.1203	-0.3647	0.1250	-0.0964	-0.0643	-0.282***
	(0.732)	(0.880)	(0.766)	(0.402)	(0.606)	(0.349)	(0.619)	(0.007)
DA	-0.0164*	-0.0162*	-0.0155	-0.0149	-0.0055	0.0014**	0.0031	0.0016
	(0.082)	(0.095)	(0.107)	(0.116)	(0.282)	(0.019)	(0.330)	(0.537)
EFF	-1.3334*	-1.2181	-1.2303	-1.6486**	0.1020	0.1025	0.0714	0.0492
	(0.097)	(0.145)	(0.138)	(0.044)	(0.326)	(0.487)	(0.562)	(0.275)
FB	0.0154	0.0142	0.0157	0.0103	-0.0170**	0.0019**	0.0044**	0.0018
	(0.193)	(0.243)	(0.199)	(0.387)	(0.041)	(0.048)	(0.023)	(0.515)
COVID_19	0.6276**	0.4537	0.6287**	0.5968**	-0.1114***	-0.1233***	-0.0792***	-0.060***
	(0.029)	(0.135)	(0.033)	(0.040)	(0.001)	(0.000)	(0.000)	(0.010)
GDPG	-0.0148	-0.0316	-0.0231	-0.0090	-0.0055*	-0.0134***	-0.0085***	-0.007***
	(0.653)	(0.355)	(0.491)	(0.788)	(0.094)	(0.000)	(0.000)	(0.000)
Inflation	0.1887***	0.1795***	0.1985***	0.1764***	-0.0035	0.0092***	0.0028	0.0064*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.779)	(0.003)	(0.699)	(0.076)

Table 6: Impact of ESG on Profitability (cont...)

	<i>OLS</i>				<i>GMM</i>			
IQ	-0.3232 (0.297)	-0.2641 (0.403)	-0.2813 (0.372)	-0.2800 (0.369)	0.2150* (0.079)	-0.0431 (0.836)	0.0033 (0.955)	0.0012 (0.979)
Constant	-3.2602 (0.352)	-2.9289 (0.434)	-3.2187 (0.389)	0.1590 (0.962)	2.3980 (0.181)	0.4184 (0.475)	0.5350 (0.541)	1.2355 (0.107)
Observations	96	96	96	96	89	89	89	89
R^2	0.586	0.565	0.568	0.577				
Adjusted R^2	0.532	0.508	0.511	0.521				
Instruments					25	28	26	26
Overall					30	30	30	30
AR(1)					0.1210	0.0736	0.1044	0.0893
AR(2)					0.3612	0.4628	0.9951	0.6779
Hansen (P-Val)					0.6676	0.5003	0.6871	0.5780

Note: Where *** denotes significance at 1%, ** at 5%, and * at 10% significance levels.

Table 7: Impact of ESG on Cost of Capital

	<i>OLS</i>				<i>GMM</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	COC							
L.COC					0.9988*** (0.000)	0.9749*** (0.000)	1.0016*** (0.000)	0.9872*** (0.000)
ESG	0.0058 (0.612)				-0.0036 (0.334)			
ENV		0.0163* (0.053)				0.0011** (0.023)		
SOC			0.0111 (0.256)				0.0019 (0.294)	
GOV				-0.0078 (0.324)				0.0014 (0.581)
NIM	0.7434*** (0.000)	0.7247*** (0.000)	0.7573*** (0.000)	0.7091*** (0.000)	-0.0416* (0.097)	-0.0014 (0.779)	-0.0020 (0.943)	0.0166 (0.750)
Size	-0.5584**	-0.7555***	-0.6479***	-0.4529**	0.1451	-0.0353	-0.0967	-0.0364

Table 8: Impact of ESG on Cost of Capital (cont...)

	<i>OLS</i>				<i>GMM</i>			
	(0.023)	(0.002)	(0.010)	(0.033)	(0.184)	(0.257)	(0.179)	(0.693)
BETA	4.8226***	4.7285***	4.6875***	4.4672***	0.3089	0.1893***	-0.0563	0.2183
	(0.000)	(0.000)	(0.000)	(0.000)	(0.376)	(0.006)	(0.798)	(0.614)
DA	-0.0527***	-0.0483***	-0.0516***	-0.0552***	0.0187**	-0.0029*	-0.0012	0.0010
	(0.002)	(0.005)	(0.003)	(0.001)	(0.020)	(0.058)	(0.715)	(0.843)
ROAA	0.3514	0.4227*	0.3692	0.2543	0.0234	0.0408***	0.0267	0.0971
	(0.169)	(0.088)	(0.138)	(0.312)	(0.560)	(0.001)	(0.620)	(0.317)
EFF	1.0137	0.6506	0.8268	0.8130	-0.3638*	-0.416***	0.0405	0.0769
	(0.491)	(0.654)	(0.574)	(0.582)	(0.083)	(0.000)	(0.872)	(0.798)
FB	0.0001	-0.0056	-0.0036	0.0020	0.0295***	0.0020	-0.0051	-0.0028
	(0.995)	(0.789)	(0.865)	(0.924)	(0.000)	(0.385)	(0.363)	(0.610)
COVID 19	0.6341	0.8977*	0.6098	0.6718	-0.0880**	-0.123***	-0.1070**	-0.1289**
	(0.217)	(0.084)	(0.232)	(0.188)	(0.024)	(0.000)	(0.014)	(0.014)
GDPG	0.1036*	0.1238**	0.1076*	0.1165**	-0.008***	-0.004***	-0.0066	-0.0043
	(0.077)	(0.033)	(0.064)	(0.049)	(0.001)	(0.008)	(0.361)	(0.529)
Inflation	-0.0699	-0.0555	-0.0800	-0.0724	-0.0076	-0.011***	-0.0019	-0.0126
	(0.381)	(0.478)	(0.317)	(0.363)	(0.554)	(0.001)	(0.863)	(0.288)
IQ	-2.4383***	-2.3940***	-2.4146***	-2.5205***	-0.3012	-0.199***	0.0605	-0.0442
	(0.000)	(0.000)	(0.000)	(0.000)	(0.150)	(0.000)	(0.693)	(0.836)
Constant	17.8400***	22.1753***	19.928***	16.8209***	-4.8404	1.2672	2.4471	0.4730
	(0.006)	(0.001)	(0.003)	(0.005)	(0.124)	(0.171)	(0.162)	(0.846)
Observations	98	98	98	98	89	89	89	89
R ²	0.736	0.746	0.739	0.738				
Adjusted R ²	0.698	0.710	0.702	0.701				
Instruments					28	28	21	21
Overall					30	30	30	30
AR(1)					0.0958	0.2628	0.2944	0.3144
AR(2)					0.7158	0.1898	0.2408	0.1370
Hansen (P-Val)					0.9863	0.6769	0.9210	0.6684

Note: Where *** denotes significance at 1%, ** at 5%, and * at 10% significance levels.

Table 9: Impact of ESG on Cost of Equity

	<i>OLS</i>				<i>GMM</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	COE	COE	COE	COE	COE	COE	COE	COE
L.CE					1.002*** (0.000)	1.002*** (0.000)	1.033*** (0.000)	0.98*** (0.000)
ESG	0.0256* (0.052)				0.0014*** (0.004)			
ENV		0.0190* (0.055)				0.0023** (0.035)		
SOC			0.0260** (0.021)				0.0016* (0.092)	
GOV				0.0043 (0.645)				0.0007 (0.405)
NIM	1.124*** (0.000)	1.052*** (0.000)	1.125*** (0.000)	1.067*** (0.000)	-0.021*** (0.000)	-0.044*** (0.004)	-0.04*** (0.002)	-0.0111 (0.350)
Size	-0.6330** (0.025)	-0.6495** (0.024)	-0.7076** (0.013)	-0.3675 (0.137)	0.0188 (0.313)	0.0307 (0.285)	-0.0004 (0.983)	-0.0116 (0.724)
BETA	4.0646*** (0.000)	3.7667*** (0.000)	3.6271*** (0.000)	3.9727*** (0.000)	0.1213*** (0.000)	0.0245 (0.782)	-0.158** (0.015)	0.0337 (0.506)
DA	-0.0749*** (0.000)	-0.0739*** (0.000)	-0.0750*** (0.000)	-0.079*** (0.000)	0.0015 (0.276)	-0.0006 (0.760)	0.0010 (0.501)	-0.0027 (0.222)
ROAA	0.5139* (0.080)	0.4794* (0.098)	0.4810* (0.091)	0.3887 (0.189)	0.0333*** (0.001)	0.0094 (0.683)	0.0014 (0.851)	0.0316** (0.015)
EFF	3.0558* (0.072)	2.6415 (0.122)	2.6216 (0.121)	3.1771* (0.070)	-0.339*** (0.000)	-0.383*** (0.002)	-0.32*** (0.000)	-0.1097 (0.548)
FB	-0.0085 (0.727)	-0.0091 (0.709)	-0.0135 (0.581)	-0.0003 (0.990)	0.0034*** (0.000)	0.0042*** (0.008)	0.0030 (0.175)	0.0026 (0.223)
COVID 19	0.3216 (0.583)	0.6891 (0.255)	0.3036 (0.601)	0.3943 (0.510)	-0.108*** (0.000)	-0.100*** (0.000)	-0.13*** (0.000)	-0.09*** (0.000)
GDPG	0.0060 (0.928)	0.0378 (0.573)	0.0207 (0.752)	0.0115 (0.867)	-0.006*** (0.005)	-0.007*** (0.000)	-0.00*** (0.003)	-0.00*** (0.000)
Inflation	-0.0162 (0.859)	0.0088 (0.923)	-0.0347 (0.703)	-0.0022 (0.981)	-0.0044 (0.148)	-0.0031 (0.359)	-0.0027 (0.336)	-0.0058* (0.076)

Table 10: Impact of ESG on Cost of Equity (cont...)

	<i>OLS</i>				<i>GMM</i>			
IQ	0.6441 (0.304)	0.5862 (0.348)	0.6300 (0.309)	0.5227 (0.412)	-0.167*** (0.000)	-0.204*** (0.003)	-0.0309 (0.725)	-0.0836 (0.126)
Constant	20.1858*** (0.006)	21.6189*** (0.005)	22.7931*** (0.003)	15.2618** (0.030)	-0.6025 (0.277)	-0.5145 (0.525)	-0.0058 (0.987)	0.6254 (0.536)
Observations	98	98	98	98	89	89	89	89
R ²	0.641	0.640	0.647	0.625				
Adjusted R ²	0.590	0.590	0.597	0.572				
Instruments					31	28	25	28
Overall					30	30	30	30
AR(1)					0.2012	0.2185	0.2143	0.2449
AR(2)					0.2501	0.4002	0.3368	0.6278
Hansen (P-Val)					0.7859	0.6820	0.8725	0.5684

Note: Where *** denotes significance at 1%, ** at 5%, and * at 10% significance levels.

Table 11: Impact of ESG on Cost of Debt

	<i>OLS</i>				<i>GMM</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	COD	COD	COD	COD	COD	COD	COD	COD
L.CD					1.052*** (0.000)	0.865*** (0.000)	1.116*** (0.000)	0.975*** (0.000)
ESG	-0.0004 (0.974)				-0.0045 (0.225)			
ENV		0.0175** (0.032)				0.0020 (0.629)		
SOC			0.0030 (0.747)				-0.0020 (0.521)	
GOV				-0.0095 (0.211)				-0.00** (0.027)
NIM	0.3652** (0.047)	0.3624** (0.041)	0.3741** (0.042)	0.3428* (0.058)	-0.0302 (0.436)	0.0184 (0.551)	-0.0231 (0.483)	-0.0271 (0.534)
Size	-0.5046**	-0.7887***	-0.5511**	-0.4587**	0.0906	-0.0744	0.0849	0.0190

Table 12: Impact of ESG on Cost of Debt (cont...)

	<i>OLS</i>				<i>GMM</i>			
	(0.034)	(0.001)	(0.023)	(0.025)	(0.526)	(0.523)	(0.501)	(0.897)
BETA	-0.1414	-0.1770	-0.1592	-0.5029	-0.1324	-0.1079	-0.0430	-0.345*
	(0.839)	(0.791)	(0.817)	(0.497)	(0.481)	(0.354)	(0.810)	(0.088)
DA	-0.0101	-0.0041	-0.0094	-0.0117	0.0034	-0.0000	0.0043	0.0025
	(0.537)	(0.798)	(0.564)	(0.470)	(0.456)	(0.996)	(0.278)	(0.642)
ROAA	0.0185	0.1352	0.0355	-0.0545	-0.0707	0.0284	-0.0642	-0.0487
	(0.940)	(0.567)	(0.883)	(0.822)	(0.462)	(0.706)	(0.461)	(0.661)
EFF	-2.4919*	-2.8826**	-2.5442*	-2.7406*	0.0130	-0.1792	0.1648	-0.0833
	(0.083)	(0.041)	(0.078)	(0.057)	(0.971)	(0.490)	(0.594)	(0.833)
FB	0.0209	0.0127	0.0192	0.0207	0.0061	0.0010	0.0057	0.0061
	(0.312)	(0.528)	(0.357)	(0.303)	(0.105)	(0.701)	(0.150)	(0.140)
COVID 19	-0.3856	-0.1249	-0.3986	-0.3635	0.0122	0.0123	0.0200	-0.0274
	(0.437)	(0.801)	(0.422)	(0.459)	(0.869)	(0.667)	(0.788)	(0.793)
GDP Growth	-0.1415**	-0.1227**	-0.1412**	-0.1289**	-0.0146	-0.0177	-0.0071	-0.0277
	(0.013)	(0.028)	(0.013)	(0.024)	(0.579)	(0.264)	(0.766)	(0.376)
Inflation	0.0535	0.0660	0.0498	0.0471	0.0320*	0.0059	0.0248	0.0325*
	(0.489)	(0.381)	(0.522)	(0.538)	(0.074)	(0.660)	(0.196)	(0.076)
IQ	1.6221***	1.7072***	1.6399***	1.5643***	0.2001	0.1046	0.1632	0.3392
	(0.003)	(0.001)	(0.002)	(0.003)	(0.362)	(0.195)	(0.315)	(0.101)
Constant	17.5986***	23.4777***	18.5460***	17.7652***	-2.3170	2.4933	-2.8336	0.0863
	(0.005)	(0.000)	(0.004)	(0.002)	(0.622)	(0.480)	(0.492)	(0.986)
Observations	98	98	98	98	89	89	89	89
R2	0.310	0.346	0.311	0.322				
Adjusted R2	0.212	0.254	0.213	0.227				
Instruments					16	16	16	16
Overall					30	30	30	30
AR(1)					0.8782	0.7648	0.6375	0.5346
AR(2)					0.4927	0.2579	0.4143	0.4990
Hansen (P-Val)					0.1604	0.2978	0.1356	0.1939

Note: Where *** denotes significance at 1%, ** at 5%, and * at 10% significance levels.

The ESG dimensions show divergent behaviours. ESG is highly correlated with its sub-indices (ENV: 0.74***, SOC: 0.89***, GOV: 0.72***), but GOV demonstrates a distinctive negative relationship with BETA (-0.22*), indicating that stronger governance reduces systematic risk. In contrast, ENV and SOC have weaker or inconsistent links to financial variables. Among macroeconomic factors, COVID-19 shows limited correlation, whereas GDP Growth (-0.25* with CD) and Inflation (0.47*** with WACC) demonstrate wider economic effects on financing costs. Finally, IQ is strongly negatively associated with both NIM (-0.694***) and Inflation (-0.57***), reinforcing its importance in supporting financial stability. Overall, the results suggest that while ESG and particularly GOV can reduce capital costs, their influence is more nuanced compared with traditional financial drivers.

Table 5 reports the impact of ESG and its sub-dimensions on ROA. The results are presented using OLS models (equations 1–4) and GMM estimations (equations 5–8). The specifications incorporate bank-level, country-level, and COVID-19 controls. In all GMM estimations, there is no indication of instrument proliferation or serial correlation, and diagnostic tests confirm the robustness of the results. To further validate reliability, OLS estimations have been employed, and they reveal outcomes consistent with those obtained under GMM. The central finding is that ESG and its components adversely affect bank profitability, with results remaining statistically significant across both methodologies, mostly at the 1% and 5% levels. These outcomes lend empirical support to the trade-off theory and the shift of focus hypothesis, reflecting the evolving awareness of ESG issues within Middle Eastern banking systems. The evidence aligns with the conclusions of Yuen et al. (2022) and Islam et al. (2025) but contrasts with the positive association reported by Nizam et al. (2019). From a theoretical perspective, the findings are consistent with the trade-off framework.

The Impact of ESG on Cost of Capital, Equity, and Debt

Tables 6, 7, and 8 present the impact of ESG and its individual components on WACC, CE, and CD. The estimations are reported using OLS models (equations 1–4) and GMM models (equations 5–8). For all GMM specifications, diagnostic tests confirm robustness, as no evidence of second-order serial correlation is detected through AR (2), and instrument validity is confirmed by the Hansen test. Furthermore, the consistency of results is reinforced by OLS estimations. The findings indicate that environmental sustainability increases banks' WACC, while ESG raises CE. No evidence is found that ESG exerts a favourable effect on either composite or component measures of capital costs. Both OLS and GMM estimations show that ESG and its social and environmental dimensions significantly elevate CE, suggesting that equity investors perceive ESG practices as a source of additional risk. In contrast, the results for CD reveal no overall effect of ESG; however, improvements in GOV are associated with a reduction in debt financing costs. Taken together, the results suggest that ESG raises WACC and reduces profitability, thereby reinforcing the profitability findings.

These outcomes neither support the stakeholder perspective nor align with the positive effects reported by [Sendi et al. \(2024\)](#) and [Azmi et al. \(2021\)](#).

CONCLUSION

Managers of banks in the Middle East are likely to be encouraged to strengthen ESG practices if these efforts demonstrably improve financial outcomes. This study assessed the impact of ESG on profitability and capital costs for 54 banks across 11 Middle Eastern countries over the period 2014–2023, employing both OLS and system GMM estimators. The investigation is particularly relevant in the context of sustainable development goals, as evidence that ESG enhances financial performance would provide strong incentives for managers to integrate sustainability into core operations. The findings indicate that ESG neither enhances profitability nor reduces capital costs, whether composite or component based. Instead, ESG is associated with reduced profitability and higher CE. One plausible explanation is that the adoption of ESG is inherently complex, and its financial benefits may only materialise in the longer term. Initial costs, such as portfolio adjustments, compliance measures, and investment in sustainability infrastructure, may temporarily constrain performance. Moreover, investors and depositors may not yet fully incorporate ESG into their decision-making, weakening the expected financial rewards from such initiatives.

These results carry significant managerial implications. Bank leaders should systematically evaluate their ESG programmes to identify areas requiring improvement. Enhanced communication and marketing directed at debtors and investors may be essential to ensure that sustainability initiatives are acknowledged and valued. More importantly, ESG should be integrated into the core strategic framework of banks, with future product development and service design informed by ESG screening. From a theoretical perspective, the results are consistent with the shift of focus and shareholder-centred views, which suggest that ESG may represent a financial burden, and banks should concentrate primarily on their traditional business functions. The study is not without limitations. Due to data constraints, the analysis could not cover all banks in the region, as only a subset report ESG scores. This limitation is common in global and regional research on bank ESG. Additionally, the dataset was restricted to listed conventional banks, thereby excluding private and Islamic banks. A future heterogeneity analysis that accounts for business model, ownership, and size would provide deeper insights. Further research should seek to expand ESG datasets by incorporating alternative sources such as text mining and keyword-based data extraction. This would enrich country-level coverage and enable more granular analyses. Future studies might also investigate how ESG influences banks' deposit and lending clientele, exploring potential mediating effects. Finally, ESG-related controversies and greenwashing practices within Middle Eastern banking provide a promising area for future inquiry.

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