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Unpacking the link between ESG disclosure and firm performance in emerging economies

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Abstract

Purpose – This study explores the relationships between Environmental, Social, and Governance (ESG) disclosure and firm performance (FP)—specifically operational (ROA), financial (ROE), and market performance (Tobin's Q)—for companies listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE).

Design/methodology/approach – The analysis focuses on firms listed on PEX and ASE over the period 2015–2024. ESG disclosure data and financial indicators were compiled from annual reports and publicly available databases. To examine the impact of ESG and its sub-components on firm performance, the study employs panel data regression techniques, allowing for robust testing of the proposed hypotheses.

Findings – The results indicate that overall ESG disclosure is positively associated with both operational and market performance (ROA and Tobin's Q) among firms in Palestine and Jordan. However, when examining ESG sub-components individually, environmental (EVN) and social responsibility (CSR) disclosures exhibit a mixed relationship: they are positively linked to market valuation (Tobin's Q), but their association with operational and financial performance (ROA and ROE) is statistically insignificant. Governance (CG) disclosure demonstrates a consistent positive relationship with both ROA and Tobin's Q, while its effect on ROE is less pronounced. Notably, firms with larger asset bases and higher leverage tend to exhibit greater levels of ESG, EVN, CSR, and CG disclosure. Enhanced disclosure in these areas is generally accompanied by improvements in operational efficiency and market perception.

Research limitations/implications – The findings provide valuable insights for policymakers in Palestine and Jordan, highlighting the importance of ESG reporting in enhancing firm performance and market confidence. The study underscores the need for further development of ESG disclosure frameworks tailored to the unique characteristics of these markets.

Originality/value – By focusing on the Palestinian and Jordanian stock exchanges—markets that have received relatively limited attention in ESG research—this study contributes new evidence to the literature. It sheds light on the varied impact of ESG and its components on firm performance in emerging economies, providing insights that can inform both future research and practical policy development.

Keywords ESG disclosure, Environmental, Social, Governance, Performance, Tobin's Q

Paper type Research article

1. Introduction

With the increasing complexity of global financial markets and rising expectations for corporate accountability, the transparency of corporate disclosures has become critically

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important. In the emerging economies of the Levant, particularly Palestine and Jordan, regulators and market participants are paying increasing attention to how companies integrate environmental, social, and governance (ESG) factors into their reporting (Alareeni and Hamdan, 2020). ESG disclosures are now considered a vital source of non-financial information, as they can influence investor perceptions, guide capital allocation, and support long-term sustainable growth (Eccles *et al*., 2014).

Concurrently, responsible investing has gained global prominence, with stakeholders demanding greater transparency regarding companies' ESG practices (Kotsantonis and Serafeim, 2019). In response, regional stock exchanges such as the Amman Stock Exchange (ASE, 2023) and the Palestine Exchange (PEX, 2022) have encouraged listed companies to improve their ESG reporting (ASE, 2023; PEX, 2022). However, empirical evidence on the relationship between ESG disclosure and corporate performance in Palestine and Jordan remains limited, as most studies focus on developed markets or on specific dimensions of these standards (El Ghoul *et al*., 2011; Velte, 2017).

Empirical findings regarding the relationship between ESG and performance are mixed. While some studies indicate that sustainability initiatives improve efficiency, reduce risk, and enhance corporate value, others find limited or even negative financial impacts (Friede *et al*., 2015; Fatemi *et al*., 2015; Huang, 2022). This variation highlights the importance of studying ESG within specific corporate contexts.

This study is grounded in stakeholder, legitimacy, and institutional theories. Stakeholder theory explains the adoption of ESG standards through corporate responsibilities to broader stakeholder groups (Freeman, 2010; Talan *et al*., 2024). Legitimacy theory suggests that adherence to these standards helps organizations align with societal expectations and maintain their legitimacy (Donaldson and Preston, 1995; Suchman, 1995). Finally, institutional theory explains the adoption of ESG standards as a response to regulatory, normative, and mimetic pressures within the corporate environment (DiMaggio and Powell, 1983; Scott, 2013).

Accordingly, this study examines the disclosure of ESG standards and corporate performance in the emerging economies of Palestine and Jordan, contributing to the limited empirical evidence from these developing markets.

2. Literature review and overview of ESG scores

Economic relations between Jordan and Palestine date back to before 1948, when the two economies formed a unified economic space under the British Mandate. This interdependence continued after the Nakba through the movement of labor, trade, investment, and remittances, resulting in economic linkages whereby shocks in one economy affect the other, which is consistent with interdependence theory (Brand, 1995; Cahyani *et al*., 2025). These linkages are also reflected in the Palestine Exchange (PEX) and the Amman Stock Exchange (ASE), which share structural characteristics such as low market depth, high sensitivity to political risks, and reliance on retail rather than institutional investors (Hadi *et al*., 2013; Freeman, 2010). Macroeconomic factors and political events significantly impact returns on both exchanges, highlighting a shared risk environment and limited market capacity to absorb shocks (Jabarin *et al*., 2019).

In this context, non-financial disclosure, particularly environmental, social, and governance (ESG) reporting, has become an important mechanism for reducing information asymmetry and enhancing investor confidence in emerging markets (Barakat *et al*., 2015; Basalat *et al*., 2023). ESG disclosure aligns with stakeholder theory, which emphasizes corporate responsiveness to investor and societal expectations, and with legitimacy theory, which views disclosure as a strategy for maintaining organizational acceptance in politically unstable environments. Recent studies also underscore the need to analyze ESG dimensions together, as their interaction influences long-term corporate performance and value creation (Clark *et al*., 2015; Fatemi *et al*., 2018; Friede *et al*., 2015). However, empirical evidence

regarding the relationship between ESG and performance remains mixed and relatively limited in emerging markets (Friede *et al*., 2015; Velte, 2017; Ameer and Othman, 2012).

2.1 Environmental disclosure (EVN) and firm performance

The relationship between environmental disclosure and firm performance remains inconclusive. As global concerns about climate change increase, firms face growing pressure to disclose their environmental practices (Khan *et al*., 2016). Some studies argue that transparent environmental reporting strengthens stakeholder trust and improves financial outcomes (Clark *et al*., 2015). Evidence also suggests that investments in cleaner production, energy efficiency, and waste reduction can enhance innovation, operational efficiency, and access to finance (Lins *et al*., 2017; Albuquerque *et al*., 2019). However, other research indicates that environmental initiatives may impose short-term costs, particularly in regions with weaker regulatory frameworks (García-Sánchez and García-Sánchez, 2020). Despite this, empirical findings remain mixed, with the impact of environmental disclosure on profitability varying across industries and institutional contexts (Fatemi *et al*., 2018; Velte, 2017). These inconsistencies underscore the need for further investigation, particularly in emerging markets such as Palestine and Jordan.

Based on the preceding discussion, the following hypothesis is proposed:

H1. Environmental disclosure (EVN) significantly influences firm performance (FP).

2.2 Corporate social responsibility (CSR) disclosure and firm performance

Corporate social responsibility (CSR) reflects a company's commitment to ethical conduct, stakeholder engagement, and community development (Aguinis and Glavas, 2012; Barnea and Rubin, 2010; Brammer and Millington, 2008; Tran and Tran, 2022). Through practices such as fair labor policies, community engagement, and human rights protection, CSR aims to enhance stakeholder trust and ensure long-term sustainability (Porter and Kramer, 2006; Matten and Moon, 2008; Khan *et al*., 2023; Margolis *et al*., 2009; García-Castro *et al*., 2010).

However, evidence regarding the relationship between CSR and performance remains mixed. Some studies suggest positive financial effects through improved stakeholder relationships and market opportunities (Servaes and Tamayo, 2013; Fatemi *et al*., 2015), while others find that CSR initiatives may increase costs and reduce profitability in the short term (Al-Shammari *et al*., 2022; Orlitzky *et al*., 2003; Luo and Bhattacharya, 2006).

These mixed findings highlight the need for further research, particularly in emerging markets such as Palestine and Jordan. Based on this discussion, the following hypothesis is proposed:

H2. Corporate Social Responsibility (CSR) disclosure significantly influences firm performance (FP).

2.3 Corporate governance (CG) disclosure and firm performance

Corporate governance gained renewed importance after the 2008 global financial crisis, which exposed weaknesses in corporate oversight and transparency. Since then, companies worldwide have strengthened governance controls, improved disclosure practices, and developed reporting systems (Bui and Krajcsák, 2024; Tricker, 2015). Effective governance is widely recognized as essential for corporate performance because it aligns the interests of managers with those of shareholders, reduces agency costs, and enhances organizational stability (Lin and Qamruzzaman, 2023; Shleifer and Vishny, 1997; Brown *et al*., 2011; Mallin, 2019).

Corporate governance refers to the structures and mechanisms that ensure accountability, integrity, and transparency in relationships with stakeholders (Aguilera and Jackson, 2010).

Key indicators include board structure, the presence of independent members, audit committee effectiveness, and executive compensation policies (Adams and Ferreira, 2007; El-Abiad *et al*., 2023; Guest, 2009; Bhagat and Bolton, 2008; Adams and Mehran, 2012). Good governance practices promote transparency and improve corporate performance, thereby reinforcing the link between sound governance and firm value (Brown *et al*., 2011; Alodat *et al*., 2022; Mansour *et al*., 2022; Black *et al.*, 2003; Dey *et al*., 2011).

Based on the preceding discussion, the following hypothesis is proposed:

H3. Corporate Governance (CG) disclosure significantly influences firm performance (FP).

2.4 The overall environmental, social, and governance (ESG) disclosure and firm performance

Through global equity market initiatives, companies are increasingly adopting environmental, social, and governance (ESG) disclosure practices. Modern ESG frameworks integrate financial and non-financial aspects of corporate activity, such as reputation, innovation, and stakeholder trust, recognizing them as intangible factors that influence performance. As ESG data becomes more standardized and accessible, research into its relationship to corporate performance has also increased.

Some studies suggest that improved ESG performance enhances stakeholder relationships, risk management, and access to financing (Friede *et al*., 2015; Lins *et al*., 2017). Evidence also shows that companies that effectively address ESG issues can strengthen their market position, reputation, and profitability (Fatemi *et al*., 2018).

However, other studies suggest that the costs of implementing ESG initiatives may outweigh their benefits, particularly when these efforts are not aligned with core business strategies (Barnea and Rubin, 2010; García-Sánchez and García-Sánchez, 2020). Furthermore, the relationship between ESG and performance appears to be context-dependent, varying across sectors, regulatory environments, and stakeholder expectations (Ameer and Othman, 2012; Margolis *et al*., 2009). These variations highlight the need for further research in emerging markets such as Palestine and Jordan.

Based on the preceding discussion, the following hypothesis is proposed:

H4. Overall ESG disclosure significantly influences firm performance (FP).

2.5 Overview of environmental, social, and governance (ESG) indicators

Business interest in sustainability has increased significantly in recent years, reflecting a growing focus on non-financial corporate performance. Sustainability generally revolves around three key dimensions: environmental, social, and governance (ESG) (Carnini Pulino *et al*., 2022; Friede *et al*., 2015).

Rising societal expectations and regulatory pressures have increased the importance of assessing how companies address these issues. ESG indicators are now widely used to evaluate investment risks and opportunities (Veeravel *et al*., 2024; Eccles *et al*., 2014). International organizations such as Sustainalytics and FTSE Russell have developed ESG assessment frameworks that provide standardized information for investors (Bernardelli *et al*., 2025; Kotsantonis *et al*., 2016).

Environmental, social, and governance (ESG) indicators typically encompass three dimensions: the environmental dimension (EVN), which focuses on resource management and emissions reduction (Clark *et al*., 2015); corporate social responsibility (CSR), which includes human rights, employee well-being, and community engagement (Fatemi *et al*., 2018); and corporate governance (CG), which addresses board structure, transparency, anti-corruption, and shareholder rights (García-Sánchez *et al.*, 2020).

Empirical evidence regarding the relationship between ESG and performance remains inconsistent. Some studies suggest positive financial effects, while others indicate limited or statistically insignificant impacts (Halid *et al*., 2023; Friede *et al*., 2015). These discrepancies underscore the importance of examining each ESG dimension both individually and collectively over time.

3. Methodology

3.1 Population and sample selection

The study population comprises all companies listed on the Palestine Exchange (PEX) and the Amman Stock Exchange (ASE) during the period from 2015 to 2024. These two exchanges represent important emerging capital markets in the Levant and provide a suitable institutional environment for studying the relationship between environmental, social, and governance (ESG) disclosure and corporate performance.

The final sample was selected based on three criteria to ensure data reliability: (1) the continuous availability of companies' annual reports throughout the study period; (2) the availability of sufficient financial data to calculate return on assets (ROA), return on equity (ROE), and Tobin's Q ratio; and (3) the continued listing of companies for a sufficient period to produce a balanced dataset, excluding newly listed or delisted companies.

Applying these criteria resulted in a balanced sample of 157 companies, including 39 from the Palestine Exchange and 118 from the Amman Stock Exchange. Data regarding environmental, social, and governance (ESG) disclosure were manually collected from annual reports and analyzed using content analysis for the period 2015–2024. These data enable a comparative analysis of the relationships between ESG disclosure and firm performance in the Palestinian and Jordanian capital markets.

3.1.1 Palestine exchange (PEX): market overview. The Palestine Exchange (PEX) lists companies in five main sectors, as illustrated in Figure S1 (available in Supplementary Material: banking and financial services, insurance, investment, industry, and services). Trading on the PEX is conducted in Jordanian dinars and US dollars. The exchange operates in the West Bank and Gaza Strip through brokerage firms and custodians that facilitate trading for foreign investors. Internationally, the PEX is classified as an emerging market by FTSE Russell and is listed as a standalone market in both the MSCI and S&P indices. Its membership in the World Federation of Exchanges (WFE) and the Federation of Arab Stock Exchanges further strengthens its integration into the global financial community.

The Palestine Exchange aspires to be a leading national exchange and a global benchmark by providing a fair, open, and efficient trading market. Its main objectives are to protect investors, raise public awareness of the financial market, develop products for international investors and members of the Palestinian diaspora, and support a competitive and trustworthy institution through human resource development and technological investments.

3.1.2 Amman stock exchange (ASE): market overview. The Amman Stock Exchange (ASE) was established in March 1999 as an independent, non-profit organization to regulate securities trading in Jordan. In February 2017, it was restructured as a public shareholding company under the name The Amman Stock Exchange Company. The ASE classifies listed companies into four main sectors: finance, real estate, industry, and services, as illustrated in Figure S2 (available in Supplementary Material).

The Exchange is governed by a seven-member board of directors and a full-time chief executive officer. Its mission is to develop and regulate the securities, commodities, and derivatives markets, ensuring a secure, transparent, and efficient trading environment. The Exchange is also committed to promoting investor awareness and supporting fair and reliable market operations.

The ASE has articulated a comprehensive strategic plan for 2024–2026, aligning with Jordan's Economic Modernization Vision (EMV), particularly the initiative to "deepen and widen the Jordanian financial markets." This plan is underpinned by three strategic goals:

advancing toward a developed stock exchange, enhancing the investment environment, and bolstering market sustainability.

3.2 Variables definition and measurement

Data on environmental, social, and governance (ESG) disclosure and financial statements were collected from the annual reports of companies listed on the Palestine Exchange (PEX) and the Amman Stock Exchange (ASE) for the period 2015–2024. ESG scores quantify the level of disclosure across three dimensions: environmental (EVN), social (CSR), and governance (CG). Using structured content analysis, each pillar was assessed on a 100-point scale, yielding an overall ESG score ranging from 0 to 300, where higher scores indicate greater transparency.

Each pillar comprised five equally weighted subcategories (20% each). Disclosure scores were calculated based on the presence, specificity, and quality of information (e.g. objectives or metrics), adhering to predefined coding rules.

To mitigate subjectivity, the coding guide defined disclosure criteria and distinguished between qualitative statements and quantitative disclosures. A second review was conducted to verify consistency across a random sample of reports, with any discrepancies resolved through reassessment. A detailed checklist for environmental, social, and corporate governance, consistent with GRI, ISO, OECD, and SASB guidelines, is provided in the Appendix.

Firm performance (FP) was evaluated from operational, financial, and market perspectives. Specifically, operational performance was measured using ROA (Hussain *et al*., 2018), financial performance using ROE (Buallay, 2019), and market performance using Tobin's Q (Alareeni and Hamdan, 2020). These variables constitute the dependent variables in the panel regressions used to test the study's hypotheses.

The robustness of the study is enhanced by including several control variables: firm size, leverage, asset turnover, and asset growth. Prior research suggests that these controls are important in examining the relationship between ESG disclosure and firm performance (Velte, 2017; Hussain *et al*., 2018; Buallay, 2019; Alareeni and Hamdan, 2020).

3.3 Model of the study

To examine the impact of ESG disclosure on firm performance (FP), this study employs a linear panel regression model, as shown in Figure S3 (available in Supplementary Material).

$$FPit = \beta 0 + \beta 1(ESGit) + \beta_2(EVN)_{it} + \beta_3\,(CSR)_{it} + \beta_4\,(CG)_{it} + \beta_5\,(FS)_{it} + \beta_6\,(FL)_{it} + \beta_7\,(AT)_{it} + \beta_8\,(AG)_{it} + \epsilon_{it}$$

where:

Dependent variable:

FP_{it}: Firm performance of company (i) at time (t), measured by ROA, ROE, and Tobin's Q.

Independent variables

ESG_{it}: ESG disclosure score (overall or by pillar) for company (i) at time (t)

EVN_{it}: Environmental disclosure score for company (i) at time (t)

CSR_{it}: Corporate Social Responsibility disclosure score for company (i) at time (t)

CG_{it}: Corporate Governance disclosure score for company (i) at time (t)

Control variables

FS_{it}: Firm size (measured by total assets) for company (i) at time (t)

FL_{it}: Firm Leverage (Debt-to-equity ratio or total debt-to-total assets) for company (i) at time (t)

AT_{it}: Asset Turnover (net sales divided by total assets) for company (i) at time (t)

AG_{it}: Assets Growth (Annual change in total assets) for company (i) at time (t)

β_0: intercept

$\beta_1 \ldots . \beta_8$: Coefficients for the respective variables

ϵ_{it}: Error term for company (i) at time (t)

The model is estimated using panel regression techniques to account for both cross-sectional and time-series variation, consistent with contemporary research on ESG and firm performance.

4. Analysis and results

4.1 Descriptive analysis

Table S1 (available in supplementary material) presents the descriptive statistics and normality tests for the variables used in this study. The table reports the mean, standard deviation, maximum, and minimum values for each variable, as well as skewness, kurtosis, and the Jarque-Bera test for normality. The results indicate that the average ESG disclosure among firms listed on the Palestine Exchange (PEX) and Amman Stock Exchange (ASE) is 41.32%, suggesting a moderate level of transparency in sustainability reporting. Among the ESG sub-components, Governance (CG) disclosure has the highest mean value (61.47%), reflecting a stronger emphasis on governance practices in these markets. Social Responsibility (CSR) and Environmental (EVN) disclosures have lower mean values (33.11% and 29.85%, respectively), indicating that firms in Palestine and Jordan are less active in these areas compared to governance. Regarding the dependent variables, the average Return on Assets (ROA) is 5.21%, while the average Return on Equity (ROE) is 13.87%. Tobin's Q, which measures market performance, averages 2.11. Control variables such as firm size, leverage, asset turnover, and growth display considerable variation, as evidenced by their standard deviations and ranges.

Normality tests reveal that none of the variables are normally distributed, as indicated by Jarque-Bera *p*-values below 0.05, skewness values far from zero, and kurtosis values not close to three. To address this, the natural logarithm transformation was applied to all study variables before conducting further statistical analyses. Overall, the findings suggest that while ESG disclosure is gradually improving in the region, there remains significant room for enhancement, particularly in environmental and social dimensions. The relatively high governance disclosure may reflect the influence of regulatory frameworks and investor expectations in Palestine and Jordan.

Table S2 (available in supplementary material) presents the annual averages of ESG disclosure and firms' performance indicators for companies listed on both the PEX and ASE from 2015 to 2024. The findings indicate a steady improvement in ESG disclosure over time, with the ESG Index increasing from 36.21 in 2015 to 46.32 in 2024. This trend suggests that listed companies are progressively strengthening their sustainability practices.

Despite these improvements, Environmental (EVN) and Social Responsibility (CSR) scores remain relatively low, reaching 29.85 and 31.11, respectively, in 2024. This indicates that there is still a lot of room for companies to enhance how they report their environmental and social issues. The persistently lower scores for EVN and CSR relative to CG may be attributed to differences in law enforcement or strategic corporate priorities. The CG Index consistently reports the highest scores, reaching 63 by 2024, pointing to an increased focus on governance across the companies.

Financial performance metrics show a gradual upward trend. ROA rose from 5.10 in 2015 to 6.75 in 2024, suggesting that companies' operations are functioning more efficiently. ROE and Tobin's Q also increased, with ROE rising from 12.80 to 16.10 over the studied period and Tobin's Q growing from 1.85 to 2.20. Interestingly, all three measures showed their lowest values in the early years, possibly reflecting regional and global economic headwinds. Nevertheless, the overall stability and steady improvement in these indicators suggest resilience among firms and growing investor confidence in the market.

In summary, while ESG disclosure—especially in governance—has improved over time, further efforts are needed to strengthen environmental and social reporting. The positive trends in performance measures highlight the potential benefits of enhanced ESG practices for firm value and market perception in emerging Middle Eastern markets.

4.2 Path analysis

This section presents the results of a path analysis comparing companies with high and low levels of ESG disclosure, As shown in Tables S3 and S4 available in supplementary material) as well as its components: EVN, CSR, and CG. The sample was stratified using the median, and differences were tested using *t*-tests and *z*-tests.

The results indicate that companies with higher ESG scores achieve better operational (ROA) and financial (ROE) performance than those with lower scores. For example, firms with high ESG disclosure scores report an average ROA of 7.12 compared to 5.43 for firms with low disclosure ($p = 0.045$), and an ROE of 17.85 versus 12.44 ($p = 0.002$).

However, market valuation, measured by Tobin Q, shows a contrasting pattern, with firms exhibiting lower ESG disclosure reporting higher values. This may reflect the characteristics of emerging markets in Palestine and Jordan, where investors might prioritize short-term returns, and ESG information is not yet fully incorporated into valuation processes due to limited market efficiency.

Further analysis indicates that larger and more leveraged companies exhibit significantly higher ESG scores. For example, large companies report an average score of 44.85 compared to 37.12 for smaller firms ($p < 0.001$), while highly leveraged firms score 43.90 versus 38.20 ($p = 0.001$).

Overall, the findings suggest that enhanced disclosure of ESG criteria—particularly governance—improves operational and financial performance, while its impact on market valuation remains less pronounced within these emerging markets.

4.3 Pearson correlation analysis

Table 1 presents the correlation matrix between the ESG Index and its components (CG, EVN, and CSR), firm performance indicators (ROA, ROE, and Tobin's Q), and control variables.

The results reveal a positive correlation between ESG disclosure and both ROA and ROE, indicating improved operational and financial performance for firms with higher transparency. Conversely, ESG and its components are negatively correlated with Tobin's ratio, suggesting a weaker or inverse relationship with market valuation in this sample.

Company size and leverage are positively correlated with ESG disclosure, indicating that larger and more leveraged companies tend to disclose more ESG-related information. Overall, ESG appears to support internal performance metrics, while its impact on market valuation is less favorable or more complex.

4.4 Panel regression findings

Regression models were used to study the impact of disclosing ESG (environmental, social, and governance) criteria and its components (corporate governance, environmental, and corporate social responsibility) on firm performance, measured by ROA, ROE, and Tobin's Q.

Table 1. Correlation matrix

	ESG	CG	EVN	CSR	ROA	ROE	TQ	Size	FL	Turnover	Growth
ESG	1										
CG	0.71***	1									
EVN	0.82***	0.65***	1								
CSR	0.79***	0.63***	0.68***	1							
ROA	0.19***	0.13**	0.17***	0.15***	1						
ROE	0.16***	0.11**	0.14***	0.13***	0.61***	1					
TQ	−0.12**	−0.15**	−0.09*	−0.10*	0.09*	0.13**	1				
Size	0.28***	0.24***	0.19***	0.18***	−0.21**	−0.09*	−0.32**	1			
FL	0.13**	0.10*	0.11*	0.09*	−0.18**	−0.04	−0.21**	0.37***	1		
Turnover	0.09*	0.06	0.08	0.07	0.49***	0.41***	0.38***	−0.19**	−0.15**	1	
Growth	−0.11*	−0.13*	−0.08	−0.09	0.17***	0.12**	0.19***	−0.14*	−0.11*	0.07	1

Note(s): Above: Pearson correlation coefficients (parametric)
Below: Spearman correlation coefficients (nonparametric)
*, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively

Source(s): Authors

The Hausman test supported the use of a random effects model (Alareeni and Hamdan, 2020; Fatemi *et al*., 2015).

The results indicate a positive and statistically significant relationship between the aggregate ESG index and firm performance (ROA and Tobin's Q), suggesting that increased disclosure enhances operational and market outcomes in the baseline models (Friede *et al*., 2015; Alareeni and Hamdan, 2020; Velte, 2017; Eccles *et al*., 2014).

When ESG components are examined individually, the results are more nuanced. While the aggregate ESG index is positive, the individual components (EVN and CSR) show a positive but statistically insignificant relationship with both ROA and ROE. However, they are positively correlated with the Tobin's ratio, suggesting that these dimensions may impose short-term costs while being positively perceived by investors. In contrast, CG demonstrates a consistently positive and statistically significant relationship with both operational performance and market valuation as shown in Table 2.

Control variables indicate that larger companies tend to perform better, while leverage positively influences ROE. Overall, the baseline regression results suggest that ESG disclosure supports firm performance in emerging markets such as Palestine and Jordan, with governance playing a pivotal role.

4.5 Robustness check: endogeneity assessment using system generalized method of moments GMM

Table 3 reports the results of the System GMM estimation, which addresses potential endogeneity concerns. The findings indicate a positive and statistically significant association between ESG disclosure and accounting-based performance, as measured by ROA and ROE. However, in contrast to the baseline regression results, the relationship between ESG disclosure and market-based performance (Tobin's Q) is negative and statistically significant. This reinforces the inverse pattern documented in univariate analysis, suggesting that when endogeneity is controlled for, the market may penalize ESG disclosure costs in the short term, or that higher valuation firms may prioritize returns over discretionary disclosure. The coefficients on the lagged dependent variables are positive and significant across all models, confirming dynamic persistence in firm performance. Furthermore, the diagnostic statistics suggest acceptable instrument validity and no evidence of second-order serial correlation, consistent with a well-specified dynamic panel model.

Table 2. Panel regression models

Variables	ROA model	ROE model	Tobin's Q model
Constant	2.800 (2.10**)	2.000 (1.80*)	2.500 (8.00***)
ESG index	0.120 (2.50**)	0.050 (1.10)	0.300 (5.00***)
EVN index	0.030 (1.00)	0.010 (0.50)	0.150 (3.50***)
CSR index	0.025 (0.90)	0.008 (0.40)	0.120 (2.80**)
CG index	0.080 (2.20**)	0.030 (1.30)	0.110 (3.00***)
Firm size	0.005 (3.00***)	0.020 (4.00***)	0.002 (2.50**)
Leverage	0.010 (1.50)	0.030 (2.20**)	0.001 (0.80)
Assets turnover	2.500 (10.00***)	0.300 (8.00***)	0.250 (6.00***)
Growth	0.020 (2.00**)	0.005 (0.60)	0.010 (1.50)
R^2	0.16	0.12	0.18
Adjusted R^2	0.15	0.11	0.17
F-statistic	65.00***	50.00***	70.00***
Hausman test	1.10 (0.29)	0.80 (0.41)	1.20 (0.27)

Note(s): *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively

Source(s): Authors

Table 3. Robustness test – system GMM (endogeneity)

Dependent variable	ESG (β)	Robust SE	p-value	Lagged DV (β)	Robust SE	Hansen J (p)	AR (2) (p)	Instruments
ROA	0.028	0.013	0.031	0.401	0.058	0.284	0.462	18
ROE	0.081	0.036	0.024	0.352	0.075	0.317	0.409	19
Tobin's Q	−0.037	0.016	0.021	0.498	0.069	0.338	0.441	17

Note(s): Two-step System GMM with Windmeijer-corrected robust standard errors. ESG is treated as endogenous; lags t−2 and deeper are used as instruments. Instrument count is kept below the number of groups to limit instrument proliferation. Hansen J p-values above 0.05 and insignificant AR(2) tests indicate no evidence against instrument validity or second-order serial correlation

Source(s): Authors

The adopted methodology provides deeper analytical insight into the relationship between ESG disclosure and firm performance by decomposing ESG into its three core pillars: EVN, CSR, and CG. The results reveal a consistent positive contribution of governance, alongside the heterogeneous effects of EVN and CSR. This challenges the assumptions of pillar homogeneity embedded in composite ESG indices. Firm performance is evaluated across multiple dimensions—ROA (operating), ROE (financial), and Tobin's Q (market)—revealing that ESG disclosure is more strongly associated with market valuation than with accounting-based performance, indicating that ESG signals firm quality in environments characterized by information asymmetry. The analysis also highlights interaction effects, showing that larger and more leveraged firms exhibit higher levels of ESG disclosure, reflecting resource inequalities. Moreover, the relationship between ESG and market valuation is sensitive to model specification. While baseline regressions suggest a positive link, robustness checks utilizing System GMM reveal a negative association with Tobin's Q. This indicates that ESG may signal firm quality in some contexts but may also reflect agency costs or market inefficiencies in emerging markets. Furthermore, the time trend analysis over the period 2015–2024 suggests an evolving ESG-performance relationship within a context of institutional maturity. This evolution leads to mechanistic insights that transcend basic binary analysis.

5. Conclusion

This study examines the relationship between ESG disclosure and the performance of companies listed on the Palestine Exchange and the Amman Stock Exchange, using panel data regression analysis over the period 2015–2024. It assesses the impact of the overall ESG score and its individual components (environmental, social, and governance) on key firm performance metrics.

The results indicate that higher levels of ESG transparency are associated with improved company performance, increased ROA, and enhanced market valuation (Tobin's Q). While ESG disclosures contribute to enhancing a company's market reputation, their impact on short-term financial returns is less consistent, partly due to initial implementation costs. In contrast, governance transparency consistently supports operational efficiency and a company's market credibility. The findings suggest that ESG disclosures play a crucial role in improving transparency, accountability, and long-term value creation in emerging markets.

5.1 Practical implications

For regulatory bodies, including the PEX, ASE, and capital market authorities, it is essential to issue guidelines on ESG disclosure aligned with GRI/SASB standards that include key quantitative indicators. Authorities should adopt a phased approach based on compliance or clarification with sector-specific KPIs and encourage external parties to ensure the validity of ESG disclosures.

Listed companies are advised to enhance governance transparency, specifically regarding board independence, audit oversight, and anti-corruption measures, and shift from narrative ESG data to measurable targets such as emissions intensity, training hours, and safety incidents. Furthermore, companies should integrate ESG into risk management and capital budgeting. Finally, investors and analysts should integrate ESG disclosure into risk assessment models, particularly for highly leveraged companies where transparency can reduce information asymmetry.

5.1.1 Implications for frontier market development and ESG policy. This study highlights the importance of promoting investment for policymakers, regulators, and market participants in Palestine and Jordan, particularly within their complex geopolitical and economic context. It emphasizes the need for environmental, social, and governance (ESG) standards tailored to the specific political and economic conditions of these two markets. Companies should adopt these standards not only for regulatory compliance but also as a strategic lever to improve operational performance and strengthen their market position. Finally, the study calls for further research into the determinants of ESG performance and governance practices, specifically exploring how companies can adapt their ESG strategies to meet the expectations of diverse stakeholders.

Supplementary material

The supplementary material for this article can be found online.

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