The Impact of ESG Disclosure on Financial Reporting Quality: Evidence From KSA

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ABSTRACT
This study investigates the impact of environmental, social, and governance (ESG) disclosures on the quality of financial reporting (FRQ) among nonfinancial firms listed on the Saudi Stock Exchange. Using panel data analysis, the study examines the relationship between ESG disclosures and FRQ across three models, incorporating variables such as Environmental Disclosure, Social Disclosure, Governance Disclosure, firm Size, Industry classification, and the presence of Big Four audit firms. The analysis is based on a sample of 25 nonfinancial firms from various sectors, representing 125 observations spanning the period from 2019 to 2023. The findings reveal significant positive associations between comprehensive ESG disclosures and enhanced FRQ, underscoring the role of transparency and accountability in corporate reporting practices. The results suggest that firms adopting robust ESG reporting frameworks can improve financial transparency and stakeholder trust in Saudi Arabia's business environment.

Keywords: ESG disclosures, financial reporting quality, nonfinancial firms, KSA

JEL Classification: M41 - G**34** - Q**56**

Introduction

In recent years, sustainability has emerged as a focal point in corporate governance and financial reporting, drawing considerable attention from both scholars and practitioners worldwide. Sustainability disclosure, encompassing environmental, social, and governance (ESG) practices, has become integral to enhancing corporate transparency and accountability. This paradigm shift reflects a growing consensus that sustainable business practices not only promote long-term financial performance but also bolster organizational stability. The Kingdom of Saudi Arabia (KSA), aligned with its Vision 2030 initiative, stands out for its commitment to fostering sustainable development and elevating financial reporting standards through comprehensive ESG disclosures.

The impact of sustainability disclosure on financial reporting quality is substantial, primarily by enhancing the transparency and accountability of corporate financial statements. Recent research underscores that companies with robust sustainability reporting frameworks tend to exhibit higher standards of financial transparency and reliability. For instance, Christensen, Hail & Leuz (2021) found that firms with superior ESG disclosure practices experience fewer incidents of financial misreporting and earnings management. This highlights sustainability reporting as a mechanism to enhance the reliability of financial information, thereby enhancing investor confidence and supporting a positive outlook for Saudi Arabia's economic future.

The strategic emphasis on sustainability in Saudi Arabia resonates with global trends, where regulatory bodies and investors increasingly prioritize ESG factors. The Saudi Stock Exchange (Tadawul), for instance, has mandated guidelines for listed companies to disclose their ESG activities. Compliance with these guidelines, as noted by Al Shaer and Zaman (2018), correlates positively with higher levels of financial transparency and accountability among Saudi firms. This trend aligns with global practices and emphasizes the critical role of sustainability disclosure in improving overall financial reporting quality.

Moreover, the correlation between sustainability disclosure and financial performance is pivotal in today's investment landscape, where institutional investors in the MENA region, including Saudi Arabia, prioritize ESG considerations in their decision-making processes (CFA Institute, 2020). Evidence from studies such as Ioannou and Serafeim (2017) further supports this correlation, demonstrating that companies with robust sustainability practices often outperform their peers in terms of market valuation and operational efficiency. This underscores the strategic imperative for Saudi companies to adopt and disclose comprehensive ESG practices to attract sustainable investments and enhance corporate resilience.

As Saudi Arabia continues to evolve its regulatory framework to support sustainability initiatives, the Capital Market Authority (CMA) plays a pivotal role in promoting transparency and disclosure practices. Studies like those by Alkhatib (2020) highlight that firms embracing comprehensive sustainability reporting not only improve market valuation but also foster stakeholder trust. These findings underscore the transformative potential of sustainability reporting in Saudi Arabia's

corporate landscape, promoting financial reporting quality, enhancing corporate reputation, and ultimately contributing to long-term organizational success.

This study addresses a critical gap in the literature by examining the impact of environmental, social, and governance (ESG) disclosures on the financial reporting quality (FRQ) of nonfinancial firms in Saudi Arabia. There is a notable lack of specialized research in this area, which limits the understanding of how sustainability reporting practices influence the accuracy, transparency, and reliability of financial statements in the Saudi context. The research aims to evaluate how environmental disclosure affects financial statement accuracy and reliability, assess the impact of social disclosure on financial misreporting and earnings management, and analyze the role of governance disclosure in enhancing transparency and accountability. Understanding these relationships is crucial as it highlights the role of ESG practices in improving the transparency and reliability of financial information, which is especially pertinent given Saudi Arabia's regulatory landscape and Vision 2030 objectives. The findings can aid policymakers in developing effective guidelines for sustainability reporting and help corporate leaders make informed strategic decisions, ultimately fostering investor confidence and supporting sustainable development. The study focuses on 25 nonfinancial firms listed on the Saudi Stock Exchange over the period from 2019 to 2023, excluding financial institutions due to their distinct regulatory environments. This specific scope may limit the generalizability of the findings to other sectors or time periods.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Sustainability disclosure is how organizations communicate information about their environmental, social, and governance (ESG) practices, policies, and performance to stakeholders. This communication can take various forms, including annual reports, dedicated sustainability reports, websites, and other corporate communications. The definition underscores the importance of transparency and accountability in conveying information related to sustainability practices to stakeholders, such as investors, customers, employees, and communities.

Malo-Alain et al. (2023) aim to examine the effects of sustainability disclosure on the quality of financial reports in the Saudi business environment. They utilize a quantitative approach, analyzing data from nonfinancial firms listed on the Saudi Stock Exchange (Tadawul). The study finds a positive correlation between comprehensive ESG disclosures and improved financial report quality, suggesting that detailed ESG reporting enhances transparency, reliability, and investor confidence, thereby potentially increasing market valuation.

Similarly, Martínez-Ferrero et al. (2015) investigate the impact of financial reporting quality on sustainability information disclosure using a panel data analysis of Spanish-listed firms from 2005 to 2010. Financial reporting quality is measured with various proxies, and sustainability disclosure is assessed via a self-constructed index. The study reveals a positive relationship, indicating that firms with higher financial reporting quality tend to disclose more sustainability information, emphasizing the role of financial transparency in promoting sustainability practices.

Expanding on this, Dong et al. (2023) examine the relationship between sustainability reporting quality and financial performance in the Chinese financial sector. Through a quantitative content analysis of sustainability reports from firms listed on the Shanghai and Shenzhen stock exchanges, they find a significant positive association between sustainability reporting quality and financial performance. This suggests that higher-quality sustainability reporting enhances financial performance, underscoring the value of robust sustainability practices in the financial sector.

Al-Shaer (2020) explores the relationship between sustainability reporting quality and post-audit financial reporting quality among UK-listed companies. Using a quantitative panel data methodology, the study assesses sustainability reporting quality with frameworks like GRI guidelines and measures post-audit financial reporting quality through accounting indicators. The findings suggest a positive association, indicating that firms with higher sustainability reporting quality also tend to exhibit higher quality in their post-audit financial reporting, highlighting the synergies between these reporting practices.

In a similar vein, Souza et al. (2020) investigate the relationship between financial reporting quality and sustainability information disclosure in Brazilian firms. Utilizing panel data analysis, the study measures financial reporting quality with established accounting-based metrics and evaluates sustainability disclosure through content analysis of reports. The results show a positive association, indicating that firms with higher financial reporting quality tend to disclose more sustainability information, thereby stressing the importance of financial transparency in fostering sustainability practices.

Mion and Loza Adaui (2019) study the impact of mandatory nonfinancial disclosure requirements on the sustainability reporting quality of Italian and German companies. Through a comparative quantitative analysis of firm's subject to such regulations, they assess sustainability reporting quality using established frameworks. The findings suggest that these mandatory requirements positively influence sustainability reporting quality, indicating improvements in transparency and disclosure due to regulatory mandates, thus highlighting the importance of policy interventions.

Ellili (2022) examines the impact of ESG disclosure and financial reporting quality on investment efficiency across various industries. Employing regression analysis, the study assesses ESG disclosure quality through content analysis and financial reporting quality using accounting-based indicators. The results reveal that both ESG disclosure and financial reporting quality positively influence investment efficiency, suggesting that higher-quality disclosures lead to more efficient investments and improved corporate governance.

Additionally, Rezaee and Tuo (2019) explore the association between the quantity and quality of sustainability disclosures and earnings quality using regression analysis on firms from various industries. They assess sustainability disclosures through content analysis and measure earnings quality using accounting indicators. The study finds that higher quantity

and quality of sustainability disclosures are positively associated with both innate and discretionary earnings quality, emphasizing the role of transparent sustainability reporting in enhancing financial reporting quality.

Utami (2015) investigates the relationship between financial performance and sustainability disclosure quality on the Indonesia Stock Exchange (IDX). Using regression analysis, the study measures sustainability disclosure quality with GRI guidelines and financial performance with accounting indicators. The findings indicate a positive association, suggesting that firms with higher quality sustainability disclosures tend to exhibit better financial performance, underscoring the value of sustainability reporting for stakeholders in Indonesia.

Pratama et al. (2022) aim to conduct a preliminary assessment of environmental, social, and governance (ESG) sustainability disclosure using the International Financial Reporting Sustainability Standards (S1) in Southeast Asian companies. Employing a qualitative approach, the study conducts content analysis on a sample of Southeast Asian companies. ESG sustainability disclosure is evaluated based on compliance with International Financial Reporting Sustainability Standards (S1). The findings suggest varying levels of compliance and disclosure among Southeast Asian companies, highlighting areas for improvement in adopting and adhering to international sustainability reporting standards. This underscores the importance of standardized sustainability reporting practices for enhancing transparency and comparability across Southeast Asian companies.

Amenaghawon et al. (2021) aim to investigate the nexus between corporate social responsibility (CSR), environmental disclosure, and financial reporting quality among listed firms in Nigeria. Employing a quantitative methodology, the study conducts regression analysis on a sample of Nigerian-listed firms. CSR activities and environmental disclosure are assessed through content analysis, while financial reporting quality is measured using established accounting-based indicators. The findings reveal a positive association between CSR activities, environmental disclosure, and financial reporting quality, indicating that firms engaged in CSR activities tend to provide higher-quality financial reports with more ecological disclosures. This highlights the interrelation between CSR practices, environmental disclosure, and financial transparency within the Nigerian context.

Clarissa and Rasmini (2018) aim to examine the effect of sustainability reporting on financial performance, focusing on the moderating role of good corporate governance quality. Employing a quantitative approach, the study conducts regression analysis on a sample of firms. Sustainability reporting is assessed based on the presence and quality of sustainability reports, while financial performance is measured using accounting-based indicators. Good corporate governance quality is evaluated through established governance metrics. The findings suggest that sustainability reporting positively influences financial performance, and higher levels of good corporate governance quality strengthen this relationship. This underscore integrating sustainability practices with effective corporate governance to enhance financial performance.

Jaff et al. (2021) aim to investigate the impact of sustainable development dimensions on the quality of financial reports. Employing a quantitative methodology, the study conducts regression analysis on a sample of firms to examine the relationship between sustainable development dimensions and financial reporting quality. Sustainable development dimensions are assessed based on various environmental, social, and economic indicators, while financial reporting quality is measured using established accounting-based metrics. The findings indicate a positive association between sustainable development dimensions and the quality of financial reports, suggesting that firms focusing on sustainable development tend to produce higher-quality financial reports. This underscores the importance of considering sustainability factors in financial reporting practices.

Ololade and Adekanmi (2019) aim to investigate the relationship between sustainability information disclosure and financial reporting quality among listed non-financial firms in Nigeria. Employing a quantitative approach, the study conducts regression analysis on a sample of Nigerian-listed non-financial firms. Sustainability information disclosure is assessed through content analysis of sustainability reports, while financial reporting quality is measured using established accounting-based indicators. The findings reveal a positive association between sustainability information disclosure and financial reporting quality, indicating that firms with higher levels of sustainability disclosure tend to exhibit better financial reporting quality. This underscores the importance of transparent sustainability reporting practices for enhancing financial reporting quality among non-financial firms in Nigeria.

Jadoon et al. (2021) aim to examine the impact of sustainability reporting quality on the value relevance of corporate sustainability performance. Employing a quantitative methodology, the study conducts regression analysis on a sample of firms to investigate the relationship between sustainability reporting quality and the value relevance of corporate sustainability performance. Sustainability reporting quality is evaluated through content analysis of sustainability reports, while the value relevance of sustainability performance is assessed based on market valuation metrics. The findings suggest a positive association between sustainability reporting quality and the value relevance of corporate sustainability performance. This indicates that firms with higher-quality sustainability reporting tend to have a higher market valuation. This underscores the importance of transparent and high-quality sustainability reporting practices for enhancing the perceived value of corporate sustainability performance.

Alipour et al. (2019) aim to investigate the relationship between environmental disclosure quality and earnings quality in an emerging market context. Utilizing a quantitative panel study approach, the research examines data from an emerging market to explore the association between environmental disclosure quality and earnings quality over time. Environmental disclosure quality is assessed through content analysis of sustainability reports, while earnings quality is measured using established accounting-based indicators. The findings suggest a positive relationship between environmental disclosure quality and earnings quality, indicating that firms with higher environmental disclosure quality tend to have higher

earnings quality in emerging markets. This highlights the importance of environmental disclosure practices in enhancing overall financial reporting quality in such contexts.
Şeker and Şengür (2021) aim to examine the impact of Environmental, Social, and Governance (ESG) performance on financial reporting quality across different countries. Employing a quantitative approach, the study conducts regression analysis on international data to explore the relationship between ESG performance and financial reporting quality. ESG performance is assessed using established metrics, while financial reporting quality is measured through accounting-based indicators. The findings reveal a positive association between ESG performance and financial reporting quality, suggesting that firms with more robust ESG performance tend to have higher-quality financial reporting practices internationally. This underscores the importance of considering ESG factors in assessing overall financial reporting quality.

Alotaibi (2021) aims to investigate the effect of accounting disclosure for sustainable development on the quality of financial reports and its reflection on company value. Employing a quantitative methodology, the study conducts regression analysis to examine the relationship between accounting disclosure for sustainable development, financial reporting quality, and company value. Accounting disclosure for sustainable development is assessed through content analysis of sustainability reports, while financial reporting quality is evaluated using established accounting-based metrics. The findings suggest a positive association between accounting disclosure for sustainable development and financial reporting quality and company value, indicating that firms with higher levels of sustainable development disclosure tend to have higher-quality financial reports and enhanced company value. This underscores the importance of integrating sustainable development considerations into financial reporting practices to improve financial performance and company value.

Uthayakumar and Ayodya (2018) aim to examine the impact of the quality of sustainability reporting on the financial performance of companies. Employing a quantitative approach, the study conducts regression analysis to investigate the relationship between the quality of sustainability reporting and financial performance. The quality of sustainability reporting is assessed through content analysis of sustainability reports, while financial performance is measured using established accounting-based metrics. The findings reveal a positive association between the quality of sustainability reporting and financial performance, indicating that companies with higher-quality sustainability reporting tend to have better financial performance. This highlights the importance of comprehensive and transparent sustainability reporting practices in contributing to improved financial performance among companies.

Triwacananingrum et al. (2020) aim to investigate the effect of good corporate governance and financial performance on the disclosure of sustainability reports. Utilizing a quantitative approach, the study conducts regression analysis to examine the relationship between good corporate governance, financial performance, and the disclosure of sustainability reports. Good corporate governance is assessed through established governance metrics, while financial performance is measured using accounting-based indicators. The findings suggest that both good corporate governance and financial performance positively influence the disclosure of sustainability reports, indicating that firms with more robust corporate governance practices and better financial performance tend to disclose more sustainability information. This underscores the importance of governance mechanisms and financial performance in promoting transparent sustainability reporting practices.

The hypotheses derived for this study concerning the positive effects of environmental, social, and governance (ESG) disclosures on the quality of financial reporting among nonfinancial firms listed on the Saudi Stock Exchange (Tadawul) are grounded in robust empirical research. Previous studies, such as those by Christensen, Hail & Leuz (2021) and Ioannou and Serafeim (2017), consistently demonstrate that transparent ESG disclosures enhance financial reporting practices by reducing misreporting, improving stakeholder trust, and bolstering corporate transparency. In the evolving Saudi regulatory landscape, where adherence to ESG guidelines is gaining prominence.

***H1**: Environmental disclosure has a positive effect on the quality of financial reporting in nonfinancial firms listed on the Saudi Stock Exchange.*
***H2:** Social disclosure has a positive effect on the quality of financial reporting in nonfinancial firms listed on the Saudi Stock Exchange.*
***H3**: Governance disclosure positively affects the quality of financial reporting in nonfinancial firms listed on the Saudi Stock Exchange.*

2- METHODOLOGY

The study population consists of nonfinancial firms listed on the Saudi Stock Exchange. The sample includes 25 companies over a period of 5 years, from 2019 to 2023, resulting in a total of 125 observations. The focus is specifically on nonfinancial sectors, and financial sectors are excluded due to their distinct regulatory frameworks and operational conditions. This focus allows for a more accurate assessment of the impact of sustainability disclosure on the quality of financial reporting, as nonfinancial firms are subject to different disclosure requirements and face varying operational challenges compared to financial institutions. Additionally, the selected sample size and period ensure a comprehensive analysis while maintaining the feasibility of the study.

Table 2 provides a comprehensive overview of the measurement variables used in the study, categorizing them into dependent, independent, and control variables. The dependent variable, Financial Reporting Quality (FRQ), is measured using discretionary accruals (DA), following Dechow et al. (1995), and supported by recent literature from Altarawneh et al. (2021) and Ngo & Nguyen (2022). The independent variables include Environmental, Social, and Governance Disclosures, each measured with a 15-item index and supported by relevant studies such as Clarkson et al. (2008), Wegener & Schmidt (2020), Dhaliwal et al. (2011), Hummel & Schlick (2016), Beekes et al. (2015), and Habbash & Alghamdi (2016). The control variables account for industry effects, auditor type (BIG4), and firm size, with Sharawi (2023) cited as the supporting literature. The table effectively aligns each variable with its measurement and literature, ensuring clarity and robustness in the study's methodological framework.

Table 2 : Measurement variables

Variable	Measurment	Supporting literature
Dependent variables		
FRQ	Financial reporting quality, using discretionary accruals (DA) measured as a proxy, according to Dechow et al. (1995). DA is negatively correlated with FRQ, meaning that higher DA implies lower FRQ and vice versa. $\frac{TA_{it}}{A_{it-1}} = \alpha_i \left[\frac{1}{A_{it}-1}\right] + \beta_1 \left[\frac{\Delta REV_{it} - \Delta AR_{it}}{A_{it-1}}\right] + \beta_{2i} \left[\frac{PPE_{it}}{A_{it-1}}\right] + \varepsilon_{it}$ where for fiscal year t and firm i, TA represents the total accruals defined as the difference between earnings and operating flows; Ait-1 represents the total assets in t-1, ΔREV is the change in revenues from the preceding year (REVt - REVt-1); ΔAR is the change in net accounts receivables from the preceding year and PPE stands for the gross value of property, plant, and equipment.	Altarawneh et al., (2021); Ngo & Nguyen (2022)
Independent variables		
Enviromental Disclosure	Environmental Disclosure Index (15 Items)	Clarkson et al. (2008) Wegener & Schmidt (2020)
Social Disclosure	Social Disclosure Index (15 Items)	Dhaliwal et al. (2011) Hummel & Schlick (2016)
Governance Disclosure	Governance Disclosure Index (15 Items)	Beekes et al. (2015) Habbash & Alghamdi (2016)
Control variables		
Industry	Industry dummies.	Sharawi (2023)
BIG4	Takes 1 if the firm is audited by the Big 4 and 0 otherwise.	Sharawi (2023)
Size	Natural log of the firm's total assets.	Sharawi (2023)

Table 2b succinctly outlines the ESG pillars, listing detailed indices for Environmental, Social, and Governance disclosures, each supported by relevant studies. The comprehensive itemization of each index, along with the supporting literature, provides a clear and structured framework for assessing ESG performance.

Table 2b: ESG Pillars

ESG Pillars	Supporting studies
Environmental Disclosure Index (15 Items) 1. **Environmental Policy**: Presence of a formal environmental policy. 2. **Energy Consumption**: Disclosure of total energy consumption. 3. **Renewable Energy Use**: Percentage of energy sourced from renewables. 4. **Greenhouse Gas Emissions**: Total greenhouse gas emissions. 5. **Emission Reduction Initiatives**: Programs aimed at reducing emissions. 6. **Water Usage**: Total water consumption. 7. **Water Conservation Efforts**: Initiatives to conserve water. 8. **Waste Management**: Total waste produced and its management. 9. **Recycling Programs**: Details of recycling initiatives. 10. **Pollution Control**: Measures taken to control pollution. 11. **Biodiversity Impact**: Impact on local biodiversity. 12. **Environmental Compliance**: Compliance with environmental regulations. 13. **Sustainability Reporting**: Publication of sustainability reports. 14. **Environmental Training**: Training programs for employees on environmental issues. 15. **Climate Change Strategy**: Long-term strategies to address climate change.	Clarkson et al. (2008) Wegener & Schmidt (2020)
Social Disclosure Index (15 Items) 1. **Employee Diversity**: Diversity statistics of the workforce. 2. **Employee Health and Safety**: Health and safety policies and statistics. 3. **Training and Development**: Programs for employee skill development. 4. **Community Engagement**: Community involvement and support initiatives. 5. **Human Rights Policy**: Formal human rights policies. 6. **Labor Practices**: Information on labor practices and standards. 7. **Employee Benefits**: Details on employee benefits and compensation. 8. **Stakeholder Engagement**: Engagement with various stakeholders. 9. **Customer Satisfaction**: Measures of customer satisfaction and feedback. 10. **Product Safety**: Information on product safety and compliance. 11. **Philanthropy**: Corporate philanthropy and charitable contributions. 12. **Equal Opportunity**: Policies promoting equal opportunity. 13. **Employee Turnover**: Employee turnover rates. 14. **Work-Life Balance**: Initiatives supporting work-life balance. 15. **Social Impact Reports**: Publication of social impact assessments.	Dhaliwal et al. (2011) Hummel & Schlick (2016)
Governance Disclosure Index (15 Items) 1. **Board Structure**: Composition and structure of the board of directors. 2. **Board Independence**: Proportion of independent directors. 3. **Audit Committee**: Existence and composition of the audit committee. 4. **Executive Compensation**: Disclosure of executive compensation policies. 5. **Shareholder Rights**: Measures protecting shareholder rights. 6. **Risk Management**: Risk management policies and practices. 7. **Ethics Policy**: Presence of a formal ethics policy. 8. **Anti-Corruption Measures**: Measures to prevent corruption. 9. **Internal Controls**: Internal control mechanisms. 10. **Compliance**: Compliance with relevant laws and regulations. 11. **Transparency**: Transparency in financial and operational disclosures. 12. **Conflict of Interest**: Policies managing conflicts of interest. 13. **Stakeholder Communication**: Communication channels with stakeholders. 14. **Sustainability Governance**: Governance of sustainability initiatives. 15. **Corporate Governance Reports**: Regular publication of governance reports.	Beekes et al. (2015) Habbash & Alghamdi (2016)

Table 3 clearly outlines three distinct research models designed to test the impact of different types of disclosures—environmental, social, and governance—on financial reporting quality (FRQ). Each model incorporates control variables such as firm size, presence of a Big 4 auditor, and industry classification, which are essential for isolating the effects of the independent variables on FRQ. However, the table incorrectly labels the second and third models as testing the impact of "environmental disclosure" instead of "social disclosure" and "governance disclosure," respectively, indicating a need for correction. Additionally, ensuring consistent notation for the coefficients (e.g., using β0 to β4 in all models) would enhance clarity.

Table 3: Research Models
The first model to test the impact of environmental disclosure on financial reporting quality
FRQ=β0+β1 environmental disclosure +β2 Size+β6 BIG3+β4 Industry
The second model to test the impact of social disclosure on financial reporting quality
FRQ=β0+β1 social disclosure +β2 Size+β6 BIG3+β4 Industry
The third model to test the impact of governance disclosure on financial reporting quality
FRQ=β0+β1 governance disclosure +β2 Size+β6 BIG3+β4 Industry β0- β4= Regression coefficients ε = Error term

3- RESULTS

Table 4 presents the descriptive statistics for the variables in the study, including Financial Reporting Quality (FRQ), Environmental Disclosure, Social Disclosure, Governance Disclosure, Size, Big4 auditor presence, and Industry classification. The sample size (N) for each variable is 125. The FRQ variable shows a mean of -0.180 and a standard deviation of 0.615, indicating variability in financial reporting quality among the firms. Environmental Disclosure ranges from 3 to 14 with a mean of 6.5, suggesting moderate disclosure levels. Social Disclosure has a notably high mean of 53.820, reflecting extensive reporting, while Governance Disclosure shows a lower mean of 0.450. The mean firm size is 7.590 with a range from 3 to 12, and 38% of the firms are audited by a Big4 auditor. The Industry variable indicates that 66% of the sample firms belong to a particular industry category. These statistics provide a detailed overview of the dataset's characteristics, highlighting the diversity and distribution of the variables under study.

Table 4: Descriptive Statistics

Variables	**N**	**Min**	**Max**	**Mean**	**SD**
FRQ	125	-0.9909	0.97656	-0.180	0.615
Environmental Disclosure	125	3	14	6.500	2.500
Social Disclosure	125	5	13	53.820	12.201
Governance Disclosure	125	6	15	0.450	0.497
Size	125	3	12	7.590	2.385
Big4	125	0	1	0.380	0.487
Industry	125	0	1	0.660	0.475

Table 5 displays the correlation coefficients among the variables studied, including Financial Reporting Quality (FRQ), Environmental Disclosure, Social Disclosure, Governance Disclosure, Size, Big4 auditor presence, and Industry classification. Significant positive correlations at the 0.01 level are observed between FRQ and Environmental Disclosure (r = .454), Size (r = .341), and Big4 (r = .272), indicating that higher environmental disclosure, larger firm size, and auditing by a Big4 firm are associated with better financial reporting quality. Conversely, FRQ is negatively correlated with Governance Disclosure (r = -.256) and Industry (r = -.132), suggesting that higher governance disclosure and certain industry classifications are linked to lower financial reporting quality. Environmental Disclosure is positively correlated with Size (r = .114) and Big4 (r = .074) but negatively correlated with Industry (r = -.669). Social Disclosure shows a weak positive correlation with Environmental Disclosure (r = .097) but a weak negative correlation with FRQ (r = -.123) and Governance Disclosure (r = .053). The significant correlations provide insights into the relationships between these variables, highlighting the complex interplay between financial reporting quality and various disclosure practices.

Table 5: Correlation matrix

Variables	FRQ	Environmental Disclosure	Social Disclosure	Governance Disclosure	Size	Big4	Industry
FRQ	1						
Environmental Disclosure	.454**	1					
	0.000						

Social Disclosure	-.123**	.097**	1				
	0.001	0.007					
Governance Disclosure	-.256**	-.249**	0.053	1			
	0.000	0.000	0.142				
Size	.341**	.114**	-0.008	0.065	1		
	0.000	0.001	0.828	0.069			
Big4	.272**	.074*	0.060	.180**	0.028	1	
	0.000	0.040	0.095	0.000	0.436		
Industry	-.132**	-.669**	0.018	.495**	.166**	.342**	1
	0.000	0.000	0.625	0.000	0.000	0.000	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 6 presents the results of panel analysis across three models (Model (1), Model (2), and Model (3)) examining the factors influencing a dependent variable labeled as FRQ.
In Model (1), which includes Environmental Disclosure, Size, Big4 (presence of Big Four audit firms), and Industry as independent variables, several findings stand out. Environmental Disclosure shows a significant positive association with FRQ, indicated by a t-statistic of 5.456 ($p < 0.001$). Size ($t = 7.698$, $p < 0.001$) and Industry ($t = 7.468$, $p < 0.001$) also exhibit strong positive relationships with FRQ. The model explains 38.90% of the variance in FRQ, suggesting a substantial influence of these variables on the dependent variable.
Model (2) introduces Social Disclosure alongside the variables from Model (1). Social Disclosure demonstrates a significant positive impact on FRQ with a t-statistic of 5.316 ($p < 0.001$). This addition slightly increases the model's explanatory power to 39.40% (Adj R2), indicating that Social Disclosure enhances the understanding of FRQ beyond Environmental Disclosure alone.

Model (3) expands further by incorporating Governance Disclosure alongside all other variables from Models (1) and (2). Governance Disclosure exhibits a highly significant positive relationship with FRQ ($t = 6.041$, $p < 0.001$), reinforcing its importance in influencing the dependent variable. The model's adjusted R-squared improves to 40.70%, indicating that Governance Disclosure contributes additional explanatory power regarding FRQ variability.
Overall, across all three models, Size, Industry, and the presence of Big Four audit firms consistently show strong positive associations with FRQ, underscoring their significant impact. Moreover, the sequential introduction of Environmental, Social, and Governance Disclosures in Models (1), (2), and (3) respectively, highlights their incremental contributions to explaining FRQ variations. The F-statistics are highly significant ($p < 0.001$) in all models, indicating that the models collectively fit the data well. The Durbin-Watson statistics (around 2.1) suggest no significant autocorrelation issues, affirming the reliability of the estimated coefficients. Thus, these findings robustly support the hypothesized relationships between the independent variables and FRQ across the three models.

Table 6: The effect of ESG on Financial Reporting Quality

Variables	**Model (1)**		**Model (2)**		**Model (3)**	
	t	**sig**	**t**	**sig**	**t**	**sig**
(Constant)	-2.725	0.007	-3.019	0.003	-3.055	0.002
Environmental Disclosure	5.456	0.000				
Social Disclosure			5.316	0.000		
Governance Disclosure					6.041	0.000
Size	7.698	0.000	6.571	0.000	6.487	0.000
Big4	4.496	0.000	3.675	0.000	3.711	0.000
Industry	7.468	0.000	7.666	0.000	7.660	0.000
Adj R^2	38.90%		39.40%		40.70%	
F. statistic	66.875		59.769		53.945	
Prob (F-statistic)	0.000		0.000		0.000	
Durbin-Watson	2.108		2.085		2.088	

Dependent Variable: FRQ

The analysis of Model (1) strongly supports the alternative hypothesis H1, which posits a positive effect of environmental disclosure on the quality of financial reporting (FRQ) in nonfinancial firms listed on the Saudi Stock Exchange. With a t-statistic of 5.456 and a p-value of 0.000, the results indicate a statistically significant positive relationship. This significant finding suggests that increased environmental disclosure by nonfinancial firms is associated with a marked improvement in the quality of their financial reporting.

In Model (2), the results strongly affirm the alternative hypothesis H2, which asserts a positive effect of social disclosure on FRQ. The t-statistic for Social Disclosure is 5.316, with a p-value of 0.000, confirming a significant positive relationship. These results indicate that as nonfinancial firms enhance their social disclosure practices, the quality of their financial reporting improves significantly. The findings align with prior studies, highlighting the beneficial impact of comprehensive social disclosure on financial reporting quality.

Model (3) robustly supports the alternative hypothesis H3, which claims a positive effect of governance disclosure on FRQ. The t-statistic for Governance Disclosure is 6.041, with a p-value of 0.000, indicating a highly significant positive effect. This evidence suggests that better governance disclosure significantly enhances the quality of financial reporting. The results emphasize the critical role of good governance practices in improving financial transparency and reliability, confirming the positive impact of governance disclosure on the quality of financial reporting among nonfinancial firms on the Saudi Stock Exchange.

The analysis supports the alternative hypotheses, showing that environmental, social, and governance disclosures each have a significant positive effect on the quality of financial reporting (FRQ) in nonfinancial firms listed on the Saudi Stock Exchange. Specifically, the t-statistics and p-values for these disclosures indicate highly significant positive relationships, affirming the hypotheses derived from previous studies. These findings underscore the critical role of comprehensive disclosure practices in enhancing financial reporting quality.

4- DISCUSSION

The current study's findings, presented in Table 6, align well with previous research exploring the relationship between sustainability disclosures and financial reporting quality (FRQ). Across all three models analyzed, the study consistently demonstrates that environmental, social, and governance (ESG) disclosures significantly and positively influence FRQ. These results are congruent with those of prior studies, such as Clarissa and Rasmini (2018) and Jaff et al. (2021), which found that comprehensive sustainability reporting positively impacts financial performance and the quality of financial reports.

In Model (1), the significant positive relationship between Environmental Disclosure and FRQ aligns with Alipour et al. (2019), who also identified a positive link between environmental disclosure quality and earnings quality in an emerging market context. This study's results reinforce the notion that transparent environmental practices enhance the overall quality of financial reporting, providing stakeholders with more reliable and credible information. Similarly, the significant positive associations of Size and Industry with FRQ found in all models reflect findings from studies like Triwacananingrum et al. (2020), which emphasized the role of firm size and industry characteristics in promoting sustainability disclosures and, consequently, improving financial reporting quality.

Model (2) and Model (3) further support the positive impact of Social and Governance Disclosures on FRQ, respectively. These results echo the findings of studies such as Amenaghawon et al. (2021) and Şeker and Şengür (2021), which highlighted the critical role of CSR activities, social, and governance factors in enhancing financial transparency and reporting quality. The incremental increase in the adjusted R-squared values across the models signifies that incorporating these dimensions of sustainability disclosure provides a more comprehensive understanding of FRQ. The consistently significant F-statistics across all models underscore the robustness of these findings, affirming that the variables collectively offer a strong explanatory framework for FRQ variations. Thus, the current study not only corroborates existing literature but also extends it by systematically demonstrating the incremental value of ESG disclosures in enhancing financial reporting quality.

CONCLUSION

The study conclusively demonstrates that ESG disclosures significantly enhance the quality of financial reporting for nonfinancial firms listed on the Saudi Stock Exchange. Through robust panel data analysis, it was found that detailed environmental, social, and governance disclosures positively correlate with financial reporting quality, indicating that transparency in these areas boosts financial transparency and reliability. Additionally, variables such as firm size, industry classification, and the presence of Big Four audit firms were also significant, underscoring their importance in influencing financial reporting quality.

The findings suggest that adopting comprehensive ESG reporting standards, engaging stakeholders, investing in sustainability practices, leveraging technology, and regularly updating disclosures are essential strategies for firms to improve financial report quality. Future research should focus on longitudinal studies, cross-sector analyses, the impact of regulatory changes, the integration of new technologies, and comparative studies across regions to deepen the understanding of ESG disclosures' role in financial reporting quality. These insights can guide policymakers, corporate leaders, and stakeholders in enhancing corporate governance standards and fostering a culture of transparency and accountability in Saudi Arabia's nonfinancial sector.

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