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External Assurance of Sustainability Reporting and ESG Performance: Evidence from Saudi Listed Firms

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Abstract

This paper examines the association between external verification of sustainability reports and ESG performance of Saudi-listed firms from the years 2014–2021. With regard to the Saudi stock exchange (Tadawul) dataset consisting of 188 firm-year observations, it is concluded that external sustainability report verification and ESG performance are positively associated. This study constructs the premise that the enhancement of credibility and transparency of sustainability reports in turn fosters stakeholder confidence. This paper documents a positive association between voluntary assurance and ESG performance from an emerging market perspective, which broadens the scope of the ESG literature. This observation particularly justifies the need to endorse more assurance services in support of sustainable development and to strengthen the reporting frameworks and policies. The study results support the objectives of Vision 2030, specifically the pillars of promoting environmental sustainability, corporate transparency, and governance. The evidence aligning national goals to encourage transparency in corporate systems and sustainability in assurance services is the positive relationship between ESG and sustainability reporting assurance. Moreover, the results highlight Saudi Arabia's dedication to the United Nations Sustainable Development Goals, specifically SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action), as they underscore the role of assurance and disclosure practices in fostering sustainable business practices in Saudi Arabia.

Keywords: external assurance; ESG; Saudi Arabia; SDGs 12 and 13

1. Introduction

Sustainability in corporate practices has seen the emergence and steady acceptance of environmental, social, and governance (ESG) metrics. ESG metrics detail a company's measurable progress in environmental concern, social responsibility, and governance. ESG metrics are proving to be important in describing a company's performance regarding sustainability and social responsibility, as well as influencing investors, lending, and the firm's social acceptance to continue operations [1]. When firms analyze corporate ESG performance, they obtain tangible outcomes and socially responsible metrics that reduce firm-level risks, increase valuation, and add to a sustainable competitive edge [2]. Research continues to confirm that strong ESG performance creates positive outcomes that correlate with reduced company-specific risk and favorable financial performance [3,4]. Identifying and understanding ESG metrics will contribute to the positive outcomes of ESG performance.

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There are various sets of theories that show how ESG outcomes are associated with various corporate activities. Stakeholder and legitimacy theories posit that sustainability reporting along with independent attestation satisfies external stakeholders. This, in turn, helps in sustaining organizational legitimacy and helps in converting environmental and social activities into competitive advantages [5,6]. Agency and signaling theories suggest that third-party assurance helps reporting on ESG activities by eliminating undue informational risk and signals true ESG reporting, thus aligning managerial interests with those of the stakeholders [7,8]. Moreover, resource dependence and board-capital perspectives underscored the importance of governance frameworks beyond sustainability-centric committees and the integration of outside counsel to facilitate the deployment of ESG initiatives [9,10]. In addition, some studies suggest that external assurance improves ESG scores and reduces the cost of capital, with some studies reporting the same conclusions [1,2,11–13].

This study makes four distinct and explicit contributions to the ESG assurance literature. First, it focuses on Saudi Arabia as an emerging market context that remains substantially underrepresented in the assurance literature, despite its rapid institutional transformation under Vision 2030 [14]. Second, the sample period of 2014–2021 captures the formative years of Vision 2030 implementation, providing evidence on the association between assurance and ESG during a period of heightened disclosure expectations and regulatory change. Third, the study employs a composite ESG score as the dependent variable, going beyond single-pillar environmental studies and providing a more comprehensive assessment of sustainability performance. Fourth, the study provides empirical evidence from Tadawul-listed firms where assurance adoption is still nascent, making signaling and legitimacy effects more pronounced than in developed markets. These contributions directly extend the closest prior studies: Alwadani et al. [15], who examined assurance and environmental performance in Saudi Arabia, and Tumewang et al. [16], who studied assurance and ESG in emerging market banking institutions. The present study broadens both the outcome variable (composite ESG versus environmental pillar only) and the sample composition (all Tadawul sectors versus banking and finance), offering a more general test of the assurance–ESG association in the Saudi context.

In case assurance is positively yielding ESG outcomes within a clearly defined scope and evaluative criteria, it is possible that the relevant regulatory bodies and stock exchanges would make it a requirement to report on such types of assurance and stress the need to improve the quality of assurance to provide a report greater credibility [17]. For the business community and the institutional investors, the evidence that links high-quality assurance with lower cost of financing and better ESG outcomes would motivate them to invest more with respect to assuring processes and expanding the sustainability competencies at the board level [10,12]. On the contrary, if it is the case that without reforms of the governance structure, assurance will remain ineffective, then the stakeholders would have to lower their expectations and concentrate on the internal practices of ESG and sustainable operations [18].

The structure of this paper is as follows: Section 2 provides a review of the relevant literature and formulates the hypothesis. Section 3 delineates the methodology, detailing the sample selection, data, variable measurement, and the empirical model. Section 4 presents the empirical results of the study. Finally, Section 5 concludes the study.

2. Literature Review and Hypothesis Development

The primary considerations when discussing external assurance's role in improving ESG performance can be explained using various intersecting theories. Freeman [5] and Donaldson and Preston [19] describe stakeholder theory as delineating that businesses will engage in trustworthy disclosures as long as they satisfy divergent stakeholder groups.

That theory is supported by Deegan and Blomquist [20] and Aboud and Diab [21], who describe stakeholder participation in relation to positive reputational and financial outcomes. Alternatively, and more germane, is Legitimacy theory. It asserts that companies want their sustainability reports externally audited in order to justify their position within society [6,22–24]. To enhance organizational legitimacy, especially in light of public and regulatory scrutiny, companies will provide substantive credibility to external parties for their ESG disclosures. With regard to agency and signaling theory, external assurance lessens the gap in knowledge between managers and stakeholders and serves as a sign to stakeholders that the company is committed to sustainability rather than just compliance [7,25,26].

Simnett et al. [8] and Shen et al. [27] showcased the ways stakeholder trust in the reporting of ESG metrics is boosted by the presence of trust assurance mechanisms. Resource dependence theory and board-capital perspectives offer additional evidence, especially ascertaining the credibility of assurance in giving firms external resource gap, legitimacy, and better resource positioning [9,28]. The role of assurance in bolstering internal monitoring and planning systems in relation to sustainability performance in organizations is noted by Boiral and Heras-Saizarbitoria [29] and Hazaea et al. [10]. Theoretical frameworks have also been supported by the rising empirical evidence. In relation to ESG performance, external assurance association has been positively analyzed, through the literature from various institutional and sectoral domains, by Carey et al. [12], Alotaibi and Hussainey [30], Alwadani et al. [15], Tumewang et al. [16], and ElAlfy et al. [31].

There are multiple possible explanations for why external assurance may improve ESG performance from a theoretical perspective. One relevant theory is stakeholder theory. It argues that a company is a part of a web of stakeholder interactions and is dependent on other parties like investors, regulators, customers, and the community for legitimacy, funding, and for the company to continue operating. Therefore, from this theory's perspective, verifiable disclosures on ESG are used as a way to obtain stakeholders' trust and improve accountability of the firm [5,20,21].

Legitimacy theory states that companies use independent social assessments as a form of positive assurance to demonstrate their social cohesion with the expectations of a given society because they wish to avoid losing their social license to operate and control their reputation in highly scrutinized and socially aware environments [6,22–24]. The agency and signaling theories identify the problem of informational imbalances between the management and the stakeholders. Agency theory discusses the circumvention of management, especially with regard to non-compulsory sustainability reporting, due to a lack of constraining mechanisms. Positive external assurance strengthens the agency-theory explanation of sustainability reporting by reducing reporting-related agency costs and managerial slack in ESG activities [7,8,25,27]. In a signaling context, assurance is a costly and uncompromising form of positive assurance that separates the truly committed from the merely symbolic [8,26].

The theory of resource dependence and the board-capital perspective provide a capability-oriented lens for examining the effectiveness of external assurance. Within this framework, assurance is seen as a mechanism facilitating access to relevant external actors and powerful stakeholders. In the ESG context, strong board capital—such as ESG committees and directors with relevant expertise—can facilitate the initiation of external assurance and the implementation of operational improvements based on assurance recommendations [9,10,28,29]. These perspectives suggest that external assurance improves the legitimacy and the practicality of implementing ESG strategies, to the extent that the assurance is of high quality and not to the extent that the assurance is purely ceremonial.

The framework is guided by a strong empirical foundation. Initial research in the field showed a positive relationship between corporate social responsibility (CSR) and a

company's financial performance, forming the basis of subsequent studies [4,11]. More recent extensive reviews and meta-analyses have confirmed previous research findings. An example would be Friede et al. [1], who reviewed and analyzed 2000 studies and found that the performance of ESG and financial performance is often positively related, or at least not negatively related. Enhanced and/or improved reputation, risk, and operational efficiency, among other factors, are often cited in conjunction with these studies [1,2,32]. Several authors investigating market and investor reactions have found that the most prominent ESG ratings, the most thorough and the most standardized related disclosures, and in some cases, the highest valued or the least expensive capitalized firms, became positive, almost to the point of being guaranteed, when ESG ratings improved, and more extensive and standardized disclosures were made [8,12,17,27]. Gipper et al. [13] documented a steady increase in the practice of providing assurance among S&P 500 companies, which is positively correlated with improvements in ESG ratings. Zhou et al. [33] stressed the importance of third-party verification in fostering organizational learning and innovation, subsequently enhancing ESG results through building internal capabilities.

Nonetheless, the added value of external assurance seems to depend on muted circumstances. With respect to areas with developed reporting systems, several studies of high methodological quality have pointed to a lack of positive association. For example, Khatri and Kjærland [34] noted that even though adoption of Global Reporting Initiative (GRI) standards is linked to improved environmental performance of Nordic firms, external environmental assurance in and of itself does not have any positive statistically significant outcome, thereby indicating that there could be a saturation point in a highly regulated or mature disclosure climate. In the same vein, Michelon et al. [18] indicated that external assurance could be accompanied by symbolic assurance and result in only marginal improvements in the quality of disclosure. Such concerns have been substantiated through qualitative studies. Boiral [35] and Cho et al. [36] have documented "talk versus walk" gaps in GRI reports whereby there is a lack of alignment between espoused and enacted sustainability outcomes. External assurance cannot replace sincere managerial engagement or active incorporation of ESG factors into the business model. More and more studies have reported the disparity in the association of external assurance with ESG factors.

In Saudi Arabia, the Saudi Exchange [37], in conjunction with the launch of Saudi Vision 2030, fostered the first steps toward increased disclosure and accountability to ESG [14,38]. A positive relationship between ESG and firm performance for companies listed on the Saudi stock exchange has been documented in the most recent studies [39,40]. Additionally, among the studies reviewed, the quality of governance appears to be the most significant moderating component of the extent of disclosure of ESG factors and the attainment of the corresponding positive performance outcome [30,38,41]. Overall, the Saudi Arabian context suggests that the most effective assurance occurs when coupled with substantial governance reform and institutional change. Perhaps most interesting is new data from Saudi Arabia that indicates external assurance is positively correlated with improved environmental performance. Alwadani et al. [15] found that, among listed companies in Saudi Arabia, the presence of assured sustainability reports, and particularly the presence of sustainability committees at the board level, positively correlated with environmental performance. These studies provide empirical evidence that assurance is most effective when coupled with sufficient governance so that companies can improve their internal processes through the operational efficiencies that come from verified disclosure. This is the case, as Tumewang et al. [16] note similar emerging market financial institutions trends, with particularly strong associations among Islamic banks, supporting the stewardship-oriented principles of Saudi Arabia's Sharia and corporate moral integration.

While some promising developments can be noted, the Saudi corporate sector continues to show inconsistency with the application of assurance practices. Small- and medium-sized enterprises (SMEs) show unawareness regarding the environmental, social and governance (ESG) factors and have low levels of adoption towards assurance [42]. When compared to large multinational corporations, the application of third-party assurance is, still to some extent, lacking within Saudi Arabia. To be sure, recent developments including new ESG-disclosure requirements from Tadawul, soft-regulatory nudges, and increasing stakeholder pressure have begun to transform the incentive structure in a positive manner [14,38]. With these factors in mind, it can be concluded that the Saudi market is in a developing stage. In such circumstances, the first users of external assurance, especially those who combine it with good governance practices, will have a good reputation and signaling. In time, with the changing of institutional context, assurance will be of more strategic value in a substantive context as opposed to in an adaptive context. There is an inconsistency with the amount of rigor, in both the methodological and substantive context, across various studies focused on ESG assurance. Regardless of this inconsistency, there is a sense of optimism.

External assurance is most typically correlated with the maintenance or enhancement of ESG performance and the enhancement of the quality of disclosures, especially when the assurance is thorough, the governance framework is strong, and the institutional framework aligns with the support of sustainable reporting [1,13,15]. The association of assurance is significant in specific emerging economies and among legitimacy-challenged firms, such as enhancement of stakeholder confidence, value attribution to the firm, and facilitation of internal management [16,33]. However, assurance is not without challenges. In the case of Nordic economies, where there is stringent regulation and developed disclosure systems, rather modest or almost no additional association has been noted, especially for firms with well-advanced ESG credentials or when the assurance is of narrow scope [34]. The potential assurance paradox is that the assurance risk is limited to superficial, checklist compliance, or where the internal governance system lacks the capacity to address the gaps identified through the assurance process [18,29]. Based on the synthesis of the existing literature, the following hypothesis is developed:

H1. *Ceteris paribus, a positive correlation exists between sustainable reporting external assurance and ESG performance.*

3. Methodology

3.1. Sample Selection and Data

The empirical study analyzes company-level datasets from Thomson One Banker covering Saudi Stock Exchange firms from 2014 to 2021. Key study variables were obtained from the Eikon Database. To enhance data accuracy, the author eliminated observations that were deficient on corporate governance or were missing financial data, resulting in a panel that is unbalanced comprising 188 firm-year observations spread across ten industry sectors: telecommunications (18), healthcare (5), financials (67), real estate (10), consumer discretionary (4), consumer staples (14), industrials (12), basic materials (45), energy (5), and utilities (8). The data is distributed annually as follows: 2014 (6), 2015 (14), 2016 (14), 2017 (16), 2018 (34), 2019 (36), 2020 (41), and 2021 (27). The sample construction proceeded as follows: the initial universe comprised all firms listed on Tadawul with at least one year of ESG data available from the Eikon database during 2014–2021. Observations were excluded due to missing corporate governance data or incomplete financial data, with listwise deletion applied at the regression stage. The resulting panel is unbalanced, reflecting the gradual expansion of ESG data coverage on Tadawul over the sample period,

consistent with the institutional development of sustainability reporting under Vision 2030. Variables such as BODMEET (N = 128) and FSIZ (N = 135) have lower usable counts than the headline 188, and the exact estimation sample for each regression is noted in the respective table footnotes. The sector distribution demonstrates broad cross-industry representation, with financials and basic materials constituting the largest groups, consistent with Tadawul's sectoral composition during the study period (The sample period concludes in 2021 for several interconnected reasons. First, sustainability reports are typically published 12 to 18 months after the close of the fiscal year, meaning that verified and complete ESG disclosures for fiscal year 2021 were not available in the Refinitiv Eikon database until late 2022 or early 2023. Second, the processing and quality-control of ESG data for emerging market firms—including those listed on Tadawul—by commercial data providers involves additional verification lags beyond the report publication date. Third, 2021 represents the most recent year for which complete and sufficiently populated data was available across all key variables at the time of data collection for this study. This lag between the reporting period and data availability is consistent with prior ESG studies using Refinitiv Eikon data from emerging markets [39], and does not diminish the relevance of the findings given that the sample window captures the full formative period of Vision 2030 implementation (2016–2021)), during which the most significant institutional transformation of ESG disclosure expectations on Tadawul occurred.

3.2. Measurement of Variables

The dependent variable for the study is environmental, social, and governance (ESG) performance, which is extensively recognized in the existing studies as a valid measure for assessing the corporate sustainability efforts of firms [1,12,13,15,16,33,40]. The principal variable of interest is sustainability reporting assurance (EXTRASSU), considered a vital instrument of governance and disclosure. The Refinitiv Eikon ESG score is a composite measure derived from publicly disclosed company data covering over 400 individual metrics organized into three pillars: Environmental (resource use, emissions, innovation), Social (workforce, human rights, community, product responsibility), and Governance (management, shareholders, CSR strategy). The score ranges from 0 to 100, with higher values reflecting stronger sustainability performance, and captures both actual performance and disclosure quality—making it a hybrid construct. It is acknowledged that if the Refinitiv methodology incorporates assured reports within its disclosure indicators, the estimated EXTRASSU coefficient may partly reflect a mechanical scoring component. This limitation is shared by all studies employing vendor-based composite ESG scores [12,15,16] and is noted as a caveat of the current design.

Recurrent studies have emphasized the importance of fostering transparency, building environmental accountability, and cultivating the trust of stakeholders [15,43–46]. For empirical research, the EXTRASSU is constructed as a dichotomous variable where the value is 1 if the external assurance of sustainability reporting exists, and 0 otherwise. This variable is a fundamental part of the theoretical framework that sustains the hypothesis concerning the positive association of external assurance on ESG performance.

Various studies have established a positive correlation between firm-level control variables, particularly corporate governance and the structure of the board, and the environmental, social, and governance (ESG) performance [15,44,46]. Board size (BODSIZE) measures the number of members on a board. Board independence (BODINDEP) is the ratio of independent directors to the total number of directors on the board. The quantity of board meetings (BODMEET) was calculated as the total number of meetings conducted within a year. Besides the governance factors, this research also analyzes some relevant firm-specific variables. These encompass firm size (FSIZ), quantified by the natural log

of total assets; performance (ROA), quantified via return on assets; and leverage (LEV), described as the total debt and total assets ratio.

3.3. Empirical Model

The relationship between sustainable external reporting assurance and ESG is analyzed using the Pooled Ordinary Least Squares (POLS) regression method. The multiple regression model is used as the principal instrument for hypothesis testing because it is best suited for examining the relationship of many independent variables to one dependent variable. It is acknowledged that pooled OLS does not control for unobserved time-invariant firm characteristics. However, given that EXTRASSU has very limited within-firm variation over time—most firms either never adopt assurance or adopt it only once during the sample period—firm fixed effects would absorb the identifying variation entirely, rendering the estimator unreliable [47]. Pooled OLS therefore remains the most appropriate estimator for this dataset. It is further acknowledged that voluntary assurance adoption is non-random and that self-selection and reverse causality are inherent limitations of the observational design, discussed further in the limitations section. If reverse causality operates—that is, if firms with stronger pre-existing ESG systems are more likely to seek external assurance—the OLS coefficient on EXTRASSU would be upward biased, meaning the reported estimate of 21.590 likely overstates the true assurance–ESG association. The causal effect of assurance on ESG, if it exists, may therefore be smaller than reported; however, an upward bias does not reverse the sign of the coefficient, and it is unlikely that the true association is zero or negative given the strength and consistency of the result across all three specifications. Furthermore, with approximately 11 assured firm-year observations, individual observations carry high leverage potential. A single influential observation could materially alter the estimated coefficient, and formal influence diagnostics (Cook's distance, leave-one-out analysis) are recommended as specific extensions in future studies when larger assurance-adopting samples become available in the Saudi market. The empirical model is represented mathematically as follows:

$$ESG = \beta + \beta 3\ EXTRASSU + \beta 4\ BODSIZE + \beta 5\ BODMEET + \beta 6\ BODINDEP + \beta 7\ FSIZ + \beta 8\ LEV + \beta 9\ ROA + € \quad (1)$$

where:

ESG	Environmental, Social, and Governance
EXTRASSU	Indicator variable equal to 1 if the sustainability report is externally assured; 0 otherwise.
BODSIZE	Total number of directors on the board.
BODMEET	Number of board meetings held during the year.
BODINDEP	Proportion of independent directors on the board.
FSIZ	Natural logarithm of total assets.
LEV	Leverage ratio, measured as total debt divided by total assets.
ROA	Return on assets, measured as net income divided by total assets.

4. Empirical Results

4.1. Descriptive Statistics and Correlations Analysis

Table 1 presents the summary statistics for the sample (N = 188 unless otherwise specified). The mean environmental, social, and governance (ESG) score is 17.558, with a standard deviation of 23.044, and it ranges from a minimum of 0.00 to a maximum of 84.79. External assurance (EXTRASSU) is represented as a binary variable, exhibiting a mean of 0.06 (SD = 0.245) and a range from 0 to 1. This mean corresponds to approximately 11 assured firm-year observations out of 188, reflecting the nascent stage of assurance adoption in Saudi Arabia. The detection of a statistically significant association despite this

small treated group further supports the robustness of the finding. Readers should note, however, that results may be sensitive to influential observations within this small group, and replication with larger samples is recommended as adoption expands. The mean board size (BODSIZE) was 9.973, with a standard deviation of 2.717, and varied from 1.00 to 25.00.

Table 1. Descriptive statistics.

Variable	No.	Mean	SD	Min.	Max.
ESG	188	17.5580	23.04397	0.00	84.79
EXTRASSU	188	0.06	0.245	0	1
BODSIZE	188	9.9734	2.71741	1.00	25.00
BODMEET	128	6.1016	2.14013	2.00	15.00
BODINDEP	188	0.4259	0.12576	0.09	0.80
FSIZ	135	9.9200	0.72676	8.46	12.18
LEV	188	0.5956	0.65025	0.00	3.90
ROA	188	0.0487	0.07621	−0.14	0.38

Table 1 depicts that the average number of board meetings (BODMEET; N = 128) was 6.102, with a standard deviation of 2.140 and a range from 2.00 to 15.00. The mean board independence (BODINDEP) was 0.426, with a standard deviation of 0.126, and varied between 0.09 and 0.80. The average log-size of firm size (FSIZ) was 9.920, with a standard deviation of 0.727, spanning from 8.46 to 12.18. Leverage (LEV) has an average of 0.596, a standard deviation of 0.650, and ranges from 0.00 to 3.90. The return on assets (ROA) averages 0.0487, with a standard deviation of 0.0762, and values ranging from −0.14 to 0.38.

Table 2 displays the Pearson correlation matrix, which elucidates the interrelationships among all variables in the study. According to Tabachnick and Fidell [48], multicollinearity becomes a concern when the correlation between any two independent variables reaches 0.90 or higher. As shown in Table 2, none of the variables exhibited correlations approaching this threshold. The most pronounced correlation was observed between firm size and external assurance at 0.374, which remained significantly below the multicollinearity threshold. These results indicate that the variables within the model do not exhibit multicollinearity, ruling out severe linear dependence among the regressors—a necessary but not sufficient condition for overall model adequacy.

Table 2. Correlation matrix.

Variable	1	2	3	4	5	6	7
1. EXTRASSU	**1**						
2. BODSIZE	**−0.013**	**1**					
3. BODMEET	**−0.047**	**0.028**	**1**				
4. BODINDEP	−0.263	**0.062**	**−0.078**	**1**			
5. FSIZ	0.374	**0.010**	0.282	−0.300	**1**		
6. LEV	**0.138**	**−0.140**	**0.051**	**−0.031**	**0.120**	**1**	
7. ROA	**−0.021**	**−0.070**	−0.237	**−0.001**	***0.183***	−0.296	**1**

4.2. Hypothesis Testing

This section delineates the empirical results derived from the pooled OLS regression analysis, wherein the dependent variable is continuously measured, and the hypothesized variable is sustainable external assurance, as shown in Table 3.

Table 3. Sustainable reporting external assurance and ESG.

Variable	Expected Sign	Coef.	t	$p > t$	Tolerance	VIF
Constant		−69.749	−2.543	0.013		
Hypothesized variable						
EXTRASSU	+	21.590	2.819	0.006	0.888	1.127
Control variables						
BODSIZE		−0.518	−0.785	0.435	0.951	1.051
BODMEET		0.202	0.245	0.807	0.774	1.291
BODINDEP		−9.821	−0.622	0.536	0.855	1.170
FSIZ		11.396	4.109	0.000	0.682	1.466
LEV		−1.866	−0.663	0.509	0.726	1.378
ROA		−16.958	−0.620	0.537	0.648	1.543

Adjusted R^2 = 0.284, F-stat = 5.748, p = 0.000.

In Table 3, we examine the results from the regression analysis of the association of external sustainability assurance on ESG performance. The model exhibits a statistically significant result (F = 5.748, $p < 0.001$) and an Adjusted R^2 of 0.284, suggesting that the model explains 28.4% of the variability of ESG performance. The analysis of the VIF/Tolerance values suggests that there is no multicollinearity, ruling out severe linear dependence among regressors. The hypothesized variable, external assurance (EXTRASSU), is positive and statistically significant (β = 21.590, t = 2.819, p = 0.006), which suggests that firms with independent assurance on their sustainability reports are associated with higher ESG performance than those without such assurance. In terms of economic magnitude, the coefficient of 21.590 translates to approximately 0.94 standard deviations of ESG performance (21.590/23.044), a substantial relationship that is theoretically consistent with the low baseline ESG scores of non-assured firms and with assurance serving as a powerful signaling mechanism in a context where its adoption is rare [8,26]. Nonetheless, this magnitude should be interpreted with caution given the small treated group. Readers should also note the potential measurement overlap between EXTRASSU and the ESG dependent variable. If Refinitiv's ESG scoring methodology partially rewards the existence of an assured sustainability report as a disclosure-quality indicator, the estimated coefficient mechanically captures both (a) the substantive effect of assurance on underlying sustainability practices, and (b) an algorithmic disclosure reward. The reported coefficient of 21.590 may therefore be partially inflated, and the true substantive assurance effect on actual ESG practices is likely smaller than reported. Future studies using assurance-neutral ESG measures—such as independently constructed environmental performance metrics, carbon emissions data, or workforce indicators—would provide a cleaner test of the substantive assurance effect.

High-quality verified ESG disclosures do, indeed, provide transparency and build stakeholder trust, leading companies to bolster their sustainability actions [5,20]. Moreover, demonstrating societal responsibility via external assurance is also legitimated in emergent contexts, wherein stakeholders care about ESG [6,24]. Also, from the agency and signaling perspective, external assurance lessens asymmetry and signals higher-tier ESG, hence attracting investors and reducing the perceived risk [8,27]. With regard to the data from

the Gulf and emerging economies, the numerous positive coefficients can be justified, given that assurance is linked with better ESG results. Tumewang et al. [16] document that external assurance is positively associated with ESG performance among developing country banks, and Alwadani et al. [15] similarly found Saudi-listed firms. Such assurance is associated with increased credibility and positive changes in ESG systems. The present outcome closely fits this trend and strengthens the idea that in Saudi Arabia—where the level of maturity of ESG reporting is still developing—assurance has an actual value as opposed to a mere token value.

Among the control variables, firm size (FSIZ) has the maximum positive association with ESG performance ($\beta = 11.396$, $t = 4.109$, $p < 0.001$). Larger companies have more resources, higher visibility, and more stakeholder pressure, and all contribute to better ESG performance. This supports the literature globally, where larger firms disclose more and perform higher on ESG due to being institutionally more scrutinized [1,4]. Boshnak [49] and Ali et al. [40] on Saudi Arabia have shown that larger firms tend to disclose more on ESG and perform better on the sustainability spectrum, which supports this finding. Other governance variables, such as board size, board meetings, and board independence, have not shown any statistical significance, despite the fact that they have shown possible expected outcomes.

Lack of association is consistent with Saudi Arabian governance frameworks that are still nascent and may not yet be systematically associated with sustainability outcomes [30,39]. Likewise, leverage and ROA predict ESG performance, and lack of association is consistent with the previous literature regarding the financial determinants (or lack thereof) of ESG engagement, which presents mixed results [50–52]. The results strongly substantiate the hypothesis of the study: external sustainability assurance is positively associated with ESG performance in Saudi firms. The evidence is consistent with the prediction and the global and regional literature, and supports the presumption that assurance is associated with increased credibility, lower information asymmetry, improved legitimacy and support for real change in sustainability initiatives.

4.3. Additional Robustness Tests

4.3.1. Sensitivity Analysis with COVID-19 Control

Given the potential disruptions the pandemic may have caused for the relationship between external sustainability assurance and ESG performance, the COVID-19 period is included as a control variable in Table 4. As in the previous models, EXTRASSU remains positive and significant ($t = 2.605$, $p = 0.011$), showing that firms with sustainability-assured reports still demonstrate higher ESG performance, even in the context of the disruptions caused by the COVID-19 pandemic. This outcome is consistent with stakeholder, legitimacy, and signaling theories, where the value placed on sustainability assurance was heightened due to the COVID-19 pandemic's unprecedented disruptions.

Of the control variables, firm size (FSIZ) remains highly significant and positive ($p < 0.001$), suggesting that larger firms are better at scoring on ESG, possibly due to more resources and embedded sustainability governance, in line with prior studies in the region [15,39]. Other governance and financial controls (board size, board meetings, independence, leverage, and ROA) were statistically insignificant and corroborated the baseline model, again demonstrating that external assurance and not internal governance mechanisms are the strongest positive correlate of ESG performance.

Table 4. Sustainable reporting external assurance and ESG with COVID-19 control.

Variable	Expected Sign	Coef.	t	$p > t$	Tolerance	VIF
Constant		−80.006	−2.792	0.007		
EXTRASSU	+	20.137	2.605	0.011	0.866	1.155
BODSIZE		−0.483	−0.733	0.466	0.950	1.053
BODMEET		0.146	0.177	0.860	0.772	1.296
BODINDEP		−8.841	−0.561	0.577	0.852	1.173
FSIZ		12.083	4.279	0.000	0.654	1.528
LEV		−0.830	−0.283	0.778	0.663	1.508
ROA		−18.422	−0.675	0.502	0.647	1.546
COVID-19		4.472	1.202	0.233	0.832	1.203

Adjusted R^2 0.288, F-stat 5.240, *p*-value 0.000.

The dummy variable associated with COVID-19 is positive but not significant (p = 0.233), which indicates that there were no appreciable changes in firms' ESG performance relative to the COVID-19 pandemic during the observed period. Such a finding is in line with the emerging global literature indicating that firms with strong ESG practices before the pandemic appeared to preserve or even improve their ESG practices during the pandemic, while the pandemic did not seem to be directly associated with ESG scores. The adjusted R-square value being the same (Adjusted R^2 = 0.288), and the multicollinearity diagnostics (VIF values < 1.55) indicating that COVID-19 still maintains the absence of collinearity, all contribute to confirming the robustness of the model. Taken together, the COVID-19 sensitivity analysis does bolster the author's confidence in stating that external sustainability assurance remains a steadfast predictor of ESG performance, even in the face of major global disruptions.

4.3.2. Sensitivity Analysis with Alternative Dependent Variable (Environmental Pillars)

Table 5 provides a further robustness check by using the environmental pillar score as a dependent variable in an effort to determine the association of external sustainability assurance with the environment as opposed to general ESG outcomes. The results are in line with the most important conclusion of the study: external sustainability assurance is again positive and significant (t = 2.863, p = 0.005), which means that assured reports are linked to better environmental outcomes. This supports the stakeholder, legitimacy, and signaling theories, which posit that the presence of a third party increases the credibility of environmental claims and encourages firms to make better environmental choices. It also supports empirical studies in developing countries like Alwadani et al. [15] and Tumewang et al. [16], which show that assurance is linked to better environmental outcomes. Firm Size (FSIZ) also continued to show a strong association with environmental outcomes (p < 0.001). Larger firms are more likely to have sufficient resources, know-how, and governance to undertake more aggressive environmental actions, as predicted by resource dependence and board capital theory. Such a trend confirms prior findings in Saudi Arabia and the MENA region, where, due to their size and visibility, larger companies outperform all others on sustainability metrics [39].

The negative value reflected by board independence (BODINDEP) is also noted (p = 0.044). Similar findings have been documented in Saudi research where the role of independent directors is conducting a financial review, and if there are no dedicated sustainability committees, they will not consider the environment. A lack of attention to the environment is consistent in the most recent research from Saudi Arabia, where the

independent directors are perceived to lack the necessary expertise in ESG, which was reflected in board decisions by Alwadani et al. [15]. Board size, board meetings, leverage, and ROA, which are all other governance and financial variables, appear not to influence the environment in Saudi Arabia since their results are not significant, which indicates to us that more than standard governance practices are necessary to improve the environment in Saudi Arabia. Rather, it appears that the more important mechanisms are those that reinforce the credibility of the reports, such as external assurance. A more sophisticated model than the ESG baseline model, which is reflected in the adjusted R-square value of 0.457, better explains the variability of the dependent value of the environment, especially external assurance and firm size, than the other predictors of the general ESG scores. The model is valid as indicated by the F-stat (11.095, $p < 0.001$), and all of the VIF results are not a cause for concern regarding multicollinearity. More specifically, the robustness test substantiates the initial viewpoint wherein external sustainability assurance is positively associated with environmental performance, emphasizing the need for reliable and verified sustainability disclosures within the Saudi market.

Table 5. Sustainable reporting external assurance and environmental pillars.

Variable	Expected sign	Coef.	t	$p > t$	Tolerance	VIF
Constant		−117.600	−4.127	0.000		
EXTRASSU	+	22.777	2.863	0.005	0.888	1.127
BODSIZE		0.267	0.390	0.698	0.951	1.051
BODMEET		0.116	0.136	0.892	0.774	1.291
BODINDEP		−33.626	−2.050	0.044	0.855	1.170
FSIZ		14.576	5.059	0.000	0.682	1.466
LEV		3.026	1.035	0.304	0.726	1.378
ROA		27.419	0.965	0.337	0.648	1.543

Adjusted R^2 0.457, F-stat 11.095, *p*-value 0.000.

5. Conclusions

This research aims to determine whether external sustainability assurance is positively associated with environmental, social, and governance (ESG) performance of firms within the Saudi Stock Exchange (Tadawul). Examining 188 firm-year observations for the period 2014 to 2021, this study demonstrates that external assurance does exhibit a positive and significant conditional association with ESG performance. This relationship remains robust, as firms with independent review of their sustainability reports score better on ESG, suggesting that the credibility and transparency of sustainability reports is associated with greater corporate sustainability. These results are particularly valuable for the contingent stakeholder theory.

In practical terms, these insights highlight the importance of obtaining independent sustainability assurance strategically. For companies, such assurance is associated with greater transparency, stronger stakeholder confidence, and potentially better access to financing in sustainability-focused markets with credible ESG claims. For the advocates and supporters of the gradual incorporation of incentivized or voluntary third-party assurance, the analysis offers suggestive evidence consistent with the view that policies encouraging assurance adoption may support improvements in ESG performance, especially in the context of Saudi Arabia moving towards the Vision 2030 sustainability goals. Given the observational nature of this study, these implications are presented as suggestive rather than prescriptive; stronger causal evidence would be required before definitive policy

mandates could be recommended. From an investor perspective, assurance signals to investors and ESG information the assured governance of ESG, thus aiding in investment screening and portfolio construction. The findings of this study support the Vision 2030 goals of enhancing transparency, accountability, and sustainable business practices. The positive association between assurance and ESG performance is consistent with companies being better positioned to actively support SDG 12 and 13, which advocate for responsible production and climate action, in addition to supporting the sustainability transition of the country in its economically resilient position.

While this study provides valuable insights, these contribute a set of limitations that demand attention. To begin with, the evaluation of the ESG performance is based on secondary data sources which, in respect of depth of measurement and standardization, can be quite disparate. Also, the study spans several years, yet entirely focuses on firms that are listed on the stock exchange, thus closing itself off to possible insights that lie in SMEs or firms that are not listed. In addition, the emphasis in the analysis on the existence of external assurance, rather than on the qualitative dimensions (e.g., type of assurance provider, assurance scope and level) that may have some bearing on the analysis, is yet another limitation of this study.

The gaps, especially with respect to the analysis of the presence of assurance that describe longitudinal causal models such as difference-in-differences or instrumental variable analysis, can be improved in future studies. Researchers are encouraged to examine the association of provider type, assurance standards, and scope on ESG performance, as well as to include SMEs, family businesses, and state-owned enterprises in order to fully understand the situation regarding sustainability in Saudi Arabia. Furthermore, studies of this nature in the region would be valuable in understanding the differences in institutions within the region that influence the adoption of sustainability assurance. Several core methodological limitations of this study warrant explicit acknowledgment. First, the binary EXTRASSU measure cannot capture heterogeneity in assurance quality, provider type (Big 4 versus non-Big 4), or assurance scope. Second, a potential measurement overlap exists between the ESG dependent variable and EXTRASSU: if Refinitiv's ESG methodology incorporates assured disclosure as a scoring input, the estimated coefficient may partly reflect a mechanical rather than substantive relationship. Third, voluntary assurance adoption is non-random, and self-selection may confound the estimated association despite the inclusion of observable controls. Fourth, the pooled OLS design cannot fully account for unobserved time-invariant firm heterogeneity, and the observational nature of the study precludes causal inference. Fifth, the economic magnitude of the assurance coefficient (β = 21.59, approximately 0.94 standard deviations of ESG) is substantial and should be interpreted with caution given the approximately 11 assured firm-year observations; this association may moderate under stricter controls in future studies. Finally, listwise deletion was applied due to missing data for BODMEET (N = 128) and FSIZ (N = 135); the missingness pattern is attributed to Eikon data-coverage expansion over the sample period rather than systematic selection bias.

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