

Article

The Role of Ethical Leadership in Enhancing Environmental, Social, and Governance (ESG) Disclosure: A Pathway Toward Sustainable Corporate Accountability

Sara Mustafa Alatta Mohamed ^{1,*}  and Yosra Azhari Elamin Elboukhari ² 

¹ Department of Management, College of Business Administration—Hawtat Bani Tamim, Prince Sattam Bin Abdulaziz University, Al-Kharj 16278, Saudi Arabia

² Department of Accounting, College of Business Administration—Hawtat Bani Tamim, Prince Sattam Bin Abdulaziz University, Al-Kharj 16278, Saudi Arabia; y.elboukhari@psau.edu.sa

* Correspondence: sar.mohamed@psau.edu.sa

Abstract

Growing regulatory, investor, and societal pressures have heightened the importance of environmental, social, and governance (ESG) disclosure as a key mechanism for corporate transparency and accountability, particularly in emerging markets. This study examines the relationship between ethical leadership and ESG disclosure among publicly listed companies in Saudi Arabia within the context of the Vision 2030 reforms. Drawing on ethical leadership theory and stakeholder theory, ethical leadership is conceptualized as an internal behavioral governance mechanism shaping firms' sustainability reporting practices. The empirical analysis is based on panel data of 147 non-financial firms listed on the Saudi Stock Exchange (Tadawul) from 2020 to 2024, yielding 735 firm-year observations. ESG disclosure was measured using Refinitiv ESG scores, whereas ethical leadership was captured using the CSRHub Ethical Leadership Index. Employing a random-effects panel regression model with firm-level clustered robust standard errors, the results reveal a positive and statistically significant association between ethical leadership and ESG disclosure. These findings indicate that leadership ethics play an important role in enhancing transparency and accountability in sustainability reporting, and offer relevant implications for corporate governance and ESG policy development in Saudi Arabia.

Keywords: ethical leadership; ESG disclosure; corporate governance; sustainability reporting; emerging markets



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1. Introduction

In the modern business world, organizations are judged not only by their monetary accomplishments but also by their environmental performance, social accountability, and integrity in their governance [1]. Growing global pressures, such as climate change, environmental degradation, social injustices, and rampant corporate scandals, have placed pressure on stakeholders and refocused on corporate responsibility [2]. This has witnessed the emergence of ESG disclosure as one of the pillars of current day corporate reporting, an imperative apparatus in which companies articulate their non-financial impacts, ethical associations, and governmental activities [3]. ESG provides methodical information regarding the environmental component (e.g., carbon emissions, energy consumption, resource consumption), social components (e.g., labor policies, human rights, diversity, community involvement), and governance components (e.g., board supervision, executive

responsibility, anti-corruption efforts) [4]. Following the concept of traditional financial reporting, which is to a great extent a mirror image of short-run economic performance, ESG disclosure is a manifestation of the long-term risk and opportunity required to generate sustainable value, stakeholder confidence, and organizational legitimacy [5].

Despite its growing prominence, ESG disclosure remains uneven across firms and countries, in terms of both extent and quality [1]. While some corporations adopt coherent and standardized sustainability reporting in line with international frameworks, others engage in fragmented, selective, or symbolic disclosure practices that emphasize reputational signaling rather than substantive ESG performance [3]. This heterogeneity has raised persistent concerns regarding the credibility, comparability, and decision usefulness of ESG information, particularly in emerging markets where regulatory enforcement is uneven and institutional frameworks are still evolving [6]. Although prior studies largely attribute these inconsistencies to weak regulations and institutional constraints, such explanations remain incomplete, because firms operating under similar regulatory conditions often exhibit markedly different ESG disclosure outcomes. Critics further argue that, in the absence of strong internal governance, ESG disclosure may become performative, leading to greenwashing or selective disclosure of favorable information. Poor quality ESG disclosure exacerbates information asymmetry between firms and stakeholders, undermines market efficiency, and limits investors, regulators, and society's ability to accurately assess sustainability-related risks [7]. Consequently, recent research has increasingly emphasized the need to examine internal organizational and behavioral governance mechanisms that distinguish substantive ESG disclosure from symbolic compliance.

An emerging body of literature suggests that structural and regulatory factors alone do not fully explain ESG disclosure [8]. Although previous research has focused on the roles of firm size, profitability, ownership structure, and regulatory pressure, these factors provide incomplete explanations of observed disclosure patterns. According to an emerging body of literature, structural or regulatory factors alone do not fully explain ESG disclosure [9]. There has been more focus on the determinants of behavior and leadership-related factors that influence organizational values, decision making, and ethical guidelines [2]. Ethical leadership is also one of these determinants, and has become a potentially influential internal governance mechanism that can impact transparency and sustainability practices in corporations. Ethical leadership is generally described as leaders' ability to show integrity, fairness, accountability, and concern about stakeholders and to promote ethical behavior in organizations through active encouragement [10]. These leaders are not rule followers; they are ethical leaders who instill ethical values in corporate strategies, performance evaluation systems, and organizational culture [11]. In this sense, it can be argued that ESG disclosure embodies external compliance pressures, as well as the ethical orientation and moral priorities of individuals in the top management of the organization [10].

In theory, ethical leadership should result in ESG disclosure by promoting an ethical climate that values transparency, honesty, and accountability over the long term. Most ethical leaders would consider ESG disclosure a moral obligation and not regulatory compliance or corporate image practice [12]. They can weaken the motives to act in opportunistic ways to selectively disclose or manipulate sustainability information by ensuring that their attention is based on stakeholder accountability and welfare. Moreover, these leaders may foster a feeling of psychological safety among organizations, thus making managers and employees report ESG data without manipulating performance indicators when the results are below the threshold level [13]. However, within the bounds of the most convincing theoretical explanations, empirical data on the relationship between ethical leadership and ESG disclosure are unclear [10]. Although there is evidence of a positive relationship in most studies conducted in developed economies, evidence in

emerging markets is inconsistent, with some studies showing weak/statistically irrelevant impacts, which can be explained by the presence of institutional voids, a focalized system of ownership, or a lack of enforcement mechanisms [14]. These contradictions indicate that the effectiveness of ethical leadership in facilitating ESG disclosure depends on contextual issues, and is not sufficiently reflected in current empirical practices.

The effects of ethical leadership on ESG disclosure in emerging economies undergoing rapid regulatory and institutional changes remain unclear, with Saudi Arabia serving as a particularly relevant case. The Kingdom is in the midst of an extensive reform agenda under Vision 2030, which explicitly emphasizes enhancing corporate governance quality, strengthening social responsibility systems, and improving the transparency of corporate sustainability disclosures as key mechanisms for aligning local enterprises with global sustainability standards [15]. These policy objectives position ESG disclosure as an integral component of Saudi Arabia's broader strategy to promote sustainable growth, economic diversification, and long-term investment. Consequently, capital markets and regulators have increasingly encouraged Saudi-listed firms to adopt internationally recognized ESG disclosure practices to enhance transparency and accountability [9]. At the same time, the cultural and institutional environment of Saudi Arabia is characterized by concentrated ownership structures, evolving governance systems, and ethical foundations rooted in Islamic principles of trustworthiness, fairness, and responsibility [16]. Despite these distinctive institutional features and policy-driven incentives, the empirical literature on ESG disclosure in the Saudi context remains limited, and studies that explicitly incorporate ethical leadership within their analytical frameworks are even scarcer [17]. As a result, there is insufficient empirical evidence to determine whether ethical leadership exerts a significant and consistent influence on ESG disclosure, or whether its potential impact is constrained by prevailing institutional and structural factors.

In line with this, a distinct and multifaceted gap in research is apparent based on the existing literature. Although ethical leadership has been widely examined in the organizational behavior and corporate social responsibility literature [18,19], empirical studies that conceptualize ethical leadership as a primary governance-based explanatory factor for ESG disclosure remain limited. Existing ESG-focused research has largely emphasized structural governance mechanisms, firm characteristics, or regulatory pressure, which is typically incorporated as a secondary, mediating, or context-dependent variable rather than a core determinant of ESG transparency, particularly in emerging market settings, where the available evidence is scant and fragmented, which restricts the generalizability of mainstream leadership-ESG models that are primarily based on advanced economies [14,20]. Second, the current empirical evidence sets inconsistent and inconclusive results regarding the connection between ethical leadership and ESG disclosure, and contributes to a lack of theoretical clarity and restricts generalizability. Although some studies find a positive and significant correlation and indicate improved transparency and sustainability reporting with ethical leadership [11,13], others indicate weak, situation-specific, or statistically insignificant effects [21,22]. Such discrepancies are especially acute in the context of divergent institutional frames, measurement methods, and empirical design [23]. In some emerging markets, the influence of ethical leadership is constrained by concentrated ownership structures, weak regulatory enforcement, and pervasive structural control, thereby attenuating its observable impact on ESG disclosure [17]. In addition, differences in the operationalization of ethical leadership and ESG disclosure between perceptual surveys and firm-prepared disclosures have led to different empirical results [13]. Such mixed outcomes reflect the fact that the ethical-leadership-ESG disclosure nexus has not been adequately worked out, and scientific research based on objective, externally validated quantities, and the use of powerful panel-data methods is required. To reduce this gap, it is

necessary to harmonize conflicting evidence and determine whether ethical leadership has a consistent and substantive impact on ESG disclosure, especially in emerging economies with rapid institutional changes, such as Saudi Arabia.

Third, the robustness of the empirical evidence is constrained by the methodological limitations of the study. A significant portion of the existing literature is based on self-reported questionnaires, management-perceived surveys, or corporate-provided sustainability reports to gauge ethical leadership and ESG disclosure [12–14]. Although informative, these methods are vulnerable to social desirability bias, impression management, and subjectivity of measurement, which can exaggerate observed relationships or mask underlying causal relationships [24]. The weakness of externally validated and objective measures of both leadership ethics and ESG disclosure creates issues with construct validity, reliability, and cross-study comparability of concern, especially when symbolic compliance is common [25]. Therefore, gaps must be bridged in both the theoretical and practical aspects of ethical leadership. Theoretically, a better study of ethical leadership as a control system for behavioral governance can further expand ESG and leaders' theories of existence by elucidating how organizational moral values at the corporate level are converted into measurable sustainability results. Practically and policy, strong empirical data are needed to carve out the frameworks of ESG beyond mere compliance to meaningful accountability by regulators, standard-setters, and corporate boards [3,5]. In the absence of such evidence, the motivation to deepen ESG disclosure can have the disadvantage of diluting regulatory requirements and technical frameworks and ignoring the ethical leadership that ultimately defines the plausibility, richness, and integrity of sustainability reporting [26].

Building on the foregoing discussion on ESG disclosure heterogeneity, governance challenges in emerging markets, and the growing relevance of ethical leadership, a clear research gap becomes evident. While prior studies acknowledge that ESG disclosure cannot be fully explained by regulatory pressure or firm-level characteristics alone, the role of ethical leadership as a central behavioral governance mechanism remains underdeveloped and empirically fragmented [1,12]. Existing evidence offers mixed and often context-specific results, particularly in emerging economies, where institutional frameworks, enforcement strength, and ownership structures constrain the effectiveness of formal governance mechanisms [17]. Moreover, much of the literature relies on perceptual surveys or self-reported disclosures, which are vulnerable to impression management and symbolic compliance [10]. Consequently, despite the recognized importance of leadership ethics in shaping organizational values and transparency, there is limited empirical clarity on whether ethical leadership independently and substantively enhances ESG disclosure when examined using objective, externally validated measures in a longitudinal setting [20]. This unresolved gap motivates this study and provides the basis for its empirical focus.

To address these limitations, this study employed a longitudinal panel design comprising 147 non-financial listed Saudi firms observed from 2020 to 2024. Unlike prior studies that rely largely on cross-sectional or perceptual data, this panel structure allows for the analysis of both cross-sectional and temporal variations in ESG disclosure, thereby controlling for unobserved firm-specific heterogeneity. This design strengthens causal inference and enables a more rigorous empirical examination of ethical leadership as an internal governance mechanism influencing ESG disclosure, particularly in emerging markets undergoing rapid institutional change. We find a strong positive relationship between ethical leadership and ESG disclosure, as indicated by a random effects panel regression model with firm-level clustered robust standard errors. Even when controlling for board- and firm-specific financial characteristics, firms with higher ethical leadership scores presented more detailed and transparent ESG reports. These findings indicate that ethical leadership plays an important role in shaping ESG disclosure practices, suggesting that sustainable

accountability may be influenced by leadership values in support of the argument that sustainable accountability is founded on values of leadership but not necessarily on regulatory adherence. Overall, the findings contribute to the body of knowledge on ethical leadership as one of the primary factors influencing plausible ESG disclosure in emerging markets, and clarify the extended impact of leadership behavior on sustainability performance.

The remainder of this paper is organized as follows. Section 2 presents a review of the relevant literature. Section 3 presents the theoretical background and hypotheses. Section 4 elaborates on the research methods, data sources, and variable measures. The empirical results are presented and discussed in Sections 5, 6 and 7 respectively. Section 8 provides an overview of the most significant findings, implications, and limitations and suggests future research directions.

2. Literature Review

Ethical Leadership and Environmental, Social, and Governance Disclosure

Ethical leadership and ESG disclosure have become areas of growing scholarly interest, where researchers are looking beyond simple structural treatments of corporate transparency to more complex behavioral and value-based predictors [13,14,22]. The term ethical leadership has usually been interpreted as exhibiting normatively right action in personal interaction and relationships, and promotion of the behavior of followers through communication, reinforcement, and decision-making [27]. In the corporate context, ethical leaders not only shape the development of organizational strategic priorities but also define what ethical leaders inform organizational behavior [21]. ESG disclosure, in turn, is a tangible manifestation of these moral orientations and an indication of the manager's wish to reveal information about non-financial outcomes from a short-term perspective [28]. From this perspective, ESG disclosure is not merely an act of disclosure, but a reflection of behavioral leadership values, ethical commitments, and managerial orientations [23]. Building on this view, ethical leadership can be conceptualized as a key antecedent of ESG disclosure, particularly in contexts where external transparency mechanisms and regulatory controls are insufficient in isolation [6]. This study advances this perspective by empirically operationalizing ethical leadership as an internal behavioral governance mechanism and testing its independent effect on ESG disclosure using objective, externally validated measures within a longitudinal panel framework. In doing so, this study moves beyond normative expectations and demonstrates how leadership ethics explain the variation in ESG disclosure among firms subject to similar regulatory requirements and governance structures. Consequently, the analysis provides a clearer behavioral explanation for why companies operating under comparable institutional and regulatory conditions exhibit markedly different ESG disclosure regimes.

From a theoretical standpoint, ethical leadership should improve ESG disclosure because it influences organizational culture and the ethical climate [22]. Ethical leadership theory suggests that leaders who lead by example through integrity, fairness, and responsibility give offices that discourage opportunistic behavior and encourage transparency [29]. These leaders view ESG disclosure as an ethical duty to stakeholders and not as a discretionary or reputational instrument [22]. Ethical leaders decrease selective disclosure incentives and greenwashing by promoting long-term accountability and value creation, which in turn promotes more equitable and balanced reporting on sustainability [11]. In addition, ethical leaders can foster psychological safety in organizations, and employees and managers feel comfortable sharing any type of data regarding ESG [13]. This process is especially applicable to ESG issues, which tend to be very sensitive, such as data about environmental factors, labor concerns, or failure on the part of governance [26]. This can influence reporting behavior on several organizational platforms in terms of ethical

advice and moral encouragement, which guarantees that ESG disclosure is not a decoration but significant [30]. Therefore, ethical leadership acts as an internal control mechanism that complements formal controls by instilling principles of transparency in the daily decision-making process.

A substantial body of research indicates that firms with morally minded leaders have a higher chance of voluntarily reporting sustainability, attaining better environmental performance, and greater transparency in their governance structures [10,22,29]. This study postulates that ethical leadership fosters disclosure quality by increasing the degree of internal control, disclosing information flows, and aligning managerial motivations with stakeholder interests [14]. The subsidiary outcomes show that ethical leaders are less prone to impression management and more open to negative ESG information, resulting in higher reporting credibility [31]. The combination of these pieces of evidence supports the impression that ethics in leadership have unequivocal implications on the outcome of non-financial disclosure in comparison to the views that can only be taken based on the pressure of regulations or the characteristics of firms [11]. Nevertheless, empirical evidence drawn largely from Western contexts characterized by strong enforcement and active capital markets [32] may not readily extrapolate to emerging economies where ownership is concentrated and regulatory enforcement is uneven. In Saudi Arabia, where family and state ownership structures are prevalent and ESG enforcement mechanisms are still evolving, these institutional features create uncertainty regarding whether ethical leadership can meaningfully influence ESG disclosure beyond formal governance requirements. This study addresses this gap by examining the role of ethical leadership in shaping ESG disclosures in the Saudi institutional context.

Existing evidence further highlights the complexity of this relationship. Several empirical studies have shown that ethical leadership still has a positive effect on ESG disclosure, even in situations where regulation is comparatively weak and ownership structure is concentrated [10,11,13]. Thus, ethical leadership can replace the absence of external controls by promoting voluntary disclosure and internal responsibility. In contrast, weak or non-significant effects have been observed in other studies, indicating that institutional voids, political affiliation, family-based ownership, and traditionally defined cultural norms can limit leaders' ability to focus on ESG transparency [21]. Ethical leaders may not be able to influence disclosure practices in such environments because of the structural obstacles they face, even though they are ethically oriented [29]. This heterogeneity not only highlights the contingency of the effectiveness of ethical leaders but also focuses on the interdependency of leadership ethics, institutional arrangements, and cultural factors in the formation of ESG performance at the institutional level [11]. Consequently, the ethical-leadership ESG nexus requires empirical studies that are sensitive to local governance systems, cultural mores, and legal contexts.

Despite growing empirical attention, existing evidence remains subject to notable methodological limitations. Much of the literature relies on self-reported surveys, managerial perceptions, or firm-prepared sustainability reports to capture ethical leadership and ESG practices [10,33,34]. Although these approaches provide useful insights, they are susceptible to social desirability bias, impression management, and measurement subjectivity, particularly in contexts where ESG disclosure is strategically employed to enhance organizational legitimacy rather than to reflect substantive performance [35]. Moreover, the scarcity of externally validated, objective, and longitudinal measures raises concerns regarding construct validity and weakens causal inference [36]. Cross-sectional research designs further limit inference by failing to disentangle whether ethical leadership drives ESG disclosure or whether firms with stronger ESG reputations are more likely to attract ethically oriented leaders [14]. In response to these methodological shortcomings, this

study employs externally validated third-party datasets and a longitudinal panel design combined with rigorous econometric techniques to mitigate measurement bias, control for unobserved firm-specific heterogeneity, and strengthen causal interpretations. By addressing these limitations, this study provides more reliable and policy-relevant evidence on the role of ethical leadership in shaping ESG disclosure, and advances the methodological rigor of research in this domain.

3. Theoretical Framework and Hypotheses Development

The interpretation of ESG disclosure in the Saudi Arabian context requires a theoretical framework that incorporates both the ethical components of leadership and country-established institutional, cultural, and regulatory environments. Within the framework of Vision 2030, which institutionalizes the notion of transparency, reform in governance, and sustainable development as drivers of economic diversification and attractiveness to foreign investors, the relevance of ESG disclosure among Saudi listed firms has sharply increased [36,37]. However, despite current progressive regulatory development, ESG disclosure among Saudi companies is diverse, which points to the fact that formal regulations alone do not explain the identified differences [38]. Such heterogeneity amplifies the role of endogenous organizational factors, especially leadership ethics, in determining sustainability reporting outcomes [39]. Therefore, the current research designs ESG disclosure in Saudi Arabia as a type of governance enactment executed through leadership, both as a kind of moral imperative and as a reactive behavior concerning the expectations of stakeholders in an environment where the institutional context is rapidly changing, hence conjoining both ethical leadership theory and stakeholder theory.

Ethical Leadership Theory provides a focused lens for explaining ESG disclosure practices in Saudi companies, where leadership authority is often centralized and top management exerts substantial influence over strategic and reporting decisions [29]. In such contexts, leaders' ethical orientations play a disproportionate role in shaping organizational norms and disclosure practices [40]. Drawing on Islamic ethical principles of integrity, accountability, and stewardship, ethically oriented leaders are more likely to view ESG disclosure as a moral and governance obligation than discretionary or reputational exercises, even in the absence of strict enforcement mechanisms [34,41]. Conversely, weak ethical leadership may foster secrecy, selective reporting, and symbolic compliance [32,41]. Stakeholder Theory complements this perspective by situating Saudi firms within an increasingly demanding stakeholder environment under Vision 2030, characterized by heightened scrutiny from regulators, institutional investors, global supply chains, and society [42]. ESG disclosure functions as a primary channel through which firms communicate accountability and alignment with national sustainability objectives and international standards [43,44]. Ethical leaders are particularly responsive to stakeholder expectations because their normative commitment to fairness, responsibility, and long-term value creation strengthens incentives for transparent and credible disclosure [10,16,42]. Taken together, Ethical Leadership Theory and Stakeholder Theory converge on a single core proposition: in the Saudi institutional context, ethical leadership operates as a central behavioral governance mechanism that enhances ESG disclosure. Accordingly, the multiple theoretical mechanisms discussed herein are synthesized to support one overarching testable hypothesis linking ethical leadership to the level of ESG disclosure.

The integration of ethical leadership and stakeholder theories is particularly appropriate in the Saudi Arabian institutional context, where regulatory frameworks for sustainability reporting are still evolving, and enforcement mechanisms remain uneven. Importantly, the two theories play analytically distinct yet complementary roles in explaining ESG disclosure behavior [45]. Ethical Leadership Theory operates at the internal organizational

level, emphasizing how leaders' moral values, integrity, and role modeling shape corporate culture, internal accountability, and disclosure choices, especially in environments characterized by centralized decision-making authority. In contrast, Stakeholder Theory functions at the external relational level, explaining how firms respond to increasing pressures and expectations from regulators, investors, employees, and society—pressures that have intensified under Vision the 2030s emphasis on transparency, sustainability, and global integration [46]. Within this framework, ethical leadership does not merely coexist with stakeholder pressure but serves as the behavioral mechanism through which stakeholder demands are interpreted, prioritized, and translated into concrete reporting practices. In transitional institutional settings, such as Saudi Arabia, where formal regulations alone may be insufficient to ensure high-quality ESG disclosure, ethical leaders complement regulatory efforts by promoting voluntary disclosure, value-driven decision-making, and resistance to opportunistic or symbolic reporting. Therefore, leaders with strong moral orientations are more likely to internalize stakeholder expectations related to environmental stewardship, social responsibility, and governance accountability and to exceed minimum compliance requirements by providing more detailed, credible, and forward-looking ESG disclosures [40,41]. Although the preceding discussion highlights multiple context-specific mechanisms, including centralized leadership power, evolving regulatory enforcement, and growing stakeholder scrutiny, these mechanisms are theoretically unified through the concept of ethical leadership as a central behavioral governance construct. To maintain analytical parsimony and empirical tractability, we consolidated these interrelated processes into a single testable hypothesis that captures their combined effects. Accordingly, ethical leadership is conceptualized as an integrative force that aligns internal moral governance with external stakeholder expectations and national sustainability objectives. Based on this synthesis, this study hypothesizes a positive relationship between ethical leadership and the level of ESG disclosure among Saudi-listed firms.

H1. *Ethical leadership is positively associated with the overall level of ESG disclosure in publicly listed Saudi firms.*

4. Methodology

Sample Selection, Data Collection, and Variable Definition

The current research uses longitudinal panel data to empirically test the nexus between ethical leadership and ESG disclosure among Saudi Arabian listed companies on stock exchanges. The initial population comprised 182 non-financial companies listed on the Saudi Stock Exchange (Tadawul) from 2020 to 2024. From this group, 35 firms were excluded due to missing or incomplete data, including unavailable ESG disclosure scores and ethical leadership indicators. After applying these screening criteria, the final sample consisted of 147 non-financial firms, yielding 735 firm-year observations over the study period. This systematic sample-selection process enhances data consistency and strengthens the representativeness and internal validity of the empirical analysis. The analysis is restricted to non-financial firms because financial institutions operate under sector-specific regulatory regimes governing governance structures, risk management, and sustainability-related disclosures [17]. These regulations systematically shape ESG and governance indicators by elevating baseline disclosure levels, particularly in the governance and social dimensions, and reducing discretionary variation across firms [22]. As a result, the inclusion of financial firms would introduce a directional upward bias in ESG scores that reflects regulatory compliance rather than voluntary leadership-driven disclosure practices. Excluding financial institutions, therefore, enhances sample homogeneity and strengthens internal validity by ensuring that the observed variation in ESG disclosure is

more plausibly attributable to ethical leadership than regulatory compulsion [24,47]. The chosen timeframe is especially relevant, as it coincides with the key period of the Saudi Vision 2030 execution, when sustainability reporting, corporate governance changes, and ethical responsibility are gradually institutionalized [15]. A longitudinal design can capture cross-sectional heterogeneity in firms and time-dependent changes in ESG disclosure patterns, which strengthens causal inference and reduces the risk of spuriousness [17]. To enhance reliability, objectivity, and external validity, we obtained secondary data from various well-established repositories [32]. The information on ESG disclosure gathered came through the Refinitiv ESG database, a reputable source of information both in an academic study and as a professional ESG rating [48]. Refinitiv systematically reviews the disclosures by firms on environmental, social, and governance by undertaking thorough analyses of publicly traded companies' documents- annual reports, sustainability disclosures, integrated disclosures, regulatory reports, and corporate websites [49]. The ESG disclosure (ESGD) score is operationalized on a normalized score scale of 1–100, with a higher score indicating disclosure that is more comprehensive, transparent, and of high quality. Using a standardized index of ESG allows meaningful cross-firm and time-series comparisons and eliminates subjectivity compared with ad hoc indices [50]. Furthermore, the approach used by Refinitiv places emphasis on the quality of disclosure instead of its existence, which makes it particularly appropriate in terms of measuring substantive corporate responsibility as opposed to token reporting [48].

The main independent variable, Ethical Leadership (ELSH), was measured using the CSRHub Ethical Leadership Index, an externally validated composite score ranging from 1 to 100. The index captures ethical leadership as an organizationally embedded governance attribute by aggregating third-party assessments derived from sustainability rating agencies, stakeholder evaluations, and independent governance reviews [14]. Rather than relying on managerial self-reports or perceptual surveys, the CSRHub index reflects observable leadership behaviors, policies, and disclosure practices, thereby reducing social desirability bias and enhancing measurement reliability [51]. Conceptually, the CSRHub Ethical Leadership Index operationalizes ethical leadership across four core dimensions at the organizational level. Integrity and Ethical Conduct reflect senior management's honesty, transparency, and adherence to ethical standards, including anti-corruption policies and compliance systems [14]. Accountability and Transparency capture leadership responsibility and openness in disclosing governance and sustainability information through the mechanisms of oversight and reporting. Fairness and stakeholder representation represent the equitable treatment of stakeholders, non-discriminatory practices, and responsiveness to stakeholders' concerns [51]. Responsible decision-making and long-term orientation measure the extent to which leaders integrate ethical considerations and sustainability objectives into strategic decisions, emphasizing long-term value creation and responsible risk management. CSRHub aggregates these dimensions using a standardized scoring methodology that normalizes inputs across firms and industries to ensure comparability over time [14]. Although the specific weighting scheme is proprietary, the index assigns relative importance to each dimension based on ethical materiality and the industry context. Overall, the CSRHub Ethical Leadership Index provides a comprehensive and objective measure of firm-level ethical leadership, making it particularly suitable for longitudinal analysis and for examining its influence on ESG disclosure practices [52]. In addition to the main variables, this study includes a set of governance and firm-level control variables regularly used in ESG and corporate governance studies to explain alternative factors [13,31,37]. Board independence (BIND) corresponds to the percentage of independent non-executive directors on the board, while board gender diversity (BGEN) corresponds to the percentage of female directors [35]. The board-level environmental committee (EC) is operationalized

through a dummy variable that is 1 in the case of the existence of such a committee and 0 when it does not exist. Firm characteristics include firm size (SIZE), which measures the natural logarithm of total assets; firm age (AGE), which is measured by the number of years since incorporation to the end of 2024; profitability (PRO), which is measured by the return on equity; leverage (LEV), which is measured as total debt divided by total assets; and liquidity (LIQ), which is measured by current assets divided by current liabilities [47,53]. Table 1 provides a brief description of the variables investigated.

Table 1. Measurement of Variables.

Description	Symbols	Description/Measurement
Dependent Variable		
Environmental, Social, And Governance Disclosure	ESGD	Refinitiv ESG Score
Independent Variables		
Ethical Leadership	ELSH	CSRHub Ethical Leadership Index
Control variables		
Board Independence	BIND	The percentage of outsiders' independent directors on firms' board
Board Gender	BGEN	The percentage of female directors on the firm's board
Environmental Committee	EC	Dummy variable with the value of 1 if a company has a board-level EC and 0 otherwise
Firm Size	SIZE	The logarithm of total assets
Firm Age	AGE	The total years of operation for the firm up to the end of 2024
Profitability	PRO	Return on equity ratio
Leverage	LEV	Total debt divided by total assets
Liquidity	LIQ	Current assets divided by current liabilities

This study uses panel data econometric methods to analyze the constructed panel dataset and explores both cross-sectional and time variations in addition to the unobserved heterogeneity of firms [54,55]. The Hausman specification test and Breusch–Pagan Lagrange multiplier test were used to select the model to be used in the estimation, and they revealed that the random effects model was the most appropriate for data estimation [47]. Conceptually, the random effects specification is appropriate in this context because key governance and leadership variables, such as ethical leadership and board characteristics, are relatively stable, institutionally embedded firm attributes that evolve gradually over time rather than responding to short-term shocks [33]. Consequently, unobserved firm-specific factors (e.g., organizational culture or historical governance practices) are unlikely to correlate systematically with year-to-year variations in the explanatory variables [39]. Under this condition, the random-effects model provides efficient and consistent estimates, while allowing the analysis to exploit both cross-sectional and temporal variations in ESG disclosure [56]. All statistical analyses were performed using Stata version 17, and common diagnostic tests were conducted to determine the presence of multicollinear-

ity, model adequacy, and model robustness [57]. The empirical analysis is based on the following equation:

$$\text{ESGDit} = \beta_0 + \beta_1 \text{ELSHit} + \beta_2 \text{BINDit} + \beta_3 \text{BGENit} + \beta_4 \text{ECit} + \beta_5 \text{SIZEit} + \beta_6 \text{AGEit} + \beta_7 \text{LEVit} + \beta_8 \text{LIQit} + u_i + \varepsilon_{it}$$

The empirical model estimated in this study is specified as a random-effects panel regression, where ESG disclosure (ESGD) for firm *i* in year *t* is expressed as a function of ethical leadership and a set of governance and firm-specific control variables. Specifically, ESGD was regressed on ethical leadership (ELSH), board independence (BIND), board gender diversity (BGEN), presence of a board-level environmental committee (EC), firm (SIZE), firm age (AGE), leverage (LEV), and liquidity (LIQ). The term u_i represents unobserved, time-invariant firm-specific effects that capture heterogeneity across firms, such as organizational culture or managerial philosophy, which are assumed to be randomly distributed and uncorrelated with the explanatory variables. The idiosyncratic error term, ε_{it} , captures the random shocks and time-varying factors that affect ESG disclosure, which are not explained by the model. These random effects specifications allow the analysis to exploit both cross-sectional and temporal variations in the data while controlling for unobserved firm-level characteristics, thus providing efficient and consistent estimates of the relationship between ethical leadership and ESG disclosure [56].

5. Analysis and Discussion

5.1. Descriptive Analysis

Table 2 indicates that the average ESG disclosure score among Saudi-listed non-financial firms is 59.58, with a standard deviation of 19.63, reflecting a substantial cross-firm variation. Relative to the theoretical maximum of the ESG disclosure index (100), this average suggests a moderate level of ESG disclosure, as firms disclose slightly more than half of the available ESG-related information, on average. The wide range of scores from 0 to 87 highlights the pronounced heterogeneity in reporting practices. While some firms exhibit relatively comprehensive ESG disclosure, others continue to report minimal or no ESG-related information, indicating the uneven adoption of ESG practices across firms during the study period. Ethical leadership has a comparatively low mean score of 28.02 with a huge standard deviation of 15.98 and a wide range of 12 to 79, which reflects a strong divergence in the degree to which ethical leadership practices are institutionalized within an organization. This variability suggests that ethical leadership is not consistently institutionalized across Saudi firms and differs significantly across firms. Board independence is recorded at 42.1% on average, indicating that the number of independent directors is less than half of the total board membership, and the difference between the lowest and highest percentages of 20 to 90 indicates a significant variability in board composition. The representation of women on boards is relatively small, with a mean representation of 14.0, the highest value of 50, and a minimum of zero, suggesting that there are firms with no female directors, and others with comparatively high representation. Board-level environmental committees were found to exist in only 44.1 per cent of the firms, suggesting that most firms have not institutionalized the role of environmental oversight on the board of directors. The statistics on age and firm size indicate that the sample is relatively mature, with an average age of approximately 33 years and a significant size range, indicating the presence of both medium and large corporations. Profitability shows average performance with significant dispersion, whereas leverage and liquidity values represent significant variations in the financial structure of firms, especially liquidity, which varies significantly between very low and very high levels. In general, the descriptive statistics indicate strong cross-sectional differences in ESG disclosure, ethical leadership, governance features, and

financial features, proving the heterogeneity of corporate practices among Saudi listed companies at the time of the investigation.

Table 2. Descriptive Statistics.

Variables	Obs.	Mean	S.D.	Min	Max
ESGD	735	59.580	0.1963	0.0000	87.000
ELSH	735	28.018	15.9818	12.0000	79.000
BIND	735	0.4210	0.1408	0.2000	0.9000
BGEN	735	0.1402	0.1293	0.0000	0.5000
EC	735	0.4408	0.4968	0.0000	1.0000
SIZE	735	5.4034	1.3174	2.1070	7.5186
AGE	735	32.9006	12.7813	5.0000	75.0000
PRO	735	0.1581	0.1146	0.0305	0.5300
LEV	735	0.4724	0.2042	0.0565	1.4411
LIQ	735	2.7165	3.5186	0.0934	27.8984

5.2. Correlation Matrix

The correlation matrix in Table 3 shows that ESG disclosure is positively correlated with various key variables, with the highest correlation between ethical leadership (0.3828), indicating that the higher the score in ethical leadership, the higher the level of ESG disclosure reported by firms. In practical terms, this magnitude represents a moderate-to-strong association in the context of firm-level governance research, indicating that ethical leadership explains a meaningful share of cross-firm variation in ESG disclosure, rather than reflecting a purely statistical relationship. This finding suggests that differences in leadership ethics are substantively relevant in shaping ESG disclosure practices even before controlling for other governance and firm-specific factors. ESG disclosure is also positively related to the existence of a board-level environmental committee (0.2434) and profitability (0.2113), indicating that companies with formal environmental control systems and more favorable financial results tend to disclose more information related to ESG. The associations between ESG disclosure and board gender diversity (0.0949), firm age (0.0824), leverage (0.0746), and board independence (0.0012) are weak, indicating that the variables do not have a strong linear relationship at the bivariate level. The relationship between ESG disclosure and firm size is negative ($= -0.1531$), implying that the larger firms in the sample do not disclose more ESG information. Most governance and firm characteristics are positively linked to ethical leadership, especially the presence of an environmental committee (0.6483), profitability (0.4025), board gender diversity (0.3066), and board independence (0.2317). This indicates that ethically led firms are more likely to implement stronger governance systems and show superior financial performance. Board independence and gender diversity have weak or negative associations with most variables, indicating a lack of overlap between these governance attributes. The correlations between liquidity and ESG disclosure and ethical leadership are negative but generally low (0.1016), whereas the relationship between liquidity and leverage is negative (0.5879), as anticipated from the relationship between firms' liquidity positions and their debt levels.

5.3. Diagnostic

Owing to the panel nature of the data employed in this study and the possibility of unobserved firm-specific effects influencing both ESG disclosure and the explanatory variables, reliance on pooled ordinary least squares (OLS) estimation is inappropriate [24]. To determine the most suitable panel estimation technique, a Hausman specification test was conducted to compare the fixed- and random-effects models [47]. Consistent with prior empirical studies in the ESG and governance literature, the Hausman test results indicate that

the random-effects model is appropriate for the analysis (See Table 4), suggesting that unobserved firm-level effects are not systematically correlated with the explanatory variables.

Table 3. Correlation Matrix.

Variables	ESGD	ELSH	BIND	BGEN	EC	SIZE	AGE	PRO	LEV	LIQ
ESGD	1									
ELSH	0.3828	1								
BIND	0.0012	0.2317	1							
BGEN	0.0949	0.3066	−0.0796	1						
EC	0.2434	0.6483	0.1769	0.1631	1					
SIZE	−0.1531	−0.1477	0.0120	−0.0826	0.0009	1				
AGE	0.0824	0.1698	−0.0201	−0.0526	0.1594	−0.1217	1			
PRO	0.2113	0.4025	0.0633	0.1688	0.2658	−0.1586	−0.0321	1		
LEV	0.0746	0.0667	0.0898	0.0441	0.0835	−0.0450	−0.0410	0.0993	1	
LIQ	−0.0501	−0.0832	0.0652	−0.0820	−0.0343	0.0780	−0.0572	−0.1021	−0.5879	1

Table 4. Hausman Specification Test.

Test	Chi-Square (χ^2)	Probability
Fixed vs. Random Effects	7.84	0.0970
Decision: Random-effects model is appropriate.		

Several diagnostic tests were performed to ensure the robustness and reliability of regression results. Multicollinearity was examined using correlation analysis and variance inflation factor (VIF) diagnostics [58]. The correlation coefficients among the explanatory variables were all below the conventional thresholds, indicating no strong linear dependence (See Table 3). This conclusion is further supported by the VIF results, where all values are well below the critical cut-off levels commonly used in empirical research, confirming the absence of multicollinearity concerns (See Table 5).

Table 5. Variance Inflation Factor (VIF).

Variables	VIF
ELSH	2.21
BIND	1.13
BGEN	1.16
EC	1.79
SIZE	1.07
AGE	1.09
PRO	1.24
LEV	1.60
LIQ	1.60
Mean VIF	1.43

To evaluate the distributional properties of the error term, the Breusch-Pagan/Cook-Weisberg test was applied to test heteroscedasticity, and the Wooldridge test was utilized to test first-order autocorrelation in the panel data [25]. These tests showed heteroscedasticity and serial correlations (Table 6). In this regard, and following accepted econometric traditions, strong standard errors concentrated at the firm-level were used to resolve these problems [47]. This methodology ensures the consistency and reliability of the estimated

coefficients and statistical inferences that may arise when classical regression assumptions do not hold [53].

Table 6. Tests for Heteroscedasticity and Autocorrelation.

Diagnostic Test	Test Statistic	Value	Probability	Decision
Breusch–Pagan/Cook–Weisberg Test	χ^2	29.6	0.0000	Heteroscedasticity present
Wooldridge Test for Autocorrelation	F-statistic	11.42	0.0010	Autocorrelation present

Note: The presence of heteroscedasticity and first-order autocorrelation necessitated the use of firm-level clustered robust standard errors in the random-effects regression model to ensure consistent and reliable statistical inference.

6. Regression Results and Discussion

Tables 7 and 8 display the model diagnostics and the fit statistics, respectively. The regression results explain the hypotheses developed regarding ethical leadership and ESG disclosure. The random-effects panel estimates indicate that ethical leadership is positively and statistically significantly associated with ESG disclosures. Firms that exhibit higher levels of ethical leadership tend to demonstrate greater transparency in environmental, social, and governance reporting. In economic terms, the estimated coefficient of ethical leadership (0.0032) implies that a one-point increase in the ethical leadership index is associated with an average increase of 0.32 percentage points in the ESG disclosure score. This finding suggests that even modest improvements in leadership ethics translate to measurable gains in disclosure transparency. This association suggests that ethical leadership is an important internal governance factor linked to more extensive and less selective ESG disclosure, highlighting the role of leadership ethics in shaping sustainability reporting practices, rather than implying a deterministic or universal outcome. This observation means that ethical leaders are not only symbolically compliant but also ensure accountability, integrity, and transparency in their disclosure practices in the corporation. Through the incorporation of ethical values in the decision-making process in the organization, leaders' impact reporting encourages the reporting of successes and potential failures in the spheres of social, environmental, and governance performance.

Table 7. Model Diagnostics and Fit Statistics.

Statistic	Value
Estimation Method	Random-Effects Panel Regression
Robust Standard Errors	Firm-level clustered
Observations	735
Number of Firms	147
Adjusted R ²	0.37
Wald χ^2	355.46
Prob > χ^2	0.000
Hausman Test	Random effects preferred

This observation is consistent with prior empirical studies that have revealed that ethical leadership is positively correlated with ESG-related outcomes [10,19]. The influence of ethical leadership on voluntary sustainability reporting has been demonstrated in the context of developed markets through research studies carried out on the topic that ethical leadership has a positive effect on voluntary sustainability reporting by establishing ethical climates, better internal controls, and discouraging opportunistic reporting behavior [11,33,40]. This relationship is supported by similar evidence in emerging economies, although with varied outcomes due to institutional and regulatory disparities. Consistent with the research by AlHares (2025) [14] and Alkhadra et al. (2023) [19], the

current results verify that ethical leadership enhances the disclosure of ESGs because it aligns managers' activities with the expectations of wider stakeholders. In contrast to research that has produced weak or insignificant outcomes in emergent markets, the present study offers strong evidence that ethical leadership continues to have an impact, even in a changing institutional environment, such as Saudi Arabia, where ESG disclosure practices are still immature.

Table 8. Impact of Ethical Leadership on ESG Disclosure.

Variables	Coefficient	<i>t</i> -Statistic	<i>p</i> Value
ELSH	0.0032	8.23	0.000
BIND	0.1060	2.67	0.008
BGEN	0.0834	1.73	0.084
EC	0.0124	1.18	0.239
SIZE	−0.0070	−0.96	0.337
AGE	0.0017	1.69	0.091
PRO	0.0533	1.37	0.170
LEV	0.0542	1.50	0.134
LIQ	0.0012	0.64	0.523
_cons	0.3842	6.41	0.000

These findings are consistent with the theoretical foundations of this study. According to the theory of ethical leadership, ethical leaders are expected to be role models that influence norms and practices in organizations because they are ethical and demonstrate integrity, fairness, and moral responsibility [29]. It is also natural for such leaders to ensure that they possess clear ESG disclosure, as any lack of transparency and misrepresentation of sustainability information will be contrary to their morals [14]. This observation explains why ethical leadership is a key indicator of ESG disclosure among the empirical findings. Ethical leaders build an ethical atmosphere that supports honest reporting and reduces the possibility of greenwashing, thereby reducing disclosure quality [34]. These findings are in line with stakeholder theory, which highlights the role of firms in meeting the information needs of a wide spectrum of stakeholders [42]. Ethical executives are more responsive to the interests of stakeholders in terms of environmental protection, social responsibility, and governance accountability, and believe that ESG disclosure is a tool for trust-building and sustaining legitimacy [35]. This allows ethical leaders to turn external demands on sustainable reporting into internal demands of proactive disclosure strategies [47]. Therefore, this theoretical argument is supported by empirical data showing that ESG disclosure is more widespread in firms with stronger leadership ethics, supporting the notion that leadership is a mediator variable between stakeholder pressure and corporate transparency.

The control variables for governance produce mixed and nuanced results. Board independence exhibits a positive and statistically significant association with ESG disclosure, suggesting that boards with a higher proportion of independent directors may be better positioned to support transparency in sustainability reporting. However, this relationship should be interpreted with caution as the magnitude of the effect is modest. Board gender diversity also shows a positive, but relatively weak and marginally significant relationship with ESG disclosure, indicating that the presence of female directors may be associated with greater stakeholder orientation, albeit not uniformly across firms. Taken together, these results suggest that board composition can contribute to ESG disclosure practices, but its influence appears complementary rather than dominant compared to ethical leadership. Regarding firm-specific variables, firm age displays a weak but statistically significant association with ESG disclosure, which may reflect accumulated experience, reputational considerations, and long-term relationships with stakeholders in established

firms. By contrast, firm size, profitability, leverage, liquidity, and the presence of a board-level environmental committee do not exhibit statistically significant associations with ESG disclosure. The environmental committee (EC) shows a positive but insignificant effect ($p = 0.239$), suggesting that the mere existence of such committees may be symbolic and may lack effective authority over sustainability reporting. Firm size (SIZE) is negative and insignificant ($p = 0.337$), indicating that larger firms do not necessarily disclose more ESG information once leadership ethics and governance characteristics are controlled for, possibly because of industry-specific constraints and standardized reporting practices. Regarding financial characteristics, profitability (PRO) ($p = 0.170$), leverage (LEV) ($p = 0.134$), and liquidity (LIQ) ($p = 0.523$) are statistically insignificant, implying that short-term financial capacity and capital structure do not systematically drive ESG disclosure decisions. Overall, these findings suggest that ESG disclosure among Saudi listed firms is shaped more by behavioral governance mechanisms, particularly ethical leadership and board oversight, than by firm size, financial performance, or symbolic structural arrangements.

7. Endogeneity Robustness Test

To further address potential endogeneity concerns and reinforce the causal interpretation of the relationship between ethical leadership and ESG disclosure, this study employs the System Generalized Method of Moments (System GMM) estimator, with the results reported in Table 9. Endogeneity may arise in the baseline random effects model for several reasons. First, reverse causality may exist if firms with stronger ESG disclosure practices are likely to attract, promote, or retain ethical leaders. Second, ESG disclosures may exhibit dynamic persistence over time, as sustainability reporting practices tend to evolve gradually rather than adjust instantaneously. Third, omitted variable bias may arise from unobserved time-varying firm-specific characteristics that jointly influence ethical leadership and ESG disclosure outcomes. The system GMM is particularly appropriate in this context because it is designed for dynamic panel data characterized by a relatively large cross-sectional dimension and a shorter time span. The estimator effectively controls for unobserved firm heterogeneity, simultaneity, and potential measurement errors by exploiting the internal instruments derived from the lag structure of the variables. Following the dynamic specification, we include the lagged dependent variable (ESGD) to capture the persistence of ESG disclosure over time. This specification acknowledges the path-dependent nature of sustainability reporting, whereby prior disclosure practices shape current reporting behavior through institutional learning, reputational concerns, and cumulative compliance processes. The System GMM framework combines equations in first differences and levels, using lagged levels and lagged differences in endogenous variables as instruments. The use of lagged values is theoretically justified, as past realizations of ESG disclosure and ethical leadership are correlated with their current values but are unlikely to be correlated with contemporaneous error terms. This approach enhances estimation efficiency, reduces finite-sample bias relative to the difference GMM, and mitigates concerns related to weak instruments.

The results presented in Panel A of Table 9 strongly support the robustness of the main findings. The coefficient of the lagged ESG disclosure variable is positive and highly statistically significant, confirming the dynamic nature of ESG disclosure among Saudi-listed firms. This result indicates that firms with higher ESG disclosures in the previous period tend to sustain higher disclosure levels in subsequent periods, consistent with the cumulative and learning-based nature of sustainability reporting. More importantly, ethical leadership (ELSH) remains positive and statistically significant at the 1% level in the System GMM estimation. This finding confirms that the positive association between ethical leadership and ESG disclosure persists, even after controlling for reverse causality,

dynamic persistence, and unobserved firm-level heterogeneity. Although the magnitude of the ethical leadership coefficient is slightly reduced relative to the random effects estimates, this attenuation is expected once endogeneity concerns are addressed and does not affect the sign, statistical significance, or substantive interpretation of the relationship. The consistency of the coefficient across estimation techniques indicates that the observed relationship is not sensitive to the model specification and is unlikely to be driven by estimation bias. Panel B reports the post-estimation diagnostic tests for the System GMM model and provides further evidence to support the validity and consistency of the dynamic specification. The Arellano–Bond test for first-order serial correlation in the differenced residuals (AR(1)) is statistically significant ($p < 0.01$), which is expected in dynamic panel models, and does not indicate model misspecification. Crucially, the AR(2) test was statistically insignificant ($p = 0.384$), confirming the absence of second-order serial correlation and validating the use of lagged variables as instruments. The Hansen test of over-identifying restrictions yielded an insignificant test statistic ($p = 0.312$), indicating that the null hypothesis of instrument validity cannot be rejected. This result suggests that the instrument set is appropriately specified and is exogenous to the error term. In addition, the number of instruments (32) is well below the number of cross-sectional units (147 firms), alleviating concerns regarding instrument proliferation and overfitting, which could weaken the power of the Hansen test and bias the estimated coefficients. Taken together, these diagnostic results confirm that the System GMM model is well-specified, the instruments are valid, and the dynamic structure is appropriate. Consequently, the coefficients reported in Panel A can be interpreted as robust and reliable evidence of the positive relationship between ethical leadership and ESG disclosure, after explicitly accounting for endogeneity, persistence, and unobserved firm-level heterogeneity.

Table 9. System GMM Estimation Results.

Panel A: System GMM Estimate	Coefficient	Std. Error	z-Statistic	p-Value
ESGD	0.4210	0.0724	5.81	0.000
ELSH	0.0029 ***	0.0006	4.83	0.000
BIND	0.0947 **	0.0431	2.20	0.028
BGEN	0.0765 *	0.0418	1.83	0.067
EC	0.0109	0.0098	1.11	0.267
SIZE	−0.0061	0.0068	−0.90	0.368
AGE	0.0015 *	0.0009	1.67	0.095
PRO	0.0496	0.0375	1.32	0.186
LEV	0.0513	0.0349	1.47	0.142
LIQ	0.0011	0.0017	0.65	0.515
Panel B: Model Diagnostics	Statistic		p-Value	
Arellano–Bond AR(1)	−3.21		0.001	
Arellano–Bond AR(2)	−0.87		0.384	
Hansen test	21.46		0.312	
Number of instruments	32		-	
Number of instruments	147		-	
Observations	735		-	

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

8. Conclusions and Implications

This study provides an explicit empirical evaluation of the proposed hypothesis that ethical leadership is positively associated with ESG disclosure among non-financial listed Saudi firms. The regression results consistently demonstrate a positive and statistically significant relationship between ethical leadership and ESG disclosure across multiple model

specifications, including random effects and System GMM estimations. This convergence of findings offers robust confirmation of the hypothesis and indicates that ethical leadership functions as an important internal governance mechanism influencing transparency and depth of sustainability reporting. Methodologically, the use of externally validated measures of ethical leadership and ESG disclosure within a longitudinal panel of 147 firms from 2020 to 2024 strengthens the analytical interpretation of the results. The application of firm-level clustered robust standard errors and comprehensive diagnostic tests further enhances the reliability of the estimates by accounting for cross-sectional and time-varying heterogeneity, as well as unobserved firm-specific effects. These methodological features allow the analysis to move beyond descriptive associations and support a structured hypothesis testing framework. From an analytical perspective, these findings suggest that ESG disclosure in the Saudi context cannot be understood solely as a function of regulatory compliance or technical reporting requirements. Rather, the results indicate that leadership ethics and moral orientation play a substantive role in shaping sustainability reporting practices by embedding transparency, accountability, and long-term responsibility within organizational governance systems. The use of standardized ESG scores alongside an independent ethical leadership index ensures that this relationship reflects substantive, externally observable practices rather than symbolic or self-reported behavior. This evidence highlights the relevance of ethical leadership in Saudi Arabia's ongoing economic and regulatory transformation under Vision 2030. As sustainability and governance reforms continue to evolve, ethical leadership appears to operate as a key behavioral channel through which national sustainability objectives are translated into firm-level disclosure practices. Ethical leadership enhances the credibility, scope, and informational value of ESG disclosures, reinforcing their role as a foundational element of sustainable corporate accountability in emerging market environments.

From an analytical perspective, these findings have important theoretical and governance-related implications. First, the results provide empirical support for Ethical Leadership Theory by demonstrating that leaders' integrity, fairness, and moral awareness are systematically associated with observable organizational outcomes in the form of ESG disclosure. This evidence reinforces the view that ethical leadership functions as a behavioral governance mechanism that shapes transparency norms, constrains opportunistic disclosure behavior, and embeds accountability within sustainability reporting practices. Second, the findings extend Stakeholder Theory by illustrating how ethical leadership operates as a channel through which stakeholder expectations are internalized and translated into proactive ESG disclosure strategies. By documenting this relationship in an emerging market context, this study enhances the external validity of leadership-based explanations of ESG disclosure and demonstrates that stakeholder-oriented transparency is not solely a response to regulatory or market pressures, but is also rooted in leadership values and governance culture. Building on these analytical insights, our findings have practical implications for corporate governance and policy formulation. For regulators and policymakers, the results suggest that strengthening ESG disclosure frameworks should be accompanied by initiatives that promote ethical leadership, including leadership development programs, governance guidelines emphasizing ethical accountability, and enhanced monitoring mechanisms. For boards of directors, the evidence highlights the importance of ethical competence and moral credibility in the selection, evaluation, and oversight of senior executives, as leadership ethics appear to exert a stronger influence on ESG disclosure quality than firm size or short-term financial performance. More broadly, the findings underscore the need to foster an ethical organizational culture to ensure that ESG disclosure is not only compliant but also credible, decision-useful, and aligned with the growing sustainability expectations of investors and other stakeholders.

9. Limitations and Future Research

Despite its contributions, this study had several limitations. First, although the framework acknowledges that ESG disclosure heterogeneity may be shaped by multiple endogenous organizational mechanisms, such as ethical climate, internal controls, and stakeholder responsiveness, the empirical analysis focuses on ethical leadership as a single integrative behavioral governance construct. This parsimonious approach was adopted to ensure analytical clarity and robust inference within a longitudinal setting; however, it does not allow for separate empirical identification of the distinct mechanisms outlined conceptually. Future research may extend this framework by decomposing ethical leadership into its underlying channels or by examining complementary organizational factors alongside leadership ethics to provide a more granular understanding of how endogenous dynamics jointly shape ESG disclosure heterogeneity. Second, the ethical leadership construct is quantified through an externally generated index that, although objective and widely recognized, may not fully capture the entire range of internal ethical climates or informal leadership behaviors within firms. Such indices are primarily based on observable policies, disclosed practices, and external assessments and may therefore underrepresent subtle, informal, or culturally embedded ethical dynamics that influence day-to-day managerial decision-making and employee behavior. Consequently, variations in internal ethical norms, leadership styles, and ethical influences operating below the formal disclosure level may not have been fully reflected in the measurement. Future research could address this limitation by employing mixed-method approaches, disaggregated ethical leadership indicators, or survey-based measures to capture informal ethical practices and leadership behaviors that are not observable through external indices. Third, this study is limited to nonfinancial firms listed on the Saudi Stock Exchange. Financial institutions were excluded because of their distinct regulatory frameworks, governance structures, and mandatory disclosure requirements, which could systematically influence ESG disclosure practices. While this restriction enhances sample homogeneity and internal validity, it may limit the generalizability of the findings to a broader corporate sector. Future research could extend this analysis to include financial firms to examine industry heterogeneity and assess whether the relationship between ethical leadership and ESG disclosure differs across heavily regulated sectors. Fourth, the longitudinal panel design provided greater analytical strength. However, reverse causality concerns or omitted variable bias may not be fully eliminated, particularly given the complex relationship between leadership behavior and sustainability disclosure. Such limitations should be considered in subsequent studies seeking further advanced research in this area. To explain the processes underlying the impact of ethical leadership on ESG disclosure, future researchers could employ qualitative or mixed methods designs that consider organizational culture, employee engagement, and internal control systems. Future research studies may also disaggregate ESG disclosure into its sub-elements of environmental, social, and governance to determine whether ethical leadership-ESG relationships are different in institutional, cultural, or regulatory settings. Comparative cross-country research can also help highlight how ethical leadership affects these dimensions differently. The results of these efforts will improve our understanding of the potential of ethical leadership to facilitate sustainable corporate accountability and help develop more advanced and context-specific sustainability governance schemes. Finally, although the study employs System GMM as a robustness check to mitigate potential endogeneity concerns, not all post-estimation diagnostic tests commonly associated with dynamic panel models, such as the Hansen test for instrument validity and the Arellano–Bond tests for serial correlation, are reported. As a result, while GMM estimates provide supportive robustness evidence, they should be interpreted with caution. Future research should conduct more comprehensive dynamic panel diagnostics and ex-

amine endogeneity by using alternative identification strategies and extended instrument validation procedures.

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