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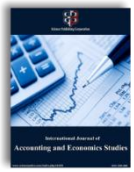

The Dark Side of CEO-Board Integration: Power Dynamics in Arab Boards and Their Performance Agency Cost Implications

Shehabaddin Abdullah Abdulwadod Al-Dubai *

Department of Accounting, School of Business, King Faisal University, Al-Ahsa, Saudi Arabia
**Corresponding author E-mail: saldubai@kfu.edu.sa*

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Abstract

This study examines the moderating impact of a powerful CEO on the relationship between board effectiveness and measured by meetings, size, and independence, and agency cost (proxied by asset turnover ratio) and firm performance (measured by earnings per share (EPS)). Using an unbalanced dataset of 295 firm-year observations from listed companies in nine Arabic countries (2019–2023), Hausman-Taylor estimations address endogeneity concerns. The results show that powerful CEOs are positively associated with firm performance but have no direct impact on agency costs. Board meetings are positively linked to firm performance but not to agency costs, whereas board size and independence show no direct effects. Importantly, a powerful CEO significantly moderates the relationship between board meetings and agency costs, with frequent meetings under powerful CEOs leading to higher agency costs. Firms should consider separating the CEO and board roles and adopt safeguards, such as independent lead directors, strict meeting agendas, and confidential sessions, to strengthen board independence.

Keywords: *Corporate Governance; Powerful CEO; CEO Board Membership; Board Effectiveness; Board of Directors; Board Meetings; Board Size; Board Independence; Agency Cost; Firm Performance; Arab; Gulf Cooperation Council GCC.*

1. Introduction

Within the context of free markets, a company is perceived as a pool of resources, information, knowledge, experience, and competencies that are either directly possessed or indirectly derived (Stoiljković et al., 2024). These companies operate as contractual entities involving multiple stakeholders with the common goal of fulfilling the ambitions and objectives of their owners to maximize profitability and attain strategic milestones. One key contractual relationship is between these companies and their executives, who are appointed by their boards of directors in alignment with legal authorizations (Jensen & Meckling, 1976). The management directs companies based on a framework of internally and externally established rules and regulations, including corporate governance. These regulations are structured to govern the interactions among owners (principals), the Board of Directors (BOD), and managers (agents) to ensure the comprehensive realization of all parties' interests (Huu Nguyen et al., 2020; Rashid, 2013). Central to these regulations is the principle that guarantees the segregation of powers and responsibilities between executive divisions and overseeing bodies, such as the BOD.

Comprising a mix of independent, non-executive members and occasionally executive personnel, the BOD plays a critical role in overseeing company operations (Rashid, 2013). Numerous governance rules have endeavored to define specific thresholds, varying by jurisdiction, to safeguard the independence of the BOD from executive management and to bolster oversight. The BOD's principal mandate is to supervise management activities and validate the alignment of their goals with the owners' objectives to minimize agency costs (Rashid, 2013). Agency problems ensue when conflicts arise between owners and executive management, particularly if the latter prioritizes personal interests over the owners' interests, as posited by Jensen and Meckling (1976). These problems generate costs that manifest in diverse ways, ultimately resulting in detriment to the company's interests (Alotaibi & Al-Dubai, 2024), failure to accomplish strategic goals, overall poor performance, and financial losses (Huu Nguyen et al., 2020), and possibly company dissolution. Effective control of the agency problem can be achieved by implementing robust management and supervisory systems within the company (AL-Dubai & Alotaibi, 2023). Specifically, the utilization of effective corporate governance mechanisms plays a crucial role in mitigating conflicts between management and shareholders (Huu Nguyen et al., 2020). A deficiency in corporate governance structure often leads to an increase in agency costs for companies

Nevertheless, a significant unanswered question persists regarding the impact of delegating day-to-day operational responsibilities to management separately from the monitoring role of the BOD (Rashid, 2013). The predominant focus in previous research examining the dynamics between CEOs and BOD has centered on the unification of the CEO and Chairman roles, a common practice in many corporate landscapes (Li & Roberts, 2018). However, certain companies have actively sought to deviate from this norm by separating these responsibilities. Despite such separation, the CEO still retains significant influence within the BOD and serves as a key source of power for top

executives. Past studies conducted in diverse countries, such as France (Bouaziz et al., 2020), Brazil (Caixe et al., 2019), Canada (Zhou, 1999), Portugal (Fernandes, 2008), and New Zealand (M. Li & Roberts, 2018), have underscored the prevalence of this governance framework. The exploration of Arab countries in this study further validates this trend through a brief survey that establishes the dominance of this practice across various Arab nations, as elucidated in the forthcoming section outlining the study outcomes. The term "powerful CEOs" is used in this study to denote CEOs operating within this context.

Varied opinions and empirical investigations have yielded contradictory findings, with some studies demonstrating positive impacts, others revealing negative repercussions, and some indicating negligible effects. For example, upper echelons theory posits that a CEO's traits can impact decision-making and subsequent organizational outcomes (Al-Dubai, 2025; Bouaziz et al., 2020). A powerful CEO holds authority over all aspects of operations, giving them increased influence over the board and organization. This influence can lead to excessive compensation (Bebchuk et al., 2011). Research suggests a connection between CEO power and factors such as CEO board membership, discretionary accruals, and strategic decision-making within the company (Bebchuk et al., 2011; Bouaziz et al., 2020). As CEO power increases, internal supervision may weaken, potentially leading to managerial entrenchment and a reduction in corporate value (Zhu et al., 2021). Conversely, some argue that a powerful CEO can positively impact firm value through resource dependence and stewardship theories (e.g., Li & Roberts, 2018). These theories suggest that a CEO's presence on the board can enhance board effectiveness, improve information flow, and reduce operational costs, ultimately benefiting firm value. This dual perspective raises the hypothesis that a powerful CEO is significantly associated with both agency costs and firm performance.

While earlier studies have predominantly focused on single-country contexts, primarily in Western nations, this study endeavors to contribute empirical insights by studying this relationship across a selection of companies in multiple Arab countries characterized by unique legal frameworks distinct from those observed in the Western domain. The dataset was extracted from the Refinitiv database, which is a reliable source of information (Shakil et al., 2021) and offers one of the most comprehensive databases in the industry, available on global companies and continuously growing (Oyewo, 2023). Data from publicly listed companies in nine Arab countries were analyzed, resulting in 295 firm-year observations between 2019 and 2023 in the Gulf Cooperation Council (GCC) and non-GCC regions. To control for endogeneity issues, Hausman-Taylor estimations were used to test the hypotheses developed in this study concerning the relationship between CEO power, board effectiveness, agency costs, and firm performance. Specifically, this study examines the influence of powerful CEOs on the relationship between board effectiveness and agency costs, as well as firm performance. Board effectiveness was measured using variables such as board meetings, board size, and board independence. A powerful CEO is defined as a CEO who holds a BOD membership. Agency costs were proxied by the asset turnover ratio, and firm performance was assessed using earnings per share (EPS).

The results indicate a positive association between powerful CEOs and firm performance, with no significant direct impact on agency costs. Additionally, board meetings were found to have a positive relationship with firm performance, but did not show a significant direct effect on the agency costs. Neither board size nor board independence had a direct impact on firm performance or agency costs. Notably, the interaction between powerful CEO and board meetings in the agency cost model revealed lower asset turnover in firms with frequent board meetings where CEOs had board membership, suggesting increased agency costs.

Potential conflicts arise when CEOs serve as board members, violating arm 's-length governance principles and creating opportunities for self-interested behavior. Directors may view CEO members as peers, reducing rigorous oversight and creating authority imbalances that weaken monitoring and board performance. The CEO's operational expertise often leads directors to defer to their judgment, compromising their independence. Evaluating corporate governance mechanisms in isolation overlooks the complex interactions that shape their effectiveness. A comprehensive assessment must consider how governance elements interact and modify their impact on organizational outcomes. Their combined effects may differ substantially from their influences, making isolated analyses incomplete or misleading.

This paper is organized as follows: the next section delves into the Literature Review and the Development of Hypotheses. Section 3 outlines the study's methodology. Section 4 presents the results and a discussion of the findings. Finally, in Section 5, the paper concludes with a discussion of the implications, limitations, and suggestions for future research.

2. Literature review and hypotheses development

Agency theory presents conflicting perspectives on the impact of CEO power within an organization, particularly regarding the CEO's role as a board member or chairman. When CEOs serve as board directors (a dual role), their interests may conflict with shareholders' goals. This misalignment can result in poor decision-making and inefficient use of company resources, harming shareholder value.

According to agency theory, powerful CEOs may avoid risky but beneficial investments to protect their positions. Instead of maximizing shareholder returns, they may prioritize their job security and benefits (Aktas et al., 2019; Cid-Aranda & López-Iturriaga, 2023). Research shows that powerful CEOs often shape board appointments, favoring directors who support them (Coles et al., 2014). When boards lack independence, oversight weakens, and CEOs are given unchecked power. This can lead to excessive spending on pet projects rather than on profitable growth opportunities. CEO duality also affects financial decisions (Chan et al., 2021). Without strong board oversight, CEOs may steer investments toward personal gains rather than the company's best interests. Such actions raise agency costs by wasting capital and missing high-potential opportunities (Aktas et al., 2019).

Weak governance entrenches CEO power, reduces accountability, and increases risks for shareholders. Wijethilake and Ekanayake (2019) posit that separating the CEO's functions from other leadership roles, such as the chairman or monitoring positions on the board, enhances transparency and accountability in organizational decision-making. This segregation is believed to instill confidence among shareholders, ultimately improving firm performance in line with the principles of agency theory (Ali, 2018). In addition, a Powerful CEO and duality may compromise the board's monitoring effectiveness (Ujunwa, 2012). Fama and Jensen (1983) argue that CEO duality could impede the board's oversight of management, potentially leading to increased agency costs through entrenchment and weakened monitoring. From an agency theory standpoint, separating the roles of the CEO and board chair/membership could enhance firm performance.

In contrast, a view rooted in agency theory suggests that a CEO with dual powers can establish a more robust decision-making framework, thereby contributing to higher firm performance (Mubeen et al., 2021). Therefore, a powerful CEO and duality may be considered a "double-edged sword." Finkelstein and D'Aveni (1994) elaborate on this notion by highlighting that dual roles can solidify a CEO's position within an organization, potentially challenging the board's monitoring and oversight capabilities. However, consolidating the CEO and chairman positions can create a clear chain of command at the organizational helm, streamline decision-making processes, and send positive signals to stakeholders.

While agency theory generally advocates for no powerful CEO to prevent potential self-serving behavior, particularly when the CEO holds multiple roles such as family ties or board committee positions, stewardship theory proposes merging the CEO and other board roles to enhance performance (Li & Roberts, 2018; Wijethilake & Ekanayake, 2019). According to Wijethilake and Ekanayake (2019), powerful

CEO /duality can be a strategic tool for leveraging organizational information effectively, given the CEO's comprehensive understanding of the company's operations. Under stewardship theory, the CEO is perceived as a dedicated corporate asset manager driven to enhance firm value and maintain high levels of performance within a governance framework that aids in shaping and executing corporate strategies. As proposed by Li and Roberts (2018), if CEOs adhere to the principles of stewardship theory, their active involvement on the board provides a platform for the exchange of confidential information. This exchange is crucial because of the superior informational advantage that CEOs possess, enabling board members to access valuable private insights through ongoing dialogues with the CEO regarding operational intricacies. This collaborative communication minimizes information transfer costs, thereby fostering organizational efficiency and ultimately bolstering firm value.

Additionally, from a resource provision perspective, a powerful CEO can be advantageous. When the BOD is established to support management, having the CEO on the board can enhance information dissemination and facilitate more productive interactions and discussions, leading to improved firm performance (Ujunwa, 2012). Resource dependence theory can be used to elucidate the influence of a powerful CEO, emphasizing the power dynamics between the CEO and the BOD. Therefore, research has indicated that adopting a resource dependence perspective is valuable for analyzing the contextual factors related to boards and agency matters (Wijethilake & Ekanayake, 2019).

The relationship between a powerful CEO and an organization's outcomes is a contentious issue within upper echelons theory, as noted by Bouaziz et al. (2020). This discussion complements established theories such as agency theory, stewardship theory, resource dependence theory, and the resource provision perspective. A CEO's prevalent authority across all operational functions grants them significant power, enabling them to shape board decisions and introduce agency costs, such as the excessive compensations of CEOs, a phenomenon highlighted by Bebchuk et al. (2011). When CEOs exert substantial control over decision-making processes, there is a risk of inflating their compensation to levels that may negatively impact the firm's overall profitability.

3. Agency cost, firm performance, and board effectiveness

Corporate governance involves establishing a well-structured system encompassing management processes, policies, laws, and customs to effectively regulate company operations while focusing on protecting the rights of shareholders and preventing the diversion of their interests (Huu Nguyen et al., 2020). The effectiveness of governance mechanisms is influenced by various organizational factors, with these mechanisms serving as substitutes or complements, depending on the broader control environment of each firm (Vafeas, 1999). Among the key governance mechanisms that attract attention from both practitioners and researchers is the BOD, which plays a critical role in the corporate governance framework of publicly listed companies (Eluyela et al., 2018; Obilikwu & Kassah, 2023). The significance of the BOD in shaping corporate governance practices is emphasized in the literature (Obilikwu & Kassah, 2023). In the past few decades, there have been numerous recommendations concerning the structure and functions of the BOD aimed at addressing conflicts between management and shareholders (García-Ramos & Díaz, 2021), which can adversely affect firm performance (Huu Nguyen et al., 2020). Achieving effective control of the agency problem requires implementing robust management and supervisory systems within the company.

In the corporate governance literature, the frequency of board meetings plays a crucial role in determining the level of board involvement, indicating the extent to which boards are motivated to engage in business operations (Wijethilake & Ekanayake, 2019). Board meetings are indispensable as they offer boards opportunities to make pivotal decisions that significantly impact the organization, as pointed out by Obilikwu and Kassah (2023). Eluyela et al. (2018) stated that board meetings serve as structured gatherings that bring together directors to deliberate on relevant issues based on their past experiences, current circumstances, and future-oriented considerations related to a company's viability as a going concern. The resolutions made during these meetings hold legal weight and are implemented within the company. This process is a vital mechanism for effectively aligning opinions to achieve the firm's overarching goals (Eluyela et al., 2018).

Vafeas (1999) asserts that optimizing board meeting frequency plays a pivotal role in enhancing firm value and reducing associated agency costs. As highlighted by Vafeas (1999)Firms that either underutilize or overemphasize board meetings risk incurring unnecessary costs that can potentially affect firm value. An optimal adjustment of the frequency of board meetings proves to be a cost-efficient tactic for enhancing a company's value proposition. By aligning board meeting frequency with the firm's unique context and operational environment, organizations can realize substantial cost efficiencies related to addressing agency challenges, thereby strengthening their competitive position and bolstering overall performance metrics. Wijethilake and Ekanayake (2019) provide empirical evidence of the moderating impact of the frequency of board meetings on the relationship between CEO duality and firm performance using data from the Colombo Stock Exchange in Sri Lanka. This indicates that the frequency of board meetings can support duality to improve firm performance.

The investigation carried out by Brick and Chidambaran (2010) revealed a significant detrimental impact of board meetings on TOBIN Q preceding the enactment of the Sarbanes-Oxley Act. Recent research by Eluyela et al. (2018) highlighted the presence of a positive yet statistically insignificant association between board meetings and firm performance in Nigerian banks. This finding underscores the notion that the mere conduct of board meetings may not inherently translate into improved financial outcomes for firms. Instead, the study emphasizes the critical role of meeting quality and the effective implementation of decisions made during these gatherings to enhance overall organizational performance. Therefore, the following hypothesis is proposed:

Hypothesis 1: Board meetings are significantly associated with firm performance and agency costs.

The board's primary responsibility is to safeguard shareholders' rights and interests, functioning as a monitoring mechanism by evaluating the performance of executives and replacing them if they fail to act in the shareholders' best interests (Al Farooque et al., 2019; Li & Roberts, 2017). However, concerns have been raised regarding the impact of soft regulations on corporate governance, with Guest (2008) suggesting that companies may exploit these regulations to manipulate the size of the board to suit their needs, potentially compromising effective monitoring.

The issue of determining an optimal board size that facilitates effective oversight, reduces agency costs, and enhances firm performance remains contentious. Advocates of larger boards argue that they enable the inclusion of diverse expertise and experience from different business sectors, thereby strengthening oversight and preventing managerial opportunism. Conversely, critics argue that larger boards may suffer from inefficiencies, such as bureaucratic processes, decision-making challenges, and time constraints during meetings.

Lee and Tulcanaza-Prieto (2024) argue that large board sizes are often associated with agency problems, such as increased communication and coordination costs among members with diverse viewpoints. These challenges can hinder timely decision-making, thereby increasing agency costs. Consequently, the debate on board size has led to differing perspectives, with some advocating a flexible approach in which companies determine board size based on their individual capabilities and business scale.

In their recent study, Sheikh and Alom (2021) establish a noteworthy positive relationship between board size and firm performance in the context of Bangladesh. Their findings indicate that companies with larger boards tend to exhibit enhanced operational efficiency across various dimensions. Specifically, an increased number of board members leads to improved power dynamics, better value creation across

different chairmanships, and heightened internal competition for leadership within the board. This ultimately contributes to the progression toward superior governance practices aimed at ensuring transparency, fostering transformative initiatives, and enhancing overall firm performance in the long run. Notably, their analysis also revealed a contrary association between board size and firm value. Brick and Chidambaran (2010) found that the association between board size and TOBIN Q was statistically insignificant both before and after the enactment of the Sarbanes-Oxley Act. This finding suggests that the number of board members does not significantly affect a firm's market valuation. Vijayakumaran (2019) shows a negative, yet statistically insignificant, relationship between agency costs and board size within Chinese PLCs. Therefore, the following hypothesis is proposed:

Hypothesis 2: Board size is significantly associated with firm performance and agency costs.

When examining the impact of board size, it is important to consider closely related factors, particularly board independence, which is often positively associated with board size (Eisenberg et al., 1998). As boards grow larger, the number of independent directors tends to increase because most corporate governance regulations mandate a minimum level of board independence.

According to Brick and Chidambaran (2010)Board director independence is a crucial factor shaping the level of board activity. The emphasis placed on this attribute by shareholders and regulatory entities underscores its pivotal role in corporate governance. Despite the importance of BOD independence, as stipulated in many corporate governance regulations in many countries, its impact on reducing agency costs and thus raising the efficiency and performance of companies is still a matter of debate (Vijayakumaran, 2019). For example, Raheja (2005) believes that the independence of board members increases the agency costs associated with the process of obtaining the required information that the BOD needs to exercise its oversight duties effectively and efficiently. Therefore, executive members are seen as an important source of information for the BOD (Vafeas, 1999). One possible solution to reduce the costs of obtaining important information is the membership of the company's CEO on the same board. The CEO is the primary source of information regarding a company's daily operations. It is also seen that the CEO holds the position of Chairman of the BOD as one of the possible solutions (Li & Roberts, 2018). On the other hand, executive members and CEO duality are seen as dangerous signs of the possibility of the CEO's opportunistic behavior, and board oversight may be weakened when the CEO is firmly entrenched, resulting in a decreased level of board engagement (Brick & Chidambaran, 2010).

Scholars have empirically investigated the role of independent directors on corporate boards in the context of firm performance and agency costs. Notably, Vijayakumaran (2019) suggests that these members serve important functions by providing information, services, and resources, and contributing to strategic decision-making due to their extensive education, diverse experience, reputation, and networks within the industry. Before the enactment of the Sarbanes-Oxley Act, Brick and Chidambaran (2010) identified a positive impact of board independence on firm value as measured by TOBIN Q. However, subsequent research by Katti and Raithatha (2018) and Singh and Davidson Iii (2003), as well as Vijayakumaran (2019) observed that independent directors do not necessarily reduce agency costs, as evidenced by the asset turnover ratio. Katti and Raithatha (2018) observed a decrease in agency costs, as measured by the operating expense ratio, in boards with higher independence. These findings imply that independent directors may predominantly be appointed to fulfill regulatory and legal obligations rather than actively contributing to value creation within the firm. Therefore, the following hypothesis is proposed:

Hypothesis 3: Board independence is significantly associated with firm performance and agency costs.

Numerous studies have examined the relationship between CEOs and Boards of Directors, particularly focusing on the common practice where the CEO also serves as the Chairman of the Board. However, some companies have chosen to separate these responsibilities. Despite this separation, the CEO retains significant influence as a board member. Similar structural arrangements have been observed in various countries, including France (Bouaziz et al., 2020), Canada (Zhou, 1999), Portugal (Fernandes, 2008), and New Zealand (Li & Roberts, 2018). Bouaziz et al. (2020) in their study refer to CEOs in such a position as "CEO board membership," which is "powerful CEOs" in the current study.

The relationship between a powerful CEO and an organization's outcomes is a subject of debate in upper echelons theory (Bouaziz et al., 2020). A CEO's authority over all aspects of operations gives them considerable power (Lee & Tulcanaza-Prieto, 2024), enabling them to influence board decisions and potentially affect their compensation (Bebchuk et al., 2011). When CEOs have significant control over decision-making processes, they may increase their CEO Pay Slice (CPS) above optimal levels, although the association between powerful CEO and CPS is not always significant (Bebchuk et al., 2011). Moreover, CEO power can affect discretionary accruals in various ways (Lee & Tulcanaza-Prieto, 2024). Bouaziz et al. (2020) found an insignificant association between a powerful CEO and discretionary accruals estimated through different models.

Additionally, as a CEO's power increases, their influence over strategic decisions may reduce internal supervision, leading to potential managerial entrenchment and decreased corporate value (Zhu et al., 2021). Li and Roberts (2018) shed light on the power imbalance between CEOs and boards, emphasizing CEOs' information advantage in influencing board decisions, potentially fostering opportunistic CEO behavior. In such contexts, the board's role may shift from exercising effective oversight to serving a largely marginal or symbolic function. Independent directors may move from actively protecting shareholder interests to merely fulfilling legal compliance requirements. Vijayakumaran (2019) notes that the monitoring functions of independent directors in developing countries frequently fall short of those in developed economies. This gap may be attributed to limited financial expertise, insufficient practical experience, and competing professional commitments that compromise oversight capacity. Consequently, independent directors often serve as symbolic figures rather than active contributors to effective corporate governance.

In contrast, Li and Roberts (2018) offer a positive perspective on powerful CEOs based on different theories, such as resource dependence and stewardship. They argue that a CEO-director relationship enhances board effectiveness, thus increasing firm value. Under the resource dependence theory, boards are seen as providers of essential resources, such as human and relational capital, relying on CEOs for comprehensive operational insights. Stewardship theory portrays CEOs as motivated managers who aim to maximize firm value within a supportive board structure that aids strategic planning and execution. Therefore, the hypotheses are as follows:

Hypothesis 4: A Powerful CEO is significantly associated with firm performance and agency costs.

Hypothesis 5: Powerful CEO moderates the relationship between board effectiveness (meeting frequency, board size, and board independence) and firm performance.

Hypothesis 6: A Powerful CEO moderates the relationship between board effectiveness (meeting frequency, board size, and board independence) and agency costs.

4. Methodology

Data for this study were extracted from the Refinitiv database, covering a comprehensive period of five years from 2019 to 2023 for all companies listed in the Arab financial markets. Initially, the sample included 6,475 firm-year observations, of which 6,180 were removed

due to incomplete data on the variables. This resulted in a final dataset of 295 firm-year observations from 123 firms across nine GCC and non-GCC countries. Despite substantial efforts to compile a comprehensive dataset covering the largest number of companies listed on Arab stock markets, this study encountered a significant limitation: the unavailability of essential data on board characteristics. This issue stems from the absence of mandatory disclosure requirements in most Arab countries, making the reporting of such information largely voluntary in nature. During the data collection process using the Refinitiv database, I observed that data for a significant number of companies were missing or incomplete. This challenge is not unique to this study; prior research on agency costs has faced similar data constraints in different contexts. For instance, Li et al. (2019) relied on 209 observations in the UK, whereas Singh and Davidson Iii (2003) used 236 observations in the US. Table 1 presents the distribution of sampled firms across the different countries and industry sectors included in the study.

Table 1: Sample Distribution by Country and Sector

TRBC Sector	Bahrain	Egypt	Jordan	Kuwait	Morocco	Oman	Qatar	Saudi Arabia	United Arab Emirates	Total
Academic & Educational Services	0	0	0	0	0	0	0	0	3	3
Basic Materials	4	0	1	0	1	4	3	37	8	58
Consumer Cyclicals	3	4	0	0	2	0	0	9	7	25
Consumer Non-Cyclicals	0	0	0	0	8	0	5	14	9	36
Energy	0	0	0	1	2	0	3	9	6	21
Healthcare	0	1	0	0	1	0	0	5	3	10
Industrials	0	0	0	6	2	0	3	5	5	21
Real Estate	0	2	0	8	0	0	6	10	11	37
Technology	5	1	0	9	6	9	12	12	8	62
Utilities	0	0	0	0	5	4	2	8	3	22
Total	12	8	1	24	27	17	34	109	63	295

Source: Author's work.

Drawing from the established literature (Huu Nguyen et al., 2020; Singh & Davidson Iii, 2003; Vijayakumaran, 2019)The utilization of the asset turnover ratio as a measure of agency costs has been widely documented. Singh and Davidson Iii (2003) and Vijayakumaran (2019) posited that the asset utilization ratio, calculated as the ratio of total sales to total assets, serves as a gauge for evaluating how effectively management harnesses the firm's assets to drive sales. Inefficiencies in asset utilization result in revenue depletion, leading to an inverse correlation with the agency costs. A higher turnover ratio signifies a firm's ability to generate substantial sales from its assets, indicating lower agency costs. Conversely, a lower ratio suggests managerial inefficiencies, such as suboptimal investment decisions, lack of effort, or excessive perk consumption. Such behaviors signal potential conflicts of interest between principals and agents, consequently increasing agency costs for shareholders (Singh & Davidson Iii, 2003; Vijayakumaran, 2019). According to Katti and Raithatha (2018)The asset utilization ratio is a key metric that aligns with resource dependence theory. This theory posits that efficient resource utilization leads to heightened organizational efficiency and superior governance practices. Therefore, a high asset utilization ratio indicates that an organization is adept at maximizing the effectiveness of its resources, thereby demonstrating strong governance and operational proficiency. The definitions of the variables are provided in Table 2.

Two models were analyzed to explore the moderating influence of a powerful CEO on the relationship between board effectiveness and firm performance, as well as agency costs.

$$\text{Model (1): Firm Performance } = \alpha_0 + \beta_1(\text{Powerful CEO})_{it} + \beta_2(\text{Board effectivness variables})_{it} + \beta_3(\text{Control variables})_{it}\,\mu_i + \varepsilon_{it}$$

$$\text{Model (2): Agency Costs } = \alpha_0 + \beta_1(\text{Powerful CEO})_{it} + \beta_2(\text{Board effectivness variables})_{it} + \beta_3(\text{Control variables})_{it}\,\mu_i + \varepsilon_{it}$$

Earnings per share (EPS) is employed as a proxy for firm performance because of its strong association with shareholder value and its capacity to reflect managerial efficiency. EPS provides a direct measure of profitability, which affects shareholder returns. Moreover, it aligns managerial incentives with those of shareholders, as an increase in EPS is often linked to rising stock prices and executive compensation tied to performance indicators. According to Wijethilake and Ekanayake (2019)EPS plays a pivotal role in shaping a CEO's perception of firm performance and influencing the level of engagement of the board of directors.

Based on prior studies on agency costs (e.g., Allam, 2018; Chaudhary, 2022; Dalwai et al., 2021; Lee & Tulcanaza-Prieto, 2024; Muñoz Mendoza et al., 2021; Rashid, 2013; Singh & Davidson Iii, 2003)This study uses the asset turnover ratio as a proxy for agency costs, as it shows how efficiently a company uses its assets. According to Singh and Davidson Iii (2003)Agency costs reflect how well management utilizes company resources. A lower asset turnover ratio suggests that the firm's assets are not being used effectively to generate cash flow, whereas a higher ratio indicates a more efficient use of assets (Rashid, 2013).

To examine the moderating effect of a powerful CEO, the analysis included three interaction terms within the model. These terms are ceobodXbodmeet, which signifies the interaction between a powerful CEO and board meetings; ceobodXbodsize, which represents the interaction between a powerful CEO and board size; and ceobodXbodindep, which denotes the interaction between a powerful CEO and board independence.

To address potential endogeneity within the model, this study employed the instrumental variable approach proposed by Hausman and Taylor (1981) using the xthtaylor function in Stata. This estimation technique enables the consideration of both time-varying and time-invariant endogenous regressors, as highlighted by Beaudry and Larivière (2016). Widely recognized in both linear and nonlinear models for its ability to yield robust estimates in the presence of endogenously correlated explanatory variables, the Hausman and Taylor method has gained significant adoption, as noted by Hausman (2019). As recommended by previous research (Arora & Gaur, 2022)All the primary variables of interest were treated as endogenous.

Table 2: Variables Definitions and Measurements

Variables	Acronym	Measurement
Dependent Variables:		
Firm Performance	EPS	EPS represents the diluted bottom-line net income available to common shareholders (including Extraordinary Items).

Agency Cost	Agency	The asset turnover ratio, used as a proxy for agency cost, is calculated by dividing the sales revenue by the total assets at the end of the fiscal year. A substantial asset turnover ratio reflects a lower agency cost, showcasing a higher level of efficiency in asset utilization for revenue generation within the organization
Independent Variables:		
Powerful CEO	ceobod	A dummy variable takes a value of 1 if the CEO is a board member, 0 otherwise.
Board Meetings	bodmeet	The average overall attendance percentage of board meetings as reported by the company.
Board Size	bodsize	The total number of board members at the end of the fiscal year.
Board Independency	bodindep	Percentage of independent board members as reported by the company.
Control Variables:		
Debt to equity	debttoequity	Total Debt Percentage of Total Equity represents the ratio of total debt divided by the value of Total Shareholders' Equity - including Minority Interest & Hybrid Debt, multiplied by 100.
Firm size	logassets	Natural logarithm for the total of assets.
Nomination Committee Independency	nomindep	Percentage of independent board members on the compensation committee as stipulated by the company.
Firm region	GCC	A dummy variable, takes a value of 1 for firms listed in GCC countries and 0 for firms listed in non-GCC countries.

Source: Author's own work.

5. Results and discussion

Figure 1 presents a scatter plot with a regression line, generated using ChatGPT-4, illustrating the relationship between Agency Cost (proxied by Asset Turnover) and Firm Performance (measured by EPS) across multiple years and observations from the countries included in this study. Visual evidence suggests a positive association between agency costs and firm performance. Specifically, firms that demonstrate higher asset turnover, which is indicative of more efficient asset utilization and lower agency costs, tend to report stronger financial performance, as reflected in higher EPS values. These findings offer partial support for agency theory, which posits that improved asset utilization enhances firm performance by reducing agency-related inefficiencies. Nonetheless, the dispersion of data points around the regression line indicates a degree of variability, suggesting that additional latent factors, such as governance mechanisms, firm size, or industry characteristics, may also play a role in shaping the observed relationship.

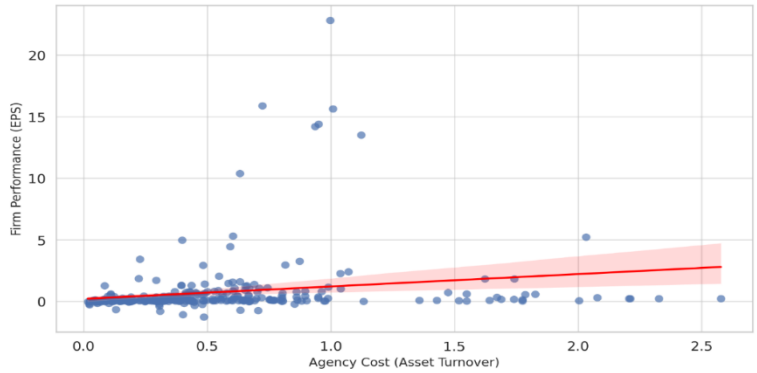


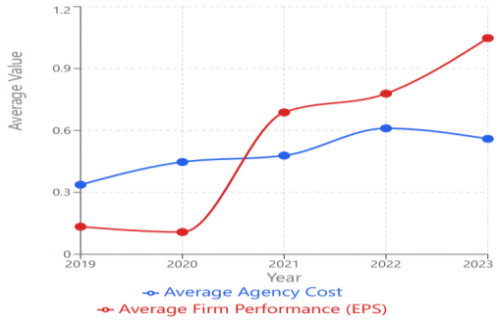
Fig. 1: Relationship between Agency Cost (Asset Turnover) and Firm Performance (EPS).

Table 3 presents the annual average values of Agency Cost (measured by Asset Turnover) and Firm Performance (measured by EPS) for Arab countries over the period 2019–2023. As shown in Figure 2, generated using Claude.ai, Asset Turnover (indicating lower agency costs) increased moderately from 0.337 in 2019 to 0.447 in 2020, while EPS slightly declined from 0.133 to 0.107 during the same period. This divergence may reflect a lag in the performance response or the impact of external shocks, such as the COVID-19 pandemic. From 2021 onward, both variables exhibited strong upward trends. Asset Turnover peaked at 0.610 in 2022 before a slight correction to 0.559 in 2023. Simultaneously, EPS rose sharply from 0.687 in 2021 to 1.048 in 2023, indicating sustained improvement in firm profitability. The positive alignment between increased Asset Turnover and rising EPS from 2021 onward suggests enhanced governance and operational efficiency across the region. The consistent growth in EPS also reflects improved market conditions, effective strategic adjustments, and potentially more disciplined managerial behavior within Arab firms.

Table 3: Overall Temporal Trends in Agency Cost and Firm Performance for Arab Countries (2019-2023)

Year	Average Agency Cost (Asset Turnover)	Average Firm Performance (EPS)
2019	0.337	0.133
2020	0.447	0.107
2021	0.478	0.687
2022	0.61	0.778
2023	0.559	1.048

Note: Values represent annual averages across all countries and firms in the sample.
Source: Author's own work.



Note: Values represent annual averages across all countries and firms in the sample.

Fig. 2: Temporal Trends in Agency Cost and Firm Performance (2019-2023).

Tables 4 and 5 present the descriptive statistics, offering valuable insights into the characteristics of observations with and without powerful CEOs. The study includes 295 firm-year observations, showing a clear disparity in CEO power distribution: 37.63% (n=111) have powerful CEOs, while 62.37% (n=184) do not. A notable 87.80% (n=259) of the sample was GCC countries, with the remaining 12.20% (n=36) in non-GCC countries.

Table 4: Descriptive Analysis of the Sample

	Firm-Year Observations (n)	%
Observations with powerful CEOs	111	37.63
Observations without powerful CEOs	184	62.37
Total	295	100%
Observations in GCC countries	259	87.80
Observations in non-GCC countries	36	12.20
Total	295	100%

Source: Author's work.

Firms with powerful CEOs exhibit a substantially higher mean EPS of 1.296, as opposed to 0.390 in firms without powerful CEOs, respectively. However, the standard deviation for firms with powerful CEOs is significantly larger at 3.540, compared to 1.377, indicating higher performance variability in this group. The asset turnover ratio is also higher in firms with powerful CEOs at a mean of 0.633, compared to 0.468 in firms without, implying a likely association between powerful CEOs and decreased agency costs. Both groups demonstrate strong engagement in board meetings with high average rates: 96.04% for powerful CEO firms and 95.13% for others. Firms with powerful CEOs also feature slightly larger boards on average (9.05 members) than those without (8.68 members). Notably, firms without powerful CEOs have a considerably higher percentage of independent board members (51.34%) compared to those with powerful CEOs (38.86%), indicating potential implications for corporate governance and oversight.

Firms with powerful CEOs have a higher mean debt-to-equity ratio of 0.787, indicating potential differences in capital structure strategies or risk appetites compared to firms without powerful CEOs (0.668). The mean logarithm of total assets is similar in both groups: 21.72 for powerful CEO firms and 21.74 for others, suggesting that firm size may not be a distinguishing factor. Notably, firms without powerful CEOs boast higher nomination committee independence (96.19%) compared to those with powerful CEOs (86.83%), aligning with the trend seen in overall board independence.

Table 5: Descriptive Statistics of the Continuous Variables

	Mean	Std. Dev.	Min	Max
All Observations (n=295)				
EPS	0.7306839	2.462236	-1.269067	22.83162
Agency	0.5297145	0.4605346	0.0172759	2.577541
bodmeet	95.47173	5.639786	65.56	100
Bodsize	8.823729	1.983635	5	16
bodindep	46.64349	24.57427	0	100
debttoequity	0.7129014	0.9515551	0	8.856852
logassets	21.73104	1.706694	17.72259	27.22086
nomindep	92.85985	13.16552	0	100
Observations with powerful CEOs (n=111)				
EPS	1.296189	3.540031	-0.805915	22.83162
Agency	0.6326573	0.5751719	0.0257479	2.577541
bodmeet	96.03883	4.930348	77.78	100
Bodsize	9.054054	1.971791	5	15
bodindep	38.86334	20.2065	7.692308	88.88889
debttoequity	0.7872676	1.323283	0.000422	8.856852
logassets	21.71918	1.982701	18.3859	27.22086
Nomindep (n=94)	86.83131	16.85118	0	100
Observations without powerful CEOs (n=184)				
EPS	0.389537	1.377007	-1.269067	15.89413
Agency	0.4676131	0.3627362	0.0172759	2.004632
bodmeet	95.12962	6.014629	65.56	100
Bodsize	8.684783	1.983149	5	16
bodindep	51.33696	25.80503	0	100
debttoequity	0.6680392	0.6298654	0	5.347702
logassets	21.73819	1.522002	17.72259	25.61775
Nomindep (n=170)	96.19328	9.060047	50	100

EPS = Firm Performance, Agency = asset turnover ratio (Agency Cost), ceobod = Powerful CEO, bodmeet = Board Meetings, bodsize = Board Size, bodindep = Board Independency, debttoequity = Debt to equity ratio, logassets = Firm size, nomindep = Nomination Committee Independency, GCC = Firm region.

Source: Author's work.

The pairwise correlation coefficient matrix in Table 6 reveals insightful connections related to firm performance metrics. Noteworthy findings include the significant positive correlations between Earnings Per Share (EPS) and asset turnover ratio (referred to as agency cost) (0.1880, p<0.01), as well as with the influence of a powerful CEO (0.1787, p<0.01). This suggests that firms characterized by higher asset turnover ratios (indicative of lower agency costs) and strong CEO leadership exhibit superior financial performance. Conversely, EPS is negatively correlated with board independence (-0.2029, p<0.01), firm size (-0.1570, p<0.01), and location outside the GCC region (-0.5095, p<0.01). The robust negative correlation with GCC location implies that firms operating outside this region tend to achieve higher EPS.

Moreover, the asset turnover ratio (agency cost) is positively correlated with the presence of a powerful CEO (0.1739, p<0.01), supporting the premise that robust CEO leadership may be linked to reduced agency costs. In contrast, agency costs are negatively correlated with firm size (-0.2443, p<0.01) and GCC location (-0.1929, p<0.1), indicating that larger firms and those in GCC nations may face higher agency costs.

Table 6: Pairwise Correlation Coefficients Matrix

	EPS	AGENCY	ceobod	bodmeet	bodsize	bodindep	debttoequity	logassets	nomindep	GCC
EPS	1									
Agency	0.1880***	1								
ceobod	0.1787***	0.1739***	1							
bodmeet	0.0198	0.0810	0.0782	1						
bodsize	0.0411	0.0177	0.0903	-0.1243**	1					
bodindep	-0.2029***	-0.0692	-0.2463***	0.0448	-0.1458*	1				
debttoe-quity	-0.1095*	-0.0208	0.0608	-0.0137	-0.0312	0.0361	1			
logassets	-0.1570***	-0.2443***	-0.0054	0.0188	0.1731***	0.1016*	0.0332	1		
nomindep	0.0545	0.1172*	-0.3411***	0.1090*	-0.0101	0.3139***	0.0915	-0.0161	1	
GCC	-0.5095***	-0.1929*	-0.1594***	0.1481**	-0.2005***	0.3794***	0.0496	0.2696***	0.2353***	1

*p < 0.1, **p < 0.05, ***p < 0.01.
EPS = Firm Performance, Agency = asset turnover ratio (Agency Cost), ceobod = Powerful CEO, bodmeet = Board Meetings, bodsize = Board Size, bodindep = Board Independency, debttoequity = Debt to equity ratio, logassets = Firm size, nomindep = Nomination Committee Independency, GCC = Firm region.
Source: Author's work.

Regarding CEO characteristics, a powerful CEO exhibits negative correlations with board independence (-0.2463, p<0.01), nomination committee independence (-0.3411, p<0.01), and GCC location (-0.1594, p<0.01). These associations suggest that organizations led by powerful CEOs tend to have less independent boards and nomination committees, while often being situated outside the GCC.

Furthermore, board size is negatively correlated with board independence (-0.1458, p<0.1) and GCC location (-0.2005, p<0.01), indicating that larger boards typically exhibit lower independence levels and are more common outside the GCC. In contrast, board independence shows positive correlations with nomination committee independence (0.3139, p<0.01) and GCC location (0.3794, p<0.01), underscoring the tendency for GCC firms to maintain more independent boards and nomination committees.

Table 7 presents the analysis of firm performance models, using Earnings Per Share (EPS) as the performance proxy. Analysis of the Hausman specification tests reveals that random effects (RE) models are generally suitable for various specifications, except Models 2 and 7, which lean toward fixed effects (FE). The Modified Wald test consistently detected the presence of heteroskedasticity in all models, necessitating the adoption of robust standard errors. The Wooldridge test for autocorrelation indicates that most models exhibit significant autocorrelation, except Model 5. The empirical results from the Hausman-Taylor estimations in Table 7 offer an in-depth examination of the determinants of firm performance, focusing on EPS. This analysis includes both direct and moderation models, shedding light on the relationships between BOD effectiveness factors as a corporate governance mechanism and firm performance.

Specifically, Models 1 – 4 delve into the direct impact of each independent variable. Notably, board meetings in Model 1 exhibit a positive and statistically significant correlation with EPS ($\beta = 0.00875$, $p < 0.05$), indicating that increased board engagement is linked to enhanced firm performance. Conversely, neither board size nor board independence exhibits statistically significant effects on EPS in their respective models (Models 2 and 3). Additionally, the presence of a powerful CEO (ceobod) has a positive and marginally significant effect on EPS ($\beta = 0.169$, $p < 0.1$), suggesting that companies with CEOs who also serve as board members tend to achieve higher financial performance.

In the comprehensive Model 5, all direct effects are considered simultaneously, further affirming the marginal significance of a powerful CEO's positive impact ($\beta = 0.160$, $p < 0.1$) and the continued positive influence of board meetings ($\beta = 0.00774$, $p < 0.1$). Board size and independence maintain their lack of significant impact on the EPS.

Furthermore, Moderation Models (6-8) explore the potential interactive effects between the presence of a powerful CEO and other board characteristics. The results show that the interaction term of CEO Power and Board Meetings in Model 6 is not statistically significant, indicating no significant difference in the impact of board meetings on EPS between companies with and without powerful CEOs. Similarly, the interactions between CEO power and board size (Model 7) and CEO power and board independence (Model 8) are not statistically significant, suggesting that there are no substantial moderating effects.

In terms of control Variables, Debt-to-Equity Ratio consistently reveals a negative and significant association across all models ($\beta \approx -0.09$, $p < 0.05$ or $p < 0.01$), highlighting that higher leverage is linked to lower EPS. Furthermore, the GCC Location variable consistently displays a strong negative and highly significant relationship across all models ($\beta \approx -1.5$, $p < 0.01$), indicating that firms in GCC countries tend to exhibit substantially lower EPS than non-GCC firms.

Table 8 presents the analysis of agency cost models, with the asset turnover ratio serving as a proxy for agency costs. Upon conducting the Hausman specification tests determined that the random effects models applied to all specifications. The Modified Wald test consistently identifies the presence of heteroskedasticity across all models, underscoring the need to implement robust standard errors for accurate estimations. The results obtained from the Wooldridge test for autocorrelation reveal significant autocorrelation within all models. The empirical findings from the Hausman-Taylor estimations in Table 8 provide a detailed analysis of the factors influencing agency costs, with

a particular focus on asset ratio turnover. This analysis integrates both direct and moderation models, illuminating the relationship between BOD effectiveness factors as a corporate governance mechanism and agency costs.

Table 7: Hausman-Taylor Estimations (Firm Performance Models)

	Direct Models					Moderation Models		
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
TVexogenous								
debttoequity	-0.0889***	-0.0885**	-0.0918***	-0.0870**	-0.0868**	-0.0857**	-0.0879**	-0.0880***
logassets	0.0698	0.0617	0.0541	0.0611	0.0710	0.0779	0.0795	0.0578
nomindep	0.000711	0.00105	0.00107	0.00232	0.00208	0.00202	0.00205	0.00235
ceobodXbodmeet						0.00653		
ceobodXbodsize							0.0263	
ceobodXbodindep								0.00278
TVendogenous								
bodmeet	0.00875**				0.00774*	0.00724		
bodsize		0.00741			0.00220		-0.00960	
bodindep			-0.00311		-0.00252			-0.00358
ceobod				0.169*	0.160*	-0.463	-0.0913	0.0586
TIexogenous								
GCC	-1.583***	-1.547***	-1.508***	-1.560***	-1.519***	-1.576***	-1.539***	-1.500***
_cons	-0.468	0.409	0.759	0.323	-0.535	-0.686	0.0222	0.513
sigma_u	1.085811	1.066317	1.0590198	1.0651682	1.1345675	1.1107641	1.0944252	1.0785296
sigma_e	0.29055698	0.2937701	0.29201011	0.29083294	0.28602127	0.28723091	0.2901156	28869876
rho	0.93317812	0.9294543	.92934172	0.93062165	0.94024464	0.93732303	0.93434366	0.93313911
Wald chi2	27.70	24.14	26.21	27.70	31.62	31.15	27.08	30.10
Prob > chi2	0.0000	0.0002	0.0001	0.0000	0.0001	0.0001	0.0003	0.0001
Number of obs	264	264	264	264	264	264	264	264
Number of groups	104	104	104	104	104	104	104	104
Hausman's specification test								
chi2	8.44	10.59	9.08	9.07	13.51	11.35	16.55	11.80
Prob>chi2	0.0769	0.0316	0.0591	0.0593	0.0607	0.0781	0.0111	0.0667
	RE Model	FE Model	RE Model	RE Model	RE Model	RE Model	FE Model	RE Model
Modified Wald test for groupwise heteroskedasticity								
chi2	1.9e+37	8.7e+37	2.1e+36	1.9e+35	5.7e+35	1.4e+36	4.4e+35	1.7e+36
Prob>chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero
Wooldridge test for autocorrelation in panel data								
F(1, 25)	4.286	5.062	4.316	4.940	4.032	4.808	5.012	4.589
Prob > F	0.0461	0.0310	0.0454	0.0330	0.0527	0.0353	0.0318	0.0394
	Auto.	Auto.	Auto.	Auto.	No Auto.	Auto.	Auto.	Auto.

p < 0.1, **p < 0.05, ***p < 0.01.
TV refers to time varying; TI refers to time invariant.
*EPS = Firm Performance, ceobod = Powerful CEO, bodmeet = Board Meetings, bodsize = Board Size, bodindep = Board Independency, debttoequity = Debt to equity ratio, logassets = Firm size, nomindep = Nomination Committee Independency, GCC = Firm region.
Source: Author's work

The results of Models 1,2 and 3 indicate a lack of statistically significant direct effects from board meetings (β = 0.00130, p > 0.1), board size (β = -0.00664, p > 0.1), and board independence (β = 0.0000452, p > 0.1) on the asset turnover ratio, suggesting that these governance mechanisms may not independently influence agency costs. The findings related to board size and board independence in the agency cost model are consistent with Vijayakumaran (2019), who observed similar results. It was found that the agency cost has a positive, insignificant association with board independence and an insignificant negative association with board size, indicating that boards of directors may struggle to effectively monitor top managers' non-value maximizing behaviors. Similarly, the direct impact of a powerful CEO on the asset turnover ratio is statistically insignificant in Model 4 (β = 0.00999, p > 0.1). These findings do not align with certain theoretical predictions (Li & Roberts, 2018) regarding the influence of board characteristics and CEO power on the agency costs.

Furthermore, the interaction term between powerful CEO and board meetings (ceobodXbodmeet) in Model 6 reveals a negative and statistically significant relationship (β = -0.00801, p < 0.01). This suggests that more frequent board meetings in the presence of a powerful CEO are associated with higher agency costs, potentially leading to less-efficient asset utilization. The interactions between powerful CEO and board size (ceobodXbodsize) or board independence (ceobodXbodindep) in Models 7 and 8 are not statistically significant, indicating a limited moderating effect of powerful CEO on the relationship between board characteristics and agency costs.

Regarding control variables, the analysis consistently shows a negative relationship between the debt-to-equity and asset turnover ratios, and is statistically significant at the 1% level across all models, indicating that higher leverage is linked to higher agency costs. This contrasts with Jensen's (1996) The free cash flow hypothesis and highlights the potential conflict of interest between shareholders and debt holders. Additionally, firm size demonstrated a negative and statistically significant association with the asset turnover ratio, implying that larger firms tend to have higher agency costs due to operational complexities and information asymmetries, which may exacerbate agency problems.

Table 8: Hausman-Taylor Estimations (Agency Cost Models)

	Direct Models					Moderation Models		
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
TVexogenous								
debttoequity	-0.0380***	-0.0395***	-0.0381***	-0.0379***	-0.0390***	-0.0381***	-0.0390***	-0.0373***
logassets	-0.119***	-0.122***	-0.120***	-0.120***	-0.120***	-0.126***	-0.128***	-0.120***
nomindep	0.0000740	0.0000122	0.000103	0.000183	0.0000731	0.0000864	0.000157	0.000219
ceobodXbodmeet						-0.00801***		
ceobodXbodsize							-0.00258	
ceobodXbodindep								0.00206
TVendogenous								

bodmeet	0.00130				0.00131	0.00268**		
bodsize		-0.00664			-0.00702		-0.00582	
bodindep			0.0000452		0.000133			-0.000363
ceobod				0.00999	0.0125	0.771***	0.0419	-0.0640
TIexogenous								
GCC	-0.0272	-0.0433	-0.0256	-0.0244	-0.0489	-0.0297	-0.0513	-0.0241
_cons	3.014***	3.283***	3.164***	3.152***	3.109***	3.047***	3.390***	3.168***
sigma_u	0.52061481	0.53089594	0.52404547	0.52272524	0.5262602	0.52664536	0.5297137	0.52329333
sigma_e	0.07846306	0.07836299	0.07866977	0.07864516	0.07809766	0.07683964	0.07829079	0.07821827
rho	0.97779028	0.97867728	0.97796063	0.97786518	0.97845163	0.97915577	0.97862263	0.97814606
Wald chi2	27.53	27.72	26.40	26.57	28.88	37.02	29.69	29.41
Prob > chi2	0.0000	0.0000	0.0001	0.0001	0.0003	0.0000	0.0001	0.0001
Number of obs	264	264	264	264	264	264	264	264
Number of groups	104	104	104	104	104	104	104	104
Hausman's specification test								
chi2	3.85	3.69	3.00	5.79	6.72	7.72	6.29	5.46
Prob>chi2	0.4262	0.4489	0.5576	0.2152	0.4581	0.2596	0.3917	0.4867
	RE Model	RE Model	RE Model	RE Model	RE Model	RE Model	RE Model	RE Model
Modified Wald test for groupwise heteroskedasticity								
chi2	1.1e+07	1.5e+05	2.0e+05	1.8e+05	4.8e+07	3.9e+05	1.4e+05	1.5e+06
Prob>chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero
Wooldridge test for autocorrelation in panel data								
F(1, 25)	48.905	43.439	45.170	45.276	46.949	45.385	43.759	42.993
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Auto.	Auto.	Auto.	Auto.	Auto.	Auto.	Auto.	Auto.

*p < 0.1, **p < 0.05, ***p < 0.01.
TV refers to time varying; TI refers to time invariant.
Agency = asset turnover ratio (Agency Cost), ceobod = Powerful CEO, bodmeet = Board Meetings, bodsize = Board Size, bodindep = Board Independency, debttoequity = Debt to equity ratio, logassets = Firm size, nomindep = Nomination Committee Independency, GCC = Firm region.
Source: Author's work.

6. Robust analysis

The sample exhibited variations in corporate governance structures, with a predominant one-tier board system among most firms and a minority employing two-tier boards. Specifically, the data revealed 1, 9, and 3 firm-year observations with two-tier boards in Kuwait, Morocco, and Saudi Arabia. This structural variation necessitates careful consideration when interpreting the results, as the governance implications differ substantially between models.

Table 9: Hausman-Taylor Estimations (Firm Performance Models)

	Direct Models					Moderation Models		
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
TVexogenous								
debttoequity	-0.0924***	-0.0925***	-0.0958***	-0.0905***	-0.0903***	-0.0887***	-0.0915***	-0.0915***
logassets	0.0498	0.0397	0.0311	0.0392	0.0518	0.0546	0.0487	0.0360
nomindep	-0.000227	0.0000414	0.0000899	0.00134	0.00126	0.00120	0.00119	0.00148
ceobodXbodmeet						0.00608		
ceobodXbodsize							0.0284	
ceobodXbodindep								0.00292
TVendogenous								
Bodmeet	0.00843*				0.00736*	0.00703		
bodsize		0.00633			0.00122		-0.0112	
bodindep			-0.00347		-0.00285			-0.00393*
ceobod				0.172*	0.162*	-0.408	-0.0894	0.0607
TIexogenous								
bodtype	-2.116**	-2.182**	-2.240**	-2.246**	-2.178**	-2.149**	-2.210**	-2.260**
_cons	0.696	1.702	2.172	1.648	0.752	0.561	1.522	1.913
sigma_u	1.1781067	1.1510372	1.1399429	1.150185	1.2158746	1.2007862	1.1760762	1.1570994
sigma_e	.29055698	.2937701	.29201011	.29083294	.28602127	.28723091	.2901156	.28869876
Rho	.94266115	.93884521	.93842171	.93990534	.94756422	.94587892	.94263901	.94139682
Wald chi2	19.17	15.72	18.36	19.51	24.46	23.61	20.16	22.93
Prob > chi2	0.0018	0.0077	0.0025	0.0015	0.0019	0.0013	0.0052	0.0018
Number of obs	264	264	264	264	264	264	264	264
Number of groups	104	104	104	104	104	104	104	104
Hausman's specification test								
chi2	7.27	6.40	6.60	6.75	8.80	11.04	10.76	9.11
Prob>chi2	0.1223	0.1711	0.1586	0.1495	0.2676	0.0872	0.0959	0.1675
	RE Model	RE Model	RE Model	RE Model	RE Model	RE Model	RE Model	RE Model
Modified Wald test for groupwise heteroskedasticity								
chi2	1.9e+37	8.7e+37	2.1e+36	1.9e+35	5.7e+35	1.4e+36	4.4e+35	1.7e+36
Prob>chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero
Wooldridge test for autocorrelation in panel data								
F(1, 34)	4.286	5.062	4.316	4.940	4.032	4.808	5.012	4.589
Prob > F	0.0461	0.0310	0.0454	0.0330	0.0527	0.0353	0.0318	0.0394
	Auto.	Auto.	Auto.	Auto.	No Auto.	Auto.	Auto.	Auto.

*p < 0.1, **p < 0.05, ***p < 0.01.

TV refers to time varying; TI refers to time invariant.
EPS = Firm Performance, ceobod = Powerful CEO, bodmeet = Board Meetings, bodsize = Board Size, bodindep = Board Independence, debttoequity = Debt to equity ratio, logassets = Firm size, nomindep = Nomination Committee Independence, bodtype Board Type (1 for one-tier board type, 0 otherwise).
Source: Author's work.

Under a one-tier board structure, a single board of directors assumes both managerial and supervisory responsibilities, comprising both executive directors (including the CEO) and non-executive directors. In contrast, the two-tier system maintains a strict separation of powers through distinct boards: a Management Board responsible for daily operations and a Supervisory Board charged with appointment, monitoring, and advisory functions (Dauth et al., 2017). This dual structure typically includes employee representatives and prohibits membership overlaps between boards.

Table 10: Hausman-Taylor Estimations (Agency Cost Models)

	Direct Models					Moderation Models		
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
TVexogenous								
debttoequity	-0.0381***	-0.0397***	-0.0382***	-0.0380***	-0.0392***	-0.0382***	-0.0392***	-0.0374***
logassets	-0.120***	-0.124***	-0.122***	-0.121***	-0.122***	-0.126***	-0.128***	-0.121***
nomindep	0.0000599	-0.00000796	0.0000888	0.000168	0.0000531	0.0000806	0.000146	0.000211
ceobodXbodmeet						-0.00799***		
ceobodXbodsize							-0.00253	
ceobodXbodindep								0.00208
TVendogenous								
bodmeet	0.00129				0.00130	0.00268*		
bodsize		-0.00685			-0.00722		-0.00594	
bodindep			0.0000471		0.000133			-0.000362
ceobod				0.00998	0.0126	0.770***	0.0422	-0.0643
TIexogenous								
bodtype	-0.327	-0.352	-0.337	-0.340	-0.343	-0.388	-0.399	-0.326
_cons	3.339***	3.629***	3.500***	3.493***	3.444***	3.400***	3.748***	3.471***
sigma_u	.52133146	.53159824	.52484009	.52353378	.52684063	.52753281	.53040256	.52408917
sigma_e	.07846306	.07836299	.07866977	.07864516	.07809766	.07683964	.07829079	.07821827
Rho	.97784994	.97873238	.97802585	.97793199	.97849807	.97922438	.97867694	.97821094
Wald chi2	27.86	28.11	26.73	26.90	29.26	36.81	29.53	29.50
Prob > chi2	0.0000	0.0000	0.0001	0.0001	0.0003	0.0000	0.0001	0.0001
Number of obs	264	264	264	264	264	264	264	264
Number of groups	104	104	104	104	104	104	104	104
Hausman's specification test								
chi2	4.00	3.78	3.13	5.89	6.77	7.81	6.34	5.54
Prob>chi2	0.4054	0.4373	0.5365	0.2078	0.4537	0.2523	0.3863	0.4770
	RE Model	RE Model	RE Model	RE Model	RE Model	RE Model	RE Model	RE Model
Modified Wald test for groupwise heteroskedasticity								
chi2	1.1e+07	1.5e+05	2.0e+05	1.8e+05	4.8e+07	3.9e+05	1.4e+05	1.5e+06
Prob>chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero	Hetero
Wooldridge test for autocorrelation in panel data								
F(1, 34)	48.905	43.439	45.170	45.276	46.949	45.385	43.759	42.993
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Auto.	Auto.	Auto.	Auto.	Auto.	Auto.	Auto.	Auto.

*p < 0.1, **p < 0.05, ***p < 0.01.
TV refers to time varying; TI refers to time invariant.
Agency = asset turnover ratio (Agency Cost), ceobod = Powerful CEO, bodmeet = Board Meetings, bodsize = Board Size, bodindep = Board Independence, debttoequity = Debt to equity ratio, logassets = Firm size, nomindep = Nomination Committee Independence, bodtype= Board Type (1 for one-tier board type, 0 otherwise).
Source: Author's work.

Consistent with Roiston and Harymawan's (2022) argument regarding the prevalence of CEO duality in one-tier systems, we implemented a methodological refinement by replacing the "GCC" control variable with "bodtype," a dummy variable coding board structure according to Burkhardt et al.'s (2020) classification. This adjustment yielded results consistent with our initial analysis (Tables 9 and 10), confirming the robustness of our conclusions while accounting for governance structure heterogeneity across the sampled firms. The maintained significance of our key findings across model specifications underscores their validity, despite the structural differences in corporate governance approaches.

Table 11: Hausman-Taylor Estimations (Firm Performance Models)

	Direct Models					Moderation Models		
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
TVexogenous								
debttoequity_w	-0.0954**	-0.0941**	-0.0981**	-0.0911**	-0.0896**	-0.0898**	-0.0941**	-0.0923**
logassets_w	0.0496	0.0430	0.0341	0.0421	0.0486	0.0588	0.0628	0.0381
nomindep_w	0.000235	0.000837	0.000686	0.00231	0.00173	0.00163	0.00178	0.00230
ceobodXbodmeet_w						0.00530		
ceobodXbodsize_w							0.0339	
ceobodXbodindep_w								0.00317
TVendogenous								
Bodmeet_w	0.00939**				0.00822*	0.00787		
bodsize_w		0.00812			0.00331		-0.0141	
bodindep_w			-0.00296		-0.00225			-0.00348
ceobod				0.172*	0.158*	-0.354	-0.166	0.0420
TIexogenous								

GCC	-1.563***	-1.524***	-1.489***	-1.536***	-1.498***	-1.551***	-1.517***	-1.480***
_cons	-0.0624	0.810	1.206	0.713	-0.103	-0.316	0.434	0.922
sigma_u	.98849788	.96588568	.95741071	.96614637	1.0362363	1.0136673	.99327065	.9761253
sigma_e	.27857942	.28210318	.28051971	.27904018	.27427885	.27528674	.27814806	.27701679
Rho	.92642083	.92140164	.92093921	.92300677	.93452747	.93131288	.92728405	.92546488
Wald chi2	27.54	23.87	25.83	27.51	31.03	30.58	26.80	29.82
Prob > chi2	0.0000	0.0002	0.0001	0.0000	0.0001	0.0001	0.0004	0.0001
Number of obs	264	264	264	264	264	264	264	264
Number of groups	104	104	104	104	104	104	104	104
E								

*p < 0.1, **p < 0.05, ***p < 0.01.
TV refers to time varying; TI refers to time invariant.
EPS_w = Firm Performance, ceobod = Powerful CEO, bodmeet_w = Board Meetings, bodsize_w = Board Size, bodindep_w = Board Independency, debttoequity_w = Debt to equity ratio, logassets_w = Firm size, nomindep_w = Nomination Committee Independency, GCC = Firm region.
Source: Author's work.

To validate the findings, I winsorized the continuous variables by trimming three observations from each tail (approximately 1%) using the command winsor VARIABLE, h(3) gen(VARIABLE_w). This approach was adopted because of the relatively small sample size, which led to errors when applying a stricter 1% winsorization. The winsorized results for the Firm Performance Models are presented in Table 11, and for the Agency Cost Models in Table 12. The conclusions remained consistent with those reported in Tables 9 and 10, confirming the robustness of the study results.

Table 12: Hausman-Taylor Estimations (Agency Cost Models)

	Direct Models					Moderation Models		
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
TVexogenous								
debttoequity_w	-0.0351***	-0.0383***	-0.0354***	-0.0349***	-0.0378***	-0.0352***	-0.0376***	-0.0349***
logassets_w	-0.133***	-0.138***	-0.135***	-0.135***	-0.136***	-0.140***	-0.143***	-0.136***
nomindep_w	-0.000190	-0.000244	-0.000118	-0.0000309	-0.000231	-0.0000613	-0.0000894	0.0000519
ceobodXbodmeet_w						-0.00696**		
ceobodXbodsize_w							-0.00187	
ceobodXbodindep_w								0.00113
TVendogenous								
Bodmeet_w	0.00166				0.00157	0.00297**		
bodsize_w		-0.00828			-0.00850		-0.00774	
bodindep_w			-0.000202		-0.0000872			-0.000414
ceobod				0.00864	0.0106	0.670**	0.0336	-0.0300
TIexogenous								
GCC	-0.0277	-0.0472	-0.0206	-0.0241	-0.0485	-0.0305	-0.0535	-0.0205
_cons	3.309***	3.667***	3.517***	3.489***	3.471***	3.324***	3.751***	3.511***
sigma_u	.53260632	.54815344	.53749393	.5366316	.54168167	.53807244	.54685625	.53649911
sigma_e	.07570488	.07559349	.07600097	.07600116	.07525912	.07446877	.075539	.0758728
Rho	.98019622	.98133695	.9803983	.9803364	.98106233	.98120567	.98127648	.98039197
Wald chi2	24.75	24.72	23.05	23.07	26.44	32.69	26.62	24.22
Prob > chi2	0.0002	0.0002	0.0003	0.0003	0.0009	0.0000	0.0004	0.0010
Number of obs	264	264	264	264	264	264	264	264
Number of groups	104	104	104	104	104	104	104	104

*p < 0.1, **p < 0.05, ***p < 0.01.
TV refers to time varying; TI refers to time invariant.
Agency_w = asset turnover ratio (Agency Cost), ceobod = Powerful CEO, bodmeet_w = Board Meetings, bodsize_w = Board Size, bodindep_w = Board Independency, debttoequity_w = Debt to equity ratio, logassets_w = Firm size, nomindep_w = Nomination Committee Independency, GCC = Firm region.
Source: Author's work.

7. Discussion

Research findings reveal a positive association between board meeting frequency and firm performance, as well as between powerful CEO and company results. These observations align with established theoretical frameworks: Agency Theory explains how regular board meetings strengthen governance oversight, while Stewardship Theory demonstrates how CEO board participation enhances information flow and decision-making processes.

According to Agency Theory, boards that meet frequently demonstrate robust governance practices, provide thorough management supervision, and improve strategic decisions, ultimately enhancing corporate performance. Complementarily, Stewardship Theory posits that when CEOs serve as board members, information gaps between leadership bodies narrow significantly. This comprehensive information access enables chief executives to make more informed decisions based on a complete understanding of organizational conditions while simultaneously aligning executive management's vision with board directives to strengthen strategic coordination.

However, an important question emerges: Does this positive influence extend across all performance dimensions? However, evidence suggests otherwise. When analyzing agency problem models, the statistical significance of these positive effects disappears. This indicates that frequent board meetings and a powerful CEO may not effectively mitigate agency concerns, suggesting that their impact varies considerably across different organizational contexts. This interpretation gains further credibility when the interaction effects are examined. Models investigating how powerful the CEO board is in moderating the relationship between meeting frequency and performance show insignificant results. This reveals that governance mechanisms may produce unexpected or counterproductive outcomes when they interact. The insignificant effect of the interaction between a powerful CEO and independent directors, as well as board size, may be attributed to the marginal or symbolic role the board often plays in corporate environments dominated by CEO authority, particularly when the CEO also holds a position on the board. In such contexts, the role of independent directors shifts from actively safeguarding shareholder interests to merely fulfilling legal compliance. This is especially relevant in many Arab business environments, where joint stock companies are mandated to appoint a specific proportion of independent directors. Vijayakumaran (2019) argues that the monitoring functions of

independent directors in developing countries often fall short of those in developed economies. This discrepancy may stem from a lack of financial expertise and insufficient practical experience among directors, as well as from the competing demands on their time, which can compromise their effectiveness. Consequently, independent directors may serve more as symbolic figures than as active participants in corporate governance.

Moreover, the findings from models examining how powerful CEO moderate the relationship between board meetings and agency problems reveal a significant negative effect. This indicates that board effectiveness in reducing agency problems critically depends on CEO board participation. These results support the Agency Theory's proposition that influential CEOs can undermine the board's monitoring capacity, transforming substantive meetings into performative exercises. Research indicates that powerful chief executives may obstruct strategic board participation by controlling information flow and meeting agendas (Chen, 2014; Kor, 2006). This reinforces the concept that the effectiveness of governance mechanisms depends significantly on their interactive dynamics (Chen, 2014). While boards serve essential monitoring and advisory functions (Coles et al., 2014; M. Li & Roberts, 2018)Those without CEO membership often demonstrate enhanced oversight capabilities as they challenge executive decisions (Kor, 2006).

Studies have demonstrated that separating the roles of the CEO and the board while increasing independent director representation positively influences board effectiveness and organizational outcomes (Kor, 2006). When CEOs exert substantial influence over boards, organizations tend to limit their investments in long-term initiatives that lack immediate returns. Additionally, influential CEOs often recruit directors with personal loyalty, further diminishing their independent monitoring capacity (Chan et al., 2021; M. Li & Roberts, 2018). Potential conflicts arise when CEOs serve as board members, potentially violating arm "s-length governance principles and creating opportunities for self-interested behavior. Directors may view CEO members as peers, reducing their incentive to provide rigorous oversight. Furthermore, this dual-role arrangement may create an authority imbalance that impairs effective monitoring and board performance. The CEO's unmatched operational knowledge often leads directors to defer to their expertise, potentially compromising their independent judgment (Fama & Jensen, 1983; M. Li & Roberts, 2018).

The interaction between corporate governance mechanisms deserves careful consideration when evaluating organizational performance and addressing agency concerns. Analyzing these mechanisms in isolation often fails to capture the complex dynamics that influence their effectiveness. A comprehensive assessment must consider how governance elements interact and potentially modify each other's impact. The direct effects of individual mechanisms, such as board meeting frequency or a powerful CEO, may present an incomplete or misleading picture of their actual influence on organizational outcomes.

These governance components operate within a sophisticated, interconnected system, where their combined impact can differ significantly from their individual effects. Truly effective governance analysis requires an understanding of these interactive relationships to accurately determine how they enhance performance or mitigate agency problems across various organizational contexts. By adopting this more nuanced approach, researchers and practitioners can develop governance frameworks that account for contextual factors and mechanism interactions, leading to more accurate predictions of governance effectiveness and more targeted organizational improvements.

8. Conclusion

This study investigates the relationship between CEO power, board effectiveness, agency costs, and firm performance. Specifically, this study examines the influence of powerful CEOs on the relationship between board effectiveness and agency costs, as well as firm performance. Board effectiveness was measured using variables such as board meetings, board size, and board independence. A powerful CEO is defined as a CEO who holds a position on the BOD. Agency costs were proxied by the asset turnover ratio, and firm performance was assessed using earnings per share (EPS). Data from publicly listed companies in nine Arab countries were analyzed, resulting in 295 firm-year observations between 2019 and 2023 in the GCC and non-GCC regions.

The results indicate a positive association between powerful CEOs and firm performance, with no significant direct impact on agency costs. Additionally, board meetings were found to have a positive relationship with firm performance, but did not show a significant direct effect on the agency costs. Neither board size nor board independence had a direct impact on firm performance or agency costs. Notably, the interaction between powerful CEO and board meetings in the agency cost model revealed lower asset turnover in firms with frequent board meetings where CEOs had board membership, suggesting increased agency costs.

The managerial implications of these findings suggest that governance mechanisms should be carefully balanced to avoid unintended negative interactions. The findings suggest that while frequent board meetings and a powerful CEO can enhance firm performance through improved information flow and strategic alignment, they may also weaken governance effectiveness when combined. Specifically, a powerful CEO can undermine the board’s monitoring function by exerting control over information and reducing independent oversight. Firms should consider the structural separation between the CEO and board membership to preserve independent oversight, particularly in environments with high agency risks (e.g., firms with dominant CEOs or weak governance checks). Additionally, boards should implement formal safeguards, such as independent lead directors, strict meeting agendas, and confidential executive sessions, to mitigate the CEO’s influence over board deliberations.

While Agency Theory posits that board meetings enhance monitoring and Stewardship Theory suggests that CEO-board integration improves decision-making, the findings reveal that their combined effects are not merely additive but contingent on power dynamics. The negative interaction effect (where a powerful CEO weakens the monitoring benefits of frequent meetings) suggests a theoretical gap: governance mechanisms may exhibit substitutive or antagonistic relationships rather than complementary ones under certain conditions. This study calls for a contingency-based extension of governance theories that integrates insights from power circulation theory (e.g., CEO dominance effects) and behavioral governance (e.g., how social dynamics influence board effectiveness).

While this study acknowledges its limitation in focusing primarily on powerful CEO, future research should broaden the scope to examine other observable CEO characteristics (e.g., origin, education, age, tenure, gender, and compensation) as well as unobservable traits (e.g., personality, values, narcissism, and overconfidence). Additionally, the roles of the chairman, top management teams, board committees, and ownership structures warrant further investigation.

Owing to the limited availability of data during the study period, it was not feasible to test the relationships using alternative proxies for agency costs. Therefore, the findings of this study should be interpreted with caution, as the results may vary depending on the agency cost measures used. It is also recommended that future studies explore a wider range of agency cost proxies beyond the asset turnover ratio, including the ratio of sales and management costs, free cash flow, asset liquidity ratio, and the number of acquisitions. Future research should model governance mechanisms as interdependent variables rather than in isolation, utilizing moderated mediation analyses to better capture their complex interactions.

Finally, although a small sample size may limit the generalizability of the findings and is considered a methodological constraint, it may also represent a potential research gap. As suggested by Herenia et al. (2024)These limitations provide valuable opportunities for future studies to expand and build upon existing research.

List of abbreviations

CEO: Chief Executive Officer.
EPS: Earnings Per Share.
BOD: Board of Directors.
GCC: Gulf Cooperation Council.

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Availability of data and materials

Data are available upon reasonable request

Ethics approval and consent to participate

Not applicable.

Consent for publication

The author agrees to the article if it is accepted for publication.

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