

-RESEARCH ARTICLE-

CORPORATE GOVERNANCE MECHANISM AND EARNING MANAGEMENT: MODERATING ROLE OF CAPITAL STRUCTURE

Vimala Venugopal Muthuswamy*

School of Business, Department of Management,
King Faisal University, Saudi Arabia.
Email: fmuthuswamy@kfu.edu.sa

Tilabov Nasrulla

Department of Finance, Tashkent State University of Economics.
Email: n.tilabov@tsue.uz

*Corresponding Author Email: fmuthuswamy@kfu.edu.sa

—Abstract—

This study conducted an analysis of the impact corporate governance has on earnings management in the context of manufacturing companies operating in Saudi Arabia. Furthermore, the research investigated potential moderating effects within the correlation between corporate governance and earnings management. Employing a quantitative research approach, data were gathered from the annual reports of 50 manufacturing firms listed on the Saudi Arabia Stock Exchange during the period spanning 2014-2022, utilizing a cross-sectional research design. Panel data analysis techniques, including pooled, random, and fixed effects, were applied using STATA software. The empirical findings of the work presents a positive and statistically significant correlation between corporate governance practices—specifically, board independence, meetings, composition, managerial ownership, and gender diversity—and earning management, aligning with theoretical expectations derived from agency theory. In contrast, institutional ownership and board size exhibited a negative association with earning management. Moreover, the study brought attention to the noteworthy moderating impact of capital structure, where elements such as board size, board meetings, board composition, independence, and managerial ownership interacted synergistically with capital structure, thereby enhancing its efficacy in mitigating earning management. However, certain governance factors, such as gender diversity and institutional

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ownership, demonstrated adverse moderating effects. The implications drawn from the study underscore the significance of a robust governance framework within the Saudi manufacturing sector. Recommendations include advocating for larger and more diverse boards, reinforcing independence, and aligning managerial interests with those of shareholders. Recognizing the interplay between governance mechanisms and financial structures becomes imperative for the effective management of earnings. The study concludes by acknowledging its limitations and suggesting avenues for future research.

Keywords: Corporate Governance, Capital Structure, Earning Management, Manufacturing, Saudi Arabia.

INTRODUCTION

Earning management, denoting the strategic manipulation of financial statements by companies, serves as a mechanism through which entities portray a distorted depiction of their financial performance (Gerged et al., 2023). While some discretion is acceptable in financial practices, excessive manipulation risks deceiving investors and stakeholders. Aligning earnings with corporate governance principles promotes transparency, ethics, and accountability in financial reporting, safeguarding investor trust and upholding company integrity (Shahzad et al., 2023). As a consequence, the significance of corporate governance has heightened, and it is posited that the board of directors plays a substantial role in influencing earnings management (Mensah & Boachie, 2023; Shahzad et al., 2023). This underscores the need for strong corporate governance, ensuring fair financial reporting aligned with stakeholders' interests. These measures prevent fraud, maintain credibility, and support ethical and transparent financial disclosures for sustainable business operations (Mensah & Boachie, 2023). The composition of capital structure exerts a notable influence on corporate governance, notably affecting the practices associated with earnings management (Naz & Sheikh, 2023; Oftapiani & Wijayanti, 2023). A judicious blend of debt and equity intricately shapes managerial conduct, aligning interests with stakeholders. Capital structures characterized by transparency diminish avenues for manipulation, thereby cultivating a climate of accountability (Oftapiani & Wijayanti, 2023). Furthermore, an ideal capital structure serves as an indicator of stability, elevating investor confidence and mitigating short-term incentives for earnings management (Oftapiani & Wijayanti, 2023). Effective allocation of capital within a well-organized framework fosters the creation of long-term value, thereby mitigating opportunistic earnings management practices (Ahmed et al., 2023; Jones, 1991).

Hence, this study explores how capital structure moderates the relationship between corporate boards and earnings management in Saudi Arabian manufacturing companies. Prior research underscores the crucial role of corporate governance (CG) in overseeing managerial actions, mitigating opportunistic behaviour, and subsequently reducing agency costs (Ahmed et al., 2023). The board of directors (BoDs) assumes a pivotal role in CG,

functioning as a crucial element in harmonizing the interests of shareholders and management and addressing inherent agency challenges. Scholars posit that both BoDs and concentrated ownership act as potent deterrents to managerial opportunism (Ahmed et al., 2023), with BoDs playing a central role in CG, particularly in the supervision of top management. However, when managerial ownership is extensively concentrated, the efficacy of monitoring tends to diminish, thereby creating opportunities for managerial opportunism (Ahmed et al., 2023). Thus, this investigation delves into the governance role of BoDs in conjunction with ownership emphasis in moderating earnings management (EM). Furthermore, the study endeavours to scrutinize the potential significance of capital structure within BoDs and its ability to moderate the association between CG & EM.

Consequently, this study extends agency theory by elucidating the efficacy of capital structure in constraining earnings management through its moderating influence on other CG mechanisms. In empirical terms, agency theory anticipates a positive correlation between the quality of CG and earnings management, with the objective of mitigating conflicts of interest between principals and agents (Gerged et al., 2023). As a result, considerable scholarly inquiry has explored the worldwide implications of CG quality on earnings management, with certain investigations suggesting a direct correlation (Biswas et al., 2022; El Dirri et al., 2020) while others suggesting an indirect link (Xie et al., 2003). Inaccuracies in financial reporting have the potential to erode investor confidence, thereby exerting an impact on the broader economy (Arioglu, 2020). Hence, the present comprehension of the influence of CG on earnings management lacks consensus. Several studies have failed to discern a discernible impact of corporate governance indicators on earnings management (Abed et al., 2012; Gerged et al., 2023). A subset of studies has identified a discernible impact of corporate governance on earnings management (Biswas et al., 2022; El Dirri et al., 2020). Moreover, numerous scholars have contributed to the investigation of the extent of earnings management within favourable or unfavourable economic conditions (Sehrawat et al., 2020). Baron and Kenny (1986) suggested that the existing variability in the literature regarding the relationship between dependent and independent variables might be elucidated by considering the indirect effects of moderator variables. The diverse empirical findings could also be attributed to idiosyncratic firm-specific characteristics (Mansour et al., 2022). Mansour et al. (2022) and Mansour et al. (2022) Emphasizes that the efficacy of a CG system is contingent upon key firm-related variables, including CS. In last studies (Biswas et al., 2022; El Dirri et al., 2020) Proposes an interconnection among these mechanisms, providing firms the flexibility to select an optimal combination. While extensive research has investigated direct associations between CG quality and earnings management (Ahmed et al., 2023; Hashed & Almaqtari, 2021), the specific context of Saudi Arabia has not undergone extensive scrutiny concerning this relationship, particularly the moderating influence of capital structure (Hashed & Almaqtari, 2021). Moreover, there exists a scarcity of studies examining moderating variables, a gap acknowledged by numerous CG researchers who underscore the importance of intervening factors (Hashed & Almaqtari, 2021; Mansour et al., 2022).

Therefore, investigating Whether CS has an impact on the link across CG quality and earnings management could yield valuable insights. Prior literature has primarily concentrated on isolated pairs of these factors, such as the influence of CG on earnings or CS, or the impact of CS on firm outcomes (Javaid et al., 2023). From a CS perspective, the direct or indirect impact of CG on earnings management remains uncertain, a key aspect in contemporary CG discourse. We aim to bridge these two literature strands by exploring how CS moderates the link among earnings management and CG in Saudi Arabian manufacturing firms. A well-structured capital arrangement in Saudi Arabian manufacturing firms could enhance the consequences of corporate governance on earnings management, fostering financial discipline and alignment of management actions with shareholders' interests (Mansour et al., 2022). Robust governance practices, when complemented by an ideal capital structure, fortify monitoring mechanisms (Gerged et al., 2023; Mansour et al., 2022). This analysis dissuades undue manipulation of earnings, promoting transparency and ethical conduct in financial reporting. Consequently, it reinforces the effectiveness of corporate governance in mitigating earnings management within manufacturing companies (Mansour et al., 2022). Several scholars have contended that capital structure holds the potential to serve as a moderating variable (Mansour et al., 2022). To address this information vacuum, the study examined how capital structure influences earnings management for production enterprises in Saudi Arabia.

This study, focusing on the agency theory perspective, holds both theoretical and practical significance. The findings underscore the impact of governance indicators on earnings management, emphasizing the importance of larger, diverse boards, enhanced independence, and managerial alignment with shareholder interests. Additionally, the study proposes capital structure as a moderating variable, emphasizing the need for robust governance strategies aligned with financial dynamics in Saudi Arabian manufacturing firms. These insights are crucial for policymakers and practitioners seeking to enhance the governance framework in the Saudi industrial sector. Sections, paper's remaining, encompass literature review, methodology for research, analysis and discussion of data, and implications and conclusions.

REVIEW OF LITERATURE

Agency Theory

Agency theory, serving as a foundational framework, elucidates how CG mechanisms influence the managerial practices of companies. It underscores the intricate interrelationships among businesses and their stakeholders, including customers, suppliers, employees, and investors. The primary goal of CG is to oversee the behaviours of various stakeholders, thereby reducing the agency costs inherent in principal-agent relationships (Gerged et al., 2023). More precisely, it

empowers stakeholders to supervise managerial conduct and ensure the credibility of financial statements (Wilkinson & Clements, 2006). Furthermore, agency theory assumes a significant role within CS theory, elucidating conflicts of interest among diverse stakeholders within a company. As per Jensen and Meckling (2019) these conflicts arise from divergent objectives between principals (shareholders) and agents (management). The selection of capital structure becomes a pivotal consideration, influencing the dynamics of these agency conflicts (Kochhar, 1996). The existence of debt introduces financial discipline, with creditors closely aligning their support for managerial activities with shareholders' interests. Nevertheless, excessive debt may lead to conflicts between shareholders and creditors, impacting the agency relationship (Kochhar, 1996).

In prior research on CG & EM, agency theory serves as the mechanism through which governance practices exert influence on managerial behaviour (Mansour et al., 2022). The purpose of CG is to mitigate agency conflicts by aligning the interests of management with those of shareholders (Mansour et al., 2022). An optimal capital structure moderates this correlation, enhancing governance effectiveness through a balanced mix of debt and equity. This alignment, supported by agency theory, strengthens corporate governance, discouraging opportunistic behaviours like earnings management and promoting transparency and accountability (Jensen and Meckling (2019); (Mansour et al., 2022) Additionally, it delves into the pivotal role of CG in supervising top management, consequently leading to a substantial reduction in agency costs. Therefore, this study incorporates CS as a moderating variable in elucidating the relationship between CG and EM.

Corporate Governance Mechanism and Earning Management

Managers frequently engage in EM when presenting financial statements, and contrasting perspectives shed light on their motivations. The opportunistic viewpoint posits that managers manipulate earnings to deceive investors for the purpose of maximizing their personal benefits (Gerged et al., 2023). In contrast, the vantage point of information asserts that managerial discretion enables managers to signal their expectations regarding the company's profitability (Gerged et al., 2023). In the endeavour to align the interests of managers and shareholders, thereby mitigating the adverse effects of managerial speculation, research has explored the connection between CG mechanisms & EM. Certain CG mechanisms, particularly board gender diversity, have garnered acclaim for their potential efficacy (Biswas et al., 2022; El Diri et al., 2020). Empirical investigations indicate that proficient CG representation in key positions on corporate boards has the potential to mitigate managerial opportunism, thereby enhancing the quality of earnings (Abed et al., 2012; Gerged et al., 2023). However, conflicting evidence persists regarding the board of directors' capability to restrict EM (Mensah & Boachie, 2023; Shahzad et al., 2023).

Moreover, numerous empirical studies have investigated the correlation between diverse CG factors & EM. Board gender diversity has been linked to a decrease in financial results, as evidenced in studies conducted by (Galia et al., 2015). Board independence has demonstrated a significant impact on EM. Notably, Mensah and Boachie (2023) discovered a detrimental relationship among the level of board independence & the practice of manipulating earnings. Mensah and Boachie (2023) established a noteworthy correlation between the frequency of board meetings and earnings management, suggesting that increased meeting frequency is associated with diminished levels of manipulation. Managerial ownership concentration has mixed findings; Ratnawati and Hamid (2015) identified an inverse association between managerial ownership and earnings management, aligning with findings from other scholarly investigation La Rosa et al. (2020) have shown positive associations. Board size exhibits varied effects, as evidenced by divergent findings in the literature. Notably, Githaiga et al. (2022) report a positive correlation between larger boards and earnings management, whereas studies by (Itopa et al., 2022) indicate a negative association. Furthermore, concentrated ownership has been shown to have a mitigating effect on earnings management in investigations by (Al-Duais et al., 2022; Indy et al., 2022). However, research conducted by (Wilson et al., 2022), presents differing findings, highlighting the need for further exploration in this domain. Therefore, drawing from the preceding discussion, the subsequent research hypothesis is articulated as follows:

Hypothesis 1: *Board size influence significantly to earning management.*

Hypothesis 2: *Board independence influence significantly to earning management.*

Hypothesis 3: *Board meetings influence significantly to earning management.*

Hypothesis 4: *Board composition influence significantly to earning management.*

Hypothesis 5: *Board diversity influence significantly to earning management.*

Hypothesis 6: *Institutional ownership influence significantly to earning management.*

Hypothesis 7: *Managerial ownership influence significantly to earning management.*

Moderating Role of Capital Structure

CS has surfaced as a fundamental financing strategy widely adopted by firms across diverse sectors, encompassing non-financial realms (Mansour et al., 2022). Acknowledged as a prospective solution for mitigating agency problems (Mansour et al., 2022). A proficiently administered capital structure is also considered to play a crucial role in influencing the earnings of organizations (Lassoued, 2022). Despite its significance, the function of CS as an intervention element is often disregarded in discussions on CG. In the social sciences, the inclusion of moderation variables in models is a conventional method to enhance the understanding of causal relationships between variables (Baron & Kenny, 1986). Nevertheless, the literature examining the moderating function of CS in the association between CG quality & EM remains largely unexplored. This gap is crucial, particularly in light of the scarcity of empirical findings concerning this relationship (Mansour et al., 2022; Mensah & Boachie, 2023). The study conducted by Mansour et al. (2022) underscored the interconnectedness of governance mechanisms, indicating that firms have the flexibility to

choose an optimal combination of these mechanisms tailored to their specific circumstances. Thus, the linkage between effective CG & CS is intricately woven together through their correlation with agency costs (Mansour et al., 2022).

Certain scholars have posited that CS acts in synergy with governance mechanisms to alleviate agency conflict (Mansour et al., 2022). Hence, it is strongly advised to investigate a potential complementary relationship among CS, CG, & EM (Mansour et al., 2022). CS, positioned as a third variable functioning as a disciplinary mechanism, is expected to exert a positive influence on the link among CG and firm performance (Goyal & Gulati, 2023; Mansour et al., 2022). Notably, Goyal and Gulati (2023) suggesting that CS emerges as a prominent moderator in elucidating the relationship between CG and earnings. Its capacity to influence the connection between CG and corporate performance stems from its ability to incentivize or deter internal or external actors, potentially altering this relationship. The quality of CG and CS has the potential to mitigate conflicts of interest between managers and shareholders by reducing agency costs associated with managers accessing free cash flows (Detthamrong et al., 2017). Additionally, it has been estimated that CS could be act as a moderating variable (Mansour et al., 2022). Numerous scholars have recommended examining CS as a governance tool to uphold governance efficacy and enhance firm performance (Mansour et al., 2022). This viewpoint perceives CS akin to CG in its capacity to alleviate agency costs, positioning CS as a pivotal third variable whose impact on the relationship between CG quality and earnings necessitates exploration (La Rocca, 2007). Nevertheless, it is anticipated that CS, acting as a determinant of corporate financial decisions, will augment the relationship between CG and earnings (Mansour et al., 2022). An optimal CS, by constraining managerial discretion concerning free cash flows, operates as a supplementary control mechanism, fortifying the efficacy of other governance mechanisms (Biswas et al., 2022). Hence, the study has formulated the subsequent research hypothesis:

Hypothesis 8: *Board size influence significantly to earning management with moderation of capital structure.*

Hypothesis 9: *Board independence influence significantly to earning management with moderation of capital structure.*

Hypothesis 10: *Board meetings influence significantly to earning management with moderation of capital structure.*

Hypothesis 11: *Board composition influence significantly to earning management with moderation of capital structure.*

Hypothesis 12: *Board diversity influence significantly to earning management with moderation of capital structure.*

Hypothesis 13: *Institutional ownership influence significantly to earning management with moderation of capital structure.*

Hypothesis 14: *Managerial ownership influence significantly to earning management with moderation of capital structure.*

Research Design and Data

The study employed six dimensions of corporate governance, including board size (BS), board independence (BI), board composition (BC), board meetings (BM), gender diversity (GED), institutional ownership (IO), and managerial ownership (MO). CS was considered as a moderating variable, & EM served as the dependent variable. Data were collected from manufacturing companies in Saudi Arabia listed on the Saudi Stock Exchange from 2014 - 2023, utilizing yearly reports from 50 firms. The quantitative longitudinal research design tracked variables over an extended period, enabling insights into trends, changes, and causality over time. This approach facilitated the examination of developmental patterns and the identification of relationships between variables across different time points. In contrast, cross-sectional research captures data at a single point, offering a snapshot of relationships but lacking the depth to understand temporal changes or causal relationships over time (Sewell et al., 2003). Table 1 delineates the measurements of the variables.

Table 1: Variable Measurements.

Variables	Acronym	Operationalization	Source
Dependent variable			
Earning management	EM	Discretionary accruals, modified Jones model as used by	(Hashed & Almaqtari, 2021)
Independent variables			
Corporate governance			
Board Size	BS	Total number of board size	(Gerged et al., 2023)
Board Independence	BI	Independent director's proportions in the board	(Gerged et al., 2023)
Board meetings	BM	Board meetings held in the whole year	(Vafeas, 1999)
Board diversity	BD	Female director's proportions in the board	(Galia et al., 2015)
Board Composition		Referred to inside to outside directors in the board	(Galia et al., 2015)
Managerial Ownership	MO	Measured by dummy variable where 1 is equal to institutional shareholding is above 5%, or below is 0 otherwise.	(Gerged et al., 2023; Wang et al., 2020)
Institutional Ownership	IO	The shares hold by the director of the total shares	(Gerged et al., 2023; Wang et al., 2020)
Moderating Variable			
Capital structure	CS	Total debts to total assets	(Wang et al., 2020)
Control Variables			
Firm Size	FS	Total sales log	(Wang et al., 2020)
Return on assets	ROA	Earning before tax/Total assets	
Sales growth	SAGR	"Current year sale minus previous year sale and divided by previous year sale"	(Wang et al., 2020)
International Financial reporting standard	IFRS	Measured through dummy 1 for post-IFRS adoption and 0 otherwise	(Hashed & Almaqtari, 2021)

Earnings Management Measurements

Discretionary accruals serve as a widely accepted proxy in the literature for detecting earning management practices at the organizational level. Previous studies have employed two methods, non-discretionary and discretionary, utilizing both balance sheet and cash flow approaches. However, some major studies indicate that the balance sheet approach may be inferior in various populations and sample sizes. A more balanced and suitable approach, as suggested, involves using the cash flow approach, which is less susceptible to external factors such as the economic conditions of the state where the study is conducted (Collins & Hribar, 2000; Green et al., 2011). Consistent with prior studies, the present research also adopts the cash flow approach to attain a more robust and judicious conclusion regarding earnings management.

The total accruals, as portrayed by the cash flow approach, are elucidated as follows:

$$TA_{it} = EAT_{it} - OCF_{it}$$

Where

OCF_{it} = Operating Cash flows for firm i for time t
 TA_{it} = Total Accruals for firm i for time t
 EAT_{it} = Earnings after tax for firm i for time t

In the pursuit of gauging the discretionary component of earnings management, Kaszink (1999) introduced a conceptual framework aimed at forecasting the Discretionary Portion of Total Accruals. This model serves as a surrogate for earning management within the context of the present research.

$$TA_{it} = Y_0 (1/ Assets_{it-1}) + Y_1 (\Delta REV_{it} - \Delta REC_{it}) + Y_2 (PPE_{it}) + Y_3 (\Delta OCF_{it}) + \varepsilon_{it}$$

TA_{it} = "Total accruals by cash flow approach"

$1/ Assets_{it-1}$ = lagged assets value for firm i at time $t-1$

ΔREV_{it} = Change in Revenues for firm i ($REV_{it} - REV_{it-1}$)

ΔREC_{it} = Change in Receivables for firm i ($REC_{it} - REC_{it-1}$)

PPE_{it} = Property Plant and equipment firm i at time t

ΔOCF_{it} = Change in operating cash flows for firm i at time t "

Y_{0-n} = estimated parameters of regression models

ε_{it} = Residuals

All variables should be scaled by beginning total level of total lagged assets.

Model specification

$$EM = \beta_0 + \beta_1 BS + \beta_2 BI + \beta_3 BM + \beta_4 BED + \beta_5 BC + \beta_6 IO + \beta_7 MO + \beta_8 SAGR + \beta_9 ROA + \beta_{10} IFRS + \beta_{11} SI + \varepsilon \text{ (Equation.1)}$$

$$EM = \beta_0 + \beta_1 BS + \beta_2 BI + \beta_3 BM + \beta_4 BED + \beta_5 BC + \beta_6 IO + \beta_7 MO + \beta_8 BS * CS + \beta_9 BI * CS + \beta_{10} BM * CS + \beta_{11} BED * CS + \beta_{12} BC * CS + \beta_{13} IO * CS + \beta_{14} MO * CS + \beta_{15} SAGR + \beta_{16} ROA + \beta_{17} IFRS + \beta_{18} SI + \varepsilon \text{ (Equation.2)}$$

The foregoing delineation encompasses two models wherein the following variables are elucidated: BS-board size, BI-board independence, BM-board meetings, Mo-managerial ownership, IO-institutional ownership, BC-board composition, GED-gender diversity, ROA-return on assets, SI-size, IFRs-international financial reporting standard, Leve-leverage, EM-earning management, CS-capital structure.

DATA ANALYSIS AND DISCUSSIONS

Descriptive statistics

The provided descriptive statistics furnish essential insights into the dimensions of corporate governance, capital structure, and metrics related to earnings management within Saudi Arabian manufacturing companies. The statistical values reveal a moderate level of EM, with a mean of 0.074 and a standard deviation of 0.130, signifying discernible variability in the management of earnings. Notably, board size (BS) (8.16) and board meetings (BM) (5.32) manifest relatively consistent values, indicating stability in governance practices. Conversely, board independence (BI) (3.96) & BC (3.54) exhibit moderate variability, suggesting a potential range in the independence and diversity of board members.

Managerial ownership (MO) (.048) and institutional ownership (IO) (.19) display low means, implying limited direct managerial and institutional influence within these firms. The return on assets (ROA) mean of 0.834 reflects positive performance, while CS mean values (0.3782) show significant variability, ranging widely from 0.234 to 85.34. This variance may indicate diverse levels of financial leverage across these companies. Additionally, the findings suggest an opportunity for enhancing gender diversity (GED) on boards.

Further exploration of financial performance, as measured by return on assets (ROA), reveals an average of 5.61, albeit with considerable variance from negative values to highly profitable returns. The leverage (Lever) at 37.467 suggests an average debt level with diverse capital structures among these firms. Firm size (FS) averages at 6.352, indicating moderate diversity in company sizes. The discussed results are presented in [Table 2](#).

Table 2: Descriptive Statistics

	OBS	Mean	SD	Min	Max
EM	450	0.074	0.130	0.00	0.821
BS	441	8.16	1.44	5.00	11
BI	441	3.96	1.30	1.00	7.00
BM	450	5.32	2.15	2.00	17.00
BC	450	3.54	0.75	3.00	7.00
GED	450	1.71	0.74	1.00	4.00
IO	450	0.19	0.981	0	1
MO	441	0.048	0.516	0.000	0.089
CS	450	0.3782	0.264	0.234	85.34
ROA	450	0.834	0.090	-0.53	0.805
Lever	450	37.467	0.264	0.234	85.34
FS	450	6.25	0.693	5.589	9.35
ROA	450	0.561	0.099	-0.53	0.805
CR	450	1.923	1.092	0.345	9.459
FS	450	6.352	0.693	5.589	9.35
IFRS	440	.58	0.782	0	1

Note: BI-board independence, SI-firm size, BS-board size, ROA-return on assets, BM-board meetings, Mo-managerial ownership, IO-institutional ownership, BC-board composition, GED-gender diversity, IFRs-international financial reporting standard, Leve-leverage, EM-earning management, CS-capital structure.

Correlation Analysis

Table 3 presents the predicted values reflecting the outcomes of correlation analyses conducted among the variables. Notably, BI demonstrates a moderately strong positive correlation with BC at 0.79, BM at 0.68, and GED at 0.42. Moreover, BI exhibits positive correlations with IO at 0.27 and MO at 0.17. ROA manifests moderate positive correlations with several variables, namely CS at 0.20, International Financial Reporting Standards (IFRS) at 0.74, and Leverage (Leve) at 0.55.

It is noteworthy that Leverage (LEVE) also correlates positively with BI at 0.16 and demonstrates a weak negative correlation with FS at -0.08. In contrast, EM displays weak correlations across the spectrum, lacking significant robust associations with other variables. These observed correlations imply potential relationships among governance factors, financial performance metrics, and reporting standards within the dataset, thereby prompting further investigation for nuanced insights. The detailed results are encapsulated in Table 3.

Table 3: Correlation Matrix

	EM	BS	BI	BM	BC	GED	IO	MO	CS	ROA	IFRS	Leve	FS
EM	1.00												
BS	-0.11	1.00											
BI	0.561	0.231	1.00										
BM	0.373	0.164	0.681	1.00									
BC	0.431	0.195	0.796	0.581	1.00								
GED	0.232	0.216	0.422	0.391	0.361	1.00							
IO	0.153	0.072	0.272	0.253	0.233	0.311	1.00						
MO	0.091	0.032	0.172	0.161	0.141	0.201	0.752	1.00					
CS	0.286	0.155	0.391	0.421	0.382	0.371	0.251	0.142	1.00				
ROA	0.218	0.122	0.294	0.322	0.282	0.281	0.181	0.102	0.20	1.00			
IFRS	0.154	0.082	0.213	0.245	0.202	0.211	0.132	0.071	0.152	0.742	1.00		
Leve	0.123	0.055	0.165	0.195	0.151	0.162	0.091	0.051	0.122	0.551	0.751	1.00	
FS	0.185	0.116	0.242	0.282	0.221	0.191	0.112	0.036	0.141	0.151	0.102	0.081	1.00

Note: BI-board independence, SI-firm size, BS-board size, ROA-return on assets, BM-board meetings, MO-managerial ownership, IO-institutional ownership, BC-board composition, GED-gender diversity, IFRs-international financial reporting standard, Leve-leverage, EM-earning management, CS-capital structure.

Diagnosics Test

Table 4 presents the anticipated values, and within parentheses are the results of diagnostic tests, accompanied by p-values, pertaining to various assessments conducted on the models. These evaluations encompass unit root tests, autocorrelation assessments, heteroscedasticity examinations, normality tests, and panel cointegration analyses. Such tests are integral in scrutinizing the characteristics of time series data and the interrelationships between variables within the models.

For instance, the unit root test serves to evaluate the stationarity of a time series. In this context, both models, denoted as M1 and M2, reveal notably negative values (-5.4461 and -4.4093, respectively), coupled with exceedingly low p-values (both recorded as 0.000). These outcomes provide robust evidence negating the presence of a unit root, thereby implying stationarity in the data (Liu et al., 2022). Furthermore, additional diagnostic assessments, including autocorrelation and heteroscedasticity, scrutinize specific statistical properties within the residuals of the models. Notably, autocorrelation values (0.83 for M1 and 0.33 for M2) and heteroscedasticity values (0.31 for M1 and 1.56 for M2) are relatively elevated, indicating an absence of significant issues (Wang et al., 2022), the normality values (0.783 for M1 and 0.831 for M2) affirm compliance with normality assumptions in the respective models (Ghaderi et al., 2022). Moreover, the outcomes of the panel cointegration tests (-3.1063 for M1 and -5.3252 for M2) provide compelling evidence of a robust relationship between the variables across diverse panels. The

exceedingly low p-values in both cases, both below 0.001, signify the presence of cointegration within the panel data (Kasem & Al-Gasaymeh, 2022). The aforementioned values are presented in the ensuing Table 4.

Table 4: Diagnostics Test Results.

Models	Unit Root Test	Autocorrelation	Heteroscedasticity	Normality	Panel Cointegration
M1	-5.4461 (0.000)	0.831 (0.754)	0.310 (0.711)	0.783 (0.676)	-3.1063 (0.0009)
M2	-4.4093 (0.000)	0.332 (0.232)	1.561 (0.413)	0.831 (0.561)	-5.3252 (0.0000)

Empirical Findings and Discussion

Panel data analysis employed pooled random and fixed effects models. The random effects model, chosen for its capacity to account for unobserved heterogeneity and panel-specific variations, was validated through the Breusch-Pagan test ($p < 0.005$). Additionally, the Hausman test ($p > 0.005$) affirmed the efficacy of the random effects model over the pooled model (Kropko & Kubinec, 2020). The model chosen, employing a random effects approach, is detailed in Table 5, presenting outcomes in two equations. The initial column delineates the outcomes regarding the direct influence of corporate governance practices on earnings management, while the second column portrays the findings related to moderating effects. The third column encapsulates the results of multicollinearity assessment (VIF).

In the first column, the reported outcomes reveal a positive and statistically significant impact of board size on earnings management. One plausible explanation for this observed relationship is the potential vulnerability of firms with smaller board sizes. These findings align with prior research results (Subhasinghe & Kehelwalatenna, 2021), while contradicting others such as (Al-Zaqeba et al., 2022).

Table 5: Hypothesis Results.

Variables	Model-1 (Em)	Model-2 (Em)	Vif	Decision
BS	-0.543 (0.0021)		2.13	Supported
GED	0.417** (0.282)		3.12	Supported
BI	0.0419 (0.2555)		3.18	Supported
BM	0.03975*** (0.0030)		2.09	Supported
BC	0.0808 (0.0045)		1.83	Supported

IO	0.0213*** (0.0034)		1.98	Supported
MO	0.0139 (0.012)		2.23	Supported
ROA	0.4120*** (0.0021)		3.89	
SI	0.0232* (0.0135)		2.78	
AGE	0.3102 (0.0206)		3.81	
IFRS	0.1540* (0.0123)		3.92	
LEVE	0.0117* (0.0032)		3.101	
CS*BS		0.561 (0.511)	2.89	Supported
CS*GED		-0.0543 (0.0473)	3.89	Supported
CS*BI		0.0457 (0.0298)	1.89	Supported
CS*BM		0.0899 (0.00592)	1.90	Supported
CS*BC		0.00105 (0.00358)	1.89	Supported
CS*IO		-0.0292** (0.00521)	2.87	Supported
CS*MO		0.0864 0.0034	3.89	Supported
Constant	8.131 (6.300)	9.635 (8.138)	13.43* (8.002)	
R-squared	0.364	0.4128		
Prob > F	0.000	0.0623		
Breusch pagan	16.89 (0.0049)	30.29 (0.000)		
Hausman Test	10.23 (0.089)	9.670 (0.095)		

Note: BI-board independence, SI-firm size, BS-board size, ROA-return on assets, BM-board meetings, MO-managerial ownership, IO-institutional ownership, BC-board composition, GED-gender diversity, IFRs-international financial reporting standard, Leve-leverage, EM-earning management, CS-capital structure.

Subsequent regression analyses unveil a statistically significant positive association between BI & EM. This implies that heightened board independence correlates with an increase in earning management, potentially signalling a propensity toward more conservative decision-making or diminished risk-taking behaviours within these companies. This observation is consistent with previous research conducted in emerging markets, including studies in regions such as Saudi Arabia ([Hashed & Almaqtari, 2021](#)).

This implies that, within this particular firm, an enhanced frequency of board meetings correlates positively with endeavours associated with earning management. The results underscore the significance of regular board meetings in earning management within manufacturing companies in Saudi Arabia. This observation aligns with prior research, emphasizing the substantial impact of routine board meetings on influencing financial reporting and management decisions within the specific industry in Saudi Arabia. These findings are consistent with the conclusions drawn in the referenced studies ([Hashed & Almaqtari, 2021](#)). Similarly, GED demonstrates a positive and significant impact on EM, indicating the influential role of gender diversity in shaping EM strategies. The results emphasize that enhancing gender diversity in corporate structures positively contributes to the development and implementation of effective earning management approaches. This underscores the value of diverse perspectives in financial decision-making processes. The findings align with research in this domain ([Zalata et al., 2022](#)). Subsequent regression analyses uncover a statistically significant inverse association between IO & EM. This implies that heightened institutional ownership correlates with diminished earning management, potentially signalling a tendency toward more conservative decision-making or decreased risk-taking behaviours within these companies. This inference aligns with prior research conducted in developing markets ([Kirana et al., 2020](#)) which has established a negative correlation between IO & EM.

In contrast, the correlation among MO and earning management exhibits a positive direction, indicating a favourable influence on EM. This observation aligns with the tenets of agency theory, positing that MO serves to align the interests of managers with those of shareholders, potentially motivating them to pursue actions conducive to maximizing firm value. This assertion is supported by [Mensah and Boachie \(2023\)](#) indicating a positive association, previous research emphasized the correlation between MO & EM. Similarly, BC has demonstrated a positive and significant impact on EM within Saudi Arabian industrial firms, underscoring the influential role of BC in guiding and influencing EM practices. These findings assert that corporate board composition significantly influences strategies and mechanisms in earning management within the Saudi Arabian manufacturing sector, underscoring the interdependence between governance structures and financial management decisions. These outcomes align with the findings in referenced studies ([Shahwan & Almubaydeen, 2020](#)). Several control variables exert influence on earning management, encompassing factors such as profitability, opportunities for sales growth, the adoption of IFRS, asset tangibility, and

firm size. Notably, firm size exhibits a more substantial impact across diverse estimation methodologies. Growth opportunities and asset tangibility exhibit an inverse relationship with earning management, whereas firm performance and the adoption of IFRS are positively associated with earning management.

Conversely, the outcomes of indirect moderating effects in Saudi Arabia reveal a positive and statistically significant moderation of capital structure among variables such as board size, independence, managerial ownership, board meetings, and composition. This implies a distinctive relationship between financial leverage and corporate governance mechanisms. Larger boards, greater independence, substantial managerial ownership, frequent board meetings, and diverse board compositions appear to synergistically interact with capital structure, augmenting its efficacy in mitigating earnings management practices. For instance, larger boards may provide a spectrum of perspectives, while independent directors contribute to enhanced oversight and accountability. This collaborative relationship with an optimal capital structure potentially restrains opportunistic behaviours by aligning managerial interests more closely with those of shareholders. These findings align with the results of referenced studies ([Mansour et al., 2022](#)) those who posited and discovered that capital structure serves a pivotal role as a moderating influence.

The adverse moderation effect observed between board gender diversity, concentrated ownership, and earning management in Saudi Arabian industrial firms requires a nuanced interpretation. This negative effect suggests that the impact of these governance factors in reducing earnings management may be influenced by specific capital structure dynamics. Despite the presence of gender diversity or significant institutional ownership, the efficacy of these measures in mitigating earnings manipulation might be counteracted by certain financial leverage considerations. While gender-diverse boards and institutional ownership are generally associated with enhanced corporate governance, the unique financial context may influence their capacity to restrain managerial discretion in financial reporting. However, when considering the moderating role of capital structure on managerial ownership, a convergence of interests becomes apparent, resulting in a subsequent reduction in earnings management.

Implications and Future Directions

The empirical investigation on Saudi Arabian manufacturing companies, examining the interplay between corporate governance and earning management with a focus on the moderating role of capital structure, yields theoretical and practical insights. Aligned with agency theory, positive effects of board size, independence, meetings, managerial ownership, gender diversity, and board composition on earnings management are observed. Larger boards and diverse compositions contribute varied perspectives,

enhancing oversight and reducing opportunistic behaviours. Higher managerial ownership aligns interests with shareholders, incentivizing value maximization and potentially curbing earnings manipulation. Conversely, the negative association between institutional ownership and earnings management underscores the nuanced interplay between external ownership influence and managerial discretion, reflecting agency theory predictions on conflicting stakeholder interests within Saudi Arabian industrial firms.

The notable moderating effect of capital structure on various corporate governance components sheds light on its crucial role in shaping managerial behaviours and influencing earning management practices. This underscores the importance of considering the correlation between governance practices and financial structures, aligning with agency theory's emphasis on minimizing agency costs and managerial discretion. The findings suggest that an optimal capital structure enhances the effectiveness of governance mechanisms in mitigating earnings manipulation, offering valuable insights for policymakers and practitioners aiming to strengthen governance frameworks in Saudi manufacturing firms.

Despite these significant contributions, the study has limitations. Its focus on a specific subset of Saudi Arabian manufacturing companies may limit generalizability, prompting future research to include a more diverse set of industries and extend the analysis to other countries. The reliance on cross-sectional data poses challenges for longitudinal insights, emphasizing the need for extended studies over a more extended period. Additionally, while capital structure is explored as a crucial moderator, other unexplored variables could influence the relationships, warranting consideration in future research for a comprehensive understanding of manufacturing dynamics.

CONCLUSION

This study investigated the impact of corporate governance on earnings management in Saudi Arabian industrial enterprises. Additionally, the study assessed the moderating impact of corporate governance on earning management. Rooted in agency theory, the empirical findings revealed a positive and statistically significant correlation between corporate governance practices (specifically, board independence, meetings, and composition), managerial ownership, gender diversity, and earning management. These results align with agency theory predictions, underscoring the governance's role in restraining opportunistic behaviours.

Conversely, institutional ownership and board size exhibited a negative relationship with earning management, indicating a nuanced interplay between external ownership and managerial discretion. Moreover, the study shed light on the considerable moderating effect of capital structure. Board size, board meetings, board composition,

independence, and managerial ownership synergistically interacted with capital structure, augmenting its efficacy in mitigating earning management. However, certain governance factors, such as gender diversity and institutional ownership, demonstrated negative moderating effects, implying a requisite for a more profound comprehension of how financial dynamics counteract governance impacts.

In practical terms, the findings underscore the significance of a robust governance structure within the Saudi manufacturing sector. The recommendations advocate for larger, diverse boards, heightened independence, and the alignment of managerial interests with shareholders. Additionally, recognizing the intricate relationship between governance mechanisms and capital structures becomes imperative for the effective mitigation of earning management.

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REFERENCE

- Abed, S., Al-Attar, A., & Suwaidan, M. (2012). Corporate governance and earnings management: Jordanian evidence. *International Business Research*, 5(1), 216-225. doi: <https://doi.org/10.5539/ibr.v5n1p216>
- Ahmed, A. M., Ali, M. N., & Hågen, I. (2023). Corporate governance and capital structure: Evidence from Europe. *International Journal of Professional Business Review*, 8(7), e01663-e01663. doi: <https://doi.org/10.26668/businessreview/2023.v8i7.1663>
- Al-Duais, S. D., Malek, M., Abdul Hamid, M. A., & Almasawa, A. M. (2022). Ownership structure and real earnings management: evidence from an emerging market. *Journal of Accounting in Emerging Economies*, 12(2), 380-404. doi: <https://doi.org/10.1108/JAEE-01-2021-0008>
- Al-Zaqeba, M. A. A., Abdul Hamid, S., Ineizeh, N. I., Hussein, O. J., & Albawwat, A. H. (2022). The effect of corporate governance mechanisms on earnings management in Malaysian manufacturing companies. *Asian Economic and Financial Review*, 12(5), 354-367. doi: <https://doi.org/10.55493/5002.v12i5.4490>
- Arioglu, E. (2020). The affiliations and characteristics of female directors and earnings management: evidence from Turkey. *Managerial Auditing Journal*, 35(7), 927-953. doi: <https://doi.org/10.1108/MAJ-07-2019-2364>
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. doi: <https://doi.org/10.1037/0022-3514.51.6.1173>

- Biswas, S., Bhattacharya, M., Sadarangani, P. H., & Jin, J. Y. (2022). Corporate governance and earnings management in banks: An empirical evidence from India. *Cogent Economics & Finance*, 10(1), 2085266. doi: <https://doi.org/10.1080/23322039.2022.2085266>
- Collins, D. W., & Hribar, P. (2000). Earnings-based and accrual-based market anomalies: one effect or two? *Journal of Accounting and Economics*, 29(1), 101-123. doi: [https://doi.org/10.1016/S0165-4101\(00\)00015-X](https://doi.org/10.1016/S0165-4101(00)00015-X)
- Detthamrong, U., Chancharat, N., & Vithessonthi, C. (2017). Corporate governance, capital structure and firm performance: Evidence from Thailand. *Research in International Business and Finance*, 42, 689-709. doi: <https://doi.org/10.1016/j.ribaf.2017.07.011>
- El Diri, M., Lambrinouidakis, C., & Alhadab, M. (2020). Corporate governance and earnings management in concentrated markets. *Journal of Business Research*, 108, 291-306. doi: <https://doi.org/10.1016/j.jbusres.2019.11.013>
- Galia, F., Zenou, E., & Ingham, M. (2015). Board composition and environmental innovation: does gender diversity matter? *International Journal of Entrepreneurship and Small Business*, 24(1), 117-141. doi: <https://doi.org/10.1504/IJESB.2015.066152>
- Gerged, A. M., Albitar, K., & Al-Haddad, L. (2023). Corporate environmental disclosure and earnings management—The moderating role of corporate governance structures. *International Journal of Finance & Economics*, 28(3), 2789-2810. doi: <https://doi.org/10.1002/ijfe.2564>
- Ghaderi, Y., Didar, H., & Heydari, M. (2022). The Role of Corporate Governance on the Efficiency of Banks Considering the Mediating Role of Financial Health. *Iranian Journal of Accounting, Auditing and Finance*, 6(1), 35-51. doi: <https://doi.org/10.22067/ijaaf.2022.41457>
- Githaiga, P. N., Muturi Kabete, P., & Caroline Bonareri, T. (2022). Board characteristics and earnings management. Does firm size matter? *Cogent Business & Management*, 9(1), 2088573. doi: <https://doi.org/10.1080/23311975.2022.2088573>
- Goyal, B., & Gulati, R. (2023). Do board and audit governance matters for insurer performance? A meta-analytical review. *Decision*, 50(3), 285-319. doi: <https://doi.org/10.1007/s40622-023-00351-2>
- Green, J., Hand, J. R., & Soliman, M. T. (2011). Going, going, gone? The apparent demise of the accruals anomaly. *Management Science*, 57(5), 797-816. doi: <https://doi.org/10.1287/mnsc.1110.1320>
- Hashed, A., & Almaqtari, F. (2021). The impact of corporate governance mechanisms and IFRS on earning management in Saudi Arabia. *Accounting*, 7(1), 207-224. doi: <http://dx.doi.org/10.5267/j.ac.2020.9.015>
- Indy, L. A., Uzliawati, L., & Mulyasari, W. (2022). The effect of managerial ownership and institutional ownership on sustainability reporting and their impact on earning management. *Journal of Applied Business, Taxation and Economics Research*, 1(3), 243-256. doi: <https://doi.org/10.54408/jabter.v1i3.48>

- Itopa, E., Alexander, S., & Yahaya, O. (2022). Board of Directors and Earnings Management: Evidence from the Nigerian Exchange Group. *Journal of Accounting and Finance*, 22(3), 45-59. doi: <https://doi.org/10.5281/zenodo.7264943>
- Javaid, A., Nazir, M. S., & Fatima, K. (2023). Impact of corporate governance on capital structure: mediating role of cost of capital. *Journal of Economic and Administrative Sciences*, 39(4), 760-780. doi: <https://doi.org/10.1108/JEAS-09-2020-0157>
- Jensen, M. C., & Meckling, W. H. (1919). Theory of the firm: Managerial behavior, agency costs and ownership structure. In *Corporate governance* (pp. 77-132). Gower. Retrieved from <https://www.taylorfrancis.com/chapters/edit/10.4324/9781315191157-9>
- Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29(2), 193-228. doi: <https://doi.org/10.2307/2491047>
- Kasem, J., & Al-Gasaymeh, A. (2022). a Cointegration Analysis for the Validity of Purchasing Power Parity: Evidence From Middle East Countries. *International Journal of Technology, Innovation and Management (IJTIM)*, 2(1), 54-67. doi: <https://doi.org/10.54489/ijtim.v2i1.60>
- Kirana, D. J., Wibawaningsih, E. J., & Wijayanti, A. (2020). The Role of Corporate Governance in Constraining Earning Management. *Journal of Accounting and Finance Management*, 1(3), 138-149. doi: <https://doi.org/10.38035/jafm.v1i3.21>
- Kochhar, R. (1996). Explaining firm capital structure: The role of agency theory vs. transaction cost economics. *Strategic Management Journal*, 17(9), 713-728. doi: [https://doi.org/10.1002/\(SICI\)1097-0266\(199611\)17:9<713::AID-SMJ844>3.0.CO;2-9](https://doi.org/10.1002/(SICI)1097-0266(199611)17:9<713::AID-SMJ844>3.0.CO;2-9)
- Kropko, J., & Kubinec, R. (2020). Interpretation and identification of within-unit and cross-sectional variation in panel data models. *PloS One*, 15(4), e0231349. doi: <https://doi.org/10.1371/journal.pone.0231349>
- La Rocca, M. (2007). The influence of corporate governance on the relation between capital structure and value. *Corporate Governance: The International Journal of Business in Society*, 7(3), 312-325. doi: <https://doi.org/10.1108/14720700710756580>
- La Rosa, F., Bernini, F., & Verona, R. (2020). Ownership structure and the cost of equity in the European context: The mediating effect of earnings management. *Meditari Accountancy Research*, 28(3), 485-514. doi: <https://doi.org/10.1108/MEDAR-12-2018-0421>
- Lassoued, N. (2022). Capital structure and earnings quality in microfinance institutions. *International Journal of Managerial Finance*, 18(2), 240-260. doi: <https://doi.org/10.1108/IJMF-08-2020-0454>
- Liu, Y., Wu, H., Wang, J., & Long, M. (2022). Non-stationary transformers: Exploring the stationarity in time series forecasting. *Advances in Neural Information Processing Systems*, 35, 9881-9893. Retrieved from https://proceedings.neurips.cc/paper_files/paper/2022/hash/4054556fcaa934b0bf76da52cf4f92cb-Abstract-Conference.html

- Mansour, M., Al Amosh, H., Alodat, A. Y., Khatib, S. F., & Saleh, M. W. (2022). The relationship between corporate governance quality and firm performance: The moderating role of capital structure. *Sustainability*, 14(17), 10525. doi: <https://doi.org/10.3390/su141710525>
- Mensah, E., & Boachie, C. (2023). Corporate governance mechanisms and earnings management: The moderating role of female directors. *Cogent Business & Management*, 10(1), 2167290. doi: <https://doi.org/10.1080/23311975.2023.2167290>
- Naz, A., & Sheikh, N. A. (2023). Capital structure and earnings management: evidence from Pakistan. *International Journal of Accounting & Information Management*, 31(1), 128-147. doi: <https://doi.org/10.1108/IJAIM-08-2022-0163>
- Oftapiani, K., & Wijayanti, R. (2023). The Moderating Role of Capital Structure on The Relationship Between Corporate Governance and Firm Performance: Evidence from The Manufacturing Sector in Indonesia. In *Proceeding Medan International Conference on Economic and Business* (Vol. 1, pp. 183-191). doi: <https://doi.org/10.30596/miceb.v1i0.119>
- Ratnawati, V., & Hamid, M. A. A. (2015). The Moderating Effect of Managerial Ownership and Institutional Ownership on the Relationship between Control Right and Earnings Management. *British Journal of Business Design & Education*, 9(1), 1-17. Retrieved from <https://www.bjbde.org/wp-content/uploads/2016/05/Paper-4-BJBDE.pdf>
- Sehrawat, N. K., Singh, S., & Kumar, A. (2020). Does corporate governance affect financial performance of firms? A large sample evidence from India. *Business Strategy & Development*, 3(4), 615-625. doi: <https://doi.org/10.1002/bsd2.126>
- Sewell, W. H., Hauser, R. M., Springer, K. W., & Hauser, T. S. (2003). As We Age: A Review of The Wisconsin Longitudinal Study, 1957–2001. *Research in Social Stratification and Mobility*, 20, 3-111. doi: [https://doi.org/10.1016/S0276-5624\(03\)20001-9](https://doi.org/10.1016/S0276-5624(03)20001-9)
- Shahwan, Y., & Almubaydeen, T. H. (2020). Effects of board size, board composition and dividend policy on real earnings management in the Jordanian listed industrial firms. *International Journal of Financial Research*, 11(4), 195-202. doi: <https://doi.org/10.5430/ijfr.v11n4p195>
- Shahzad, A., Nazir, M. S., Qamar, M. A. J., & Abid, A. (2023). Impact of corporate governance on firm value in the presence of earning quality and real earnings management. *International Journal of Business Excellence*, 29(3), 409-436. doi: <https://doi.org/10.1504/IJBEX.2023.129103>
- Subhasinghe, J., & Kehelwalatenna, S. (2021). Impact of corporate governance on earnings management: Evidence from Sri Lankan listed companies. *Global Review of Accounting and Finance*, 12(1), 58-74. Retrieved from <https://zantworldpress.com/wp-content/uploads/2021/07/5.-Kehelwalatenna-Management.pdf>
- Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics*, 53(1), 113-142. doi: [https://doi.org/10.1016/S0304-405X\(99\)00018-5](https://doi.org/10.1016/S0304-405X(99)00018-5)

- Wang, H., Chen, Z., & Zhang, P. (2022). Spatial autocorrelation and temporal convergence of PM_{2.5} concentrations in Chinese cities. *International Journal of Environmental Research and Public Health*, 19(21), 13942. doi: <https://doi.org/10.3390/ijerph192113942>
- Wang, Y., Abbasi, K., Babajide, B., & Yekini, K. C. (2020). Corporate governance mechanisms and firm performance: evidence from the emerging market following the revised CG code. *Corporate Governance: The International Journal of Business in Society*, 20(1), 158-174. doi: <https://doi.org/10.1108/CG-07-2018-0244>
- Wilkinson, B. R., & Clements, C. E. (2006). Corporate governance mechanisms and the early-filing of CEO certification. *Journal of Accounting and Public Policy*, 25(2), 121-139. doi: <https://doi.org/10.1016/j.jaccpubpol.2006.01.001>
- Wilson, M., Wang, K. T., Wu, Y., & Lau, A. (2022). Institutional investors and earnings management associated with controlling shareholders' promises: Evidence from the split share structure reform in China. *Journal of Contemporary Accounting & Economics*, 18(3), 100330. doi: <https://doi.org/10.1016/j.jcae.2022.100330>
- Xie, B., Davidson, W. N., & DaDalt, P. J. (2003). Earnings management and corporate governance: the role of the board and the audit committee. *Journal of Corporate Finance*, 9(3), 295-316. doi: [https://doi.org/10.1016/S0929-1199\(02\)00006-8](https://doi.org/10.1016/S0929-1199(02)00006-8)
- Zalata, A. M., Ntim, C. G., Alshaghy, M. H., & Malagila, J. (2022). Gender diversity and earnings management: the case of female directors with financial background. *Review of Quantitative Finance and Accounting*, 58(1), 101-136. doi: <https://doi.org/10.1007/s11156-021-00991-4>