

-RESEARCH ARTICLE-

INVESTMENT AND FINANCING DECISIONS IMPACT ON FINANCIAL SUSTAINABILITY WITH MODERATING EFFECT OF CORPORATE GOVERNANCE INDEX: A DYNAMIC PANEL DATA APPROACH

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—Abstract—

Ensuring financial sustainability is a critical imperative for organizations seeking to maintain a competitive edge in the global marketplace. Therefore, the primary aim of this study was to investigate the impact of financing and investment decisions on the financial sustainability of manufacturing companies in Saudi Arabia, with a particular focus on the moderating influence of corporate governance practices. Data spanning from 2010 to 2022 were gathered from the annual reports of manufacturing firms, utilizing a longitudinal research design. A quantitative deductive approach was employed, and Generalized Method of Moments (GMM) was utilized for panel data analysis. The results from the GMM models demonstrated superior effectiveness compared to ordinary least squares methods. Specifically, the findings revealed that capital expenditure had a positive and statistically significant effect on financial sustainability, whereas capital structure exhibited a negative and statistically significant impact. Moreover, corporate governance index was found to positively and significantly moderate the relationship between capital expenditure and financial sustainability, while exerting a negative moderating effect on the relationship between capital structure and financial sustainability. These significant results underscore the

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importance of corporate governance mechanisms in shaping the financial sustainability of manufacturing firms in Saudi Arabia. This study makes a noteworthy contribution by shedding light on the moderating role of corporate governance practices within the Saudi Arabian manufacturing context, representing a pioneering endeavour within existing research. Additionally, the findings offer valuable insights for policymakers and stakeholders, emphasizing the significance of robust corporate governance frameworks in enhancing financial sustainability.

Keywords: Capital Structure, Capital Expenditure, Corporate Governance Index Financial Sustainability, Saudi Arabia, Manufacturing

INTRODUCTION

In the current competitive landscape, financial sustainability (FS) holds paramount importance for organizations' long-term survival (Gleißner et al., 2022). It ensures an entity's ability to sustain operations and fulfil financial obligations over time without compromising its mission or objectives (Navarro-Galera et al., 2016). FS plays a critical role in providing stability and security to stakeholders, including investors, employees, and creditors. Its absence poses a risk to organizations, potentially eroding investor confidence and leading to business failure (Jordão & Almeida, 2017). Recognizing this significance, attention must be paid to influencing factors. Among various factors affecting FS, investment decisions (IND) and financial decisions (FID) emerge as crucial determinants in enhancing FS (Dave et al., 2013; Rutanga et al., 2021; Arini Mar'ah & Titis, 2020).

As previously argued, IND are pivotal in enhancing FS by effectively allocating resources to projects that optimize profitability and minimize costs (Dave et al., 2013). Rigorous assessment of investment opportunities ensures resources are directed towards ventures that bolster profitability and positively contribute to the company's sustainability (Listiani & Supramono, 2020). Conversely, inadequate IND can deplete financial resources, impeding the organization's ability to meet obligations and potentially undermining firm value (Ullah et al., 2023), thus impacting company sustainability. Similarly, FID, such as optimal capital structure (CS) and funding sources, are integral to FS (Sukesti et al., 2021). Striking a balance between debt and equity financing enables organizations to mitigate financial risk, maximize returns for shareholders, and maintain flexibility in navigating economic uncertainties (Huang & Ye, 2021). Prior studies underscore the significance of IND and FID in improving financial sustainability. Additionally, literature suggests that corporate governance (CG) plays a pivotal role in shaping investment and FID outcomes (Javaid et al., 2023).

CG assumes a critical role in shaping investment and financial decision-making processes to enhance FS. Robust governance practices, characterized by transparency, accountability, and ethical conduct, mitigate the risk of mismanagement or fraudulent activities (Pandey et al., 2023). Thus, under effective strategic oversight from the board of directors, organizations can mitigate excessive risk-taking and ensure alignment of investment and financial decisions with long-term sustainability objectives. Additionally, strong CG mechanisms foster trust and confidence among stakeholders, attracting investment capital and reducing the organization's cost of capital (Ngatno et al., 2021). Prior research underscores that integrating CG principles into investment and financial decisions enables organizations to enhance FS and create value for all stakeholders. Therefore, this study incorporates CG as a moderating variable in examining the relationship between IND, FID, and FS.

Empirical research conducted on IND, FID, CG, and FS has yielded valuable insights. However, several gaps persist in the literature. Firstly, while numerous studies have explored the impact of IND on financial performance (Ahmad & Shah, 2020; Banerjee & Deb, 2023; Putra & Manuari, 2024), there is a need for more comprehensive research that considers the long-term implications of investment strategies on overall sustainability metrics beyond traditional financial indicators. Secondly, although the influence of FID on firm performance has been extensively investigated (Rahmah & Asep, 2023; Ronoowah & Seetanah, 2023), further research could delve deeper into the dynamics of CS and the role of different financing instruments in achieving financial sustainability, especially in diverse economic contexts. Thirdly, previous research has shown inconsistent findings among IND, FID, and FS (Arhinful et al., 2023; Rahmah & Asep, 2023). This suggests that relationships can be tested in other contexts with different moderating variables (Baron, 1986). Therefore, it is essential to examine these relationships with the moderating effect of corporate governance because it plays an important role in improving financing and industrial development, which could lead to enhanced financial sustainability for organizations.

Lastly, while CG has been recognized as a critical factor in enhancing financial sustainability, empirical studies often focus on other countries, leaving a gap in understanding how governance practices influence investment and FID in Saudi Arabia manufacturing companies. Addressing these gaps through rigorous empirical research could provide valuable insights for policymakers, practitioners, and scholars seeking to promote financial sustainability in diverse organizational settings within the context of Saudi Arabia.

Several studies have contended that in the context of Saudi Arabia, the FS of the manufacturing sector assumes critical importance for fostering economic diversification and facilitating job creation (Yusuf & Lytras, 2023). Existing literature

has highlighted the pivotal role of IND in channelling resources towards the adoption of advanced technologies and bolstering market competitiveness. Similarly, FID have been identified as instrumental in ensuring the availability of adequate capital for growth and effective risk management, thereby potentially contributing to the sustainability of manufacturing enterprises in Saudi Arabia (Dave et al., 2013; Rutanga et al., 2021; Arini Mar'ah & Titis, 2020).

Despite notable regulatory enhancements, challenges persist in the implementation of effective CG practices aimed at supporting robust financing mechanisms and fostering industrial development (Javaid et al., 2023; Suman & Singh, 2021). Consequently, ongoing efforts are deemed necessary to strengthen CG frameworks and cultivate ethical conduct, thereby enhancing the quality of decision-making processes within Saudi manufacturing companies and ultimately augmenting their sustainability (Javaid et al., 2023). As such, this study is centred on the Saudi Arabian context, exploring the moderating influence of CG on the relationship between IND, FID, and financial sustainability.

This study innovatively explores the moderating role of the CG index on the relationship between CS, capital expenditure (Capex), and FS in Saudi Arabian manufacturing firms. It fills gaps in existing literature by considering financial sustainability and employing dynamic panel data analysis, offering insights for policymakers and stakeholders. The research structure includes chapters on literature review, methods, analysis, and discussion, providing a comprehensive overview.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Theoretical Foundation

In corporate finance, the interplay among IND, FID, CG, and FS assumes paramount importance. IND entails allocating capital to projects or assets with the aim of generating future returns, while FID involves determining the optimal mix of debt and equity to finance these investments (Suman & Singh, 2021). CG plays a crucial role in improving investment and financing decisions, thereby enhancing FS. Agency theory underscores the inherent conflicts of interest between shareholders and management, highlighting the necessity for effective governance structures to align managerial actions with shareholder interests (AA Zaid et al., 2020; Hosain, 2020). A robust governance framework ensures that IND are executed with a focus on maximizing shareholder value, thereby bolstering FS (Ardini & Adhitya, 2022; Mirza et al., 2020). Pecking order theory further emphasizes companies' preference for internal resources over external financing options like equity and debt, driven by concerns of information asymmetry and agency costs (Myers & Majluf, 1984a). However, the effectiveness of external financing is contingent upon the quality of a firm's CG practices. Transparent

disclosure policies, robust risk management frameworks, and accountable board structures enhance the credibility of a firm's financial disclosures, reducing information asymmetry and agency costs associated with external financing (Myers & Majluf, 1948b). Therefore, strong CG fosters a conducive environment for FID and FS by facilitating external capital provision while safeguarding the interests of internal shareholders.

Put differently, various institutional theories have underscored the influence of broader institutional norms and pressures on corporate conduct. Effective CG practices not only conform to prevailing institutional expectations but also bolster a firm's reputation and legitimacy in the eyes of investors and creditors (DiMaggio & Powell, 1983). By adhering to governance best practices, firms bolster their credibility and reliability, thereby fostering investor confidence and diminishing the cost of capital (Javaid et al., 2023). Consequently, firms are better positioned to pursue investment opportunities that facilitate sustainable growth and value creation in the long run (Ronoowah & Seetana, 2023). Hence, the relationship among FID, IND, and FS, moderated by CG, enhances alignment with shareholder interests, facilitates access to external financing, and enhances firm reputation. These relationships are depicted in Figure 1.

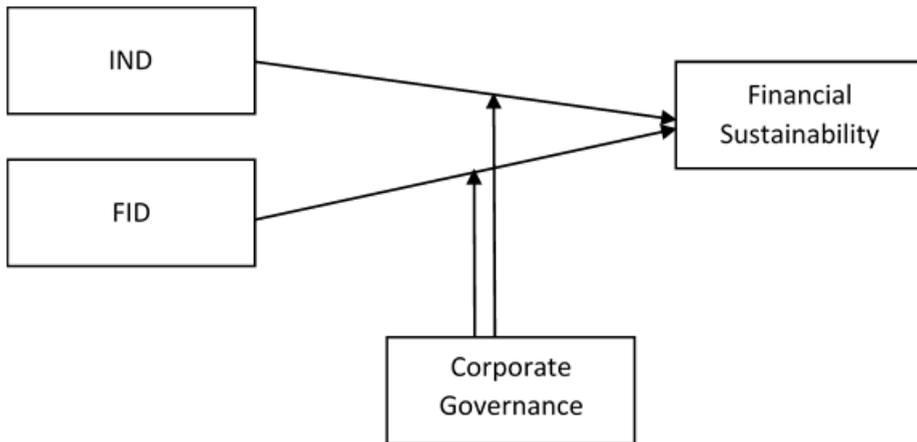


Figure.1: Research Framework

Empirical Studies and Hypothesis Development

IND and FS

FS denotes a company's capacity to generate profits or returns on investments that cover all expenses, ensuring long-term financial health and viability while efficiently managing expenditures and enhancing ongoing operations (Gleißner et al., 2022). IND

are pivotal strategic activities that impact company performance, with IND closely linked to a company's risk profile (Sarpong et al., 2023). Assessing investment decisions in light of expected returns and associated risks is essential for positively impacting FS (Molina & Wilestari, 2023). Alkaraan et al. (2023) emphasized the significant impact of investment decisions on company performance, particularly noting that financially constrained firms base their investments on available cash flows. Putra and Manuari (2024) reported a positive influence of investments in company assets on performance and value. Similarly, Ahmad and Shah (2020) found a positive association between IND and company performance. Sukesti et al. (2021) highlighted the positive impact of investment in a company's asset structure on operational activities, as evidenced by return on assets and return on equity. In essence, sound IND ultimately lead to enhanced FS for a company. Therefore, it can be hypothesized that:

H1: *Financial sustainability influenced significantly by capital expenditure.*

Financing Decisions and Financial Sustainability

The empirical literature examining the relationship between CS and FS has produced diverse and nuanced outcomes. For instance, Sukesti et al. (2021) discovered that companies with elevated debt levels often encounter heightened bankruptcy risks, potentially endangering their FS. Conversely, other studies have proposed that moderate debt levels can enhance financial performance and sustainability by capitalizing on tax shields and mitigating agency costs (Sukesti et al., 2021). For instance, Dabi et al. (2023) identified a non-linear relationship between leverage and firm value, suggesting the existence of an optimal CS that optimizes FS. Empirically, Dabi et al. (2023) observed a significant negative impact of CS on FS and argued that companies with minimal debts enhance FS by reducing risk. Furthermore, N. Wu et al. (2023) provided additional empirical support, indicating that companies exhibit a preference for internal financing over external financing and debt over equity, especially when confronted with information asymmetry and adverse selection issues. These preceding findings underscore the importance of IND in enhancing FS, thus prompting the hypothesis that,

H2: *Financial sustainability influenced significantly by capital structure.*

Corporate Governance Moderating Role

The existing literature on the relationship among capital structure, CAPEX, and FS remains ambiguous, underscoring the necessity of exploring this relationship in alternative contexts. Baron (1986) advocated for testing relationships with moderating influences when clarity is lacking. Several studies have posited that CG plays a pivotal role in enhancing financing and investment decisions, thereby potentially improving

firms' sustainability (Bawuah, 2024; Suharti & Murwaningsari, 2024). Consequently, this study examines the moderating effect of CG, as conflicts of interest between management and shareholders (agency problems) can lead to investment inefficiency. It is anticipated that governance mechanisms can mitigate such issues by regulating directors who may prioritize personal interests over investor interests. Restructurings in CG regulations are expected to bolster investor protection (Chakraborty et al., 2023). Conversely, emphasis has also been placed on CG's role in expanding investment opportunities for organizations (Al-Gamrh et al., 2020). Dong et al. (2021) further demonstrated that robust CG practices can enhance investment decisions. Pandey et al. (2023) reported an increase in dividends following CG rule modifications, suggesting that well-structured CG facilitates investment decisions aligned with shareholder interests and long-term company value. Additionally, Soelton et al. (2020) found that companies in jurisdictions with updated CG frameworks are more likely to be listed in other nations offering strong investor protection.

Moreover, a variety of empirical investigations have delved into the interplay among capital structure, CG, and FS. For example, Miloud (2022) found that robust CG practices can alleviate the detrimental effects of high leverage on FS by enhancing transparency, accountability, and risk management within firms. Similarly, Naciti et al. (2022) observed a positive and significant impact of CG on FS. Conversely, Hamad et al. (2020) reported an insignificant impact of CG on sustainability. PeiZhi and Ramzan (2020) suggested that effective governance structures align shareholder and management interests, thereby mitigating agency conflicts and ensuring that capital structure decisions prioritize long-term value creation and sustainability. Despite these findings, the relationship between CG, CS, and FS remains unclear and inconsistently supported, underscoring the imperative for firms to institute robust governance mechanisms to safeguard their financial health and viability. Therefore, this study primarily focuses on the moderating effect of the CG index on the relationship among capital structure, CAPEX, and FS within the Saudi Arabian manufacturing sector, as outlined in the formulated research hypotheses.

H3: *Corporate governance index enhance the positive relationship between capital structure and financial sustainability*

H4: *Corporate governance index enhance the positive relationship between capital expenditure and financials sustainability.*

RESEARCH METHODS

The study sought to examine the influence of financing and investment decisions on financial sustainability, with the moderating effect of the corporate governance index, within the manufacturing sector of Saudi Arabia. To achieve this objective, a

quantitative research approach was employed, which is suitable for data collected in numerical form (Williams, 2007). Specifically, a longitudinal research design was utilized, involving data collection from 50 different manufacturing companies listed in Saudi Arabia from 2010 to 2022, sourced from their annual reports. This longitudinal design was deemed appropriate for the study, considering its ability to capture data over an extended period (Kelloway & Francis, 2012). Companies with missing data were excluded from the analysis. Furthermore, the research adopted an explanatory nature, wherein existing theory was tested, aligning with deductive research principles (Casula et al., 2021).

Variable Measurement and Econometric Models

This section details variable measurement. It covers four variable categories: corporate governance index as the moderator, investment and financing decisions as independents, and financial sustainability as the dependent. The corporate governance index is gauged through four proxies: board size, independence, composition, and diversity and audit committee independence. Investment decisions are proxied by capital expenditure, while financing decisions are measured using a proxy for capital structure. Additionally, corporate financial sustainability is gauged by the sustainable growth rate, with dividend pay-out ratio, earnings per share, volatility, firm size, and growth serving as control variables. These variables are detailed in Table 1.

The study's objective was to examine the influence of financing and investment decisions on financial sustainability, moderated by the corporate governance index of manufacturing firms in Saudi Arabia. This objective was assessed through four models. The first two models addressed the primary study objective, while the subsequent two models aimed to validate the findings by incorporating additional accounting-based financial performance variables, specifically return on assets.

$$\text{Model-1 FS} = \beta_0 + \beta_1\text{CAPEX} + \beta_2\text{CS} + \beta_3\text{SIZE} + \beta_4\text{VOL} + \beta_5\text{EPS} + \beta_6\text{GRO} + \beta_7\text{PR} + \varepsilon.$$

$$\text{Model-2 FS} = \beta_0 + \beta_1\text{CAPEX} + \beta_2\text{CS} + \beta_3\text{CGI} * \text{CAPEX} + \beta_3\text{CGI} * \text{CS} + \beta_4\text{SIZE} + \beta_5\text{VOL} + \beta_6\text{EPS} + \beta_7\text{GRO} + \beta_8\text{PR} + \varepsilon.$$

$$\text{Model-3 ROA} = \beta_0 + \beta_1\text{CAPEX} + \beta_2\text{CS} + \beta_3\text{SIZE} + \beta_4\text{VOL} + \beta_5\text{EPS} + \beta_6\text{GRO} + \beta_7\text{PR} + \varepsilon.$$

$$\text{Model-4 ROA} = \beta_0 + \beta_1\text{CAPEX} + \beta_2\text{CS} + \beta_3\text{CGI} * \text{CAPEX} + \beta_3\text{CGI} * \text{CS} + \beta_4\text{SIZE} + \beta_5\text{VOL} + \beta_6\text{EPS} + \beta_7\text{GRO} + \beta_8\text{PR} + \varepsilon.$$

Table.1: Variables Measurements

Constructs	Acronyms	Measurements	References
Dependent Variable			
Financial Sustainability	FS	Sustainable growth rate”	(Hamad et al., 2020)
Independent Variable			
Capital Expenditure	CPEX	“Net increase in property plant and equipment + Depreciation expense”	(Dushnitsky & Lenox, 2006)
Capital Structure	CS	Total Debts/Total Assets””	(Wang et al., 2020)
Moderating Variable			
Corporate Governance Index			
Board Size	BOS	Board members in board”	(Gerged et al., 2023)
Board Independence	BOI	“Proportion of independent directors in the board”	(Gerged et al., 2023)
Audit Committee Independence	ACI	“Outside directors proportions in audit committee”	(Gerged et al., 2023)
Board Diversity	BOD	“Women directors board members in the board”	(Galia et al., 2015)
Board Composition	BOC	“Referred to outside directors to inside directors in the board”	(Galia et al., 2015)
Control Variable			
Firm Size	SIZ	Total assets natural log	(Wang et al., 2020)
Pay-out Ratio	PR	DPS/EPS	(Lin et al., 2017)
GROWTH	GRO	Net equity value+ net debt book value/ total asset book value	(Liao et al., 2016)
Volatility	VOL	Year cash flow standard deviation	(Kieschnick et al., 2013)
Earnings Per Share	EPS	Net income/total outstanding share	(Consler et al., 2011)

DATA ANALYSIS AND RESULTS

Descriptive Statistics

Table 2 presents the descriptive statistics of the study variables. Within the dataset, the mean value of CS is 37.467, indicating a moderate level of leverage among companies. CAPEX exhibits notably high values, averaging at 3,728,647.90, suggesting substantial investment activities. The mean value for the CGI is 0.3223, indicating a moderate level of impact. SIZE has a mean of 6.075, suggesting a relatively stable distribution, while VOLU at 4.125 suggests moderate variability. EPS at 3.63 and GRO at 0.53 both exhibit

moderate central tendencies with significant dispersion, implying varied performance among firms. The PR at 41.94% demonstrates a wide range, indicating diverse dividend policies across companies. These findings are summarized in [Table 2](#).

Table.2: Descriptive Statistics

Variables	OBS	Mean	Median	Std. Deviation
CS	700	37.467	34.020	0.234
CAPEX	700	3728647.9	16557.5	0.223
CGI	700	0.3223	0.2191	0.572
SIZE	700	6.075	12.39	2.124
VOL	670	4.125	4.53	1.18
EPS	700	3.63	0.312	12.93
GRO	689	0.53	0.52	0.34
PR	680	41.94	44.13	33.37

NOTE: CS (Capital Structure), CAPEX (Capital Expenditure), CGI (Corporate Governance Index), SIZE (Firm Size), VOLU (Volume), EPS (Earnings Per Share), GRO (Growth), and PR (Pay-out ratio).

Correlation Matrix

[Table 3](#) presents the correlational matrix of the discussed study variables. The results indicate positive correlations among FS, CAPEX, and VOL, suggesting that larger firms tend to engage in higher levels of investment and experience greater volatility. Similarly, there is a positive correlation between EPS and VOL, implying that companies with higher earnings per share may be related with more volatility. Conversely, a negative correlation is observed between CGI and CS, indicating that firms with stronger corporate governance tend to have lower levels of leverage. Additionally, a negative correlation is noted between GRO and CS, suggesting that companies with higher growth rates tend to have lower levels of leverage.

Table.3: Correlation Matrix.

	Q	CAPEX	CS	CGI	SIZW	VOL	EPS	GRO	PR
Q	1								
CAPEX	0.121	1							
CS	0.121*	0.042	1						
CGI	-0.111	-0.321	-0.025	1					
SIZE	0.23*	0.222*	-0.021	0.238*	1				
VOL	0.121*	0.231	-0.021	0.470*	0.303*	1			
EPS	0.12	0.067	0.078	-0.151	0.324	0.125	1		
GRO	-0.133*	-0.002	0.072	-0.024	-0.229*	-0.122	0.056	1	
PR	0.032	0.034	-0.021	-0.082*	0.232	0.176	0.132	0.022	1

Hypothesis Testing

To evaluate our study hypotheses, we utilized STATA to implement the GMM procedures, specifically employing the two-step GMM model proposed by (Arellano & Bond, 1991). This approach was selected for its efficacy in handling panel data with diverse characteristics, allowing for effective capturing of cross-sector heterogeneity. Additionally, GMM leverages lagged instrumental variables across different time frames to address potential endogeneity concerns in panel data. Azmat (2014) highlighted the presence of endogeneity and causality issues in studies concerning variables related to cash holdings, attributed to random shocks affecting firms' cash holding decisions or other firm-specific factors such as leverage or growth opportunities. Similarly, the inverse relationship between capital expenditure and capital structure may also encounter endogeneity concerns. Therefore, we employed the GMM model to mitigate reverse causality concerns in the relationship among capital structure, capital expenditure, and financial sustainability. To evaluate the moderating effect of the corporate governance index, we followed the procedures outlined by (La Rocca & Cambrea, 2019), creating interaction variables to examine the interaction between capital expenditure and corporate governance. In developing the final model, we conducted various estimations to examine all hypothesized relationships. We systematically introduced control variables into two models, as recommended by (La Rocca & Cambrea, 2019), allowing us to monitor potential alterations in the significance levels of crucial study variables. It is noteworthy that although we initially utilized Ordinary Least Squares (OLS) regression to analyse equations 1 and 2, the obtained results were less significant compared to those obtained using GMM, attributed to the presence of multicollinearity and endogeneity in the data.

Our study highlights the effectiveness of the GMM approach in handling the complexities of our data and hypotheses, offering more dependable insights into the relationships under examination. The direct effect analysis reveals that capital expenditure significantly and positively impacts the financial sustainability of Saudi-listed manufacturing firms, in line with our hypothesis. This direct effect is found to be moderated by corporate governance index. Conversely, capital structure shows a significant negative impact on financial sustainability, supporting our proposed hypothesis. Additionally, the corporate governance index significantly and positively moderates the relationship between capital expenditure and financial sustainability, confirming our hypothesis. Including interaction terms boosts beta values, showing stronger moderation between capital structure and financial sustainability. The negative moderation by corporate governance index supports our hypothesis, indicating a reinforced relationship.

Table.4: Without Robustness Hypothesis Results

Variables	2 Step GMM Model (FS)		OLS
	Model 1	Model 2	
C	2.94***	3.15*	4.27**
CAPEX	2.78***	2.8***	2.36***
CS	-2.25*	-2.29***	-2.13*
CAPEX*CGI		-2.98*	-2.33**
CS*CGI		-3.32*	-3.12**
SIZE	2.18***	3.39***	1.29***
VOL	-3.89***	-4.37***	-3.57***
EPS	-0.118*	-0.227*	-0.017*
GRO	-7.35***	-8.15***	-6.75***
PR	0.13***	0.19***	0.02***
I/Y/C Dummies	Yes	Yes	Yes
R2	0.133	0.133	0.116
DW statistic	1.98	1.98	1.96

Table 5. Robustness Results ROA.

Variables	Robustness 2 Step System GMM (ROA)		OLS Model (ROA)
	MODEL-3	MODEL-4	
C	-0.09*	8.75***	16.58***
CAPEX	0.23**	0.78***	0.088*
CS	-0.78***	-0.90***	-0.20***
CAPEX*CGI		0.92***	0.78***
CS*CGI		-0.88**	-0.77**
SIZE	-0.036*	-0.021*	-.014***
VOL	2.32***	2.92***	2.38***
EPS	2.48***	3.18***	0.034***
GRO	-0.021***	-0.031***	-1.01***
PR	1.24***	2.64***	1.21***
I/Y/C Dummies	Yes	Yes	Yes
R2	0.087	0.101	0.383
DW statistic	1.85	1.85	1.91

Robustness Test

In our analysis, we conducted separate tests on equations 3 and 4, utilizing an alternative financial sustainability metric, ROA, as opposed to Tobin's Q, which relies on stock market data. ROA offers an accounting-based measure of firm performance. The GMM regression results presented in [Table 5](#) reaffirmed the consistency of our findings from the primary model. Despite the change in financial sustainability metric, the signs of the relationship variables remained consistent (except for CAPEX*CGI that is moved to be positive), and all coefficients remained significant in the new model, indicating the robustness of our results. Notably, the R2 value increased for OLS model when

ROA was employed, suggesting enhanced explanatory power of the model. The Durbin-Watson test results, ranging from 1.85 to 1.91 for models 1, 2, and 3, respectively, indicate a minimal risk of autocorrelation. Additionally, the overidentification J test, recommended by [La Rocca and Cambrea \(2019\)](#) for assessing goodness-of-fit and instrument validity, yielded zero values across all three models, confirming the robustness of our results. These outcomes are summarized in [Table 5](#).

DISCUSSION

Financial sustainability emerges as a pivotal concern for organizations striving to attain competitive advantages in the global market. Consequently, the study aims to scrutinize the influence of capital expenditure and capital structure on the financial sustainability of Saudi Arabian manufacturing firms, while considering the moderating effect of the corporate governance index. Regression analyses conducted on panel data reveal a significant and positive impact of capital expenditure on the financial sustainability of manufacturing companies in Saudi Arabia. These outcomes underscore the strategic importance of investing in capital expenditure, indicating a deliberate focus among Saudi Arabian companies on enhancing their financial sustainability through resource allocation towards productive investments. This assertion finds support in [Lawanson \(2017\)](#), who established a positive association between increased investment in manufacturing capabilities and economic growth. Similarly, [Jeong et al. \(2020\)](#) highlighted that higher levels of capital investment are conducive to firm growth. Conversely, capital structure demonstrates a significant and negative impact on the financial sustainability of Saudi Arabian manufacturing firms. These findings underscore the importance of prudent fund management and allocation to bolster sustainability within the sector. Excessive reliance on debt financing is posited to introduce financial vulnerabilities and constraints, potentially undermining firms' abilities to sustain operations and navigate economic challenges. Moreover, [Panda et al. \(2023\)](#) observed that firms with conservative capital structures tend to exhibit greater financial stability. Hence, the findings underscore the importance of prioritizing balanced debt and equity financing to enhance financial sustainability within the Saudi Arabian manufacturing sector.

The study reveals that corporate governance plays a significant moderating role between capital expenditure and the financial sustainability of Saudi Arabian manufacturing companies. This underscores the critical importance of governance mechanisms in enhancing investment effectiveness and value creation. The findings suggest that robust corporate governance practices, can align capital expenditure decisions, thereby improving financial sustainability. These results are consistent with [W. Wu et al. \(2023\)](#), who argued that firms with stronger governance structures demonstrate better financial performance and investor confidence. Similarly, [Ahamad](#)

et al. (2023) highlighted the positive impact of effective governance on firm resilience and value creation. These findings underscore the necessity for Saudi Arabian manufacturing firms to adopt strong governance frameworks to optimize investment outcomes and foster sustainable growth. Additionally, the study indicates that the corporate governance index negatively and significantly moderates between capital structure and financial sustainability. This result underscores the crucial role of governance mechanisms in mitigating the negative effects of high leverage among Saudi listed manufacturing firms. It suggests that effective governance practices, such as board oversight and risk management, can help alleviate financial risks associated with excessive debt levels, thus enhancing the company's financial sustainability. This finding aligns with previous studies such as (Ronoowah & Seetana, 2023), which emphasized the importance of strong governance structures in managing financial risks and improving financial performance.

Additionally, to scrutinize the consistency of outcomes, robustness tests were conducted to assess the impact of investment and financing decisions on accounting-based financial performance. The robust findings mirrored the main results, with each coefficient retaining its sign as observed in the primary models (except for CAPEX*CGI that is moved to be positive). This consistency across variables underscores the stability of the identified associations, regardless of the performance metric employed. These findings find support in Singh and Rastogi (2023), where alternative performance measures corroborated the main findings, affirming the robustness of the results. Therefore, the coherent and resilient findings from the alternative performance measure analysis further affirm the significance of investment decisions, financing decisions, and corporate governance in shaping the financial sustainability of Saudi Arabian manufacturing companies. Based on these findings, it can be concluded that strong investment decisions, financing strategies, and corporate governance mechanisms, within a comprehensive framework, are pivotal for promoting financial sustainability among manufacturing firms in Saudi Arabia. By incorporating the implications of this study, firms can navigate the intricacies of the regional business landscape and seize growth opportunities.

IMPLICATIONS

The study offers both theoretical and practical implications of significance. Theoretically, the extension of the model to incorporate the moderating influence of corporate governance index within the Saudi Arabian context, coupled with the combined effects of investment and financing decisions on financial sustainability, contributes a novel perspective to the existing literature. Firstly, the observed positive and statistically significant impact of capital expenditure on financial sustainability underscores the strategic imperative of investing in initiatives that drive long-term

viability and competitiveness. This underscores the imperative for firms to allocate resources towards investments that enhance operational efficiency and technological advancement. Secondly, the negative impact of capital structure highlights the imperative for companies to prudently manage their funds and judiciously allocate their financial strategies to mitigate financial risks that could undermine the company's financial sustainability. The study provides practical insights by offering an integrated model encompassing investment decisions, financing decisions, and corporate governance practices to enhance the financial sustainability of Saudi Arabian manufacturing companies. It emphasizes the importance of investing in capital expenditure to bolster financial sustainability and underscores the necessity of effective governance structures to ensure alignment with long-term value creation goals and stakeholder interests. By adopting this integrated approach, firms can fortify their resilience, competitiveness, and long-term viability within the dynamic Saudi Arabian business landscape. Furthermore, the study aids policymakers in recognizing the pivotal role of corporate governance in guiding decisions to promote firm sustainability.

LIMITATIONS AND FUTURE DIRECTIONS

The study presents both limitations and avenues for future research. Firstly, the research is confined to a sample of 50 manufacturing companies in Saudi Arabia, thereby constraining its applicability to other financial sectors. Future investigations could broaden their scope to encompass diverse financial sectors, thus enriching the variability of research outcomes. Additionally, while the current study primarily focuses on moderating effects, future research endeavours could delve into mediating effects, such as those pertaining to corporate social responsibility or financial performance. This expansion would serve to enhance the breadth of results. Moreover, given the study's exclusive focus on Saudi Arabia as a developing nation, there exists an opportunity for future research to explore analogous phenomena in developed nations, thereby augmenting the generalizability of findings within this research domain.

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