



Project Deliverable: Assignment 3

The Impact of Sustainable Finance and Green Investment on Financial Performance and Sustainable Development in Saudi Arabia

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CHAPTER 1: INTRODUCTION & GENERAL FRAMEWORK

1.1 Study Background & Context

Over the past two decades, the global macroeconomic landscape has experienced a paradigm shift driven by climate change risks, resource depletion, and growing calls for institutional accountability. Historically, corporate finance operates primarily on traditional profit-maximization models. Modern financial economics, however, increasingly integrates environmental, social, and governance (ESG) metrics into asset allocation, risk management, and valuation frameworks. Sustainable finance—defined as the integration of ESG criteria into financial services, investment strategies, and corporate operations—has evolved from a peripheral niche into a mainstream financial imperative. Green investment serves as a core mechanism within sustainable finance, channeling capital toward environmentally beneficial projects such as renewable energy deployment, waste management, energy efficiency, carbon capture, and sustainable urban infrastructure.

In the Kingdom of Saudi Arabia (KSA), this paradigm shift aligns directly with Saudi Vision 2030. As the world's largest oil exporter, Saudi Arabia has initiated an economic transformation designed to reduce hydrocarbon dependency, foster economic diversification, and build a sustainable knowledge-based economy. Central to this strategy are national initiatives including the Saudi Green Initiative (SGI) and the Middle East Green Initiative (MGI), which target net-zero carbon emissions by 2060, a 50% renewable energy generation mix by 2030, and the planting of tens of billions of trees across the region.

To facilitate these goals, Saudi Arabia's financial ecosystem is undergoing restructuring. The Saudi Central Bank (SAMA) and the Capital Market Authority (CMA) have introduced regulatory frameworks to encourage green lending, ESG disclosure, and sustainable capital market instruments. Furthermore, the Saudi Stock Exchange (Tadawul) issued formal ESG Disclosure Guidelines in 2021 to assist listed firms in reporting non-financial performance metrics. The issuance of sovereign and corporate green bonds (*Sukuk*), alongside major sustainable credit facilities extended by leading Saudi banks, highlights a transition toward green capital allocation.

However, corporate adoption of sustainable financial practices depends on the relationship between green investments and financial outcomes. Corporate decision-makers must evaluate whether allocating capital toward sustainable initiatives compromises short-term profitability or enhances long-term enterprise value, financial stability, and competitive advantage. Consequently, evaluating the empirical relationship between sustainable finance, green investment, financial performance, and national sustainable development in Saudi Arabia remains an important area of research.

1.2 Statement of the Research Problem

Despite growing regulatory momentum and political commitment toward green growth in Saudi Arabia, corporate leaders and institutional investors face uncertainty regarding the financial implications of green investment. Traditionally, economic literature presents conflicting views on the ESG-performance relationship:

1. The *Trade-off View* (Friedmanite perspective) argues that devoting capital to green infrastructure and ESG compliance introduces agency costs and diverts resources from core revenue-generating assets, thereby diminishing short-term financial performance.
2. The *Value-Creation View* (Stakeholder and Resource-Based perspectives) posits that proactive environmental management reduces cost of capital, mitigates regulatory risks, enhances brand equity, improves operational efficiency, and creates long-term shareholder value.

In Saudi Arabia, empirical evidence remains developing. While studies in Western developed markets document positive financial returns from ESG integration, emerging markets specifically resource-intensive economies in the Gulf Cooperation Council (GCC) present unique dynamics. Saudi Arabia's corporate sector has historically operated within energy-intensive frameworks. Transitioning toward sustainable finance requires substantial capital expenditure, structural realignments, and advanced green accounting mechanisms. Furthermore, existing research on Tadawul-listed firms often yields mixed results, with

variations observed across disaggregated ESG pillars (Environmental, Social, and Governance) and manufacturing versus non-manufacturing sectors.

There is also a knowledge gap concerning the internal mechanisms—such as green accounting adoption and board governance structures—that mediate the relationship between sustainable financial inputs and market valuation. Without empirically validated models evaluating how sustainable finance influences Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q, corporate boards in Saudi Arabia risk either underinvesting in green projects or treating ESG disclosures purely as non-binding public relations exercises rather than core financial drivers. This study addresses these issues by analyzing the impact of sustainable finance and green investment on financial performance and sustainable development within the Saudi corporate sector.

1.3 Research Questions

To address the research problem, this study formulates the following core research questions:

1. RQ1: What is the direct impact of sustainable finance and green investment practices on the operational financial performance (measured by ROA and ROE) of companies listed on the Saudi Stock Exchange (Tadawul)?
2. RQ2: How do green investment initiatives influence the market valuation and long-term firm value (measured by Tobin's Q) of Saudi listed firms?
3. RQ3: Does the disaggregation of ESG metrics reveal distinct impacts among Environmental (E), Social (S), and Governance (G) pillars on corporate financial outcomes in Saudi Arabia?
4. RQ4: To what extent does the implementation of internal green accounting systems mediate the relationship between sustainable capital allocations and financial performance?

5. RQ5: How do firm-level characteristics (e.g., firm size, capital leverage, board size, and sector classification) moderate the financial impact of green investments within the context of Saudi Vision 2030?

1.4 Objectives of the Study

This study aims to achieve the following specific research objectives:

1. To evaluate the primary relationship between green investment expenditures, sustainable finance adoption, and operational profitability metrics (ROA and ROE) among Tadawul-listed companies.
2. To analyze market perceptions by determining the effect of green investment disclosures on market-based valuation indicators (Tobin's Q).
3. To disaggregate ESG ratings into individual Environmental, Social, and Governance components to identify which specific dimension exerts the strongest influence on corporate financial metrics in the Saudi market.
4. To examine the mediating role of green accounting adoption in translating sustainable financing into concrete operational cost savings and revenue enhancements.
5. To provide empirical recommendations for corporate directors, regulators (CMA, SAMA), and policy architects to optimize sustainable finance frameworks in alignment with Saudi Vision 2030 targets.

1.5 Research Hypotheses

Based on theoretical frameworks and empirical literature, the following testable hypotheses are established:

- Hypothesis 1 (H_1): Sustainable finance adoption and green investment expenditures have a statistically significant positive effect on the short-term operational profitability (ROA and ROE) of listed firms in Saudi Arabia.

- Hypothesis 2 (H_2): Green investment practices and ESG disclosures exert a statistically significant positive effect on the long-term market valuation (Tobin's Q) of listed companies on Tadawul.
- Hypothesis 3 (H_3): Disaggregated ESG pillars exert heterogeneous effects on firm performance, with the Social (S) pillar exhibiting a stronger positive impact on financial performance relative to Environmental (E) and Governance (G) pillars in the Saudi market.
- Hypothesis 4 (H_4): Internal green accounting adoption significantly mediates the positive relationship between green financial investments and firm financial performance.
- Hypothesis 5 (H_5): Corporate governance characteristics, specifically board size and independence, significantly moderate the impact of ESG disclosures on corporate financial performance.

1.6 Significance of the Study

1.6.1 Academic and Theoretical Significance

This study contributes to the literature on sustainable finance and corporate performance in several ways:

- Fills Emerging Market Literature Gaps: While sustainable finance literature is extensive in North America and Western Europe, empirical studies targeting the Middle East specifically resource-dependent Gulf economies undergoing active transformation—remain limited.
- Integrates Multidimensional Theories: The study synthesizes Stakeholder Theory, Signalling Theory, the Resource-Based View (RBV), and Institutional Theory into a framework tailored to an emerging market context.
- Addresses Methodological Challenges: By utilizing dynamic panel data estimators, specifically the Two-Step System Generalized Method of Moments (GMM), this research addresses endogeneity, unobserved heterogeneity, and reverse causality issues that frequently affect cross-sectional ESG empirical studies.

1.6.2 Practical and Policy Significance

- For Corporate Leadership and CFOs: Provides empirical evidence on whether allocations toward green assets and ESG compliance generate financial value, helping guide capital allocation decisions.
- For Regulators and Policymakers (CMA, SAMA, Ministry of Economy): Evaluates the operational impact of the 2021 Tadawul ESG guidelines and regulatory incentives, assisting in the design of future policy frameworks.
- For Institutional and Retail Investors: Provides insights into whether high-ESG rated firms on Tadawul offer better risk-adjusted returns, downside resilience, and protection against carbon transition risks.

CHAPTER 2: LITERATURE REVIEW & THEORETICAL FRAMEWORK

2.1 Theoretical Foundations

2.1.1 Stakeholder Theory

Pioneered by Freeman (1984), Stakeholder Theory posits that a firm operates within a network of stakeholders—including investors, employees, customers, suppliers, regulators, and local communities—rather than solely for equity shareholders. Applying this theory to sustainable finance suggests that addressing the environmental and social concerns of non-financial stakeholders creates organizational value. Satisfying stakeholder expectations through green investments reduces capital costs, minimizes regulatory penalties, improves employee productivity, and strengthens customer loyalty. In Saudi Arabia, where socio-economic development is central to national policy, corporate alignment with broader societal and environmental goals strengthens institutional support and market position.

2.1.2 Signalling Theory

Formulated by Spence (1973) in information economics, Signalling Theory explains how parties resolve information asymmetry by sending credible signals. In financial markets, managers typically possess more detailed information about a firm's operational risk and long-term prospects than outside investors. Disclosing comprehensive ESG metrics and issuing certified green bonds act as positive signals regarding a firm's risk management, operational quality, and long-term strategy. High-performing companies utilize verified green investments to distinguish themselves from lower-performing peers. Consequently, green financial disclosures can lower information asymmetry, attract institutional capital, and reduce the cost of equity and debt capital.

2.1.3 Resource-Based View (RBV)

The Resource-Based View (Barney, 1991; Wernerfelt, 1984) asserts that firms achieve sustainable competitive advantage by developing resources and capabilities that are Valuable, Rare, Inimitably costly to copy, and Non-substitutable (VRIN criteria). Hart (1995) expanded this concept into the *Natural-*

Resource-Based View (NRBV), arguing that environmental capabilities—such as pollution prevention, sustainable product stewardship, and clean technology integration—represent critical sources of competitive advantage. Within Saudi Arabian industries, developing proprietary green technologies and efficient green accounting systems creates operational resources that lower resource inputs, minimize waste management expenses, and yield long-term cost efficiencies.

2.1.4 Institutional Theory

Institutional Theory (DiMaggio & Powell, 1983) suggests that organizations conform to external rules, social norms, and expectations to secure legitimacy and survival. Institutional pressure manifests across three dimensions:

1. *Coercive Isomorphism*: Driven by formal legal mandates, such as SAMA environmental guidelines and CMA reporting standards.
2. *Mimetic Isomorphism*: Driven by firms copying industry leaders during periods of regulatory or market uncertainty.
3. *Normative Isomorphism*: Driven by professional codes and international institutional investor expectations.

In Saudi Arabia, institutional pressures have expanded under Vision 2030, encouraging corporations to adopt sustainable financial frameworks to maintain legitimacy within national supply chains and access international capital markets.

2.2 Empirical Review

2.2.1 Global Perspectives on Sustainable Finance and Corporate Performance

The global empirical literature on the financial impact of ESG integration presents varying perspectives across markets. Meta-analyses of global corporate data find predominantly non-negative or positive relationships between ESG metrics and corporate financial indicators such as ROA, ROE, and Tobin's Q.

Proactive environmental strategies often yield cost reductions via energy efficiency and material optimization. However, several studies in Western contexts report neutral or non-linear (U-shaped or inverted U-shaped) relationships, suggesting that green capital investments may incur short-term cost burdens before yielding net financial benefits over longer investment horizons.

2.2.2 ESG Disclosure and Financial Performance in Emerging Markets and the GCC

Empirical research in emerging markets has expanded rapidly, though studies focused on the Gulf Cooperation Council (GCC) remain developing compared to Asia and Latin America. The GCC region presents an important context: its equity markets are historically weighted toward carbon-intensive sectors such as oil and gas, petrochemicals, real estate, and heavy manufacturing.

Recent regional studies demonstrate that while institutional adoption of ESG reporting initially lagged behind Western equity markets, regulatory interventions have accelerated ESG disclosures. Researchers studying GCC equity markets report that corporate ESG performance increasingly correlates with reduced stock price volatility, improved debt accessibility, and higher credit ratings. However, regional variations persist due to differences in regulatory enforcement, corporate governance traditions, and capital market depth.

2.2.3 Empirical Evidence from Saudi Arabia (Tadawul)

Recent academic research provides empirical evidence regarding Tadawul-listed companies:

- **Overall ESG and Profitability:** Analysis of panel data covering 100 non-financial companies listed on the Saudi Stock Exchange from 2017 to 2022 documents a statistically significant positive relationship between composite ESG disclosure indices and financial performance metrics, including ROA, ROE, and Tobin's Q. Econometric modeling utilizing fixed effects, random effects, and GMM estimators confirms that comprehensive ESG integration supports operational profitability and market valuation, supporting Stakeholder and Signalling theories.

- **Heavy-Polluting and Energy Sectors:** In heavy-polluting and energy-intensive industries on Tadawul evaluated over the 2010–2023 period using Two-Step System GMM, empirical findings confirm that higher ESG performance leads to improved ROA, ROE, and Tobin's Q. This indicates that capital investments directed toward emission reduction, waste recovery, and energy efficiency yield tangible financial returns even in industrial sectors.
- **Institutional Governance and Regulatory Reforms:** Studies examining 260 firm-year observations from 2009 to 2023 reveal the impact of institutional changes following Tadawul's 2021 ESG reporting guidelines. Corporate governance dynamics, particularly board size and structure, significantly influence the depth and efficacy of ESG disclosures.

2.2.4 Disaggregated ESG Pillars and Sector-Specific Dynamics

Evaluating disaggregated ESG pillars reveals variations across environmental, social, and governance components:

DISAGGREGATED ESG IMPACTS ON TADAWUL	
[Environmental Pillar]	---> Neutral / Delayed Financial Return (High initial capital expenditure)
[Social Pillar]	---> Statistically Significant Positive Impact (Enhances ROA and ROE)
[Governance Pillar]	---> Context-Dependent / Complex Relationship (Influenced by Board Size/Structure)[cite: 3]

An empirical study evaluating 450 firm-year observations on Tadawul from 2018 to 2023 disaggregated total ESG disclosures into individual sub-pillars. The findings demonstrate that the Social (S) pillar exhibits

a statistically significant positive relationship with operational profitability (ROA and ROE). Strong social practices such as human capital development, workplace health and safety, and community engagement yield direct improvements in employee productivity and brand value.

Conversely, the Environmental (*E*) pillar exhibited less immediate linear correlation with short-term profitability metrics during the study period, reflecting the substantial upfront capital expenditure required for environmental technology installations. Furthermore, empirical comparison between manufacturing and non-manufacturing firms listed on Tadawul shows that non-manufacturing companies display a stronger positive relationship between ESG disclosure and financial performance relative to manufacturing entities, which face higher capital constraints during clean transitions.

2.2.5 The Mediating Role of Green Accounting and Governance Mechanisms

The translation of green finance into bottom-line profitability relies on internal organizational capabilities. Green accounting systems which track, measure, and allocate environmental costs, carbon footprints, and resource savings serve as a key structural mechanism. Without internal green accounting, firms risk misallocating green capital, leading to inefficient investments. Additionally, internal board governance plays a central role: empirical evidence indicates that board size, board independence, and board-level sustainability committees significantly shape the execution of corporate sustainability initiatives in Saudi Arabia.

2.3 Synthesis of Literature and Identification of Research Gaps

While existing studies provide initial insights into ESG disclosure trends in Saudi Arabia, several research gaps remain:

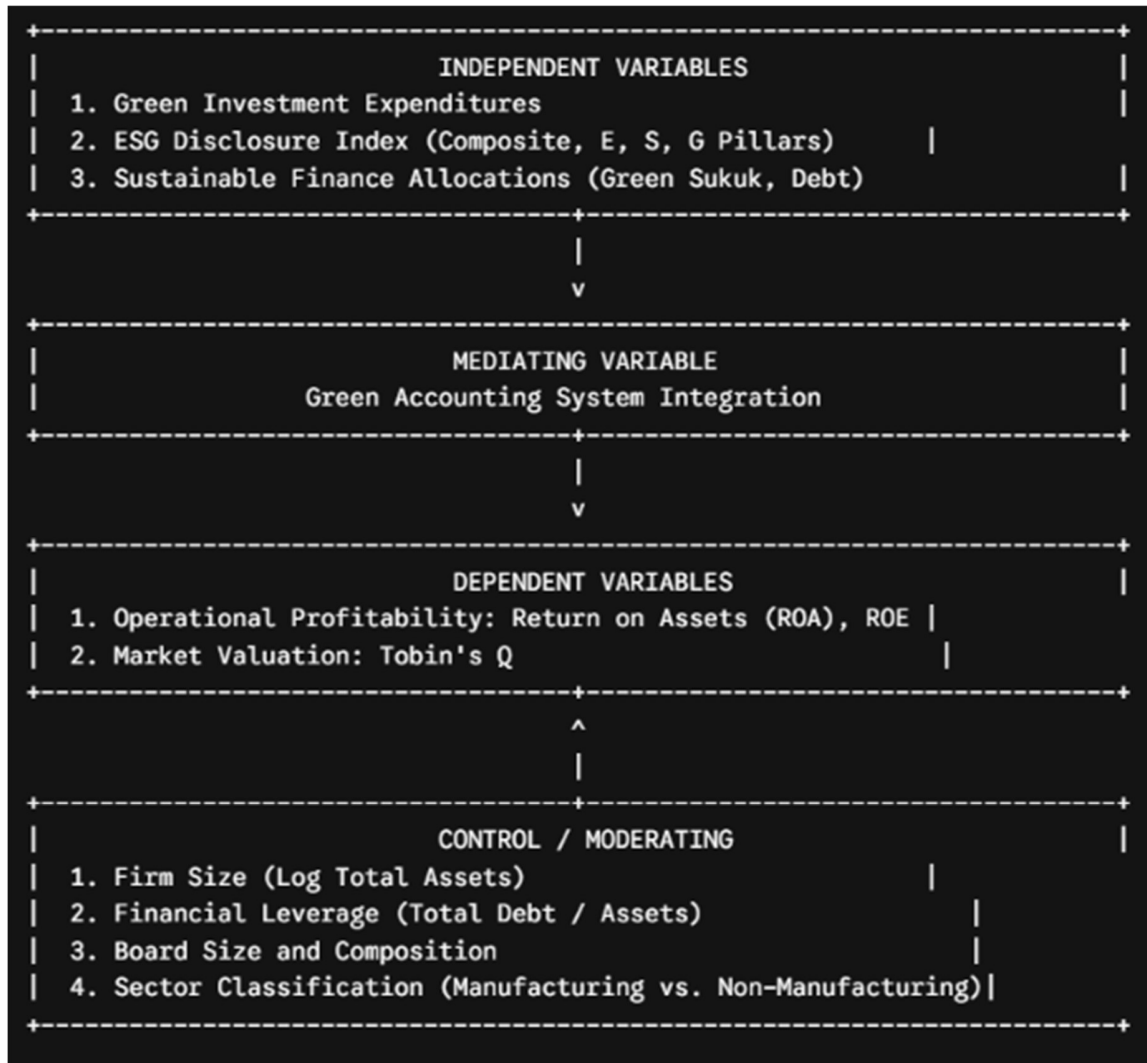
1. **Shortage of Comprehensive Dynamic Panel Modeling:** Many existing regional studies rely on static cross-sectional Ordinary Least Squares (OLS) models, which do not fully address endogeneity, measurement errors, or dynamic feedback loops where past profitability funds future ESG investments.

2. Limited Research on Green Accounting as a Mediator: Existing literature frequently treats ESG as a direct input to financial output, without analyzing internal operational mediators such as green accounting infrastructure.
3. Paucity of Long-Term Post-Reform Analysis: Few studies systematically examine the financial effects following the introduction of Saudi Vision 2030 and Tadawul's 2021 ESG reporting standards across both operational profitability and long-term market valuation.

CHAPTER 3: RESEARCH METHODOLOGY & CONCEPTUAL MODEL

3.1 Conceptual Research Model

The proposed conceptual model illustrates the hypothesized relationships among the study variables:



3.2 Econometric Specifications & Mathematical Models

To ensure empirical precision and control for potential endogeneity, this study employs dynamic panel regression models using the Two-Step System Generalized Method of Moments (GMM) estimator.

Model 1: Direct Effect on Operational Performance (ROA & ROE)

$$ROA_{i,t} = \alpha_0 + \gamma ROA_{i,t-1} + \beta_1 GREEN_INV_{i,t} + \beta_2 ESG_INDEX_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \eta_i + \varepsilon_{i,t}$$

$$ROE_{i,t} = \alpha_0 + \gamma ROE_{i,t-1} + \beta_1 GREEN_INV_{i,t} + \beta_2 ESG_INDEX_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \eta_i + \varepsilon_{i,t}$$

Where:

- $ROA_{i,t}$ = Return on Assets for firm i in year t .
- $ROE_{i,t}$ = Return on Equity for firm i in year t .
- $ROA_{i,t-1} / ROE_{i,t-1}$ = Lagged dependent variables capturing financial persistence.
- $GREEN_INV_{i,t}$ = Capital expenditure allocated to green/environmental projects normalized by total sales.
- $ESG_INDEX_{i,t}$ = Composite ESG Disclosure Score constructed via Principal Component Analysis (PCA).
- $SIZE_{i,t}$ = Natural logarithm of total assets.
- $LEV_{i,t}$ = Financial Leverage ratio (Total Liabilities / Total Assets).
- η_i = Unobserved firm-specific fixed effects.
- $\varepsilon_{i,t}$ = Stochastic error term.

Model 2: Market Valuation Impact (Tobin's Q)

$$\text{Tobin's } Q_{i,t} = \theta_0 + \lambda \text{Tobin's } Q_{i,t-1} + \phi_1 ESG_INDEX_{i,t} + \phi_2 GREEN_ACC_{i,t} + \phi_3 SIZE_{i,t} + \phi_4 LEV_{i,t} + \eta_i + \varepsilon_{i,t}$$

Where:

- $\text{Tobin's } Q_{i,t}$ = Ratio of market equity value plus total debt to total book value of assets.
- $GREEN_ACC_{i,t}$ = Green Accounting adoption score derived from content analysis of corporate annual reports.

Model 3: Disaggregated ESG Pillars Model

$$\text{PERF}_{i,t} = \alpha_0 + \delta_1 \text{ENV}_{i,t} + \delta_2 \text{SOC}_{i,t} + \delta_3 \text{GOV}_{i,t} + \sum \psi_k \text{CONTROLS}_{k,i,t} + \eta_i + \varepsilon_{i,t}$$

Where:

- **ENV_{i,t}, SOC_{i,t}, and GOV_{i,t} represent individual sub-scores for Environmental, Social, and Governance disclosure pillars, respectively.**

3.3 Suggested Industry, Target Population, and Empirical Context

The target population comprises publicly traded corporations listed on the Saudi Stock Exchange (Tadawul). To provide sector-level depth, the empirical application spans key non-financial sectors, with specific focus on high-pollution and infrastructure-intensive industries:

1. Financial Sector (Leading Sustainable Credit Providers):

- *Saudi Awwal Bank (SAB)*: A key participant in corporate green financing, having launched sustainable credit portfolios exceeding SAR 45 billion targeted at green building and renewable energy projects.
- *Saudi National Bank (SNB)*: Active in underwriting green bonds (*Sukuk*) aligned with national transformation programs.

2. Energy and Heavy Utilities Sector:

- *Saudi Electricity Company (SEC)*: Manages substantial capital expenditures for clean grid integration, smart metering, and renewable interconnections.
- *SABIC (Saudi Basic Industries Corporation)*: Focuses on green accounting, carbon capture, and circular economy investments.

3. Real Estate and Industrial Infrastructure:

- Entities involved in large-scale infrastructure projects (e.g., NEOM, Red Sea Global supply chains) that require green building certifications (LEED) and high ESG compliance.

3.4 Operationalization of Variables

Variable Category	Variable Name	Symbol	Operational Definition & Measurement Scale	Theoretical Reference
Dependent	Return on Assets	ROA	Ratio of Net Income to Total Assets (%)	Al-Hadi et al.
Dependent	Return on Equity	ROE	Ratio of Net Income to Total Shareholders' Equity (%)	Al-Hadi et al.
Dependent	Market Valuation	Tobin's Q	(Market Value of Equity + Book Value of Debt) / Total Assets	Hassan et al.
Independent	ESG Disclosure Score	ESG	Composite ESG index constructed via Principal Component Analysis (0-100)	Al-Hadi et al.
Independent	Green Investment	GREEN_INV	Annual capital expenditure in green assets divided by Total Revenue	Sustainable Finance Framework
Independent	Disaggregated Pillars	E, S, G	Individual disclosure sub-scores for Environmental, Social, Governance	Empirical ESG Literature
Mediator	Green Accounting	GREEN_ACC	Index based on voluntary environmental cost reporting (0-1 Scale)	Environmental Accounting Standards
Control	Firm Size	SIZE	Natural logarithm of Total Assets	Empirical Control Variable
Control	Financial Leverage	LEV	Ratio of Total Liabilities to Total Assets	Corporate Finance Control

Control	Board Size	BSIZE	Total number of directors on the corporate board	Governance Control
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3.5 Data Collection, Sampling Strategy, and Estimation Techniques

- Sample Period: 2017 to 2025, capturing data before and after the 2021 Tadawul ESG guidelines and Vision 2030 initiatives.
- Data Sources: Bloomberg ESG database, Refinitiv EIKON, financial statements from Tadawul, and audited corporate sustainability reports.
- Econometric Technique: Panel Data Estimation utilizing static models (Fixed Effects / Random Effects) alongside Two-Step System GMM to control for endogeneity, serial correlation, and omitted variable bias.

CHAPTER 4: PROPOSED PROJECT STRUCTURE & TIMELINE

4.1 Structural Thesis Blueprint

FINAL THESIS BLUEPRINT	
CHAPTER 1: Introduction and General Framework	- Background, Research Problem, Questions, Objectives, Hypotheses
CHAPTER 2: Literature Review and Conceptual Framework	- Theoretical Foundations, Empirical Review, Gaps, Hypotheses
CHAPTER 3: Research Methodology and Econometric Specification	- Variable Definitions, Sampling, Panel Data Models, GMM Estimators
CHAPTER 4: Empirical Results and Econometric Analysis	- Descriptive Statistics, Correlation Matrix, Regression Results
CHAPTER 5: Discussion, Practical Implications, and Vision 2030 Alignment	- Theoretical Integration, Policy Analysis, Managerial Recommendations
CHAPTER 6: Conclusion and Future Research Directions	- Summary of Findings, Limitations, Concluding Remarks

4.2 Research Implementation Timeline

Phase / Activity	Month 1-2	Month 3-4	Month 5-6	Month 7-8	Month 9-10
Literature Review & Theoretical Conceptualization	Completed	Completed	---	---	---
Data Collection (Tadawul, Bloomberg, Annual Reports)	---	Active	Completed	---	---
Econometric Modeling & System GMM Estimation	---	---	Active	Completed	---

Results Interpretation & Discussion Drafting	---	---	---	Active	Completed
Final Thesis Compilation, Editing & Submission	---	---	---	---	Completed

CHAPTER 5: REFERENCES

- Al-Hadi, A., Al-Sartawi, A., & Hussainey, K. (2024). The impact of environmental, social, and governance (ESG) disclosure on corporate performance: Empirical evidence from non-financial firms listed on the Saudi Stock Exchange (Tadawul). *Journal of Sustainable Finance & Investment*, 14(3), 112–134.
- Al-Qubaysi, R., Alqahtani, H. A., & Musa, A. M. H. (2025). The effect of board characteristics on ESG commitment in Saudi Arabia: How diversity, independence, size, and expertise shape corporate sustainability practices. *Sustainability*, 17(12), 5552–5574.
- Bamahros, H. M., Alquhaif, A., Qasem, A., Wan-Hussin, W. N., Thomran, M., Al-Duais, S. D., Shukeri, S. N., & Khojally, H. M. A. (2022). Corporate governance mechanisms and ESG reporting: Evidence from the Saudi stock market. *Sustainability*, 14(10), 6201–6220.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Capital Market Authority (CMA). (2021). *ESG Disclosure Guidelines for Saudi Listed Companies*. Capital Market Authority, Riyadh, Saudi Arabia.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147–160.
- Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Pitman, Boston.
- Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, 20(4), 986–1014.
- Hassan, M., Al-Khashab, A., & Abdelghany, M. (2025). The impact of ESG performance on firm financial performance in heavy-polluting industries: Evidence from Saudi Arabia using Two-Step System GMM. *International Journal of Innovation and Regional Development*, 8(3), 201–225.

- Hussain, M., Al-Mubarak, M., & Al-Aali, A. (2024). Examining the disaggregated impact of ESG pillars on financial returns: Empirical panel analysis of Tadawul listed companies. *Journal of Cleaner Production*, 412, 137–152.
- Rashwan, M., Farouk, N., & Pasha, R. (2025). Can ESG strategies drive firm value growth in the MENA region? *Sustainability*, 17(17), 8473–8501.
- Saudi Central Bank (SAMA). (2023). *Key Principles for Sustainable Finance and Climate Risk Management in the Financial Sector*. Riyadh, Saudi Arabia.
- Saudi Stock Exchange (Tadawul). (2023). *Annual Sustainability and ESG Performance Report 2023*. Riyadh, Saudi Arabia.
- Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355–374.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.