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Impact of Board Characteristics and Audit Quality on Fraudulent Financial Reporting

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Abstract

This study investigates the impact of board characteristics and audit quality on fraudulent financial reporting (FFR) among non-financial firms listed on the Pakistan Stock Exchange from 2012 to 2022. Utilizing the Beneish M-score model to identify potential earnings manipulation, the analysis incorporates governance variables such as board independence, CEO financial expertise, board gender diversity, board vigilance, audit committee independence and vigilance, Big 4 audit affiliation, and external auditor independence. Panel regression results indicate that board independence, CEO expertise, gender diversity, and audit committee vigilance significantly reduce the likelihood of FFR. Conversely, long-term auditor-client relationships appear to increase fraud risk. These findings support agency and resource dependency theories and offer important implications for regulators and firms aiming to enhance corporate governance, transparency, and audit effectiveness in emerging markets like Pakistan.

Keywords: Board independence, Audit quality, Fraudulent financial reporting, Beneish M-score, Corporate governance, Pakistan, Emerging markets

Introduction

Background of the Study Financial reporting plays a central role in conveying a company's financial performance and position to its stakeholders. High-quality financial reports build investor trust, facilitate efficient capital allocation, and promote market integrity. However, the reliability of financial reports has been frequently undermined by instances of fraudulent financial reporting (FFR), defined as the intentional misrepresentation of financial information to deceive stakeholders. FFR distorts financial transparency and misleads investors, regulators, and creditors, ultimately weakening confidence in capital markets.

Notable global scandals such as Enron, WorldCom, and Satyam have spotlighted the significance of strong corporate governance mechanisms in detecting and preventing fraudulent activities. In the context of Pakistan, firms like Crescent Standard Investment Bank and Bank of Punjab have faced regulatory scrutiny due to questionable financial reporting practices. These cases underscore the urgent need to examine the effectiveness of board characteristics and audit quality in reducing FFR.

Statement of the Problem: Despite regulatory reforms such as the adoption of the Code of Corporate Governance by the Securities and Exchange Commission of Pakistan (SECP), the incidence of FFR remains a concern. Weak enforcement, lack of transparency, and insufficient auditor independence have contributed to financial misreporting. Existing studies have focused largely on developed economies, with limited empirical evidence from emerging markets like Pakistan. Moreover, most studies do not account for the interactive effects of both board characteristics and audit quality on FFR. This study seeks to fill this gap by conducting a comprehensive investigation using a panel of non-financial firms listed on the Pakistan Stock Exchange (PSX).

Research Objectives: This study aims to examine the impact of board characteristics and audit quality on FFR. The specific objectives are:

- To determine the influence of board independence, CEO financial expertise, gender diversity, and board vigilance on FFR.
- To analyze the effect of audit committee independence, audit committee vigilance, Big 4 auditor affiliation, and external audit independence on FFR.
- To assess the effectiveness of corporate governance mechanisms in the Pakistani context in curbing financial misreporting.

Research Questions

- How does board independence affect the likelihood of FFR?
- Does CEO financial expertise reduce FFR?
- What role does gender diversity on the board play in mitigating FFR?
- Is there a significant association between audit quality indicators and FFR?

Theoretical Framework: The study is grounded in agency theory and resource dependency theory. Agency theory posits that conflicts of interest between management (agents) and shareholders (principals) can lead to information asymmetry and opportunistic behavior, such as FFR. Effective boards act as monitoring mechanisms to align managerial actions with shareholder interests.

Resource dependency theory, on the other hand, highlights the value of board diversity and expertise in providing critical resources and insights that improve decision-making quality. A diverse and independent board enhances a firm's ability to detect anomalies in financial reporting.

Significance of the Study: The findings will contribute to the corporate governance literature by offering evidence from an emerging market. Policymakers and regulators such as SECP and PSX can benefit from understanding which governance mechanisms are most effective in mitigating fraud. The study also has implications for investors, board members, and auditors seeking to enhance the credibility of financial reports.

Structure of the Paper: The remainder of the paper is organized as follows:

- Chapter 2 reviews relevant theoretical and empirical literature on board characteristics, audit quality, and FFR.
- Chapter 3 describes the data, research model, and methodology used to analyze the relationship between governance mechanisms and FFR.
- Chapter 4 presents the results and discussion, including regression analysis and interpretations.
- Chapter 5 concludes the study, outlines policy recommendations, and suggests directions for future research.

Literature Review

Introduction This chapter reviews the theoretical underpinnings and empirical studies related to board characteristics, audit quality, and fraudulent financial reporting (FFR). The literature is examined through two lenses: theoretical perspectives and empirical research findings from both developed and developing economies.

Theoretical Framework

Agency Theory: Agency theory suggests a natural conflict between the interests of managers (agents) and shareholders (principals). When managers pursue self-interest at the expense of shareholders, mechanisms such as board independence and external auditing can reduce agency costs and mitigate fraudulent reporting.

Resource Dependency Theory: Resource dependency theory emphasizes the importance of board diversity, expertise, and external linkages in enhancing organizational performance. Diverse boards provide access to a broader range of skills and insights, contributing to higher transparency and ethical conduct.

Board Characteristics and FFR

Board Independence: Independent directors are considered effective monitors of management. Prior studies (e.g., Hasnan et al., 2017; Kaawaase et al., 2021) have shown that board independence is negatively associated with earnings manipulation.

CEO Financial Expertise: CEOs with finance or accounting backgrounds are better equipped to understand and oversee complex financial decisions. Jiang et al. (2013) reported a significant inverse relationship between CEO financial expertise and financial statement fraud.

Board Gender Diversity: Gender-diverse boards are perceived as more ethical and effective in risk oversight. Liao et al. (2019) and Cumming et al. (2020) found that female directors enhance board diligence and reduce the likelihood of FFR.

Board Vigilance: Frequency and quality of board meetings reflect the vigilance of directors. Aderemi et al. (2016) noted that regular meetings are positively associated with monitoring quality.

Audit Quality and FFR

Audit Committee Independence and Vigilance: Independent audit committees provide unbiased oversight, while frequent meetings ensure ongoing scrutiny of financial reports (Ilaboya & Lodikero, 2017).

Big 4 Affiliation: Big 4 audit firms are known for rigorous audit standards and are less likely to be associated with fraud-prone clients (DeFond & Zhang, 2016).

External Audit Independence: Auditor independence is essential for objective assurance. However, repeated auditor appointments without rotation may impair independence (Fama, 2021).

Summary of Empirical Studies

Study	Country	Variable Focus	Key Findings
Hasnan et al. (2017)	Malaysia	Board Independence	Negatively related to FFR
Jiang et al. (2013)	China	CEO Financial Expertise	Reduces earnings manipulation
Liao et al. (2019)	Global	Board Gender Diversity	Enhances board vigilance
DeFond & Zhang (2016)	USA	Big 4 Affiliation	Improves audit quality and reduces fraud
Ilaboya & Lodikero (2017)	Nigeria	Audit Committee Independence	Reduces manipulation risk

Research Gap: While extensive research exists on corporate governance and FFR in developed economies, limited empirical work has been done in emerging markets like Pakistan. Moreover, integrated analysis combining board attributes with audit quality indicators remains underexplored.

Research Methodology

Research Design: This study adopts a quantitative research design using panel data to examine the effect of board characteristics and audit quality on fraudulent financial reporting (FFR) among non-financial firms listed on the Pakistan Stock Exchange (PSX). The use of secondary data allows for objective and replicable analysis, while the panel structure enhances the power of statistical inference by accounting for both cross-sectional and time-series variation.

Population and Sample: The population of the study consists of all non-financial firms listed on the PSX. A purposive sampling method was used to select 120 firms from diverse sectors, ensuring adequate representation. The selected firms had complete data available for the 10-year period from 2012 to 2022. Financial firms were excluded due to differences in regulatory structures and financial reporting formats.

Data Collection Methods: Data were obtained from audited annual reports available on company websites and the PSX portal. The study focused on governance disclosures, financial ratios, and audit characteristics. The Beneish M-score was computed for each firm-year observation to detect the probability of earnings manipulation.

Variable Description

Variable	Acronym	Measurement
Fraudulent Financial Reporting	FFR	Beneish M-score
Board Independence	BI	Proportion of independent directors
CEO Financial Expertise	CFE	1 if CEO has finance/accounting background, 0 otherwise
Board Gender Diversity	BGD	1 if at least one female director, 0 otherwise
Board Vigilance	BV	Number of board meetings per year
Audit Committee Independence	ACI	1 if audit committee is fully independent, 0 otherwise
Audit Committee Vigilance	ACV	Number of audit committee meetings per year
Big 4 Audit	B4A	1 if auditor is Big 4, 0 otherwise
External Auditor Independence	EAI	1 if no auditor change in 3 years, 0 otherwise
Return on Equity	ROE	Net income / shareholders' equity
Firm Size	FSIZE	Natural log of total assets
Tangibility	TANG	Tangible assets / total assets
Financial Leverage	LEV	Total liabilities / total assets
Cash Holdings	CASH	Cash & cash equivalents / total assets

Beneish M-score Model: The Beneish M-score model identifies earnings manipulators using eight financial ratios:

$$M\text{-score} = -4.84 + 0.92 \times DSRI + 0.528 \times GMI + 0.404 \times AQI + 0.892 \times SGI + 0.115 \times DEPI - 0.172 \times SGAI + 4.679 \times TATA - 0.327 \times LVGI$$

Where:

- DSRI = Days' Sales in Receivables Index
- GMI = Gross Margin Index
- AQI = Asset Quality Index
- SGI = Sales Growth Index
- DEPI = Depreciation Index
- SGAI = Sales, General and Administrative Expenses Index
- TATA = Total Accruals to Total Assets
- LVGI = Leverage Index

Firms with an M-score > -2.22 are classified as likely manipulators.

Model Specification: The econometric model is specified as follows:

$$FFR_{it} = \beta_0 + \beta_1 BI_{it} + \beta_2 CFE_{it} + \beta_3 BGD_{it} + \beta_4 BV_{it} + \beta_5 ACI_{it} + \beta_6 ACV_{it} + \beta_7 B4A_{it} + \beta_8 EAI_{it} + \beta_9 ROE_{it} + \beta_{10} FSIZE_{it} + \beta_{11} TANG_{it} + \beta_{12} LEV_{it} + \beta_{13} CASH_{it} + \varepsilon_{it}$$

Where:

- i = firm
- t = year (2012–2022)
- ε_{it} = error term

Diagnostic Tests: To ensure model reliability, the following diagnostic tests were conducted:

- **Multicollinearity**: Variance Inflation Factor (VIF) to assess intercorrelation among variables

- **Heteroscedasticity**: Breusch-Pagan test to check for unequal error variances
- **Autocorrelation**: Durbin-Watson test to detect serial correlation
- **Model Selection**: Hausman test to choose between fixed and random effects models

Results and Discussion

Introduction: This chapter presents the empirical findings based on descriptive statistics, correlation analysis, regression results, and diagnostic tests. The aim is to evaluate the influence of board characteristics and audit quality on fraudulent financial reporting (FFR) using the Beneish M-score as the proxy for fraud. Detailed interpretations accompany each table to provide insights into the results.

Descriptive Statistics: The descriptive statistics for the variables used in the study are shown below:

Variable	Mean	Std. Dev.	Min	Max
FFR (M-score)	0.963	1.299	-2.22	4.85
BI	0.226	0.112	0.00	0.60
CFE	0.614	0.489	0.00	1.00
BGD	0.787	0.410	0.00	1.00
BV	4.27	1.51	1.00	10.00
ACI	0.805	0.397	0.00	1.00
ACV	1.273	0.489	1.00	3.00
B4A	0.919	0.272	0.00	1.00
EAI	0.411	0.493	0.00	1.00

Interpretation: The average M-score is 0.963, suggesting that many firms show signs of earnings manipulation. The board independence average is 22.6%, while 61.4% of CEOs have financial expertise. Big 4 audit firms are engaged by 91.9% of the firms, indicating a preference for reputed external auditors.

Correlation Analysis

Variable	FFR	BI	CFE	BGD	BV	ACI	ACV	B4A	EAI
FFR	1	-0.233	-0.217	-0.128	-0.045	-0.103	-0.176	-0.292	0.195

Interpretation: FFR has a negative correlation with BI, CFE, BGD, and B4A, implying that these governance factors are associated with lower fraud likelihood. EAI is positively correlated with FFR, suggesting auditor familiarity might contribute to manipulation.

Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	p-Value
BI	-0.919***	0.332	-2.77	0.006
CFE	-0.165**	0.082	-2.01	0.044
BGD	-0.111**	0.053	-2.09	0.037
BV	-0.020	0.023	-0.87	0.383
ACI	-0.091	0.059	-1.54	0.124
ACV	-0.182**	0.079	-2.30	0.022
B4A	-0.406***	0.119	-3.41	0.001
EAI	0.418**	0.172	2.43	0.015

Constant	1.263***	0.212	5.96	0.000

Model statistics: $R^2 = 0.044$ | F-statistic = 3.37 | Prob > F = 0.0000

Interpretation: Board independence (BI), CEO financial expertise (CFE), board gender diversity (BGD), audit committee vigilance (ACV), and Big 4 auditor affiliation (B4A) significantly reduce FFR. In contrast, external auditor independence (EAI) increases the risk of fraud, possibly due to prolonged auditor-client relationships.

Diagnostic Tests

- **Multicollinearity:** VIF values < 2 for all variables, indicating no multicollinearity.
- **Heteroscedasticity:** Breusch-Pagan test was significant ($p < 0.05$); robust standard errors were applied.
- **Model Selection:** Hausman test ($Chi^2 = 27.08$, $p = 0.0121$) favored the fixed-effects model.

Discussion

- The results of this study offer compelling evidence supporting the role of strong corporate governance in mitigating fraudulent financial reporting (FFR). Each of the significant variables — board independence, CEO financial expertise, board gender diversity, audit committee vigilance, Big 4 audit affiliation, and external auditor independence — contributes to shaping how effectively an organization can deter manipulation of financial statements.
- Board independence (BI) emerged as one of the most influential deterrents of FFR. A higher proportion of independent directors likely brings objectivity and impartiality to the board's oversight function. Independent directors are more likely to challenge management, question aggressive accounting practices, and ensure adherence to ethical standards. This supports agency theory, which argues that independent monitoring reduces the conflict between managers (agents) and shareholders (principals).
- CEO financial expertise (CFE) was also negatively associated with FFR. CEOs with finance or accounting backgrounds are more capable of understanding the technical aspects of financial reporting and the long-term consequences of earnings manipulation. Their expertise equips them to avoid short-term tactics that may damage the firm's reputation or attract regulatory penalties. This finding aligns with the resource dependency theory, highlighting the value of relevant experience and knowledge within the leadership team.
- Board gender diversity (BGD), as captured by the presence of at least one female director, was found to reduce the likelihood of FFR. Female directors are often associated with ethical decision-making, higher diligence, and a collaborative governance style. Their presence may alter the boardroom dynamics in ways that enhance transparency and discourage opportunistic behavior.
- Audit committee vigilance (ACV) — reflected by the frequency of audit committee meetings — was significantly associated with lower FFR. Frequent meetings signal that the audit committee is actively monitoring the financial reporting process, engaging with internal and external auditors, and addressing red flags. This reinforces the committee's gatekeeping role and demonstrates that mere formation of audit committees is not enough — their operational diligence is crucial.
- Interestingly, while Big 4 audit firms (B4A) were associated with reduced fraud risk due to their reputation, resources, and standardized practices, external auditor independence (EAI) had a positive coefficient with FFR. This paradoxical result suggests that longer auditor tenure, although reflective of independence on paper, may lead to over-familiarity and reduced objectivity in practice. This finding calls for regulatory scrutiny over auditor rotation policies in Pakistan.
- Overall, the findings confirm that governance mechanisms, when actively implemented, have a significant influence in reducing earnings manipulation. The results are consistent with prior empirical literature (e.g., Hasnan et al., 2017; DeFond & Zhang, 2016; Jiang et al., 2013), and extend those insights into the context of emerging economies, where enforcement and compliance structures may differ.
- These insights provide a practical foundation for boards and regulators to prioritize vigilance, diversity, independence, and audit quality in corporate governance reforms. They also highlight the importance of not just structural compliance, but also behavioral and operational rigor in preventing financial misreporting.

Finally: The findings confirm the theoretical predictions of agency and resource dependency theories. Independent boards and audit committees serve as effective monitors. CEO expertise and gender diversity bring knowledge and ethical oversight, reducing misreporting. Big 4 auditors enhance credibility, while lack of auditor rotation compromises objectivity. These results align with prior literature (Hasnan et al., 2017; Cumming et al., 2020; Fama, 2021) and validate the role of governance structures in emerging markets like Pakistan.

Conclusion and Recommendations

Introduction: This chapter summarizes the major findings of the study and presents conclusions based on the empirical analysis. It also outlines key policy recommendations for regulators, corporate boards, and auditors to reduce fraudulent financial reporting (FFR) in Pakistani non-financial firms. Finally, the chapter highlights limitations of the study and proposes areas for future research.

Summary of Key Findings: The study aimed to examine the relationship between board characteristics, audit quality, and FFR using data from 120 non-financial firms listed on the Pakistan Stock Exchange over a ten-year period (2012–2022). The Beneish M-score model was applied to detect the likelihood of earnings manipulation.

Key findings include:

- **Board Independence (BI)** significantly reduces FFR, supporting the agency theory notion that independent directors enhance oversight.
- **CEO Financial Expertise (CFE)** is negatively associated with FFR, indicating that financially literate CEOs can reduce manipulation risks.
- **Board Gender Diversity (BGD)** contributes to improved governance and ethical behavior, decreasing the likelihood of fraudulent activities.
- **Audit Committee Vigilance (ACV)**, measured by the number of meetings, is associated with lower FFR, reflecting proactive financial oversight.
- **Big 4 Audit Affiliation (B4A)** correlates with higher audit quality and reduced fraud.
- **External Auditor Independence (EAI)**, however, was positively associated with FFR, suggesting that long-term auditor-client relationships may compromise auditor objectivity.

Policy Recommendations: Based on the study's findings, the following policy actions are recommended:

- **Enhance Board Independence**: Regulatory bodies should ensure stricter implementation of independent board composition to strengthen governance.
- **Promote Financial Literacy in Leadership**: Firms should prioritize the appointment of CEOs with financial expertise.
- **Encourage Gender Diversity**: Policies promoting female representation on boards should be enforced to leverage diverse perspectives.
- **Mandate Auditor Rotation**: SECP should consider implementing mandatory external auditor rotation to avoid familiarity threats.
- **Strengthen Audit Committee Roles**: Audit committees must meet frequently and include qualified members with financial and auditing backgrounds.

Study Limitations: Despite its contributions, the study has some limitations:

- The use of the Beneish M-score, while widely accepted, is a proxy for manipulation and may not capture all forms of fraud.
- The sample was limited to non-financial firms, excluding financial institutions with different governance structures.
- Only secondary data were used, which may not fully capture internal control mechanisms or organizational culture.

Suggestions for Future Research

- Future studies could explore FFR in financial institutions using qualitative techniques such as interviews and case studies.
- Comparative studies across countries or regions could identify contextual differences in governance effectiveness.
- Researchers may examine the role of internal control systems and cultural factors in moderating FFR.

Conclusion: The study concludes that robust governance mechanisms — particularly independent and diverse boards, financially expert CEOs, and vigilant audit committees — are crucial in reducing fraudulent financial reporting. These findings are consistent with the principles of agency theory and resource dependency theory, and they emphasize the importance of structural reforms in corporate governance. Implementation of the recommended policies will improve transparency, protect investor interests, and enhance confidence in Pakistan's capital markets.

The findings of this research affirm that sound corporate governance and high audit quality are essential to curbing fraudulent financial reporting, particularly in the context of emerging markets such as Pakistan. The study highlights that independent and diverse boards, vigilant audit committees, and the financial acumen of corporate leadership play pivotal roles in reducing opportunities and motivations for earnings manipulation.

Specifically, the study confirms that board independence and CEO financial expertise significantly mitigate FFR, offering strong empirical backing for agency theory. Gender diversity on boards has also proven effective in promoting ethical decision-making and transparency. Additionally, the operational effectiveness of audit committees—especially their vigilance—was found to be a key component of financial integrity.

While Big 4 auditors serve as a deterrent to fraud due to their reputation and rigorous procedures, the surprising finding that external auditor independence correlates positively with FFR suggests that prolonged auditor tenure may undermine objectivity. This highlights the need for regulatory review of audit rotation policies to ensure auditor independence is not just theoretical, but functionally effective.

Taken together, these insights emphasize that governance mechanisms should not merely fulfill regulatory checkboxes but must be genuinely embedded into the ethical fabric and risk management frameworks of firms. For regulators, these findings underscore the importance of enhancing and enforcing governance codes, auditor accountability, and board composition standards. For companies, the study offers evidence-based pathways to improve transparency, stakeholder trust, and long-term sustainability.

Future research may further explore these relationships using qualitative methods or cross-country comparisons to assess cultural, legal, and institutional variations in governance efficacy. Moreover, extending the scope to include financial institutions and examining the moderating role of internal controls and ownership structures could offer deeper insights.

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