# BETWEEN TRANSPARENCY AND MANIPULATION: THE INFLUENCE OF AUDIT COMMITTEES ON EARNINGS MANAGEMENT IN MOROCCO

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## Abstract

Although numerous studies have focused on the role of audit committees in limiting earnings management practices in developed countries, emerging markets have received limited attention. This study addresses this gap by examining the effectiveness of the 2008 Moroccan Code of Good Corporate Governance Practices through an analysis of the influence of audit committee characteristics on earnings management in companies listed on the Casablanca Stock Exchange (CSE) between 2018 and 2022. Using the generalized method of moments (GMM) on a sample of 34 companies, the results reveal a negative and significant association between audit committee independence and earnings management. Additionally, multiple mandates of audit committee members exert a negative and significant influence on earnings management. In contrast, gender diversity within audit committees positively influences earnings management, while the size of the audit committee is not significantly associated with this practice. Overall, our findings highlight the importance of audit committees predominantly composed of independent directors, with diverse experience gained from serving on various boards and balanced gender representation. These characteristics significantly reduce earnings management, confirming the effectiveness of the 2008 Moroccan Code of Good Corporate Governance Practices in curbing opportunistic behavior. This study contributes to the corporate governance literature by emphasizing the role of multiple mandates and audit committee independence, particularly in crisis contexts. It also offers new perspectives on emerging markets, particularly in North Africa, and opens avenues for research in similar contexts.

**Keywords:** Corporate Governance, Earnings Management, Audit Committee, Morocco, Emerging Markets, COVID-19

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# 1. INTRODUCTION

Fraudulent practices, including earnings management, continue to pose serious challenges to financial transparency worldwide in 2024. According to the Global Economic Crime Survey (PricewaterhouseCoopers [PwC], 2024), 72% of boards of directors actively monitor fraud risks, while a significant number of companies report exposure to practices such as procurement fraud and corruption. The fraud triangle theory Zhu et al. (2023) identifies three explanatory factors: 1) motivation, 2) opportunity, and 3) rationalization. Key motivations include financial pressure, growth ambitions, and executive compensation incentives (Sun et al., 2023). As a result, earnings manipulation has become widespread in both developed and emerging economies (AL-Duais et al., 2022). In light of these global trends, academic and policy discussions have increasingly turned to corporate governance as a critical line of defense against financial misconduct. While many studies have focused on board characteristics (Almarayeh et al., 2024; Mensah & Boachie, 2023), audit committees remain relatively underexplored in this regard (Saleh & Mansour, 2024), particularly in emerging markets. This trend is especially pronounced in Morocco, where governance challenges are compounded by structural features of the financial market. In this context, Ibrahimi and El Baghdadi (2025) highlighted the involvement of listed companies in earnings management practices, underscoring the need for a deeper analysis of the role of governance mechanisms in curbing such opportunistic behavior. To improve financial reporting transparency and reliability, the National Commission on Corporate Governance (NCCG) established a Code of Good Corporate Governance Practices in 2008, promoting the enhancement of internal governance mechanisms. However, the effectiveness of this framework remains largely unevaluated empirically, especially in the post-pandemic context. Recent literature underscores the importance of audit committees in strengthening governance and reducing accounting manipulation (Al-Haddad & Whittington, 2019). Nonetheless, specific characteristics of audit committees, such as the number of directorships held by their members (multiple directorships), remain insufficiently studied. Alkebsee et al. (2022) note the limited number of studies investigating this factor, particularly in North African countries.

To the best of our knowledge, no prior research has examined the impact of audit committee members holding multiple directorships on earnings management in Morocco or, more broadly, in the North African region. This theoretical and empirical gap presents an opportunity to contribute original insights to the corporate governance literature. Accordingly, the main research question of our study is:

*RQ: To what extent do audit committee characteristics — namely size, independence, gender diversity, and multiple directorships — influence earnings management among Moroccan listed firms, in a post-COVID-19 context marked by growing pressures on financial governance?*

In this context, the objective of our study is to assess the effectiveness of the 2008 Moroccan Code of Good Corporate Governance Practices by analyzing how audit committee characteristics affect earnings management in companies listed on the Casablanca Stock Exchange (CSE) from 2018 to 2022, using the generalized method of moments (GMM), while accounting for the COVID-19 pandemic.

Our study offers academic, practical, and policy implications. For the academic community, this research enriches the literature on earnings management and corporate governance in underexplored emerging economies such as Morocco. It also responds to calls from scholars like Al-Haddad and Whittington (2019) and Almarayeh et al. (2024) by providing empirical evidence on audit committees in evolving governance environments. A notable contribution of our study is the introduction of the multiple directorships variable in the audit committee context, which has been largely overlooked. The study also offers an empirical evaluation of the 2008 Moroccan Code of Good Corporate Governance Practices' effectiveness amid economic emergence, post-pandemic uncertainty, and the growing influence of institutional investors. For practitioners, especially executives and board members, this study provides actionable recommendations to enhance audit committee performance. The results emphasize the importance of independent audit committees composed of members with diverse experience across various boards and balanced gender representation, to strengthen financial reporting quality, boost investor confidence, and reduce opportunistic behavior. For regulators and policymakers particularly in emerging markets, this research demonstrates that specific audit committee characteristics contribute to reducing earnings manipulation. It advocates for the strict enforcement of governance standards and recommends reforms promoting diversity and improving audit committee effectiveness. In a context of economic turbulence, such as the COVID-19 crisis, our results highlight the crucial role of strong governance mechanisms in maintaining financial stability and transparency.

The remainder of this paper is organized as follows. Section 2 introduces the Moroccan context, theoretical framework, and hypotheses. Section 3 describes the data and methodology. Section 4 presents the results. Section 5 discusses the findings, and Section 6 concludes the study.

# 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

## 2.1. Context

Over the past few decades, countries in the Middle East and North Africa (MENA) region have undergone profound transformations in their economic and institutional frameworks. These changes have enabled many emerging economies to strengthen their economic and financial foundations, marked by a gradual adaptation to international standards and the development of their institutional mechanisms (Ibrahimi & El Baghdadi, 2025). Morocco has emerged as a key player in this regional landscape, consolidating its position in North Africa and beyond. Its institutional and financial environment, though still evolving, distinguishes itself from that of developed economies through its ability to adapt its financial sector to international standards while strengthening its governance mechanisms (Ibrahimi et al., 2021). This momentum has particularly accelerated in recent years through a series of reforms aimed at improving macroeconomic stability and enhancing the country's resilience to global crises. In 2023, Morocco recorded economic growth of 3.2%, supported by positive momentum in the stock market, reflected in a 12.8% increase in the Moroccan All Shares (MASI) index[1]. This performance is accompanied by improvements in governance indicators[2]. The government effectiveness index strengthened, rising from -0.17 in 2021 to -0.13 in 2022, signaling more efficient public management. The rule of law index also improved from -0.25 to -0.20, indicating increased legal stability and greater institutional transparency. Although the control of corruption slightly improved its score, moving from -0.42 to -0.36, further efforts are still needed in this area. These advancements reflect Morocco's efforts to strengthen its institutions and enhance its competitiveness.

Moreover, Morocco's strategic position as a major investor in Africa (Monnier, n.d.), particularly following its accession to the African Union in 2017, has enabled the country to become the second-largest African investor on the continent, enhancing its attractiveness as a regional economic and financial hub (Ibrahimi & Liassini, 2024). As the second-largest investor in Africa after South Africa, Morocco is now at the heart of the continent's economic exchanges, with Moroccan companies established in numerous African countries. This economic stability and its central role in the region make Morocco an ideal setting for analyzing corporate governance mechanisms.

In this dynamic context, the study of corporate governance in Moroccan companies takes on particular importance. The impact of audit committee characteristics on earnings management constitutes a key area requiring further exploration, particularly in light of recent reforms and the evolution of governance in the country. These reforms have emphasized strengthening boards of directors, particularly in terms of independence and diversity of expertise, to ensure effective governance and optimal corporate performance. They aim to align governance practices with international standards, incorporating recommendations from the Organisation for Economic Co-operation and Development (OECD) and other global frameworks. The 2008 Moroccan Code of Good Corporate Governance Practices requires that audit committees now be composed predominantly of independent members to ensure impartial oversight of financial practices. Additionally, committee members must possess specific technical expertise in finance and accounting to enhance the quality of financial reporting oversight. Furthermore, the audit committee is assigned a more active role in risk management, strengthening its control over the company's internal and external risk management systems. Another significant reform is the requirement for the audit committee to ensure the independence of external auditors, ensuring they are not subject to undue pressure, thereby safeguarding the integrity of financial reports.

## 2.2. Research hypotheses

Earnings management has been extensively studied in the literature, highlighting its impact on financial transparency and corporate strategic decision-making. Schipper (1989) defined earnings management as the deliberate intervention of managers in the financial reporting process to serve their own interests, often at the expense of shareholders. This intervention can manifest as manipulations that distort the true presentation of a company's performance. Healy and Wahlen (1999) expanded on this definition by stating that managers exercise their discretion to conceal information relevant to stakeholders, thereby influencing the decisions of investors and other economic actors based on altered accounting figures.

Lo (2008) distinguished two forms of earnings management: 1) accounting-based and 2) real activities-based. Accounting-based earnings management involves exploiting the flexibility of accounting standards to influence financial results, often through discretionary accruals. Real activities-based earnings management, on the other hand, refers to concrete actions taken by managers in the company's operations, such as manipulating cash flows, discretionary expenditures, and abnormal production costs. These two types of earnings management are not only complementary but also substitutable (Zang, 2012).

### *2.2.1. Audit committee size*

The literature presents mixed findings regarding the impact of audit committee size on earnings management. The first category suggests that a larger audit committee is effective in limiting earnings management practices, as it comprises a broader range of directors responsible for overseeing management actions (Adelopo et al., 2012). It brings more resources and a wider knowledge base to the oversight process, effectively identifying potential issues and anomalies in financial reporting and proposing corrective actions to produce financial reports that meet stakeholder expectations (Ali, 2024). The second category suggests that a smaller audit committee is more effective in mitigating earnings management practices due to its ability to respond more quickly than larger committees (Jensen, 2010). Similarly, Lin and Hwang (2010) conducted a meta-analysis encompassing the results of nearly 50 empirical studies. They found that a smaller audit committee size is likely to reduce opportunistic behavior by managers. Finally, some researchers report no significant relationship between audit committee size and earnings management (Almuzaiqer et al., 2022), implying that the appointment of audit committee members is more symbolic than substantive, driven by compliance with regulatory requirements, which undermines the effectiveness of the governance system (Spira, 1999). This divergence in findings reveals a research gap, particularly in the context of emerging markets like Morocco, where governance dynamics and the role of audit committees remain underexplored. In light of this, we consider that audit committee size is negatively and significantly associated with earnings management. This hypothesis is supported by the report published by the Moroccan Institute of Directors (2018), which highlights that the audit committee is responsible for evaluating internal control systems, preventing and managing risks, and maintaining the quality and transparency of disclosed financial reports.

*H1: Audit committee size is negatively related to earnings management.*

[1] https://donnees.banquemondiale.org/pays/maroc?view=chart
[2] https://www.theglobaleconomy.com/Morocco/wb_government_effectiveness/

### *2.2.2. Audit committee independence*

Audit committee independence is considered one of the most effective attributes for strengthening the governance system (Collier, 1996), as it oversees the financial reporting process and protects shareholders' interests. Saona et al. (2020) showed that a strong presence of independent directors on audit committees is likely to effectively control the management team, thereby limiting their ability to manage earnings. Chang and Sun (2009) conducted a comparison of audit committee characteristics in a sample of 89 U.S. companies before and after the adoption of the Sarbanes-Oxley Act (SOX). They found that audit committee independence did not affect earnings management before SOX but was negatively associated with earnings management after its adoption. On the other hand, some studies suggest that audit committee independence is positively associated with earnings management (Ali, 2024; El-Dyasty & Elamer 2023), indicating that the higher the proportion of independent directors, the stronger the tendency of managers to manipulate earnings. However, Lee and Phua (2022) and Ngo and Le (2021) found no significant relationship between earnings management and audit committee independence. This divergence in empirical findings highlights a research gap in the Moroccan context, where despite regulatory encouragement for independent audit committees, little is known about their actual effectiveness in curbing earnings management in practice. In the present study, we consider that audit committee independence is negatively associated with earnings management. This hypothesis is supported by the recommendations of the 2008 Moroccan Code of Good Corporate Governance Practices and Maroclear[3], which advocate for the establishment of independent audit committees responsible for overseeing the financial reporting process to provide reasonable assurance to shareholders regarding the quality of financial reports, thereby contributing to optimal risk management.

*H2: Audit committee independence is negatively related to earnings management.*

### *2.2.3. Gender diversity*

Chatterjee and Rakshit (2023) suggested that the inclusion of women on audit committees is likely to improve the quality of financial reporting and reduce opportunistic behavior by managers. According to resource dependence theory, female directors bring unique skills in oversight, adopt conservative strategies, have an ethical orientation, and maintain strong external relationships (Bilal et al., 2024). Additionally, Conyon and He (2017) showed that the presence of female directors on audit committees is a sign of improved corporate performance, as they respond quickly to accounting manipulations practiced by management. Similarly, agency theory suggests that female directors with financial expertise are more effective in reducing agency costs through their control over the financial reporting process (Alkebsee et al., 2022). However, Wang et al. (2022) showed that female directors may not be effective in reducing earnings management practices due to political distractions. In the same vein, Biswas et al. (2022) found that gender diversity does not mitigate earnings management practices in Indian commercial banks, attributing this to male dominance and a masculinized organizational culture (Sheedy & Lubojanski, 2018). Despite increased global interest, the role of gender diversity in curbing earnings management remains underexplored in Morocco, where women's representation on audit committees is still limited and the cultural and regulatory environment may uniquely influence its impact. In the present study, we consider that audit committee gender diversity is negatively associated with earnings management. This hypothesis is based on the results of a survey conducted in Morocco by the Women Administrators Club (*Club des Femmes Administrateurs* — CFA) among 133 directors (International Finance Corporation [IFC] et al., 2022). Their findings indicate that audit committee gender diversity is likely to enhance their effectiveness and, consequently, reduce earnings management.

*H3: Audit committee gender diversity is negatively related to earnings management.*

### *2.2.4. Multiple directorships of audit committees*

Multiple directorships within audit committees refer to members who simultaneously serve on multiple boards of directors and audit committees, which can influence their role in governance and oversight (Hasnan et al., 2022). Quang Trinh (2022) showed that directors serving on various boards and audit committees bring a broader and more diverse range of experiences and knowledge, positively affecting decision-making processes. In the Malaysian context, Othman et al. (2014) demonstrated that independent directors with more experience and serving on multiple boards play a key role in enhancing corporate transparency, thereby strengthening investor confidence and governance. Similarly, Jiraporn et al. (2009) emphasized that holding multiple directorships by audit committee members can promote increased expertise and enhanced oversight, contributing to improved risk prevention and transparency. On the other hand, Saleh et al. (2020) found that multiple directorships of board members reduced the effectiveness and performance of non-financial firms listed on the Palestine Security Exchange (PSE) between 2009 and 2016. Persons (2005) revealed that multiple directorships within audit committees are more common in fraudulent firms than in non-fraudulent ones. This suggests that holding multiple roles may compromise the effectiveness of audit committee members and limit voluntary information disclosure. In the context of Morocco, although multiple directorships are increasingly common, little research has addressed how they impact the effectiveness of audit committees, especially in relation to earnings management. This gap highlights the need for further investigation, given the unique governance dynamics in Moroccan firms. In the present study, we consider that multiple directorships of audit committees are negatively and significantly associated with earnings management.

*H4: Multiple directorships of audit committees are negatively related to earnings management.*

[3] https://www.maroclear.com/fr

## 3. RESEARCH METHODOLOGY

### 3.1. Sample and variables

Our initial sample consists of 76 companies listed on the CSE during the 2018–2022 period a time marked by the COVID-19 health crisis and the 2018 boycott movement, both of which significantly impacted governance practices and earnings management. From this sample, we excluded financial institutions due to their specific regulations, totaling 13 companies, as well as all firms for which financial data and audit committee information were unavailable, in addition to those recently listed on the stock exchange. This led to the exclusion of 29 companies in total. The financial and governance-related data for the remaining 34 companies were collected from the CSE website over a five-year period, resulting in 170 data entries. The distribution of these companies by industry sector is presented in Table 1.

**Table 1.** Distribution of sample companies by industry sector

| *The Refinitiv Business Classification (TRBC)* | *No. of companies* | *Percentage* |
|---|---|---|
| Food & Beverages | 7 | 20.59% |
| Chemicals | 1 | 2.94% |
| Transportation | 4 | 11.76% |
| Investment Holding Companies | 1 | 2.94% |
| Mineral Resources | 4 | 11.76% |
| Industrial Goods | 1 | 2.94% |
| Mineral Resources | 2 | 5.88% |
| Energy-Fossil Fuels | 3 | 8.83% |
| Pharmaceuticals & Medical Research | 1 | 2.94% |
| Real Estate | 5 | 14.71% |
| Industrial & Commercial Services | 5 | 14.71% |
| Total | 34 | 100% |

Table 1 presents the sectoral distribution of the sample companies, based on TRBC, a globally recognized standard. This classification ensures international comparability of results. The majority of the companies belong to the "Food & Beverages" sector (20.59%), followed by "Real Estate" and "Industrial & Commercial Services" (each 14.71%), and then "Transportation" and "Mineral Resources" (11.76% each). Other sectors are less represented, such as "Energy-Fossil Fuels", "Chemicals", and "Pharmaceuticals & Medical Research". This distribution reflects a certain sectoral diversity, which is conducive to a more robust analysis of the relationship between audit committees and earnings management.

The primary dependent variable used in this study is discretionary accruals, which serve as an indicator of earnings management, following the model of Kothari et al. (2005). This model is preferred because it accurately captures discretionary accruals in non-financial firms, unlike other models (Costa & Soares, 2022). It also has greater explanatory power than the model of Dechow et al. (1995), as it accounts for both past and present firm performance (Almuzaiqer et al., 2022). Thus, this model remains a widely used tool by researchers in this field (Almarayeh, 2024; Musa et al., 2025). We estimate discretionary accruals using the Kothari et al.'s (2005) model as follows:

$$\frac{TA_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{t-1}} + \beta_2 \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \beta_4 ROA_{i,t} + \varepsilon_{i,t} \quad (1)$$

where,

- $TA_{it}$ — total accruals of firm *i* in year *t*, measured as the difference between net income and operating cash flows;
- $A_{it-1}$ — total assets of firm *i* in year *t* – 1;
- $\Delta REV_{it}$ — change in revenue of firm *i* between *t* and *t* – 1;
- $\Delta REC_{it}$ — change in total accounts receivable of firm *i* between *t* and *t* – 1;
- $PPE_{it}$ — net book value of tangible assets of firm *i* in year *t*;
- $ROA_{it}$ — return on assets of firm *i* in year *t*;
- $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$ — estimated coefficients of the model;
- $\varepsilon_{it}$ — residual, serving as a proxy for discretionary accruals.

This study incorporates a range of independent and control variables to examine the determinants of earnings management. The first key independent variable, audit committee size (*ACS*), represents the total number of members on the audit committee. The second independent variable, gender diversity (*ACG*), is measured by the proportion of women serving on the audit committee. The third variable, multiple directorships of the audit committee (*ACM*), is a binary variable that takes the value 1 if audit committee members also serve on other boards of directors, and 0 otherwise. Finally, audit committee independence (*ACI*) represents the number of independent directors serving on the audit committee. Data for these variables are sourced from annual management reports filed with the CSE.

In addition to these independent variables, we incorporate several control variables that account for structural and contextual factors influencing earnings management practices. These include:

- the health crisis (*COV*), which takes the value 1 for the years 2020 and 2021, corresponding to the COVID-19 pandemic period, and 0 otherwise;
- foreign ownership (*FO*), measured by the percentage of shares held by foreign investors;
- return on assets (*ROA*), calculated as the ratio of net income to total assets;
- institutional ownership (*IO*), representing the percentage of shares held by institutional investors;
- leverage (*LEV*), measured by the ratio of long-term debt to total assets;

• audit quality (*AQ*), which takes the value 1 if the company is audited by a Big 4 firm, and 0 otherwise.

To enhance the robustness of our results and limit potential estimation biases, we conduct additional analyses by including alternative control variables commonly used in the literature. Among these are:

• managerial ownership (*MO*), measured by the percentage of shares held by executives;

• board size (*BS*), measured by the number of members on the board of directors;

• family ownership (*FOWN*), which takes the value 1 if the company is family-controlled and 0 otherwise;

• firm age (*AGE*), measured by the number of years since the company's establishment;

• firm size (*FS*), measured by the logarithm of total assets;

• chief executive officer (CEO) nationality (*CEO_N*), which takes the value 1 if the CEO is Moroccan and 0 otherwise.

Data for these variables are sourced from the CSE website.

Table 2 provides a detailed presentation of the dependent, independent, and control variables, including their definitions, measurement methods, and data sources. Additionally, Table 2 presents the descriptive statistics of the variables used in the analysis.

**Table 2.** Variables, measures, and data sources

| *Variable* | *Name* | *Measure* | *Source* |
|---|---|---|---|
| ***Dependent variable*** | | | |
| Discretionary accruals | *DA* | Absolute value of discretionary accruals measured using the Kothari et al.'s (2005) model. | CSE |
| ***Independent variables*** | | | |
| Audit committee size | *ACS* | Total number of audit committee members. | CSE |
| Gender diversity | *ACG* | Proportion of women serving on the audit committee. | CSE |
| Multiple directorships | *ACM* | Dummy variable that takes the value 1 if audit committee members also serve on other boards, otherwise 0. | CSE |
| Audit committee independence | *ACI* | Number of independent directors serving on the audit committee. | CSE |
| ***Control variables*** | | | |
| COVID-19 | *COV* | Dummy variable that takes the value 1 for the years 2020 and 2021, corresponding to the COVID-19 pandemic period, otherwise 0. | World Bank |
| Foreign ownership | *FO* | Percentage of common shares held by foreign investors. | CSE |
| Return on assets | *ROA* | Ratio of net income to total assets. | CSE |
| Institutional ownership | *IO* | Percentage of common shares held by institutional investors. | CSE |
| Leverage | *LEV* | Ratio of long-term debt to total assets. | CSE |
| Audit quality | *AQ* | Dummy variable that takes the value 1 if the company is audited by a Big 4 firm, otherwise 0. | CSE |
| Managerial ownership | *MO* | Percentage of common shares held by executives. | CSE |
| Board size | *BS* | Total number of board members. | CSE |
| Family ownership | *FOWN* | Dummy variable that takes the value 1 if the company is family-controlled, otherwise 0. | CSE |
| Firm age | *AGE* | Number of years since the company's establishment. | CSE |
| Firm size | *FS* | Natural logarithm of total assets. | CSE |
| CEO nationality | *CEO_N* | Dummy variable that takes the value 1 if the CEO is Moroccan, otherwise 0. | CSE |

**Table 3.** Descriptive statistics of variables

| *Variables* | *Mean* | *Median* | *Std. dev.* | *Kurtosis* | *Skewness* | *Min* | *Max* |
|---|---|---|---|---|---|---|---|
| *DA* | -0.024 | 0.000 | 0.389 | 62.104 | 5.568 | -0.965 | 0.630 |
| *ACS* | 3.712 | 4.000 | 10459.000 | 2.461 | 0.347 | 2.000 | 6.000 |
| *ACG* | 0.190 | 0.1666 | 0.218 | 3.145 | 0.944 | 0.000 | 0.800 |
| *ACM* | 0.971 | 1.000 | 0.1694 | 32.030 | -5.570 | 0.000 | 1.000 |
| *ACI* | 1.653 | 2.000 | 10220.000 | 2.812 | 0.066 | 0.000 | 4.000 |
| *COV* | 0.400 | 0.000 | 0.4913 | 1.167 | 0.408 | 0.000 | 1.000 |
| *FO* | 0.073 | 0.000 | 0.183 | 11.672 | 2.994 | 0.000 | 0.858 |
| *ROA* | 0.061 | 0.060 | 0.070 | 7.038 | -0.024 | -0.195 | 0.242 |
| *IO* | 0.248 | 0.151 | 0.241 | 2.666 | 0.781 | 0.000 | 0.878 |
| *LEV* | 0.102 | 0.053 | 0.119 | 2.865 | 1.030 | 0.000 | 0.413 |
| *AQ* | 0.706 | 1.000 | 0.457 | 1.817 | -0.904 | 0.000 | 1.000 |

### 3.2. Research method

This study analyzes earnings management practices using discretionary accruals (*DA*) as the dependent variable to determine whether managers adopt upward or downward earnings management strategies. Our dataset covers a 5-year period and is organized in a panel structure. Panel data are particularly suited to econometric techniques capable of simultaneously addressing cross-sectional and temporal dimensions. The GMM, with the two-step Arellano-Bond estimator, is a particularly effective approach for this type of analysis (Arellano & Bond, 1991). This method is commonly preferred for dynamic panel data analysis due to its ability to correct endogeneity (Baltagi et al., 2009). Additionally, the two-step GMM estimation handles heteroscedasticity and provides robust estimates, even under over-specified moment conditions (Fève & Langot, 1995). This method is also widely adopted in the academic literature (Aly et al., 2024; Saleh et al., 2024) due to its robustness and efficiency in analyzing dynamic panel data.

In our analysis, we consider the following regression equation:

*Main analysis*

$$DA_{i,t} = \alpha + \beta_1 ACS_{i,t} + \beta_2 ACG_{i,t} + \beta_3 ACM_{i,t} + \beta_4 ACI_{i,t} + \beta_5 COV_{i,t} + \beta_6 FO_{i,t} + \beta_7 ROA_{i,t} + \beta_8 IO_{i,t} + \beta_9 FS_{i,t} + \beta_{10} AQ_{i,t} + \varepsilon_{i,t} \quad (2)$$

*Robustness check*

$$DA_{i,t} = \alpha + \beta_1 ACS_{i,t} + \beta_2 ACG_{i,t} + \beta_3 ACM_{i,t} + \beta_4 ACI_{i,t} + \beta_5 MO_{i,t} + \beta_6 BS_{i,t} + \beta_7 FOWN_{i,t} + \beta_8 AGE_{i,t} + \beta_9 FS_{i,t} + \beta_{10} CEO\_N_{i,t} + \varepsilon_{i,t} \quad (3)$$

where, $\alpha$ and $\beta_1$ are the parameters of the equations, and $\varepsilon_{i,t}$ is the random error term.

Our empirical analysis is based on five regression models. The correlation matrices of the variables (see Tables 3 and 4) indicate low levels of correlation, and the variance inflation factor (VIF) tests reveal values below 10. These results confirm the absence of multicollinearity issues in our analysis.

**Table 4.** Correlation matrix: Core analysis

| *Variables* | *(1)* | *(2)* | *(3)* | *(4)* | *(5)* | *(6)* | *(7)* | *(8)* | *(9)* | *(10)* | *VIF* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***(1)*** *ACS* | 1.000 | | | | | | | | | | 1.400 |
| ***(2)*** *ACG* | 0.110 | 1.000 | | | | | | | | | 1.320 |
| ***(3)*** *ACM* | -0.115 | -0.054 | 1.000 | | | | | | | | 1.410 |
| ***(4)*** *ACI* | 0.089 | 0.289 | 0.112 | 1.000 | | | | | | | 1.070 |
| ***(5)*** *COV* | 0.088 | -0.084 | 0.000 | -0.028 | 1.000 | | | | | | 1.030 |
| ***(6)*** *FO* | 0.272 | -0.056 | -0.241 | -0.106 | 0.006 | 1.000 | | | | | 1.610 |
| ***(7)*** *ROA* | 0.180 | -0.005 | 0.196 | -0.094 | -0.093 | 0.201 | 1.000 | | | | 1.450 |
| ***(8)*** *IO* | 0.193 | 0.189 | 0.180 | 0.127 | -0.012 | -0.254 | -0.129 | 1.000 | | | 1.460 |
| ***(9)*** *LEV* | 0.004 | 0.025 | 0.114 | 0.093 | 0.051 | 0.194 | -0.284 | 0.171 | 1.000 | | 1.340 |
| ***(10)*** *AQ* | 0.193 | 0.098 | 0.270 | 0.059 | 0.000 | 0.130 | 0.006 | 0.280 | 0.161 | 1.000 | 1.300 |

**Table 5.** Correlation matrix: Robustness check

| *Variables* | *(1)* | *(2)* | *(3)* | *(4)* | *(5)* | *(6)* | *(7)* | *(8)* | *(9)* | *(10)* | *VIF* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***(1)*** *ACS* | 1.000 | | | | | | | | | | 1.350 |
| ***(2)*** *ACG* | -0.315 | 1.000 | | | | | | | | | 1.330 |
| ***(3)*** *ACM* | -0.115 | 0.072 | 1.000 | | | | | | | | 1.310 |
| ***(4)*** *ACI* | 0.054 | 0.056 | 0.117 | 1.000 | | | | | | | 1.090 |
| ***(5)*** *MO* | -0.153 | 0.023 | 0.021 | 0.128 | 1.000 | | | | | | 1.290 |
| ***(6)*** *BS* | 0.373 | -0.190 | -0.190 | 0.093 | -0.271 | 1.000 | | | | | 1.660 |
| ***(7)*** *FO* | -0.282 | 0.108 | 0.164 | 0.062 | 0.316 | -0.185 | 1.000 | | | | 1.290 |
| ***(8)*** *AGE* | 0.044 | 0.007 | 0.013 | 0.014 | 0.085 | 0.013 | 0.070 | 1.000 | | | 1.020 |
| ***(9)*** *FS* | 0.027 | -0.122 | -0.015 | -0.052 | 0.067 | -0.014 | 0.066 | 0.117 | 1.000 | | 1.500 |
| ***(10)*** *CEO_N* | -0.099 | -0.062 | 0.419 | 0.086 | -0.121 | 0.020 | 0.225 | 0.067 | 0.046 | 1.000 | 1.400 |

## 4. RESEARCH RESULTS

### 4.1. Descriptive analysis

Table 3, which presents the descriptive statistics of companies listed on the CSE for the period 2018–2022, indicates that the mean of discretionary accruals (*DA*) is -0.024, with a minimum of -0.965 and a maximum of 0.630. These values suggest that managers of companies listed on the CSE are more likely to engage in downward earnings management than upward earnings management. These findings align with the results reported by Ibrahimi and El Baghdadi (2025) in the Moroccan context over the period 2012–2021. Thus, these elements reinforce the relevance of our conclusions within the existing literature on earnings management. The average number of audit committee members ranges between three and four directors, with a minimum of two and a maximum of six. Although the 2008 Moroccan Code of Good Corporate Governance Practices allows companies the freedom to determine the number of directors they deem necessary, this average indicates general compliance with good practices aimed at ensuring the sustainability and transparency of financial reporting. The average number of independent directors on the audit committee ranges between one and two on a scale of 0 to 4, suggesting a moderate presence of independent members. This observation highlights the importance of further strengthening independence to align local practices with international standards. The average percentage of women on audit committees is 18.98%, with a minimum of 0% and a maximum of 80%. While this average reflects a commitment to the recommendations of the 2008 Moroccan Code of Good Corporate Governance Practices on gender inclusion, it also reveals significant room for improvement to achieve balanced representation. Regarding the control variables, audit quality (*AQ*) has an average of 70.58%, indicating that the majority of listed companies prefer Big 4 firms, while the COVID-19 (*COV*) variable has an average of 40%, indicating that 40% of the observations relate to the post-pandemic period. Finally, the mean values for leverage (*LEV*), *ROA*, foreign ownership (*FO*), and institutional ownership (*IO*) are 10.18%, 60.7%, 7.32%, and 24.76%, respectively.

### 4.2. Main analysis

Table 6 presents the results of our analysis of the impact of audit committee characteristics on earnings management. In Model 2, audit committee size (*ACS*) has a negative but non-significant effect on earnings management (-0.001). This result indicates that smaller audit committees do not appear to be effective in reducing earnings management practices. Additionally, audit committee independence (*ACI*) has a negative and significant effect on earnings management (-0.120), suggesting that the higher the proportion of independent directors, the less likely managers are to engage in earnings management practices. Model 4 highlights a negative and significant effect between multiple directorships of audit committee members and earnings management (-0.152), indicating that members serving simultaneously on multiple boards develop enhanced oversight expertise and apply a more rigorous approach to addressing earnings management practices. Finally, Model 5 examines the effect of gender diversity within the audit committee on earnings management. The coefficient is positive and significant (0.060), indicating that the presence of women on the audit committee did not produce the expected effect in controlling accounting manipulation practices.

**Table 6.** Regression analysis: Main analysis

| *Variables* | *Model 1* | *Model 2* | *Model 3* | *Model 4* | *Model 5* |
|---|---|---|---|---|---|
| *COV* | -0.080** | -0.0799** | -0.080** | -0.079 ** | -0.082** |
| | (0.021) | (0.021) | (0.017) | (0.022) | (0.018) |
| *FO* | -0.229*** | -0.228*** | -0.136* | -0.273*** | -0.244*** |
| | (0.001) | (0.003) | (0.069) | (0.000) | (0.000) |
| *ROA* | 0.821*** | 0.823*** | 0.715*** | 0.920*** | 0.803*** |
| | (0.000) | (0.000) | (0.001) | (0.000) | (0.000) |
| *IO* | -0.259*** | -0.258*** | -0.168** | -0.258*** | -0.251*** |
| | (0.001) | (0.001) | (0.044) | (0.001) | (0.001) |
| *LEV* | -0.132 | -0.133 | -0.095 | -0.091 | -0.114 |
| | (0.470) | (0.469) | (0.596) | (0.619) | (0.528) |
| *AQ* | 0.190*** | 0.190*** | 0.171*** | 0.202*** | 0.192*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| *ACS* | | -0.001 | | | |
| | | (0.955) | | | |
| *ACG* | | | 0.060*** | | |
| | | | (0.000) | | |
| *ACM* | | | | -0.120* | |
| | | | | (0.079) | |
| *ACI* | | | | | -0.027** |
| | | | | | (0.005) |
| Observations | 170 | 170 | 170 | 170 | 170 |
| VIF | 1.180 | 1.230 | 1.230 | 1.290 | 1.160 |
| AIC | 167.868 | 169.616 | 167.359 | 169.787 | 169.658 |
| BIC | 189.818 | 194.702 | 192.445 | 194.873 | 194.745 |

*Note: p-values in parentheses: *** p < 0.01, ** p < 0.05, * p < 0.1. AIC — Akaike information criterion, BIC — Bayesian information criterion.*

## 4.3. Robustness check

The robustness check presented in Table 7 extends the main analysis by incorporating additional variables. In Model 2, audit committee size has a positive but non-significant effect on earnings management (0.003). Model 3 highlights a positive and significant effect of gender diversity on earnings management (0.082), indicating that the presence of women on the audit committee influences accounting management practices. In Model 4, multiple directorships of audit committee members have a positive and significant effect on earnings management (0.234), suggesting that holding multiple board seats may impact financial reporting decisions. Finally, Model 5 reveals that audit committee independence has a negative and significant effect on earnings management (-0.032), confirming the role of independent directors in risk prevention and promoting transparency.

**Table 7.** Regression analysis: Robustness check

| *Variables* | *Model 1* | *Model 2* | *Model 3* | *Model 4* | *Model 5* |
|---|---|---|---|---|---|
| *MO* | 0.088 | 0.088 | 0.087 | 0.087 | 0.104 |
| | (0.167) | (0.168) | (0.145) | (0.186) | (0.102) |
| *BS* | 0.015* | 0.014* | 0.014* | 0.018* | 0.017** |
| | (0.098) | (0.092) | (0.093) | (0.053) | (0.038) |
| *FOWN* | 0.074* | 0.076* | 0.049 | 0.071* | 0.072* |
| | (0.078) | (0.091) | (0.198) | (0.096) | (0.080) |
| *AGE* | 0.000 | 0.000 | -0.000 | 0.000 | 0.000 |
| | (0.946) | (0.955) | (0.988) | (0.922) | (0.940) |
| *FS* | -0.670** | -0.067** | -0.014 | -0.071** | -0.069** |
| | (0.015) | (0.016) | (0.627) | (0.010) | (0.012) |
| *CEO_N* | -0.101** | -0.100** | -0.076** | -.014*** | -0.085 |
| | (0.037) | (0.039) | (0.039) | (0.005) | (0.102) |
| *ACS* | | 0.003 | | | |
| | | (0.869) | | | |
| *ACG* | | | 0.082*** | | |
| | | | (0.000) | | |
| *ACM* | | | | 0.234*** | |
| | | | | (0.000) | |
| *ACI* | | | | | -0.032* |
| | | | | | (0.053) |
| Observations | 170 | 170 | 170 | 170 | 170 |
| VIF | 1.220 | 1.250 | 1.250 | 1.270 | 1.210 |
| AIC | 173.419 | 175.353 | 167.420 | 174.295 | 175.094 |
| BIC | 195.369 | 200.440 | 192.507 | 199.382 | 200.180 |

*Note: p-values in parentheses: *** p < 0.01, ** p < 0.05, * p < 0.1.*

Overall, the robustness check confirms the main findings of the initial analysis, indicating that audit committee independence, multiple directorships of audit committee members, and gender diversity significantly influence earnings management practices in non-financial firms listed on the CSE. Regarding the hypotheses, our results confirm *H2* and *H4*, while *H1* and *H3* are not supported.

## 5. DISCUSSION

The results of our analysis indicate the absence of a significant relationship between audit committee size and earnings management, suggesting that the size of the audit committee does not play a decisive role in limiting earnings management practices. This finding is similar to that of Albersmann and Hohenfels (2017), who show that audit committee size does not significantly influence earnings management. They argue that the effectiveness of the audit committee depends more on the financial expertise of its members than on their number. Regarding audit committee independence, it has a negative and significant effect on earnings management, suggesting that the higher the proportion of independent directors, the less likely managers are to engage in earnings management practices. This result is consistent with those of Almarayeh (2024) in the MENA region and Ali (2024) in Ethiopia, who confirm the role of audit committee independence in mitigating earnings management. This observation aligns with the recommendations of the 2008 Moroccan Code of Good Corporate Governance Practices, which highlights the essential role of independent directors on the audit committee in strengthening governance mechanisms and promoting transparency through the voluntary disclosure of ethical information.

Our findings also reveal that gender diversity has a negative and significant effect on earnings management, meaning that the presence of women on the audit committee did not produce the expected effect in controlling accounting manipulation practices. This result is similar to that of Biswas et al. (2022), who showed that the presence of a single female director in the majority of Indian banks is insufficient to ensure a significant influence on board decisions. Additionally, Almarayeh (2021), in the context of the MENA region, emphasizes that institutional and cultural barriers restrict women’s access to leadership positions, thereby limiting their participation compared to their male counterparts. Furthermore, Sheedy and Lubojanski (2018) indicate that male dominance on audit committees, reinforced by a dominant masculine culture, reduces the influence of women in corporate governance. Finally, we found that multiple directorships of audit committee members have a negative and significant effect on earnings management, meaning that audit committee members serving simultaneously on multiple boards develop enhanced oversight expertise and apply a more rigorous and vigilant approach to addressing earnings management practices. This result is consistent with that of Mishra and Malhotra (2016) in the Indian context, who showed that the presence of audit committee members holding multiple directorships contributes to reducing earnings management, thereby confirming the reputation and expertise hypothesis.

On a different note, our analysis indicates that the COVID-19 pandemic, foreign ownership, and institutional ownership have a negative and significant effect on earnings management, suggesting that during periods marked by crises such as the health crisis, foreign and institutional investors play a crucial role by demanding stricter standards for transparency and disclosure, thereby helping to limit accounting manipulation and strengthen the reliability of financial information. On the other hand, ROA and audit quality have a positive and significant effect on earnings management, meaning that firms with better performance and audited by Big 4 firms are more likely to resort to accounting manipulation techniques to improve their results. This finding can be explained by the credibility assured by the Big 4 stamp, providing a kind of cover for managers and encouraging them to engage in accounting manipulations.

In summary, our study indicates that audit committee independence and multiple directorships of audit committee members have a positive effect on reducing earnings management practices. These findings align with the recommendations of the 2008 Moroccan Code of Good Corporate Governance Practices and the work of several researchers. For example, Abdelfattah and Hussainey (2019) emphasize the importance of having at least three independent directors to enhance the quality of financial disclosure, and in the Indian context, Mishra and Malhotra (2016) showed that directors serving simultaneously on various boards are more effective in detecting earnings management practices. However, although listed companies comply with the recommendations of this Code, these efforts remain insufficient to ensure effective oversight and total transparency. Other research, such as that of Almarayeh (2021), has demonstrated that governance systems in the MENA region are often characterized by concentrated ownership, weak enforcement of laws, and insufficient investor protection, which fosters earnings management practices. The COVID-19 crisis has amplified these challenges, exacerbating issues of information asymmetry and corporate performance while highlighting the critical importance of transparent financial management, particularly during crises (Hsu & Yang, 2022). Furthermore, the study by Ahdadou et al. (2021) sheds light on the inefficiency of the Moroccan regulatory framework, which, in turn, affects the effectiveness of the governance system. This observation can be partly explained by the adoption, in 2008, of the “comply or explain” approach inspired by the British model, which allows companies to deviate from the Code’s recommendations without facing sanctions. This flexibility can hinder the effective implementation of good governance practices.

## 6. CONCLUSION

The objective of our study was to explore the relationship between audit committee characteristics and earnings management. To achieve this, a regression using the GMM was employed to analyze data from 34 companies listed on the CSE over the period 2018–2022. The results of our study show that audit committees composed predominantly of independent directors and including members serving simultaneously on multiple boards and audit committees are more effective in limiting earnings management practices. This increased effectiveness can be attributed to the adoption of Law 20-05 in 2008, which requires listed companies to establish audit committees. Additionally, Law No. 17-95 on public limited companies mandates a majority of independent directors on these committees to strengthen transparency, the independence of governance decisions, and the quality of financial reporting. Furthermore, although the 2008 Moroccan Code of Good Corporate Governance Practices does not prohibit multiple directorships, it recommends limiting the workload of directors to preserve the effectiveness of audit committees. Moroccan regulators should consider several measures to strengthen the governance system and improve the transparency of financial reporting. These include: consolidating the "comply or explain" approach by making it mandatory for listed companies, with penalties for non-compliance; encouraging companies to adopt the 2008 Moroccan Code of Good Corporate Governance Practices to improve their performance and brand image; and introducing a "name and shame" approach, which involves publishing the names of companies involved in earnings manipulation so that the market can sanction these practices and encourage greater transparency.

Our study makes a significant contribution by exploring the role of audit committees in reducing earnings management practices, particularly in the context of emerging markets like Morocco. The results offer concrete recommendations for various stakeholders. For regulators, they highlight the need to strengthen governance frameworks by adopting tailored reforms that promote diverse and dynamic audit committees to improve financial transparency. For practitioners, the results emphasize the importance of independent directors in enhancing the effectiveness of the governance system and investor confidence. Additionally, balanced gender representation and the experience of directors serving on other boards and audit committees enrich decision-making skills, foster diverse perspectives, and improve the oversight of earnings management practices. This study stands out for its in-depth analysis of the impact of the 2008 Moroccan Code of Good Corporate Governance Practices on earnings management, highlighting the strategic role of audit committees. It provides insights into governance practices in Africa, where institutional and structural challenges differ from those in developed economies. In a post-COVID-19 context, the findings reinforce the importance of robust governance mechanisms to ensure financial stability and promote sustainable long-term practices.

However, the study has certain limitations, particularly regarding the observation period and the scope of the audit committee characteristics analyzed. Future research could enrich the analysis by incorporating additional factors, such as the independence of committee members, their financial expertise, and other contextual dimensions such as the legal framework, ownership concentration, the prevalence of family businesses, and corporate social responsibility. Furthermore, adopting a qualitative approach through in-depth interviews with executives and directors would provide a better understanding of the underlying mechanisms of audit committee effectiveness. This approach would offer complementary perspectives by exploring the perceptions, practices, and challenges faced by corporate governance actors.

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