

CEO Leadership, Internal Audit Practices and Real Earnings Management: Malaysian Evidence

Nurina Firzana Jailani¹, Khairul Ayuni Mohd Kharuddin^{2*}, Suhaily Hasnan³ and Kennardi Tanujaya⁴

¹MAHSA University, Selangor, Malaysia

²Faculty of Accountancy, Universiti Teknologi MARA, Shah Alam Campus, Selangor, Malaysia

³Faculty of Accountancy, Universiti Teknologi MARA, Puncak Alam Campus, Selangor, Malaysia

⁴Faculty of Business and Management, Universitas Internasional Batam, Batam, Indonesia

ARTICLE INFO

Article history:

Received 5 May 2026

Revised 2 July 2026

Accepted 17 July 2026

Published 31 August 2026

Keywords:

Real Earnings Management

CEO Characteristics

Internal Audit

Female CEO

Malay CEO

DOI:

10.24191/APMAJ.v21i2-02

ABSTRACT

This study examines the influence of CEO leadership characteristics and internal audit practices on real earnings management (REM) among Malaysian public listed companies (PLCs). Grounded in Agency Theory, the research explores whether demographic and structural governance mechanisms effectively mitigate managerial opportunism and enhance financial reporting quality. Using panel data regression, the study analyses 3,028 firm-year observations from 618 Main Market firms listed on Bursa Malaysia between 2020 and 2024. The findings indicate that CEO age and Malay CEO are significantly and negatively associated with REM, suggesting that older and Malay CEOs are less likely to engage in earnings manipulation, potentially, due to greater risk aversion or culturally driven ethical considerations. Outsourced internal audit functions also show a significant negative relationship with REM, highlighting that internal control oversight is more effective when it is performed by an external independent party. Conversely, female CEO presence and internal audit investment are not statistically significant. The study provides practical implications for regulators and corporate boards seeking to strengthen governance frameworks and promote financial transparency in Malaysia.

1. INTRODUCTION

Real Earnings Management (REM) has emerged as a critical issue in corporate finance due to its adverse effects on financial transparency, stakeholder trust, and long-term firm value. Unlike Accrual-Based Earnings Management (AEM), which involves accounting adjustments within financial reporting

^{2*}Corresponding author. E-mail address: ayunimk@uitm.edu.my

standards, REM manipulates actual operational decisions, such as discretionary spending, sales timing, and production levels, to meet financial targets (Davis & Garcia-Cestona, 2023). By distorting a firm's underlying economic activities, REM can compromise future performance and erode market confidence (Giordino, 2023). Consequently, stronger regulatory oversight and effective governance mechanisms are required. Robust internal controls, active audit committees, and ethical audit practices are particularly important in addressing REM and promoting transparency (Ibrahim et al., 2020; Oreshile & Adeneye, 2025).

The prevalence of REM is particularly pronounced in institutional environments characterised by weak regulatory enforcement and limited investor protection (Kałdoński, 2020). In such settings, managerial discretion is less constrained, increasing the scope for opportunistic behaviour (Orazalin, 2020). Malaysia provides a pertinent setting for examining these issues due to structural factors such as concentrated ownership, political affiliations, and persistent governance challenges (Nasiri & Ramakrishnan, 2020; Nuhu et al., 2024c). High-profile corporate scandals, including the Serba Dinamik case and issues associated with 1MDB, have further highlighted governance gaps and the difficulty of detecting manipulation embedded in operational decisions rather than accounting entries (Ismail et al., 2024). These circumstances underscore the importance of examining internal governance mechanisms, particularly leadership and audit functions, in addressing REM.

Against this backdrop, scholars have increasingly focused on governance mechanisms that may constrain REM, particularly leadership characteristics and audit quality. The Chief Executive Officer (CEO) plays a central role given the CEO's influence over strategic, operational, and financial decisions. Emerging literature suggests that CEO demographic attributes, including gender, age, and ethnicity, can shape managerial behaviour, ethical orientation, and risk preferences (Putra & Setiawan, 2024; Al-Begali & Phua, 2023). Female CEOs, in particular, have been associated with stronger ethical conduct, stakeholder orientation, and conservative financial decision-making, potentially reducing the propensity for REM (Farooq et al., 2022; Al-Absy, 2022b). In Malaysia, the Prime Minister Anwar Ibrahim has emphasised the importance of greater female participation in leadership and equal opportunities in corporate leadership (Malay Mail, 2025; Bernama, 2025). These developments raise important questions regarding whether female leadership contributes to improved governance and financial decision-making, particularly in relation to REM.

However, recent developments indicate a decline in female representation in senior management, from 38.2% in 2023 to 36.2% in 2025, despite continued government efforts to promote inclusivity and equitable leadership (Grant Thornton, 2025; Bernama, 2025). This trend further highlights the need to examine whether female leadership contributes to ethical governance and financial accountability.

In addition to gender, CEO age has been associated with ethical conservatism and lower engagement in earnings manipulation, as older executives tend to be more risk-averse and concerned with legacy and career capital (Haider et al., 2019). In Malaysia's multi-ethnic business environment, CEO ethnicity may also influence leadership dynamics, stakeholder relations, and governance outcomes. Wahab et al. (2024), for example, demonstrate that ethnic-based director networks can affect financial reporting quality and corporate accountability, suggesting that cultural norms and social affiliations may either strengthen or weaken managerial discipline.

Complementing leadership characteristics, the internal audit function plays an important role in mitigating earnings manipulation through continuous monitoring, policy enforcement, and anomaly detection. Internal audit serves as an internal assurance mechanism that can strengthen governance and financial integrity (Ghaleb et al., 2020; Kaawaase et al., 2021). However, its effectiveness depends partly on the resources allocated to the function. Firms that provide sufficient resources to internal audit may benefit from stronger detection capabilities and control environments (Park et al., 2019; Erwinaz et al., 2020). Nevertheless, internal audit remains underutilised in some Malaysian firms and may be perceived primarily as a compliance function rather than a strategic governance mechanism. This highlights the importance of examining the resources devoted to internal audit and their implications for financial transparency.

The sourcing of internal audit activities may further influence audit effectiveness. Internal audit can be conducted in-house, outsourced to external specialists, or delivered through co-sourcing, with each arrangement presenting distinct advantages and limitations. In-house teams have greater organisational knowledge but may face independence constraints, whereas outsourced providers can offer technical expertise and greater objectivity but may be less familiar with organisational processes (Baatwah et al., 2021). Co-sourcing combines internal and external capabilities and may therefore balance contextual knowledge and independence (Kolsi & Al-Hiyari, 2024). Despite the importance of these arrangements, empirical research examining the relationship between internal audit sourcing and REM remains limited.

Malaysia's regulatory framework, including the Malaysian Code on Corporate Governance (MCCG) 2021, promotes gender diversity and effective audit committees, although the effectiveness of these initiatives depends on consistent implementation and organisational commitment (Jamil et al., 2020; Wahab et al., 2024). The Malaysia MADANI economic framework similarly emphasises corporate accountability and inclusive growth, reinforcing the relevance of effective internal governance mechanisms in addressing REM.

Despite growing interest in individual determinants of REM, existing literature remains fragmented, with limited research examining the joint influence of CEO leadership and internal audit practices. In particular, empirical evidence on how CEO demographic characteristics interact with audit-related factors to influence REM in emerging markets such as Malaysia remains limited. Accordingly, this study investigates whether CEO gender, age, and ethnicity, together with internal audit practices measured through investment levels and sourcing models, affect REM among Malaysian public listed companies (PLCs). By integrating leadership characteristics with internal audit mechanisms, the study provides insights into internal governance mechanisms that may constrain managerial opportunism and enhance financial reporting quality in Malaysia.

This study examines 3,028 firm-year observations from 618 Malaysian PLCs spanning 2020 to 2024. The findings show that CEO age is significantly and negatively associated with REM, suggesting that older CEOs tend to be more conservative and risk-averse. Malay CEOs also exhibit a significant negative relationship with REM, potentially reflecting cultural and ethical values associated with less aggressive financial practices. Internal audit outsourcing is significantly negatively related to REM, suggesting that external providers may enhance monitoring through greater independence and specialised expertise. In contrast, the presence of a female CEO is negatively associated with REM, although the relationship is not

statistically significant. Similarly, internal audit investment is negatively but insignificantly related to REM, indicating that expenditure alone may not be sufficient without effective implementation and audit quality.

This study contributes to the literature and practice in several ways. It is among the few Malaysian studies to empirically examine the combined effects of CEO gender, age, and ethnicity alongside internal audit investment and sourcing within a single framework using recent data. Previous studies have generally examined these factors separately, focused on selected characteristics, or relied on older datasets that may not reflect recent MCCG reforms (e.g., Al-Begali & Phua, 2023; Ghaleb et al., 2020; Nasiri & Ramakrishnan, 2020). By integrating leadership demographics and internal audit structures using data from 2020 to 2024, this study provides a contemporary perspective on REM governance. It also extends the internal audit literature by examining underexplored structural dimensions of the internal audit function. While internal audit is recognised as an important component of corporate governance (Bananuka et al., 2018), relatively limited attention has been given to how investment levels and sourcing arrangements affect its effectiveness. Accordingly, this study extends prior research such as Ghaleb et al. (2020), Baatwah et al. (2020), and Kolsi and Al-Hiyari (2024) by examining how these structural characteristics relate to REM.

The study also has policy relevance given Malaysia's declining female executive representation, which fell to 36.2% in 2025 (Bernama, 2025; Grant Thornton, 2025), despite the MCCG's emphasis on gender diversity. Evidence concerning female CEOs and REM remains inconclusive (Al-Absy, 2022a; Rizzotti & Frisenna, 2025), highlighting the importance of examining how gender, age, and ethnicity shape managerial behaviour. The inclusion of Malay CEO status further reflects the socio-political characteristics of Malaysian corporate governance, where ethnicity may influence networks, decision-making, and accountability (Elsheikh et al., 2023; Wahab et al., 2024). By examining these leadership attributes alongside internal audit investment and sourcing, the study provides timely evidence relevant to Malaysia's evolving governance environment. The findings offer implications for policymakers, corporate boards, and investors in strengthening leadership selection, audit design, transparency, and financial oversight.

The remainder of this article is organised as follows. Section One introduces the research background, while Section Two reviews the relevant literature and theoretical framework underpinning the study. Section Three explains the research methodology, while Section Four presents and discusses the empirical findings. Finally, Section Five concludes with the study's main insights, implications, limitations, and recommendations for future research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Agency Theory

This study is grounded in Agency Theory, which explains how information asymmetry and divergent interests between managers and shareholders may create opportunities for managerial opportunism, including REM. In this framework, managerial characteristics and internal governance mechanisms matter because they can influence managerial discretion and monitoring effectiveness.

These agency concerns may be particularly important in emerging markets such as Malaysia, where concentrated ownership, institutional limitations, and governance enforcement challenges may increase

managerial discretion (Abdullah et al., 2018; Nuhu et al., 2024a). Effective monitoring mechanisms, including internal audit and independent oversight, can therefore help constrain opportunistic behaviour and align managerial actions with shareholder interests.

CEO characteristics may also shape managerial responses to incentives and monitoring. Gender, age, and ethnicity represent potentially important behavioural and contextual characteristics. Female CEOs have been associated with greater ethical awareness, risk aversion, and transparency, which may reduce opportunistic reporting (Rizzotti & Frisenna, 2025; Houque et al., 2024). Similarly, Al-Absy (2022b) and Ismail et al. (2024) report negative associations between influential female directors and earnings management. Puhat et al. (2024) and Kharuddin and Liu (2023) also found evidence that women directors contribute to better firm performance. CEO age may also influence risk preferences and career incentives, with younger CEOs potentially taking greater risks and facing stronger short-term performance incentives, while older CEOs may place greater emphasis on reputation, legacy, and long-term outcomes (Haider et al., 2019; Belenzon et al., 2019). Putra and Setiawan (2024) further demonstrate that CEO age can influence the relationship between managerial incentives and accounting outcomes. Ethnicity introduces an additional institutional and social dimension to managerial behaviour in Malaysia. Ethnicity-related networks and political connections may influence governance and earnings management through informal institutional arrangements (Elsheikh et al., 2023; Wahab et al., 2024). Such relationships may either facilitate managerial entrenchment or reinforce accountability, depending on the surrounding governance environment (Mohamad et al., 2020).

Internal audit represents an important monitoring mechanism within an organisation. Internal audit can reduce information asymmetry by strengthening internal controls, risk management, and oversight (Ghaleb et al., 2020; Abdulraheem Ghaleb et al., 2020). Greater investment in internal audit may therefore enhance monitoring capacity, while the sourcing arrangement may influence the independence, expertise, and organisational knowledge available to the function. Outsourcing may provide greater independence and specialised expertise, although external providers may possess less organisational familiarity (Baatwah et al., 2021; Wahab et al., 2021). Kolsi and Al-Hiyari (2024) further suggest that the effectiveness of outsourced internal audit depends on governance quality and firm-level policies.

Overall, Agency Theory provides the overarching explanation for why both CEO characteristics and internal audit practices may influence REM. The following sections draw on this framework, along with relevant empirical and contextual perspectives, to develop hypotheses about CEO gender, age, ethnicity, internal audit investment, and internal audit sourcing.

2.2 Real Earnings Management (REM)

Earnings management refers to managerial discretion in financial reporting or operational decisions intended to influence reported earnings or meet internal and external targets (Ghaleb & Kamardin, 2018; Giordino, 2023; Paino & Iskandar, 2021). It is commonly classified into two categories: AEM and REM (Al-Duais et al., 2022; Roychowdhury, 2006; Jamadar et al., 2022). AEM involves manipulating accounting estimates and accruals, such as depreciation, bad debt provisions, or the timing of revenue recognition, without necessarily altering underlying transactions (Dong et al., 2020; Jamadar et al., 2022). In contrast, REM is undertaken through actual business activities, including accelerating sales, overproducing

inventory, or reducing discretionary expenditure to influence reported earnings (Al-Duais et al., 2022; Roychowdhury, 2006).

While AEM occurs through accounting choices and may be more readily scrutinised by auditors and regulators, REM is embedded in operational decisions and can therefore be harder to identify (Chang et al., 2018; Zhao et al., 2016; Buanaputra, 2021). Regulatory developments such as IFRS and the Sarbanes-Oxley Act (SOX) have imposed greater constraints on AEM, potentially increasing managerial incentives to rely on REM (Ghaleb & Kamardin, 2018). Understanding REM is therefore important for stakeholders assessing firms' underlying economic performance.

Roychowdhury (2006) defines REM as management actions that deviate from normal business practices to meet earnings thresholds. Common strategies include accelerating sales through discounts, overproducing to reduce per-unit costs, and reducing discretionary expenditure such as research and development, advertising, and maintenance (Al-Duais et al., 2022). Firms may also influence reported performance through shipment schedules, asset sales, hedging strategies, stock repurchases, debt-equity swaps, and securitisation (Al-Duais et al., 2022). The range of possible strategies makes it difficult to distinguish REM from legitimate operational decisions.

REM is commonly estimated using Roychowdhury's (2006) models, which identify abnormal levels of operating cash flows, discretionary expenses, and production costs. Unlike abnormal accruals, REM may not leave explicit traces in financial statements because the underlying activities constitute actual business decisions (Christensen et al., 2023). This characteristic creates concerns regarding its potential to distort reported performance, reduce investor confidence, and undermine long-term financial sustainability (Nguyen et al., 2023).

The regulatory environment may further influence REM. In Malaysia, frameworks such as the MCGG and MFRS seek to enhance financial transparency and constrain earnings management. Although standards such as MFRS 15 and MFRS 9 strengthen regulation of revenue recognition and financial instruments, their emphasis on accounting-based manipulation may incentivise managers to shift toward operational forms of earnings management (Abdullah et al., 2018). Malaysian firms facing earnings pressure or external scrutiny may consequently rely on REM to meet earnings benchmarks while maintaining compliance with accounting requirements (Nuhu et al., 2024a; Nasiri & Ramakrishnan, 2020).

Managerial characteristics are also relevant to REM. Female CEOs have been associated with ethical conduct, greater financial transparency, and lower REM engagement, although evidence remains mixed (Ullah et al., 2020; Farooq et al., 2022; Li et al., 2023; Hassan et al., 2023). Younger CEOs may face stronger short-term performance incentives, potentially increasing their propensity to engage in REM (Al-Begali & Phua, 2023). Ethnic background may likewise influence managerial behaviour through leadership networks and social affiliations, particularly within Malaysia's multi-ethnic corporate environment (Wahab et al., 2024; Elsheikh et al., 2023).

The effectiveness of these leadership characteristics may also depend on complementary governance mechanisms. In particular, internal audit investment and sourcing may affect firms' capacity to monitor operational decisions and detect potential manipulation. Existing research suggests that stronger internal and external audit functions are generally associated with lower REM, although effectiveness depends on resources, expertise, and governance arrangements (Nuhu et al., 2024b; Jamil et al., 2020; Ghazali et al., 2021). Internal audit investment can strengthen monitoring capacity, while sourcing arrangements may

influence independence and organisational knowledge (Abbott et al., 2022; Erwinaz et al., 2020; Baatwah et al., 2021; Jokipii & Meo, 2019).

Thus, REM reflects the interaction between managerial discretion and corporate governance. Examining CEO characteristics together with internal audit practices provides a more comprehensive basis for understanding the factors associated with REM in Malaysia. The following sections develop the hypotheses concerning CEO gender, age, ethnicity, internal audit investment, and internal audit sourcing.

2.3 Female CEO and REM

Female CEOs have been associated with corporate financial behaviour, particularly in relation to earnings management. Female leaders are frequently characterised by greater ethical awareness, stronger stakeholder orientation, and more risk-averse decision-making, which may reduce engagement in REM (Farooq et al., 2022; Ullah et al., 2020). Their greater emphasis on long-term outcomes may also reduce incentives to manipulate real activities for short-term performance purposes. Empirical evidence indicates that female CEOs demonstrate stronger ethical leadership and risk aversion, contributing to greater transparency and less opportunistic financial reporting (Houqe et al., 2024; Putra & Setiawan, 2024).

In Malaysia, where firms may be affected by political influence and concentrated ownership, female leadership has also been associated with more conservative earnings practices. Ismail et al. (2024) report that female CEOs in politically connected or family-controlled firms are associated with improved earnings quality. Similarly, Al-Absy (2022b) found that impactful female directors were associated with lower REM, particularly where board structures supported gender diversity. Li et al. (2023) found that female-led firms engaged in lower REM, especially during economic downturns, while Musa et al. (2023) reported that CEO attributes, including gender, influence earnings management practices.

Female CEOs may also promote financial prudence by emphasising long-term value creation over short-term performance (Al-Begali et al., 2024). Firms led by female CEOs have been associated with stronger monitoring mechanisms, improved financial reporting integrity, and greater investor confidence (Ardhaoui et al., 2024). However, the effectiveness of female leadership may depend on firm-specific conditions, including ownership concentration, governance structures, and regulatory environments.

The evidence is nevertheless mixed. El-Dyasty and Elamer (2023) found that female leadership improves reporting quality in Egypt, whereas Peni and Vähämaa (2010) and Houqe et al. (2024) suggest that female representation does not consistently reduce earnings management, particularly where women are underrepresented or have limited influence. In Malaysia, recent reports indicate that women hold less than 10% of CEO positions in listed firms (Bernama, 2025a), raising questions about their authority in strategic decision-making. Hence, the following hypothesis is posited:

H1: There is a negative relationship between female CEOs and REM.

2.4 CEO Age and REM

CEO age reflects career stage, experience, risk tolerance, and long-term orientation, all of which may influence financial decision-making and REM. Older CEOs are generally characterised as more risk-averse and ethically conservative, which may make them less inclined to manipulate earnings through real activities.

Several studies support this view. Haider et al. (2019) found that older executives place greater emphasis on long-term firm value, while Belenzon et al. (2019) observed that older CEOs place greater importance on consistency and legacy, reducing incentives for opportunistic manipulation. Ngo and Nguyễn (2022) similarly suggest that senior executives possess greater financial experience and exercise greater caution, contributing to higher-quality financial reporting.

Conversely, younger CEOs may take greater risks and show stronger short-term performance orientations, particularly early in their careers. Putra and Setiawan (2024) found that younger CEOs are more likely to engage in REM strategies such as overproduction and discretionary expense reduction, while Bouaziz et al. (2020) reported higher earnings manipulation among firms led by younger executives, particularly under weak governance. Rusydi (2021) further suggests that narcissistic tendencies, which may be more pronounced among younger CEOs, can increase incentives to manipulate reported performance.

The relationship between CEO age and REM may also depend on governance quality. Strong board independence and audit committees can constrain managerial discretion and reduce manipulation risks (Alves, 2021). In Malaysia, where family ownership is prevalent, CEO age may signal continuity and stability. Al-Begali and Phua (2023) suggest that older CEOs in family firms may represent continuity, whereas younger successors may face pressure to demonstrate rapid performance. Al-Begali, Phua, and Al-Rowaidi (2024) similarly found that CEO age interacts with ownership structures in influencing REM.

Market perceptions provide further support for this relationship. Haider et al. (2019) found that older CEOs are associated with more credible reporting, while leadership transitions may encourage new CEOs to adopt more aggressive strategies to establish their performance (Ameila & Eriandani, 2021). Overall, the literature suggests that older CEOs tend to favour stability and long-term outcomes, whereas younger CEOs may face stronger short-term performance pressures.

CEO age is therefore an important demographic characteristic in understanding managerial risk-taking and financial reporting behaviour. Evidence generally indicates a negative relationship between CEO age and earnings manipulation, including REM (Altarawneh et al., 2022; Twongirwe & Bakundana, 2025). The relationship may vary by ownership structure, firm characteristics, and governance quality (Putra & Setiawan, 2024). Hence, the following hypothesis is posited:

H2: There is a negative relationship between CEO age and REM.

2.5 Malay CEO and REM

In multicultural societies such as Malaysia, ethnicity may influence corporate leadership, ethical norms, and governance practices (Liao et al., 2022; Wan Mohammad & Wasiuzzaman, 2019). The presence of a Malay CEO may reflect socio-political and cultural influences that shape managerial discretion and ethical conduct. The New Economic Policy (NEP) of 1971, which sought to increase Bumiputera participation, has contributed to the prevalence of Malay leadership in GLCs and politically connected firms (Mohamad-Yusof et al., 2018). However, alignment between CEO ethnicity and controlling shareholders or board members may also facilitate informal networks that influence governance and board independence.

Ethnicity may therefore shape leadership style, ethical orientation, and governance conduct. Malay CEOs, influenced by Islamic principles and collectivist cultural values, may place greater emphasis on trust and transparency, potentially discouraging REM (Al-Absy, 2022; Wahab et al., 2024). Conversely, shared ethnicity among governance actors may foster loyalty networks that weaken monitoring (Wahab et al.,

2024; Elsheikh et al., 2023). Social capital theory offers another perspective, suggesting that in-group affiliations may influence governance vigilance and managerial behaviour (Wan Mohammad & Wasiuzzaman, 2019). These dynamics are particularly relevant in Malaysia, where ethnicity and political relationships may intersect with corporate decision-making (Nasiri & Ramakrishnan, 2020; Al-Duais et al., 2022).

Although Agency Theory provides the primary theoretical foundation of this study, social capital theory helps contextualise the role of ethnicity in governance. Wang et al. (2021) report similar dynamics in China, where political and ethnic connections can facilitate opportunistic practices. Such effects may be particularly relevant in family and state-linked enterprises where ownership, political, and ethnic ties overlap (Nasiri & Ramakrishnan, 2020; Al-Duais et al., 2022). Conversely, where Malay leadership is informed by Islamic principles of justice (*adl*), trust (*amanah*), and accountability (*mas'uliyah*), such values may discourage REM (Ghaleb et al., 2020; Al-Absy, 2022; Wahab et al., 2024).

Ethnic diversity in top management may also enhance governance by introducing different perspectives and reducing the likelihood of collusion (Liao et al., 2022). Moreover, ethnicity may interact with other CEO characteristics, such as gender and age, and with firm-level governance structures (Al-Begali & Phua, 2023; Githaiga, 2024). While Malay CEOs are prevalent in GLCs and politically connected firms, Chinese and Indian CEOs also occupy important leadership positions. Chinese leadership, influenced by Confucian values of hierarchy and pragmatism, and Indian leadership, associated with entrepreneurial and hierarchical orientations, may shape governance differently (Gomez, 2006; Selvarajah & Meyer, 2008). Although this study does not differentiate empirically among all ethnic groups due to data constraints, recognising these differences provides useful context for interpreting REM behaviour in Malaysia's multi-ethnic corporate environment.

Overall, Malay CEO status may either mitigate or exacerbate REM depending on the prevailing governance context. Formal monitoring mechanisms remain important in determining whether ethnic affiliations translate into stronger accountability or greater managerial discretion. Hence, the following hypothesis is posited:

H3: There is a negative relationship between Malay CEO and REM.

2.6 Internal Audit Investment and REM

Internal audit investment can strengthen corporate governance by enhancing internal controls and financial reporting quality (Kharuddin et al., 2023). Firms that allocate greater resources to internal audit may benefit from stronger oversight, reduced misreporting, and greater transparency (Abbott et al., 2022; Al-Qadasi, 2024). Firms that disclose internal control weaknesses are more likely to receive modified audit opinions (Kharuddin et al., 2023). Measured through internal audit cost, such investment reflects the resources devoted to monitoring activities. Although previous studies have primarily examined internal audit in relation to accrual-based earnings management (Eriandani et al., 2020; Wang & Zheng, 2019), its implications for REM remain less explored. Because REM involves operational decisions such as production, discretionary expenditure, and sales timing, it may be more difficult to detect through conventional external auditing (Jaén & Martínez, 2023). Adequately resourced internal audit functions may nevertheless strengthen monitoring through risk-based auditing, data analytics, and forensic review, enabling earlier identification of abnormal operational patterns (Ege et al., 2022; Ghaleb et al., 2020).

In Malaysia, Ghaleb et al. (2020) found that firms allocating greater financial resources to internal audit reported lower levels of REM, particularly when external governance mechanisms were weak. Prasad et al. (2021) similarly found that internal audit investment strengthens monitoring capacity, while Al-Qadasi (2024) highlighted the importance of adequate resources and active board engagement in constraining earnings manipulation.

However, investment alone does not guarantee effectiveness. Internal audit resources must be supported by auditor competence, independence, authority, and appropriate use of technology (Shin & Park, 2022). Excessive management influence may also compromise objectivity and limit internal auditors' ability to identify irregularities (Sitanggang et al., 2019). Human capital is similarly important, as firms with skilled internal auditors possessing business and analytical expertise tend to demonstrate stronger fraud detection capabilities and financial discipline (Ege et al., 2022). Accordingly, internal audit investment is expected to strengthen monitoring capacity and reduce opportunities for REM. Therefore, the following hypothesis is proposed:

H4: There is a negative relationship between internal audit investment and real earnings management.

2.7 Internal Audit Sourcing and REM

The sourcing model of the internal audit function, whether in-house, outsourced, or co-sourced, may influence its independence, technical capability, and alignment with governance objectives. In-house teams benefit from organisational familiarity and contextual knowledge, although their proximity to management may create independence concerns, particularly in family-controlled or closely held firms (Qamhan, 2020). Outsourced providers, by contrast, may enhance objectivity and provide specialised expertise, potentially improving fraud detection and reducing REM, although they may have less familiarity with firm-specific risks (Baatwah et al., 2021; Mubako, 2019; Ghaleb et al., 2020).

Co-sourcing provides an alternative by combining internal knowledge with external expertise. This arrangement can strengthen audit capacity, provide access to specialised skills, and allow firms to respond more flexibly to emerging risks (Jokipii & Meo, 2019). In Malaysia, internal audit sourcing is increasingly viewed as part of broader governance and ESG practices, reinforcing accountability and ethical reporting (Kolsi & Al-Hiyari, 2024).

Empirical evidence highlights the importance of the sourcing arrangement. Ghaleb et al. (2020) reported that firms with strong in-house audit structures engaged in less REM, partly because internal auditors possess detailed knowledge of organisational processes and controls. Conversely, Wahab et al. (2021) found that excessive reliance on outsourced providers may create oversight and coordination challenges, particularly where audit committees are weak. Other studies emphasise that effective sourcing arrangements, supported by adequate training, ethical standards, and independence, can strengthen monitoring and reduce earnings manipulation (Ismail et al., 2022; Rahim et al., 2022; Nwoba & Ede, 2024).

Integrating internal and external audit expertise may therefore provide additional monitoring benefits. Jachi and Yona (2019) and Prasad et al. (2021) emphasised that coordinated audit structures can improve transparency and constrain opportunistic behaviour. Thus, the effectiveness of internal audit sourcing depends not only on the chosen arrangement but also on how effectively it is governed and implemented. Accordingly, this study proposes the following hypothesis:

H5: There is a negative relationship between internal audit sourcing and real earnings management.

3. RESEARCH METHODOLOGY

This study investigates how CEO leadership characteristics such as gender, age, and ethnicity relate to REM activities, and whether internal audit practices, including the level of internal audit investment and sourcing structure, function as governance mechanisms to mitigate earnings manipulation. The study uses secondary data from 2020 to 2024 and excludes financial institutions because of their distinct regulatory frameworks and earnings structures. Firm-level data are sourced primarily from annual reports, corporate governance disclosures, and the London Stock Exchange Group (LSEG) Workspace (formerly Refinitiv Eikon) database.

To ensure data quality, the dataset underwent extensive screening to address missing values, outliers, and inconsistencies. Extreme values were winsorised, and missing cases were removed following established guidelines for financial data analysis (Hair et al., 2019; Pallant, 2016). These data-cleaning procedures are critical to maintaining the integrity and robustness of panel regression results.

The final dataset comprises non-financial Main Market firms with complete financial and governance disclosures from 2020 to 2024, providing a total of 3,028 firm-year observations. Tables 1 summarise the final sample selection.

Table 1. Sample Selection

	No. of Companies
Total number of companies listed on Bursa Malaysia	811
Main Market	
<u>Excluded companies:</u>	
Finance-related companies	42
Newly listed companies in 2024	55
Companies with missing or incomplete data	96
Total excluded companies	193
The final sample	618
Total observations for five years (618*5 years)	3,090
Observations deleted due to incomplete data	58
Observations deleted as outliers	4
Final sample	3,028

3.1 Model Specification

Following prior studies on the relationship between corporate governance and REM in the emerging markets (e.g. Ghaleb et al., 2020; Al-Duais et al., 2022; Ali et al., 2023), the regression model used in this study is specified as follow:

$$REM_{it} = \beta_0 + \beta_1 FCEO_{it} + \beta_2 AGE_{it} + \beta_3 ETH_{it} + \beta_4 IAL_{it} + \beta_5 IAS_{it} + \beta_6 BIND_{it} + \beta_7 BIG4_{it} + \beta_8 AC_{it} + \beta_9 SIZE_{it} + \beta_{10} LEV_{it} + \beta_{11} ROA_{it} + Year_t + Industry_i + \varepsilon_{it} \quad (1)$$

where;

REM_{it} represents abnormal REM for firm i in year t (the sum of ABCFO, ABPROD, and ABDISEXP). β_0 is the intercept, $\beta_1 - \beta_{11}$ are the coefficients associated with the independent and control variables, ε_{it} is the error term. $Year_t$ and $Industry_i$ represent year and industry dummies that are included to control for unobserved heterogeneity across time and sectors.

3.2 Measurement of REM

This study adopts the model developed by Roychowdhury (2006), which has been widely applied in recent Malaysian and emerging market research to estimate REM. Consistent with prior studies (e.g., Al-Absy, 2022; Ghaleb et al., 2020; Al-Duais et al., 2022; Ali et al., 2023; Hamed, 2025), REM is measured using three proxies, including Abnormal Cash Flow from Operations (ABCFO), Abnormal Production Costs (ABPROD), and Abnormal Discretionary Expenses (ABDISEXP). These proxies capture deviations from normal operational activities, typically undertaken by managers to manipulate reported earnings.

To estimate the abnormal components, this study employs the following Ordinary Least Squares (OLS) regression models based on industry-year estimations, with all variables measured by lagged total assets:

$$\frac{CFO_{it}}{A_{it-1}} = \beta_1 \left(\frac{1}{A_{it-1}} \right) + \beta_2 \left(\frac{S_{it}}{A_{it-1}} \right) + \beta_3 \left(\frac{\Delta S_{it}}{A_{it-1}} \right) + \varepsilon_{it}, \quad (2)$$

$$\frac{PROD_{it}}{A_{it-1}} = \beta_1 \left(\frac{1}{A_{it-1}} \right) + \beta_2 \left(\frac{S_{it}}{A_{it-1}} \right) + \beta_3 \left(\frac{\Delta S_{it}}{A_{it-1}} \right) + \beta_4 \left(\frac{\Delta S_{it-1}}{A_{it-1}} \right) + \varepsilon_{it} \quad (3)$$

$$\frac{DISEXP_{it}}{A_{it-1}} = \beta_1 \left(\frac{1}{A_{it-1}} \right) + \beta_2 \left(\frac{S_{t-1}}{A_{t-1}} \right) + \varepsilon_t \quad (4)$$

Table 2. Definitions of Variables Used in REM Models

Symbol	Definition
CFO_{it}	Cash flow from operations for firm i in year t .
A_{it-1}	Total assets in year $t - 1$
S_{it}	Revenues in year t
ΔS_{it}	The change in revenues from $t - 1$ to t
$PROD_{it}$	Represents production costs, calculated as the sum of the cost of goods sold (COGS) and the change in inventory (ΔINV)
ΔS_{it-1}	The lagged change in revenues
$DISEXP_{it}$	Represents discretionary expenses, including R&D, advertising, selling, and general and administrative costs

The residuals from these equations represent abnormal levels of each activity. Following previous research (e.g. Al-Absy, 2022; Ghaleb et al., 2020; Hamed, 2025), the values of ABCFO and ABDISEXP are multiplied by -1 to ensure consistent interpretation across all three components, where higher values indicate greater REM activity. The standardised residuals are then aggregated into a composite REM score using the following equation:

$$REM = (ABCFO * -1) + ABPROD + (ABDISEXP * -1) \quad (5)$$

In line with Al-Duais et al. (2022), Ali et al. (2023), and others, the analysis uses the absolute value of REM to capture the magnitude of real earnings management, regardless of whether it is income-increasing or income-decreasing. This composite measure is widely accepted in the literature as a robust proxy for overall REM activity.

Although previous studies predominantly used Stata to estimate REM models (e.g., Al-Absy, 2022; Ghaleb et al., 2020), this study uses SPSS to run the OLS regressions. The choice of statistical software does not compromise the robustness or validity of the estimation, as both Stata and SPSS offer reliable and widely accepted implementations of OLS regression techniques (Field, 2019; Pallant, 2023). Recent methodological literature confirms that the core estimation results remain consistent across major statistical packages when standard regression procedures are applied (Hair et al., 2022), thereby justifying the use of SPSS in this context.

3.3 Measurement of Independent and Control Variables

This study examines the relationship between CEO leadership, internal audit practices, and real earnings management (REM) using a structured set of independent and control variables grounded in Agency Theory and prior empirical literature.

CEO leadership is represented by three proxies: female CEO, CEO age, and Malay CEO. Female CEO is a binary variable coded “1” for female and “0” otherwise, reflecting ethical and risk-averse leadership tendencies (Li et al., 2023; Houqe et al., 2024). CEO age is measured as the natural logarithm of the CEO’s age in years (Haider et al., 2019; Al-Begali & Phua, 2023), representing experience and conservatism. Malay CEO is a binary variable coded “1” if the CEO is Bumiputera (mainly Malay) and “0” otherwise, acknowledging cultural influences on governance and ethical behaviour (Wahab et al., 2024; Al-Absy, 2022).

Internal audit practices include internal audit investment and internal audit sourcing. Investment is measured as the natural logarithm of internal audit cost, capturing resource allocation to monitoring mechanisms (Erwinaz et al., 2020; Ghaleb et al., 2020). Sourcing is a binary variable coded “1” for outsourced and “0” for in-house internal audit (Baatwah et al., 2021; Kolsi & Al-Hiyari, 2024).

Control variables include board independence, audit firm type, audit committee meetings, firm size, leverage, and profitability. Board independence is the ratio of independent directors to total board members (Wahab et al., 2024), while audit firm type is a binary variable coded “1” for Big 4 auditors and “0” otherwise (Owusu et al., 2020). Audit committee diligence is measured by the number of annual meetings (Ghaleb et al., 2020). Firm size is the natural logarithm of total assets, leverage is the ratio of total debt to total assets, and profitability is measured by return on assets (ROA). These controls mitigate firm-specific bias and enhance model robustness. All measurements of variables are summarised in Table 3.

Table 3. Measurement of Independent and Control Variables

Variable	Measurement
Independent Variables: CEO Leadership	
Female CEO (FCEO)	A binary variable coded as “1” if the firm's CEO is female and “0” otherwise.
CEO Age (CEOAGE)	Natural logarithm of CEO age
Malay CEO (MCEO)	A binary variable coded as “1” if the firm's CEO is Bumiputera (mainly Malay) and “0” otherwise.
Independent Variables: Internal Audit Investment	
Internal Audit Investment (IAI)	Natural logarithm of internal audit function cost
Internal Audit Sourcing (IAS)	A binary variable coded as “1” if the firm outsourced its internal audit and “0” otherwise.
Control Variables	
Board Independence (BIND)	$BIND = \frac{\text{No. of Ind. Directors}}{\text{Total of Board Members}}$
Audit Firm Type (BIG4)	A binary variable coded as “1” if the firm is audited by a Big 4 firm (Deloitte, PwC, EY, or KPMG) and “0” otherwise.
Audit Committee Meetings (ACM)	Number of audit committee meetings held per year
Firm Size (SIZE)	Natural logarithm of total asset
Leverage (LEV)	$LEV = \frac{\text{Total Debt}}{\text{Total Asset}}$
Profitability (ROA)	$ROA = \frac{\text{Net Income}}{\text{Total Asset}}$

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

As shown in Table 4, REM has a mean of 0.18 and a standard deviation of 0.26. The minimum value is 0, while the maximum reaches 5.57, indicating substantial dispersion in the extent of real earnings management practices among Malaysian listed firms. The positive skewness and wide range suggest that although most firms engage in moderate levels of REM, a subset exhibits unusually high manipulation, potentially reflecting aggressive earnings strategies. The mean REM value observed in this study is comparable to prior research. For instance, Al-Absy (2022) reported a mean REM of 0.15, while Ghaleb et al. (2020) found similar variation in REM among Malaysian public firms. Such dispersion is common in

emerging markets, where institutional enforcement mechanisms and governance practices may not fully deter managerial opportunism (Al-Haddad & Whittington, 2019). In this context, higher REM values may reflect the strategic use of real activities manipulation as an earnings tool, particularly in firms facing performance pressure or weak internal controls.

CEO leadership is proxied by three variables: FCEO, CEOAGE, and MCEO. The results for FCEO show that only 3.3% of the sample firms have a female CEO, confirming the persistent gender imbalance in Malaysian corporate leadership (Grant Thornton, 2025; Ismail et al., 2024). This mirrors the 2.9% reported by Al-Absy (2022) and supports evidence that female representation in top management remains limited despite regulatory encouragement for diversity. Such underrepresentation has governance implications, as female leaders are often linked to stronger ethical orientation and reduced risk-taking (Farooq et al., 2022; Ullah et al., 2020). The CEOAGE variable, presented in log form, has a mean of 4.04, suggesting that the average CEO age falls around the mid-50s, consistent with Haider et al. (2019) and Al-Absy (2022), who noted that the typical CEO age in Malaysian PLCs ranges between 50 and 60 years. The relatively low standard deviation indicates limited variation in CEO age across firms, and prior literature suggests that older CEOs tend to be more conservative and less inclined toward opportunistic financial practices due to reputational considerations and long-term orientation (Belenzon et al., 2019; Twongirwe & Bakundana, 2025). For the MCEO variable, 16.2% of the sample firms are led by Malay executives, while 83.8% are led by non-Malay CEOs, suggesting that although Malay ethnicity plays a dominant role in the country's socio-political landscape, it is less prevalent at the CEO level in the corporate sector. This aligns with Mohamad Yusof et al. (2018), who found that Malay CEOs were underrepresented in private-sector PLCs despite forming the ethnic majority in the population. However, this proportion is considerably lower than that reported by Al-Absy (2022), who found that 51.62% of CEOs in his Malaysian sample were Malay, with the discrepancy likely attributable to sample differences. This ethnic imbalance in leadership may affect corporate governance, as cultural and religious values associated with Malay CEOs may shape their approach to financial reporting (Wahab et al., 2024; Elsheikh et al., 2023).

Internal audit practices are represented by two variables, IAI and IAS. As shown in Table 4, the mean IAI value is 11.68 (SD = 1.78; range = 0–21.04), reflecting substantial variation in firms' financial commitment to internal audit functions. Generally, higher investment corresponds to stronger internal controls and a greater emphasis on governance (Ghaleb et al., 2020; Ege et al., 2022). The mean IAI value is slightly higher than the 11.240 reported by Ghaleb et al. (2020), indicating that firms in this sample may prioritise internal audit effectiveness more strongly, while Al-Qadasi (2024) reported a higher mean of 12.01, suggesting context-specific differences in audit strategy, industry, or regulatory responsiveness. Regarding IAS, 60.3% of firms outsource their internal audit function, whereas 39.7% maintain in-house teams, indicating a growing reliance on external providers, possibly due to cost efficiency or access to specialised expertise. This proportion exceeds the 53.9% outsourcing rate reported by Ghaleb et al. (2020), highlighting an upward trend in outsourcing practices. Although outsourcing can enhance objectivity and access to expertise, prior studies caution that it may weaken integration with internal control systems and reduce familiarity with firm-specific processes (Baatwah et al., 2021; Kolsi & Al-Hiyari, 2024). These findings underscore the strategic significance of internal audit sourcing decisions in balancing cost efficiency, compliance, and audit quality within Malaysia's evolving governance landscape.

Table 4. Descriptive Statistics

Variable	N	Mean	Std. Dev.	Min	Ma
REM	3,028	0.18	0.26	0.00	5.57
CEOAGE	3,028	4.04	0.18	3.37	4.49
IAI	3,028	11.68	1.78	0.00	21.04
BIND	3,028	0.51	0.13	0.17	1.00
ACM	3,028	5.09	1.33	0.00	17.00
SIZE	3,028	20.41	1.52	13.68	26.05
LEV	3,028	19.17	17.52	0.00	188.20
ROA	3,028	2.38	14.16	-268.63	170.23
Dummy Variable	Freq. of 1		Percent	Freq. of 0	Percent
FCEO	99		3.30	2929	96.70
MCEO	492		16.20	2536	83.80
IAS	1827		60.30	1201	39.70
BIG4	1189		39.30	1839	60.70

Note: Definitions of the acronyms were presented in Table 3. Frequencies are only shown for dummy-coded variables.

The control variables further illustrate variation in firm characteristics. The BIND variable has a mean of 0.51, consistent with Malaysian corporate governance guidelines that recommend at least one-third of board members be independent (Ghazali et al., 2021). The BIG4 variable indicates that 39.3% of firms are audited by Big Four firms, implying that most still rely on non-Big Four auditors, which may affect audit quality and the effectiveness of external monitoring (Alhebri et al., 2021; Sitanggang et al., 2019). ACM average 5.09 meetings annually, with some firms reporting as many as 17 meetings. Meeting frequency may reflect the audit committee's diligence and its role in overseeing financial reporting processes (Ahmad et al., 2023; Al-Absy et al., 2019). SIZE, likely measured using the natural logarithm of total assets, has a mean of 20.41, suggesting that the sample includes a mix of small, medium, and large firms. Financial indicators such as LEV and ROA exhibit considerable variation, with extreme values observed in both variables. LEV has a mean of 19.17, while profitability (ROA) averages 2.38, with a large standard deviation of 14.16. The extreme ROA values ranging from -268.63 to 170.23 indicate that some firms experienced severe losses or unusually high profits during the study period. These financial indicators are important controls, as firms with weaker financial performance may have stronger incentives to engage in REM to manage stakeholder perceptions (Bhutta et al., 2021; Nguyen et al., 2023).

4.2 Correlation Analysis

Table 5 presents the Pearson correlation matrix, displaying the correlation coefficients between all variables included in the study. According to the matrix, most correlation values fall below the 0.70 threshold, indicating no severe multicollinearity (Hair et al., 2010).

The highest correlation is observed between internal audit investment (IAI) and firm size (SIZE) ($r = 0.645$), which is strong but still below the 0.70 threshold, suggesting that the two variables are moderately related but not excessively so. Other correlations, such as those between REM and CEO age ($r = -0.050$), REM and internal audit sourcing (IAS) ($r = -0.031$), and REM and Malay CEO (MCEO) ($r = -0.032$), are weak, with coefficients well below 0.10. Even the positive correlation between REM and profitability (ROA) ($r = 0.130$) remains minimal. Thus, none of the correlation coefficients exceeds the 0.70 threshold, confirming no significant multicollinearity concerns in the model and allowing further multivariate analysis. This is further supported by the absence of any VIF exceeding 10 in subsequent multivariate analysis.

The VIF diagnostic results in Table 6 indicate that all VIFs were well below 5, with most close to 1. As a rule of thumb, VIF values exceeding 10 are commonly regarded as indicative of problematic multicollinearity (Hair et al., 2010), while more conservative thresholds suggest that values above 5 may require caution in certain empirical contexts (O'Brien, 2007; Al-Haddad & Whittington, 2019). Based on the VIF diagnostic results in Table 6, multicollinearity does not threaten the internal validity of the regression models used in this study.

Table 5. Pearson Correlation Matrix

	REM	FCEO	CEOAGE	MCEO	IAI	IAS	BIND	BIG4	ACM	SIZE	LEV	ROA
REM	1											
FCEO	0.023	1										
CEOAGE	-0.050***	0.005	1									
MCEO	-0.032*	0.025	-0.019	1								
IAI	-0.012	-0.024	0.038**	0.218***	1							
IAS	-0.031*	-0.018	-0.030*	-0.067***	-0.258***	1						
BIND	0.059***	-0.018	-0.058***	0.096***	0.036**	-0.038**	1					
BIG4	0.040**	0.023	0.000	0.148***	0.419***	-0.108***	-0.023	1				
ACM	0.022	0.002	-0.013	0.061***	0.049***	-0.117***	0.112***	0.059***	1			
SIZE	-0.069***	-0.021	0.046**	0.108**	0.645***	-0.212***	-0.007	0.445***	0.075***	1		
LEV	-0.019	-0.042**	-0.032*	0.118***	0.229***	-0.059***	0.038**	0.143***	0.060***	0.378**	1	
ROA	0.130***	-0.015	0.066***	-0.039**	0.104***	-0.061***	-0.002	0.109***	-0.021	0.155***	-0.126***	1

Note: Definitions of the acronyms were presented in Table 3. *, **, and *** are significant at 10%, 5%, and 1% levels, respectively

Table 6. Variance Inflation Factor (VIF) Analysis

Variable	VIF
FCEO	1.018
CEOAGE	1.031
MCEO	1.143
IAI	1.987
IAS	1.119
BIND	1.043
BIG4	1.371
ACM	1.044
SIZE	2.383
LEV	1.328
ROA	1.104

Note: Definitions of the acronyms were presented in Table 3.

4.3 Regression Results

The multiple linear regression analysis examines the associations between CEO leadership characteristics, internal audit practices, and REM while controlling for firm-specific attributes. Given the panel structure of the data, model specification tests were conducted to determine the appropriate estimation technique. Following Wooldridge (2010) and Baltagi (2021), the F-test was used to assess the presence of individual-specific fixed effects, while the Breusch–Pagan Lagrange Multiplier test was employed to examine the presence of random effects. The results indicate that the null hypotheses of no individual-specific effects cannot be rejected, suggesting that pooled ordinary least squares is appropriate. Accordingly, pooled ordinary least squares was employed, with year and industry dummy variables included to control for common time-specific shocks and systematic differences across industries (Baltagi, 2021; Wooldridge, 2010). Table 7 summarises the regression results.

The regression model explains approximately 8.6% of the variance in REM, as indicated by the R-squared value ($R^2 = 0.086$). Although modest, this level of explanatory power is consistent with prior research in the earnings management domain, where REM is influenced by a wide array of firm-level and behavioural variables that are often unobservable or difficult to quantify (Ghaleb & Kamardin, 2018; Christensen et al., 2023). Importantly, the F-statistic is statistically significant ($F = 10.50$, $p < 0.001$), confirming the overall significance of the model.

The coefficient for FCEO is positive but statistically insignificant at any conventional level ($\beta = 0.034$, $p = 0.184$). This indicates that the presence of a female CEO is not significantly associated with REM among the sampled companies. Hence, Hypothesis 1 is not supported. This outcome diverges from the expectations rooted in Agency Theory, which proposes that risk-averse and ethically inclined leaders, such as female executives, are more likely to align with shareholder interests and reduce opportunistic financial behaviour (Jensen & Meckling, 1976; Farooq et al., 2022). The finding also contrasts with prior studies that reported either positive (Rizzotti & Frisenna, 2025; Kim et al., 2017; Li et al., 2023) or negative relationships (Kim et al., 2017; Li et al., 2023; Gull et al., 2018; Al-Absy, 2022).

Several explanations may account for this insignificant result. Peni and Vähämaa (2010) and Houqe et al. (2024) have shown that the presence of women in top management does not consistently reduce earnings manipulation, particularly in contexts where women lack sufficient authority or are numerically under-represented. In Malaysia, the proportion of female CEOs remains below 10% (Bernama, 2025; Grant Thornton, 2025), which may limit their influence on high-level financial decision-making. Harris et al. (2019), for instance, found that at low levels of equity-based compensation, female CEOs were less likely to manipulate earnings. However, this difference disappeared when performance-based incentives were high. Similarly, Li and Zeng (2019) found no consistent relationship between gender and earnings management, suggesting that female leadership alone is not decisive.

Table 7. Regression Results

Variable	Coef.	t-value	p-value	Sig.
FCEO	0.034	1.329	0.184	
CEOAGE	-0.066	-2.602	0.009	**
MCEO	-0.027	-2.090	0.037	**
IAI	0.004	1.198	0.231	
IAS	-0.025	-2.597	0.009	**
BIND	0.089	2.508	0.012	**
BIG4	0.034	3.225	0.001	***
ACM	0.003	0.937	0.349	
SIZE	-0.022	-4.823	<0.001	***
LEV	0.001	2.431	0.015	**
ROA	0.003	7.634	<0.001	***
Constant	0.778	6.077	<0.001	

Variable	Coef.	t-value	p-value	Sig.
Year fixed effects	Included			
Industry fixed effects	Included			
F-Value	10.50			
Sig.	<0.001			
Observation	3028			
R-squared	0.086			

Definitions of the acronyms were presented in Table 3. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All p-values are two-tailed.

Beyond under-representation, the nature of executive appointments may also matter. Some female CEOs may hold their positions symbolically, being appointed to meet compliance or diversity expectations rather than because of their strategic influence. Ismail et al. (2024) highlight this as a form of tokenism that may limit actual influence, a concern echoed by Debnath et al. (2019), who note that such appointments rarely come with genuine power to shape financial policies or reporting practices. Beyond these structural limitations, the nature of REM itself may plausibly explain the insignificant relationship.

Next, CEO age (CEOAGE) has a negative and statistically significant relationship with REM at the 1% level ($\beta = -0.066$, $p = 0.009$). This finding indicates that older CEOs are less likely to engage in REM, potentially reflecting greater ethical conservatism and a stronger long-term orientation among older executives (Haider et al., 2019; Belenzon et al., 2019). Hence, Hypothesis 2 is supported.

From a theoretical standpoint, this result aligns with Agency Theory assumptions. With longer career experience and stronger concerns for legacy and professional reputation, older executives may be more likely to adopt a long-term perspective and prioritise sustainable firm performance over short-term financial gains. This risk-averse orientation may discourage REM, which often involves altering production levels, discretionary spending, or sales practices to manage reported earnings (Haider et al., 2019). These findings are echoed by Al-Begali and Phua (2023), who reported that CEO age was negatively associated with REM, suggesting that as executives grow older, their inclination to engage in aggressive financial tactics diminishes.

A related form of manipulation involves intentionally lowering current-period earnings to increase reported performance in future periods, often to build reserves or manage expectations. Older CEOs appear less inclined to use such techniques, reinforcing the view that age may contribute to a more prudent approach to financial decision-making (Al-Begali et al., 2023).

Similarly, MCEO shows a negative and statistically significant relationship with REM at the 5% level ($\beta = -0.027$, $p = 0.037$). This supports Hypothesis 3 and suggests that Malay CEOs are associated with lower levels of REM, which may be shaped by socio-political factors specific to Malaysia's institutional environment (Elsheikh et al., 2023; Wahab et al., 2024).

This finding is consistent with prior studies by Al-Absy (2022) and Elsheikh et al. (2023), which reported that Bumiputera, or Malay, executives are less likely to engage in REM than their non-Bumiputera counterparts. Wahab et al. (2024) further argue that ethnic-based networks and informal governance mechanisms may encourage more cautious managerial behaviour, particularly among Malay leaders operating within GLCs or politically exposed entities.

From an Agency Theory perspective, when cultural identity intersects with institutional or political expectations, executives may face greater reputational risk, which can substitute for formal monitoring and promote behaviour that aligns more closely with shareholders' interests. This interaction may help explain why Malay CEOs appear less likely to engage in REM. Consistently, Abdul Rahman et al. (2018) found that while general ethical values of Muslim CEOs did not show a direct effect on REM, their presence in family-owned firms was significantly associated with reduced manipulation.

Regarding internal audit practices, IAI does not show a significant relationship with REM ($\beta = 0.004$, $p = 0.231$). This indicates that higher internal audit spending, as measured by cost, does not significantly reduce REM, providing no empirical support for Hypothesis 4.

While Agency Theory posits that internal monitoring mechanisms such as internal audit functions reduce agency costs by enhancing oversight (Jensen & Meckling, 1976), the present finding implies that monetary investment alone may be insufficient. Instead, internal audit effectiveness depends on factors such as independence, professional expertise, and integration with senior management and the audit committee (Ghaleb et al., 2020; Zadeh et al., 2023). When these elements are weak or absent, even well-funded audit departments may fail to detect or prevent REM. This aligns with Garven and Scarlata (2020), who argue that governance outcomes are influenced more by audit structure and support than by budget allocations. Similarly, Prasad et al. (2021) emphasise that internal audit success depends on operational independence and communication with key oversight bodies. In some cases, increased spending on internal audit may be reactive, responding to prior failures or external pressure, rather than reflecting proactive risk management. Without an appropriate audit framework, such spending may not improve financial transparency.

Moreover, Ege et al. (2022) found that firms with managers possessing internal audit experience are more effective in reducing REM, especially when those individuals hold decision-making roles. This suggests that human capital and audit leadership may matter more than overall budget. If internal audit teams lack the authority or access to challenge financial decisions, their role in reducing REM diminishes, regardless of expenditure levels. Similarly, Baatwah et al. (2021) and Ghaleb et al. (2020) noted that outsourced internal audit providers with deep firm-specific knowledge tend to control REM more effectively than those offering only general industry expertise. This further supports the notion that audit quality and contextual alignment, rather than investment alone, drive internal control effectiveness.

In sum, while internal audit investment conceptually aligns with Agency Theory's emphasis on monitoring mechanisms, this study's results suggest that its practical impact on REM depends on qualitative factors. Effective audit outcomes require not only financial commitment but also strategic alignment, independence, and operational support within the firm's governance infrastructure. These insights highlight the need for organisations to move beyond budgetary allocations and focus on the structural and organisational conditions that enable internal audit teams to perform a robust monitoring role.

IAS, on the other hand, shows a negative and statistically significant relationship with REM ($\beta = -0.025$, $p = 0.009$), significant at the 5% level. This supports Hypothesis 5 and suggests that firms outsourcing their internal audit functions are less likely to engage in REM.

From an Agency Theory perspective, internal audit functions help mitigate conflicts between managers and shareholders, especially when their interests are misaligned (Jensen & Meckling, 1976). Outsourcing internal audit to independent external providers may strengthen monitoring by reducing internal bias, enhancing objectivity, and improving technical competence. Baatwah et al. (2021) and Al-Qadasi (2024) found that outsourced auditors tend to be more independent and are better equipped with specialised expertise, allowing them to detect irregularities more effectively and resist managerial pressure. External audit providers are also subject to professional standards and reputational risks, which may encourage rigorous audit practices and deter REM (Prasad et al., 2021; Park et al., 2019). This adds another layer of accountability, particularly in firms where internal governance mechanisms are weak or not fully institutionalised. By improving the quality and independence of oversight, outsourcing may reduce agency costs and limit managerial discretion in financial reporting.

Moreover, the specific expertise of outsourced auditors appears to be an important determinant of effectiveness. According to Baatwah et al. (2021), outsourced internal auditors with firm-specific knowledge are more effective at reducing REM than those relying solely on industry-level expertise. This finding highlights the importance of contextual familiarity, suggesting that audit providers who understand a firm's unique risks, processes, and culture are better positioned to detect manipulation and enforce compliance.

However, prior studies have offered mixed results regarding the efficacy of outsourced internal audit functions. For instance, Mubako (2019) cautioned that while outsourcing may provide cost advantages and technical expertise, it can also raise concerns about reduced integration with internal operations and a potential lack of responsiveness to firm-specific issues. Ghaleb et al. (2020) found that, in some cases, in-house audit teams were more effective at mitigating REM because of their deeper alignment with the firm's strategic direction and internal processes. These contrasting findings suggest that while outsourcing can improve independence and technical capacity, its success depends on how well external auditors are integrated into the firm's governance framework. Outsourced internal audit functions must not only possess the appropriate expertise but also be embedded within the firm's oversight structure to ensure effective monitoring. Changing the sourcing model without improving coordination and communication with management and audit committees may limit the benefits.

Overall, the findings across the five research objectives offer partial support for Agency Theory. Specifically, CEO age, CEO ethnicity, and internal audit sourcing showed statistically significant relationships with REM, supporting the theoretical expectation that managerial attributes and effective monitoring mechanisms can reduce agency costs (Jensen & Meckling, 1976). These results underscore the importance of both leadership characteristics and internal audit practices in shaping firms' financial reporting behaviour. Conversely, the non-significant relationships observed for female CEOs and internal audit investment suggest that formal structures or demographic characteristics alone may not be sufficient to address REM. Instead, their effectiveness may depend on deeper institutional factors such as corporate culture, leadership authority, and the actual implementation of governance mechanisms. This highlights the context-sensitive nature of agency conflicts in emerging markets such as Malaysia, where symbolic compliance may dilute the intended impact of governance reforms.

Taken together, the evidence reinforces the understanding that corporate governance effectiveness is not solely determined by policies or formal structures but also depends on how these mechanisms are implemented within specific organisational and cultural environments.

Several control variables also exhibit statistically significant relationships with REM. Notably, SIZE has a negative and statistically significant relationship with REM ($\beta = -0.022$, $p < 0.001$), significant at the 1% level, indicating that larger firms are associated with lower levels of real earnings management. Conversely, both LEV and ROA show positive relationships with REM. LEV has a small but statistically significant positive relationship with REM ($\beta = 0.001$, $p = 0.015$), significant at the 5% level, indicating that firms with higher leverage are more likely to engage in REM. ROA shows a positive and highly significant relationship with REM ($\beta = 0.003$, $p < 0.001$), significant at the 1% level, indicating that more profitable firms may use REM to sustain earnings trends or meet market expectations (Nasiri & Ramakrishnan, 2020).

Interestingly, BIND and BIG4 also show positive and statistically significant relationships with REM. BIND is positively related to REM ($\beta = 0.089$, $p = 0.012$), significant at the 5% level. This unexpected result suggests that a higher proportion of independent directors does not necessarily constrain REM. BIG4 also shows a positive and statistically significant relationship with REM ($\beta = 0.034$, $p = 0.001$), significant at the 1% level. This result suggests that companies audited by Big Four firms engage in higher levels of REM. However, ACM frequency shows no significant relationship with REM ($\beta = 0.003$, $p = 0.349$), indicating that more frequent meetings alone may not be sufficient to influence REM (Ghazali et al., 2021).

While the regression results offer significant insights into the associations between CEO leadership, internal audit practices, and REM, it is important to verify the reliability and generalisability of these findings. The next section presents robustness tests to assess the consistency of the empirical results.

4.4 Robustness Test

This robustness check assesses the stability and reliability of the main findings. The robustness analysis further examines whether the results are sensitive to the direction of REM. The primary analysis employs absolute REM to capture the overall magnitude of REM, regardless of whether the underlying activities are income-increasing or income-decreasing (Roychowdhury, 2006; Cohen & Zarowin, 2010). For the robustness analysis, REM is separated into positive and negative measures to distinguish income-increasing from income-decreasing REM. This directional decomposition provides additional insight into whether the main findings are driven by a particular form of REM and therefore complements the absolute REM measure. Consistent findings across these specifications would enhance confidence in the robustness of the main results.

A positive REM value indicates income-increasing behaviour, typically through activities such as reduced discretionary spending or overproduction to inflate current earnings. In contrast, a negative REM value suggests income-decreasing strategies, potentially intended for earnings smoothing, tax deferral, or managing future expectations. This distinction matters because the motivations and governance implications of REM may differ by the direction of manipulation (Shah et al., 2020; Christensen et al., 2023; Al-Absy, 2022a; Bhutta et al., 2021).

Table 8. Regression results on Positive versus Negative REM

Variable	Positive REM		Negative REM	
	Coef.	p-value	Coef.	p-value
FCEO	0.065	0.119	0.001	0.988
CEOAGE	0.017	0.507	-0.169	0.024**
MCEO	-0.025	0.032**	-0.024	0.332
IAI	-0.006	0.078*	0.0012	0.006**
IAS	-0.033	0.001***	-0.017	0.338
BIND	0.156	0.003**	0.007	0.913
BIG4	0.024	0.041*	0.039	0.033**
ACM	-0.007	0.025**	0.013	0.039**
SIZE	-0.011	0.016**	-0.033	0.000***
LEV	0.001	0.003**	0.000	0.470
ROA	0.001	0.010**	0.005	0.000***
Constant	0.336	0.013	1.294	0.000
Year Fixed Effect	Included		Included	
Industry Fixed Effect	Included		Included	
F-value	13.98		-	
Observations	1720		1308	
R-squared	0.0978		0.1268	

Definitions of the acronyms were presented in Table 3. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8 presents the regression results for each sub-sample. Table 8 presents the regression results for each sub-sample. Compared with the main findings, the relationships between several variables and REM appear to vary depending on whether firms inflate or defer earnings.

For CEO characteristics, CEOAGE shows a significant negative association with negative REM ($\beta = -0.169$, $p = 0.024$), consistent with the main model, where CEOAGE was also negatively associated with REM. This finding reinforces the conclusion that older CEOs are less likely to engage in earnings management, particularly through income-decreasing strategies, possibly due to reputational or career-

related concerns. This is consistent with Agency Theory's view that age may act as a behavioural constraint on managerial opportunism.

The results for MCEO are also broadly consistent with the main findings. In the full sample, MCEO was significantly negatively associated with REM. In the robustness test, this relationship remains significant for positive REM ($\beta = -0.025$, $p = 0.032$) but becomes insignificant for negative REM. This suggests that the negative association between Malay CEO status and REM in the main model is more evident in the context of income-increasing behaviour. The finding may reflect the influence of socio-cultural or institutional expectations on managerial conduct (Elsheikh et al., 2023; Wahab et al., 2024), although the evidence does not indicate a significant relationship with income-decreasing REM.

For FCEO, the results remain insignificant across both the main model and the sub-sample analyses. While the coefficient for positive REM is positive ($\beta = 0.065$, $p = 0.119$) and near zero for negative REM ($\beta = 0.001$, $p = 0.988$), the lack of statistical significance in both cases is consistent with the main model's conclusion that female CEO presence is not significantly associated with REM in the current context.

Turning to internal audit practices, the robustness analysis provides further insight into the role of audit sourcing. IAS remains significantly negatively associated with REM in both the main model and the positive REM sub-sample ($\beta = -0.033$, $p = 0.001$), suggesting that outsourced internal audit functions are particularly relevant in constraining income-increasing strategies. However, the relationship becomes insignificant for negative REM, indicating that the monitoring benefits associated with outsourced internal audit may be more pronounced when firms engage in income-increasing rather than income-decreasing REM.

The findings for IAI diverge somewhat from the main regression model, in which IAI was statistically insignificant. In the sub-sample analyses, IAI is weakly negatively associated with positive REM ($p = 0.078$) and significantly positively associated with negative REM ($\beta = 0.0012$, $p = 0.006$). These results suggest that the relationship between internal audit investment and REM may depend on the direction of earnings management. In particular, the positive association with negative REM may indicate that firms with greater reporting or performance concerns invest more in internal audit, potentially reflecting a reactive allocation of audit resources. However, this interpretation should be treated cautiously, as the present analysis does not establish the direction of causality. The mixed results further highlight the importance of considering the qualitative and contextual dimensions of internal audit effectiveness rather than relying solely on expenditure-based measures.

In summary, the directional sub-sample robustness analysis broadly supports the main findings, particularly for CEO age and internal audit outsourcing. At the same time, it provides additional evidence that some relationships are sensitive to the direction of REM. The significant association between MCEO and positive REM, together with the insignificant association with negative REM, suggests that the effect of CEO ethnicity may be more pronounced for income-increasing strategies. Similarly, the significant negative association between IAS and positive REM indicates that outsourced internal audit may be particularly relevant in constraining income-increasing REM. Overall, the robustness analysis strengthens confidence in the main findings and shows that the determinants of REM may operate differently depending on whether firms increase or decrease reported earnings.

5. CONCLUSION

This study examines the associations between CEO leadership characteristics, internal audit practices, and real earnings management (REM) among Malaysian PLCs. Based on 3,028 firm-year observations from 618 companies from 2020 to 2024, the findings provide evidence that selected CEO characteristics and internal audit arrangements help explain REM in the Malaysian corporate environment.

The results show that CEO age and Malay CEO status are significantly and negatively associated with REM, while CEO gender is not significantly associated with REM. These findings suggest that behavioural and contextual characteristics of corporate leaders may matter more than demographic diversity alone in constraining managerial opportunism. The results also indicate that internal audit sourcing is significantly and negatively associated with REM, whereas internal audit investment is not significant. Collectively, these findings provide partial support for Agency Theory and highlight that the effectiveness of governance mechanisms depends not only on their formal presence or resource allocation but also on their quality, independence, and implementation.

The study contributes to the literature by examining CEO characteristics and internal audit practices jointly in explaining REM within an emerging-market context. In particular, the findings extend existing evidence on the role of CEO age and ethnicity and provide further insight into internal audit sourcing as a potentially important governance mechanism. The insignificant findings for female CEOs and internal audit investment further suggest that formal representation and financial commitment alone may not necessarily translate into effective constraints on REM.

The findings have practical implications for boards, audit committees, regulators, and policymakers. Boards should consider behavioural and leadership characteristics when assessing governance risks, while firms should carefully evaluate internal audit sourcing arrangements to ensure adequate independence, expertise, and oversight. Policymakers should also continue to promote leadership diversity and strengthen the organisational independence and effectiveness of internal audit functions.

Future research could use mixed-method approaches, including interviews and case studies, to examine qualitative dimensions of CEO decision-making and internal audit effectiveness that secondary data cannot fully capture. Further research could also examine how internal audit competence, independence, technological capability, and board support influence the effectiveness of different sourcing arrangements.

Overall, the study demonstrates that REM is shaped by a combination of managerial characteristics and governance mechanisms. The findings contribute to a more nuanced understanding of how corporate governance operates in an emerging-market setting and provide implications for strengthening mechanisms designed to constrain managerial opportunism among Malaysian PLCs.

6. ACKNOWLEDGEMENT

The authors gratefully acknowledge the Faculty of Accountancy, Universiti Teknologi MARA, for providing financial support towards the publication fee of this article.

7. REFERENCES

- Abbott, L. J., Barr-Pulliam, D., Buslepp, W. L., & Parker, S. (2022). The real effects of internal audit function quality: Evidence from investment strategies. *Journal of Accounting, Auditing & Finance*, 39(2), 540–567.
- Abdul Rahman, R., Hj Omar, N., Rahman, A., & Muda, R. (2018). Islamic ethical values of corporate top leadership and real earnings management. *International Journal of Law and Management*, 60(3), 869–884.
- Abdullah, W., Maruhun, E., Tarmizi, M., & Rahman, L. (2018). Mitigating earnings management: Adoption of IFRS and corporate governance practices in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 8, 760–772.
- Abdulraheem Ghaleb, B. A., Kamardin, H., & Hashed, A. A. (2020). Investment in outside governance monitoring and real earnings management: Evidence from an emerging market. *Asian Review of Accounting*, 28(3), 377–400.
- Al-Absy, M. S. M. (2022a). Board chairman characteristics and real earnings management. *Sustainability*, 14, 15025.
- Al-Absy, M. S. M. (2022b). Impactful women directors and earnings management. *Cogent Business & Management*, 9(1), 2148873.
- Al-Absy, M. S. M., Ku Ismail, K. N. I., & Chandren, S. (2019). Corporate governance mechanisms, whistle-blowing policy and real earnings management. *International Journal of Financial Research*, 10(6), 265–282.
- Al-Begali, S. A. A., & Phua, L. K. (2023). Accruals, real earnings management, and CEO demographic attributes in emerging markets: Does concentration of family ownership count? *Cogent Business & Management*, 10(2).
- Al-Begali, S. A. A., Phua, L. K., & Al-Rowaidi, M. A. (2024). CEO features, foreign ownership, and real earnings manipulation: Evidence from Jordan. *Cogent Economics & Finance*, 12(1), 2376363.
- Al-Duais, S. D., Malek, M., Abdul Hamid, M. A., & Almasawa, A. M. (2022). Ownership structure and real earnings management: evidence from an emerging market. *Journal of Accounting in Emerging Economies*, 12(2), 380–404.
- Al-Haddad, L., & Whittington, M. (2019). The impact of corporate governance mechanisms on real and accrual earnings management practices: Evidence from Jordan. *Corporate Governance*, 19(6), 1167–1186.
- Al-Qadasi, A. (2024). The power of institutional investors: empirical evidence on their role in investment in internal audit function. *Managerial Auditing Journal*, 39(2), 166–190.
- Alhebri, A., Alkhatib, K., & Harasheh, M. (2021). Audit quality and earnings management: Evidence from GCC markets. *International Journal of Financial Research*, 12(2), 243–256.
- Ali, S. M., Norhashim, M., & Jaffar, N. (2023). Exploring earnings management: Institutional ownership and audit size in Malaysia's sustainability pathway. *International Journal of Management and Sustainability*, 12(4), 535–560.
- Alquhaif, A. S., & Alobaid, R. O. (2024). Audit committee financial expertise and real earnings management via accretive repurchases: does CEO power matter?. *Humanities and Social Sciences Communications*, 11(1), 1–17.
- Altarawneh, M., Shafie, R., Ishak, R., & Ghaleb, B. A. A. (2022). Chief executive officer characteristics and discretionary accruals in an emerging economy. *Cogent Business & Management*, 9(1), 2024117.
- Alves, S. (2021). CEO duality, earnings quality and board independence. *Journal of Financial Reporting and Accounting*, 21(2), 217–231.
- Ameila, A., & Eriandani, R. (2021). CEO characteristics and earnings management: Evidence from Indonesia. *Journal of Management and Business*, 20(2), 141–154.

- Ardhaoui, R., Ben Amar, A., & Fakhfakh, I. (2024). Does corporate environmental disclosure affect earnings management? The moderating effect of female board representation. *EuroMed Journal of Business*, 20(4), 1199–1225.
- Baatwah, S. R., Omer, W. K., & Aljaaidi, K. S. (2021). Outsourced internal audit function and real earnings management: The role of industry and firm expertise of external providers. *International Journal of Auditing*, 25(1), 206-232
- Baltagi, B. H. (2021). *Econometric Analysis of Panel Data* (6th ed.). Springer.
- Bananuka, J., Nkundabanyanga, S., Nalukenge, I., & Kaawaase, T. (2018). Internal audit function, audit committee effectiveness and accountability in the Ugandan statutory corporations. *Journal of Financial Reporting and Accounting*, 16(1), 138-157.
- Belenzon, S., Shamshur, A., & Zarutskie, R. (2019). CEO's age and the performance of closely held firms. *Strategic Management Journal*, 40(6), 917–944.
- Bernama. (2025, March 12). Women representation in senior management fall to 36.2 pct in 2025. Astro Awani.
- Bernama. (2025a, March 8). PM Anwar wants women to be given sufficient opportunities in country's development. BERNAMA.
- Bhutta, U., AlHares, A., Shahab, Y., & Tariq, A. (2021). The jinx of real earnings management: evidence from inefficient investments and debt maturity structure in Pakistan. *Journal of Accounting in Emerging Economies*, 12(2), 405-432.
- Bouaziz, D., Salhi, B., & Jarboui, A. (2020). CEO characteristics and earnings management: Empirical evidence from France. *Journal of Financial Reporting and Accounting*, 18(1), 77–110.
- Buanaputra, V. (2021). Is there any interaction between real earnings management and accrual-based earnings management? *Jurnal Akuntansi & Auditing Indonesia*, 25(1), 12–23.
- Cohen, D. A., & Zarowin, P. (2010). Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics*, 50(1), 2–19.
- Chang, C. C., Kao, L. H., & Chen, H. Y. (2018). How does real earnings management affect the value of cash holdings? Comparisons between information and agency perspectives. *Pacific-Basin Finance Journal*, 51, 47-64.
- Christensen, T.E., Huffman, A., Lewis-Western, M.F. and Valentine, K. (2023), A simple approach to better distinguish real earnings manipulation from strategy changes. *Contemporary Accounting Research*, 40, 406–450.
- Davis, J. G., & Garcia-Cestona, M. (2023). Financial reporting quality and the effects of CFO gender and board gender diversity. *Journal of Financial Reporting and Accounting*, 21(2), 384-400.
- Debnath, N. C., Patnaik, B. C. M., & Satpathy, I. (2019). Female directorship and real earnings management in Bangladesh: Towards an analytical assessment. *Management Science Letters*, 9(11), 1723–1740.
- Dong, N., Wang, F., Zhang, J., & Zhou, J. (2020). Ownership structure and real earnings management: Evidence from China. *Journal of Accounting and Public Policy*, 39(3), 106733.
- Duong, K. D., Phung, N. N. Y., Pham, H., & Le, A. N. N. (2024). CEO overpower and real earnings manipulation in family businesses: Do ownership structures matter? *SAGE Open*, 14(3), 21582440241266922.
- Ege, M., Seidel, T. A., Sterin, M., & Wood, D. A. (2022). The influence of management's internal audit experience on earnings management. *Contemporary Accounting Research*, 39(3), 1834-1870.

- El-Dyasty, M. M., & Elamer, A. A. (2023). Female leadership and financial reporting quality in Egypt. *Journal of Business and Accounting*, 23(1), 585-644.
- Elsheikh, T., Hashim, H. A., Mohamad, N. R., Youssef, M. A. A., & Almaqtari, F. A. (2023). CEO masculine behavior and earnings management: Does ethnicity matter? *Journal of Financial Reporting and Accounting*, 23(1), 959-983.
- Eriandani, R., Pirzada, K., & Kurniawan, M. (2020). The role of auditor characteristics: earnings management and audit committee effectiveness. *Journal of Entrepreneurship and Sustainability Issues*, 7(4), 3242-3252.
- Erwinaz, F., Hafiz, A., & Nasir, M. (2020). The impacts of investment in internal audit functions on the going concern opinion for financially distressed firms. *AJAG*, 14, 1-12.
- Farooq, M. U., Su, K., Boubaker, S., & Gull, A. A. (2022). Does gender promote ethical and risk-averse behavior among CEOs? An illustration through related-party transactions. *Finance Research Letters*, 47, 102730.
- Field, A. (2019). *Discovering statistics using IBM SPSS Statistics* (5th ed.). SAGE Publications.
- Garven, S. and Scarlata, A. (2020). An examination of factors associated with investment in internal auditing technology. *Managerial Auditing Journal*, 35(7), 955-978.
- Ghaleb, B., & Kamardin, H. (2018). Real earnings management: A review of literature and future research. *Asian Journal of Finance & Accounting*, 10(1), 440.
- Ghaleb, B., Kamardin, H., & Al-Qadasi, A. (2020). Internal audit function and real earnings management practices in an emerging market. *Meditari Accountancy Research*, 28(6), 1209-1230.
- Ghazali, M. N. A. M., Ahmad, N., & Abdul Wahab, N. S. (2021). The revised Malaysian Code on Corporate Governance 2021: Enhancing board effectiveness and stakeholder trust.
- Ghazali, N., Mohd Suffian, M. T., & Ghafar, M. (2021). The impact of audit committee on earnings management: The relevance of Malaysian Code of Corporate Governance 2007. *International Journal of Academic Research in Business and Social Sciences*, 11(8), 1179-1184.
- Giordino, D. (2023). Earnings management or earnings manipulation?: A narrative review of organizational profitability. In A. Rafay (Ed.), *Theory and practice of illegitimate finance* (pp. 84-104). IGI Global Scientific Publishing.
- Githaiga, P. N. (2024). Sustainability reporting, board gender diversity and earnings management: Evidence from East Africa community. *Journal of Business and Socio-Economic Development*, 4(2), 142-160.
- Gomez, E. T. (2006). Malaysian business groups: The state and capital development in the post-currency crisis period. In *Business groups in East Asia: Financial crisis, restructuring, and new growth*, 119-146. Oxford University Press.
- Grant Thornton. (2025, March 12). Women in senior management on the decline in Malaysia. Grant Thornton Malaysia.
- Haider, I., Sultana, N., Singh, H., & Tham, Y. (2019). CEO age and analysts' forecast properties. *Asian Review of Accounting*, 28(1), 1-23.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Pearson Education.
- Hamed, R. (2025). ESG initiative and meeting earnings benchmarks: Evidence from Malaysia. *Cogent Business & Management*, 12(1), 2450298.
- Hassan, S., Aksar, M. A., Khan, S., Ahmed, T., & Zahoor, M. (2023). Impact of audit quality on real earnings

- management: Moderating role of corporate governance. *Review of Management Sciences*, 5(1), 1–12.
- Houqe, M. N., Opore, S., & Zahir-Ul-Hassan, M. K. (2024). Carbon emissions, female CEOs and earnings management. *International Journal of Accounting & Information Management*, 32(4), 593–621.
- Ibrahim, G., Mansor, N., & Ahmad, A. U. (2020). The mediating effect of the internal audit committee on the relationship between firms' financial audits and real earnings management. *International Journal of Scientific & Technology Research*, 9(4), 816–822.
- Ismail, I., How, J., Shafie, R., Ku Ismail, K. N. I., & Abdul Wahab, E. A. (2024). Female leadership and earnings management in politically connected and family firms. *Accounting Forum*, 49, 978–1008.
- Jachi, M., & Yona, L. (2019). The impact of independence of internal audit function on transparency and accountability: Case of Zimbabwe local authorities. *Research Journal of Finance and Accounting*, 10(20), 46–53.
- Jaén, J. and Martínez, M. (2023). Is earnings management impacted by audit fees and auditor tenure? An analysis of the Big Four audit firms in the US market. *Oeconomia Copernicana*, 14(3), 899–934.
- Jamadar, Y., Ong, T. S., Abdullah, A. A., & Kamarudin, F. (2022). Earnings and discretionary accruals. *Managerial and Decision Economics*, 43(2), 431–439.
- Jamil, A., Mohd Ghazali, N. A., & Puat Nelson, S. (2021). The influence of corporate governance structure on sustainability reporting in Malaysia. *Social Responsibility Journal*, 17(8), 1251–1270.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Jokipii, A., & Meo, F. (2019). Internal audit function characteristics and external auditors' co-sourcing in different institutional contexts. *International Journal of Auditing*, 23(2), 292–307.
- Kaawaase, T., Nairuba, C., Akankunda, B., & Bananuka, J. (2021). Corporate governance, internal audit quality and financial reporting quality of financial institutions. *Asian Journal of Accounting Research*, 6(3), 348–366.
- Kałdoński, M., Jewartowski, T., & Mizerka, J. (2020). Capital market pressure, real earnings management, and institutional ownership stability: Evidence from Poland. *International Review of Financial Analysis*, 71, 101315.
- Kharuddin, K. A. M., Zhu, W., & Farooque, O. (2023). Internal Control Weakness, Remediation Failure, and Audit Opinions: Evidence from the US Listed Firms. *Review of Economics and Finance*, 21, 1628–1637.
- Kharuddin, K. A. M., & Liu, Y. (2023). The relationship between firm performance, gender, and nationality of the UK boards. *Review of Economics and Finance*, 21(1), 1561–1570.
- Kolsi, M. and Al-Hiyari, A. (2024). Does internal audit function outsourcing policy matter for environmental, social and governance performance score? evidence from bursa malaysia. *Sustainability Accounting, Management and Policy Journal*, 15(6), 1442–1459.
- Li, X., Than, E. T., Ahmed, R., Ishaque, M., & Huynh, T. L. D. (2023). Gender diversity of boards and executives on real earnings management in the bull or bear period: Empirical evidence from China. *International Journal of Finance & Economics*, 28(3), 2753–27.
- Li, Y., & Zeng, Y. (2019). The impact of top executive gender on asset prices: Evidence from stock price crash risk. *Journal of Corporate Finance*, 58, 528–550.
- Liao, Q., Ouyang, B., & Tang, Y. (2023). The impact of executive ethnic diversity on real earnings management. *Accounting Horizons*, 37(4), 1–27.

- Malay Mail. (2024, April 25). PM Anwar wants more women in top civil service posts. Malay Mail.
- Malay Mail. (2025, March 8). Anwar calls for greater role, more opportunities for women in nation's development. Malay Mail.
- Mohamad Yusof, N. Z., Wickramasinghe, D., & Zaman, M. (2018). Corporate governance, critical junctures and ethnic politics: Ownership and boards in Malaysia. *Critical Perspectives on Accounting*, 55, 33–52.
- Mohamad, S., Abdurrahman, A. P., Keong, O. C., & Garrett, K. W. C. (2020). Corporate governance and earnings management: Evidence from listed Malaysian firms. *Journal of Critical Reviews*, 7(2), 90-97.
- Mubako, G. (2019). Internal audit outsourcing: A literature synthesis and future directions. *Australian Accounting Review*, 29(3), 532-545.
- Musa, A., Abdul Latif, R., & Abdul Majid, J. (2023). CEO attributes, board independence, and real earnings management: Evidence from Nigeria. *Cogent Business & Management*, 10(1), 2194464.
- Nasiri, M., & Ramakrishnan, S. (2020). Earnings management, corporate governance and corporate performance among Malaysian listed companies. *Journal of Environmental Treatment Techniques*, 8(3), 1124–1131.
- Ngo, D., & Nguyễn, C. (2022). Does the CEO's financial and accounting expertise affect the financial reporting quality? Evidence from an emerging economy. *Journal of Financial Reporting and Accounting*, 22(3), 653–676.
- Nguyen, T. T. H., Ibrahim, S., & Giannopoulos, G. (2023). Detecting earnings management: A comparison of accrual and real earnings manipulation models. *Journal of Applied Accounting Research*, 24(2), 344–379.
- Nuhu, M. S., Ahmad, Z., & Lim, K. L. (2024a). Nexus among disclosure quality, discretionary accruals and real earnings management practices: An empirical analysis of Malaysian public firms. *Journal of Corporate Accounting & Finance. Advance online publication*, 1–18.
- Nuhu, M. S., Ahmad, Z., & Lim, Y. Z. (2024b). The influence of external audit quality on discretionary accruals and real earnings management practices: An analysis of Malaysian firms. *Asian Academy of Management Journal*, 29(2), 211–241.
- Nuhu, M. S., Ahmad, Z., & Ying Zhee, L. (2024c). The Relationship between Ownership Structure and Real Earnings Management Practices: Evidence from Malaysian Public Companies. *Jurnal Pengurusan*, 72.
- Nwoba, M., & Ede, C. (2024). Effect of internal audit techniques on performance of Ezza-North Local Government Council. *JPDS*, 16(1), 128–148.
- O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 41(5), 673–690.
- Orazalin, N. (2020). Board gender diversity, corporate governance, and earnings management. *Gender in Management: An International Journal*, 35(1), 37–60.
- Oreshile, S. A., & Adeneye, Y. (2025). Real earnings management practices and financial performance: The moderating role of whistleblowing policy. *South African Journal of Accounting Research*, 1- 42.
- Owusu, A., Zalata, A. M., Omoteso, K., & Elamer, A. A. (2020). Is there a trade-off between accrual-based and real earnings management activities in the presence of (fe)male auditors? *Journal of Business Ethics*, 1–22.
- Paino, H., & Iskandar, T. I. T. (2021). Governance issues on earnings management: a case of the manufacturing industry. *Universal Journal of Accounting and Finance*, 9(6), 1582-1593.
- Pallant, J. (2016). SPSS Survival Manual: A step-by-step guide to data analysis using IBM SPSS (6th ed.). McGraw-

Hill Education.

- Park, H., Lee, H., & Kim, J. (2019). Investment in internal auditing and governance characteristics. *Managerial Auditing Journal*, 34(5), 627-652.
- Peni, E., & Vähämaa, S. (2010). Female executives and earnings management. *Managerial Finance*, 36(7), 629–645.
- Prasad, N., Hay, D., & Chen, L. (2021). Internal audit use, earnings quality and external audit fees. *Pacific Accounting Review*, 33(4), 474- 504.
- Putra, A., & Setiawan, D. (2024). Do CEO characteristics affect earnings management? *Corporate Governance*, 24(5), 1137–1155.
- Puhat, N. H. A., Hasnan, S., Kharuddin, K. A. M., Marzuki, H., & Ali, M. M. (2024). Board characteristics and financial performance: evidence from Bursa Malaysia Financial Times Stock Exchange (FTSE) Top 100 Index firms. *Jurnal Pengurusan*, 71, 1-14.
- Qamhan, M. A. (2020). Internal audit sourcing and earnings management: Evidence from Oman. *Journal of Advanced Research in Dynamical and Control Systems*, 12(1), 153-160.
- Rahim, M., Kuruppu, S., & Islam, M. (2022). Social auditing in the supply chain: business legitimisation strategy rather than a change agent. *Meditari Accountancy Research*, 31(6), 1606-1633.
- Rizzotti, D., & Frisenna, C. (2025). Do women behave more ethically than men? Evidence from the impact of female CEO on the level of earnings management. In M. Agostini, V. Beretta, M. C. Demartini, A. Ghio, & S. Trucco (Eds.), *Diversity and equity in accounting*. Springer.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335–370.
- Rusydi, M. (2021). The impact of CEO narcissism behavior on firm performance through earnings management. *Atestasi Jurnal Ilmiah Akuntansi*, 4(1), 53–60.
- Selvarajah, C., & Meyer, D. (2008). One nation, three cultures: exploring dimensions that relate to leadership in Malaysia. *Leadership & Organization Development Journal*, 29(8), 693-712.
- Shah, S., Rashid, A., & Malik, W. (2020). Potential Substitution Between Accrual Earnings Management and Real Earnings Management Among Pakistani Listed Firms. *Global Business Review*, 25, 180-197.
- Shin, H. and Park, S. (2022). Does human resource investment in internal controls and information technology improve audit efficiency? *International Journal of Auditing*, 26(4), 515-533.
- Sitanggang, R., Karbhari, Y., Matemilola, B., & Ariff, M. (2019). Audit quality and real earnings management: Evidence from the UK manufacturing sector. *International Journal of Managerial Finance*, 16(2), 165–181.
- Twongirwe, C., & Bakundana, M. (2025). CEO age and stock price synchronicity—International Review of Financial Analysis, 103, 104195.
- Ullah, I., Majeed, M. A., Fang, H. X., & Khan, M. A. (2020). Female CEOs and investment efficiency: Evidence from an emerging economy. *Pacific Accounting Review*, 32(4), 443–474.
- Wahab, E. A. A., How, J. C. Y., & Verhoeven, P. (2025). Ethnicity-based director network and earnings quality. *Asia-Pacific Journal of Accounting & Economics*, 32(2), 251–277.
- Wahab, E., Gist, W., Gul, F., & Zain, M. (2021). Internal auditing outsourcing, non-audit services, and audit fees. *Auditing: A Journal of Practice & Theory*, 40(2), 23-48.

- Wan Mohammad, W. M., & Wasiuzzaman, S. (2020). Effect of audit committee independence, board ethnicity and family ownership on earnings management in Malaysia. *Journal of Accounting in Emerging Economies*, 10(1), 74–99.
- Wang, W., & Zheng, K. (2019). Real earnings manipulation and future performance: A revisit using quarterly data of firms with debt covenants. *Review of Financial Economics*, 38(1), 76–96.
- Wang, Y., Ma, J., & Wang, T. (2021). Do all female directors have the same impact on corporate social responsibility? The role of their political connection. *Asia Pacific Journal of Management*, 40, 1–28.
- Wooldridge, J. M. (2010). *Econometric Analysis of Cross-Section and Panel Data* (2nd ed.). MIT Press.
- Zadeh, F. N., Askarany, D., Shirzad, A., & Faghani, M. (2023). Audit committee features and earnings management. *Heliyon*, 9(10).
- Zhao, Q., Gao, J., & Wang, S. (2016, June). Literature review on the relationship between managerial ability and real earnings management. In 2016 13th International Conference on Service Systems and Service Management (ICSSSM) (pp. 1–4). IEEE.



© 2026 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY-NC-ND) license (<http://creativecommons.org/licenses/by/4.0/>).