RETHINKING AUDIT COMMITTEE COMPETENCE: ACCREDITATION, EXPERIENCE, AND DIGITAL SKILLS IN CONSTRAINING REAL EARNINGS MANAGEMENT

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Abstract

This study examines how audit committee (AC) competencies influence real earnings management (REM) in Malaysian publicly listed companies (PLCs) during a period of significant governance reform (2017 to 2019). Using secondary data from annual reports and financial databases, the analysis revealed that different forms of AC expertise exert divergent effects on financial reporting oversight. Financial expertise associated with Malaysian Institute of Accountants (MIA) membership (ACMIA) consistently constrains REM, highlighting the importance of statutory accreditation, professional ethics, and jurisdiction-specific regulatory knowledge. In contrast, financial expertise without MIA membership (ACFIN) is positively associated with REM, suggesting that technical expertise alone may be insufficient to ensure effective governance when it is not institutionally embedded within the local regulatory environment. Digital competence within the AC (ACDIGI) exhibits a weaker but significant negative relationship with REM, indicating its emerging importance in increasingly digitalised reporting systems. By distinguishing between MIA-accredited and non-MIA financial expertise and introducing digital competence as an additional dimension of AC capability, this study extends agency theory, resource dependence theory, and Masli et al.'s (2018) multidimensional board effectiveness framework. The findings highlight the importance of aligning professional expertise with institutional context and technological capability to strengthen financial oversight and enhance reporting integrity in emerging markets.

Keywords: Audit Committee Competencies, Real Earnings Management, Financial Expertise, Financial Accreditation, Digital Competence

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1. INTRODUCTION

Audit committees (ACs) play a pivotal role in corporate governance (CG), serving as guardians of financial reporting integrity and reinforcers of internal control systems (Alqatamin & Alqatamin, 2024; Alshammari, 2024; Flayyih et al., 2024; Hadi et al., 2025; Naim et al., 2025; Sihombing & Nurhaliza, 2025). However, many of the existing scholars evaluate their effectiveness in a broad, undifferentiated manner, often neglecting the specific qualifications and specialised expertise of individual members. Building on Masli et al. (2018), this study disaggregates AC competencies into three distinct dimensions: 1) financial expertise with Malaysian Institute of Accountants (MIA) (ACMIA), 2) financial expertise without MIA membership (ACFIN), and 3) digital competence (ACDIGI). This refined classification provides a more nuanced perspective on how different forms of expertise shape ACs' ability to detect and constrain real earnings management (REM), particularly within Malaysia's principles-based regulatory framework (Securities Commission Malaysia, 2021b).

The accelerating digitalisation of business, driven by the Fourth Industrial Revolution, has expanded the scope of AC responsibilities. Acknowledging this transformation, the MIA launched its Digital Technology Blueprint in 2018, aligned with International Federation of Accountants guidance. The Blueprint identifies automation, big data, and cybersecurity as strategic competencies for finance professionals, stressing that AC members, especially those with statutory accreditation, must integrate digital literacy into governance and assurance processes (MIA, 2018).

Malaysia provides a particularly compelling setting for examining these issues. Between 2016 and 2019, the CG landscape underwent significant reforms through the introduction of the Companies Act 2016 (CA 2016), the revised Malaysian Code on CG (MCCG 2017), the new Malaysian Financial Reporting Standards (MFRS 9, 15, and 16), and the professionalisation of governance roles such as AC membership (CA 2016, 2016; Malaysian Accounting Standards Board [MASB], 2024; Securities Commission Malaysia, 2017). Yet, despite these institutional advances, REM remains widespread. Unlike accrual-based earnings management (AEM), which can often be detected through traditional audit procedures, REM involves operational decisions such as excessive production, aggressive discounting, or the curtailment of discretionary expenditure that remain permissible under accounting rules (Dharwadkar et al., 2025; Nurjanah et al., 2025). While technically compliant, such practices undermine the credibility of financial statements, mislead stakeholders, and erode long-term firm value (Cohen & Zarowin, 2010; Dharwadkar et al., 2025). Globally, REM accounts for approximately 89% of financial statement fraud cases (Association of Certified Fraud Examiners, 2024), which highlights its systemic significance. In Malaysia, corporate failures, including Serba Dinamik, Sapura Energy, and KNM Group, illustrate how REM can function as a precursor to outright fraud, thereby exposing persistent weaknesses in governance (Hasnan et al., 2022; Teen, 2021).

These challenges persist despite successive reforms. Structural and institutional features such as concentrated family ownership, politically connected boards, fragmented enforcement, and cultural norms that discourage dissent continue to dilute the monitoring effectiveness of ACs (Alqatamin & Alqatamin, 2024; Hadi et al., 2025). This raises a fundamental question

RQ: Do qualifications and competencies of AC members, rather than their mere presence, determine their ability to constrain REM in emerging markets?

High-profile corporate episodes provide further evidence. The collapse of Serba Dinamik showed that technically trained but non-accredited AC members failed to prevent manipulation, which led to disputes with KPMG and regulatory intervention by the Securities Commission Malaysia (Securities Commission Malaysia, 2021b). Similarly, the Revenue Group case illustrated how inadequate digital oversight created weaknesses in information technology (IT) governance and reporting systems, eventually prompting regulatory action (Yatim, 2023). These examples suggest that structural compliance, such as the MCCG's requirement for financial literacy (Securities Commission Malaysia, 2021a), is insufficient when qualification standards remain inconsistent. While some members hold statutory accreditation through the MIA, others rely on foreign credentials or experiential expertise that may not align with local requirements (Haji-Abdullah & Wan-Hussin, 2015; Mazza et al., 2023). At the same time, the increasing digitalisation of corporate reporting has created new risks of technologically enabled manipulation. Nevertheless, digital competence among AC members remains an overlooked dimension in both scholarship and practice, despite MIA's Digital Technology Blueprint (2018) emphasising the importance of digital awareness, cybersecurity literacy, and analytics as essential governance skills (Farhan et al., 2024; MIA, 2018; Ruel et al., 2021).

Against this backdrop, the present study disaggregates AC expertise into MIA-accredited financial expertise, non-MIA financial expertise, and digital competence to evaluate how these dimensions influence oversight capacity. By examining whether accreditation, international credentials, or digital proficiency are most effective in constraining REM, this study provides a more refined understanding of AC effectiveness. Theoretically, it extends Masli et al.'s (2018) multidimensional framework by distinguishing accredited and non-accredited expertise, while introducing digital competence as a novel governance resource. From an agency theory perspective, MIA-accredited members are bound by statutory obligations and ethical codes, positioning them as vigilant monitors of managerial behaviour. From a resource dependency theory (RDT) perspective, accredited expertise enhances governance capacity and supports coordination with auditors, while digital competence represents an emerging intangible asset that strengthens monitoring precision and resilience against digital risks.

Practically, the study generates insights for policymakers, regulators, and boards in Malaysia with comparable emerging economies. It highlights how targeted AC composition and balancing financial expertise with digital competence can

enhance monitoring effectiveness, curb opportunistic managerial behaviour, and strengthen investor confidence.

The remainder of this paper proceeds as follows. Section 2 reviews the literature and develops hypotheses. Section 3 outlines the research design. Section 4 presents the empirical results. Section 5 discusses the main findings. Section 6 concludes this study.

2. LITERATURE REVIEW

2.1. Real earnings management in corporate governance and the Malaysian context

Reliable financial reporting is fundamental to sustaining capital market confidence, as it provides stakeholders with transparent and decision-useful information (MASB, 2018). This reliability is compromised when managers engage in earnings management (EM), broadly defined as the deliberate manipulation of reported outcomes to achieve specific objectives (Davidson et al., 1987; Schipper, 1989). EM can be pursued through AEM, which relies on accounting adjustments and estimates, or through REM, which influences genuine operating decisions such as production, sales timing, or discretionary expenditure (Baatour et al., 2017; Dharwadkar et al., 2025; Roychowdhury, 2006).

REM is particularly problematic because it distorts underlying business choices and reduces efficiency, ultimately weakening long-term firm performance (Klish et al., 2022)—although it remains within the boundaries of Generally Accepted Accounting Principles and International Financial Reporting Standards. Managers often favour REM over AEM since it is less likely to be flagged by auditors and regulators, who may interpret it as part of normal operations (Cohen & Zarowin, 2010). Common practices include offering aggressive price discounts that affect cash flows (ACFL), producing beyond demand to lower unit costs (APCO), and reducing discretionary items such as research and development or marketing (ADEX) (Baatour et al., 2017; Dharwadkar et al., 2025; Roychowdhury, 2006). While such actions may allow firms to meet short-term targets, they undermine the credibility of financial statements and threaten long-term sustainability (Hasnan et al., 2022; Nurjanah et al., 2025; Rudyanto & Kusnadi, 2025).

CG mechanisms are intended to moderate these practices. Boards of directors, external auditors, institutional investors, and particularly ACs are critical in monitoring financial conduct and discouraging opportunistic behaviour. ACs with strong expertise in finance are generally expected to scrutinise complex reports more effectively and resist questionable managerial strategies (Financial Reporting Council [FRC], 2024; SC, 2021a). Nonetheless, evidence from different contexts shows that formal structures alone are insufficient; the effectiveness of ACs is determined by specific competencies and the judgment of their members.

In Malaysia, research on REM is still emerging and often embedded within broader studies of EM. Findings remain inconclusive, where some studies suggest that financial knowledge within ACs helps reduce REM (Nuhu et al., 2023), while others observe limited or insignificant influence, especially in firms dominated by family ownership, where independence is diluted (Haji-Abdullah & Wan-Hussin, 2015). This inconsistency underscores the importance of moving beyond broad measures of financial literacy to examine the diverse qualifications and skills of AC members.

Malaysia's institutional setting provides a useful case for such inquiry. Its governance framework reflects a hybrid model that combines Anglo-American-style codes with concentrated ownership patterns. Reforms introduced through the CA 2016, the MCCG 2017, and the MIA Digital Blueprint 2018 were intended to enhance transparency and accountability, yet REM continues to be practised more extensively than in neighbouring Southeast Asian economies (Almarayeh et al., 2024; Enomoto et al., 2018; Nuhu et al., 2023; Nurjanah et al., 2025). Enduring institutional constraints such as family and state ownership, uneven enforcement, and social norms that discourage open challenge to authority limit the practical effectiveness of governance rules (Ghaleb et al., 2020; Wan Abdul Rahman & Mansor, 2019).

Similar dynamics are visible in other transitional economies. In Indonesia, weak professional accreditation diminishes ACs' oversight capacity (Nurjanah et al., 2025). In India, family-controlled firms frequently circumvent governance requirements despite the presence of strong codes (Nagar & Sen, 2016). In Gulf economies, concentrated ownership and limited enforcement undermine AC monitoring even where formal compliance exists (Almarayeh, 2024). These parallels suggest that Malaysia's experience reflects a wider pattern, as effective oversight of REM depends not merely on the presence of governance structures but on the specific competencies, accreditation, and contextual awareness of AC members.

2.2. Audit committee competencies and real earnings management practices

The AC plays a central role in safeguarding financial reporting quality (Alqatamin & Alqatamin, 2024; Alshammari, 2024; Flayyih et al., 2024; Hadi et al., 2025; Naim et al., 2025; Sihombing & Nurhaliza, 2025), yet its effectiveness in constraining REM depends critically on the competencies of its members. Competence extends beyond technical expertise to encompass ethical reasoning, behavioural assertiveness, and the ability to apply knowledge within specific institutional contexts (Boyatzis, 1982; Spencer & Spencer, 1993). From an agency theory perspective, competent ACs reduce information asymmetry and increase the expected costs of managerial manipulation (Jensen & Meckling, 1976). From an RDT perspective, they serve as embedded organisational resources that strengthen oversight capacity, improve coordination with auditors, and enhance resilience to emerging risks (Pfeffer & Salancik, 1978). Consistent with Masli et al. (2018), competence is non-compensatory, as its governance value materialises only when technical proficiency is combined with independence, diligence, and active engagement. Within this study, given the salience in Malaysia's evolving governance landscape, two dimensions of competence are emphasised: 1) financial expertise, and 2) digital competence.

2.2.1. Audit committee financial expertise and real earnings management mitigation

Financial expertise is widely regarded as a cornerstone of AC's effectiveness. Governance frameworks such as the MCCG (SC, 2021a), Bursa Malaysia Listing Requirements (BMLR) (Bursa Malaysia, 2023), and the UK CG Code (FRC, 2024) emphasise that ACs should include members who are financially literate and capable of scrutinising financial reporting judgements. Financial experts are expected to interpret complex reports, engage critically with auditors, and challenge managerial decisions that may impair reporting quality, including REM (Alqatamin & Alqatamin, 2024; Alshammari, 2024).

Importantly, this study does not classify AC members as "accredited" versus "non-accredited" financial experts. Instead, consistent with the Malaysian regulatory setting, the distinction is based on whether an AC financial expert is registered with the MIA. Under Paragraph 15.09(1)(c) of the BMLR, firms may appoint AC members with financial expertise through several routes (including qualification- or experience-based criteria), but MIA membership uniquely embeds members within Malaysia's statutory professional and ethical regime. Accordingly, this study differentiates between: 1) AC financial experts with MIA membership (ACMIA), and 2) AC financial experts without MIA membership (ACFIN) (Bursa Malaysia, 2023).

MIA is Malaysia's statutory accounting body established under the Accountants Act 1967, responsible for professional registration, ethical oversight, and disciplinary enforcement (MIA, 2022a, 2022b). MIA-registered experts are therefore not only technically trained but also exposed to Malaysia-specific reporting expectations, enforcement practices, and professional obligations (MIA, 2013; May-Amy et al., 2020). By contrast, non-MIA financial experts (ACFIN) may possess substantial technical capability (often through international qualifications or senior finance roles), but they are not necessarily subject to the same Malaysian statutory monitoring and disciplinary infrastructure and may vary in their familiarity with local enforcement norms and institutional constraints. From an agency theory perspective, ACMIA members offer stronger monitoring capacity, while from an RDT perspective, they reduce reliance on external advisors and enhance trust with auditors and investors.

This distinction matters because REM is shaped not only by technical knowledge, but also by the expert's ability and incentives to apply that knowledge in a context-sensitive and enforcement-aligned manner. In emerging markets, the effectiveness of financial expertise can depend on institutional embeddedness, independence from controlling owners, and alignment with local regulatory expectations. Therefore, the study proposes:

H1a: ACMIA is negatively associated with REM practices in Malaysia.

H1b: ACFIN is positively associated with REM practices in Malaysia.

2.2.2. Audit committee's digital competence and real earnings management mitigation

Alongside financial expertise, digital competence has become increasingly important as financial reporting processes are now deeply embedded within advanced digital infrastructures. Technologies such as enterprise resource planning (ERP) systems, artificial intelligence (AI), blockchain, and big data analytics have transformed the way financial data is generated, processed, and reported. While these technologies improve operational efficiency and data integration, they may also create new opportunities for manipulation that can escape traditional monitoring mechanisms. Recognising this shift, the MIA Digital Technology Blueprint emphasises the importance of digital awareness, cybersecurity knowledge, and data analytics capabilities among accounting and governance professionals (MIA, 2018). Empirical evidence also indicates that directors with digital expertise are better positioned to identify anomalies in digital systems, evaluate technology-based internal controls, and challenge management over technology-enabled manipulation (Gao et al., 2020; Wu et al., 2024).

Despite the growing digitalisation of financial reporting, digital competence is not explicitly required under the MCCG or the BMLR. Similarly, an international governance framework such as the UK CG Code emphasises financial expertise but does not mandate technological competence among AC members (FRC, 2024). Governance surveys have therefore identified a persistent digital capability gap among corporate boards in Malaysia (Grant Thornton, 2023). This gap may weaken oversight of digitalised reporting systems, allowing manipulation embedded in automated processes or algorithm-driven decision-making to remain undetected.

From an agency theory perspective, digital competence can reduce information asymmetry by improving directors' ability to monitor how financial data is generated, processed, and transmitted within complex digital reporting systems. Digitally competent AC members are better able to evaluate system controls, interrogate data integrity issues, and recognise irregular patterns that may signal manipulation of operational activities. At the same time, RDT views digitally competent directors as strategic organisational resources who enhance firms' ability to adapt to technological change, regulatory developments, and emerging cyber risks.

Importantly, digital competence complements rather than replaces financial expertise. Financial knowledge enables AC members to identify areas of financial reporting vulnerability, while digital competence provides the technological capability to examine how such vulnerabilities may be embedded in digital systems and operational processes. In this sense, digital competence strengthens both the competence and behavioural engagement dimensions of board effectiveness identified by Masli et al. (2018), enabling directors to combine financial understanding with technological oversight. Given the increasing reliance on digital technologies in financial reporting and internal control systems, ACs with digital expertise are

expected to strengthen monitoring over technology-enabled manipulation and reduce opportunities for REM. Therefore, the following hypothesis is proposed:

H2: ACDIGI is negatively associated with REM practices in Malaysia.

3. METHODOLOGY

3.1. Data sources, study period, and sample selection

This study employs secondary data from the annual reports of Malaysian publicly listed companies (PLCs), complemented by financial data from Thomson Reuters DataStream. Governance information, including ACs' qualifications and experience, was extracted from annual reports and cross-verified using statutory filings from the Companies Commission of Malaysia's (CCM) MyData portal. MyData is a reputable electronic database directly connected to companies officially registered with the CCM, offering accurate and up-to-date information (MyData, 2023). To ensure reliability, the financial expertise of AC members was independently confirmed against the MIA membership database.

The period from 2017 to 2019 was chosen as it coincided with intensive reforms: the CA 2016, the revised MCCG 2017, the new MFRS 9, 15, and 16, and the launch of the MIA Digital Blueprint. This timeframe captures the immediate impact of these reforms while avoiding later distortions such as COVID-19. A three-year panel also aligns with prior REM studies that favour short panels to balance comparability and statistical power (Al-Absy, 2022; Ge & Kim, 2014).

The initial population comprised 801 firms listed on Bursa Malaysia as of 31 December 2018. Following prior studies, financial institutions, utilities, real estate investment trusts (REITs), and closed-end funds were excluded due to their distinct regulatory frameworks. Firms with missing reports, incomplete data, or insufficient industry representation were also removed. The final sample consists of 434 firms (1,302 firm-year observations), broadly representative of Bursa Malaysia's sectoral distribution, with industrial products and consumer services dominating the sample. These procedures enhance the robustness and generalisability of the findings across non-financial Malaysian PLCs. The sample selection process is summarised in Table 1 below.

Table 1. Sample selection process

Criteria	*Number of companies*
Population of all companies listed on Bursa Malaysia (as of 31 December 2018)	801
Excluded due to financial institutions	(31)
Excluded due to the utility companies	(13)
Excluded due to REIT companies	(18)
Excluded due to closed-end fund companies	(20)
Excluded due to the unavailability of annual reports	(47)
Excluded due to incomplete REM data	(187)
Excluded due to fewer than eight observed industry groups per year	(51)
Final sample of companies considered in this study	434

Source: Authors' elaboration.

3.2. Variables and measurement

3.2.1. Real earnings management as a dependent variable

The dependent variable in this study is an aggregate measure of REM (*REMALL*), consistent with prior studies (Baatour et al., 2017; Nurjanah et al., 2025; Roychowdhury, 2006). *REMALL* is constructed from three components: 1) abnormal cash flow from operations (*ACFL*), 2) abnormal production costs (*APCO*), and 3) abnormal discretionary expenditures (*ADEX*). Each component was estimated using cross-sectional industry-year regressions following the models proposed by Roychowdhury (2006), where the residuals represent abnormal levels of operational activities associated with REM.

First, the *ACFL* from operations was estimated using the following regression model:

$$\frac{CFO_{it}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{S_{it}}{A_{i,t-1}} + \alpha_3 \frac{\Delta S_{it}}{A_{i,t-1}} + \varepsilon_{it} \quad (1)$$

where,

- CFO_{it} denotes cash flow from operations;
- $A_{i,t-1}$ represents total assets at the beginning of the year;
- S_{it} is sales revenue;
- ΔS_{it} is the change in sales;
- the residual term ε_{it} represents *ACFL* from operations.

Second, *APCO* was estimated using the following model:

$$\frac{PROD_{it}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{S_{it}}{A_{i,t-1}} + \beta_3 \frac{\Delta S_{it}}{A_{i,t-1}} + \beta_4 \frac{\Delta S_{i,t-1}}{A_{i,t-1}} + \varepsilon_{it} \quad (2)$$

where,

- $PROD_{it}$ represents production costs, calculated as the sum of cost of goods sold and changes in inventory;
- the residual term ε_{it} represents *APCO*.

Third, *ADEX* was estimated using the following regression:

$$\frac{DISEXP_{it}}{A_{i,t-1}} = \gamma_0 + \gamma_1 \frac{1}{A_{i,t-1}} + \gamma_2 \frac{S_{i,t-1}}{A_{i,t-1}} + \varepsilon_{it} \quad (3)$$

where,

• $DISEXP_{it}$ represents discretionary expenditures, including selling, general and administrative expenses, advertising expenses, and research and development costs;

• the residual term ε_{it} represents *ADEX*.

Following Roychowdhury (2006), the aggregate REM measure (*REMALL*) is computed as:

$$REMALL = (-ACFL) + APCO + (-ADEX) \quad (4)$$

This aggregation reflects the typical patterns of REM, where managers increase reported earnings by accelerating sales (reducing operating cash flows), overproducing to lower cost of goods sold, and reducing discretionary expenditures.

The use of the aggregate REM measure (*REMALL*) provides a more comprehensive representation of REM compared with analysing individual REM components separately. Prior studies argued that managers may employ multiple operational strategies simultaneously to manipulate earnings, and examining only one component may underestimate the overall extent of REM behaviour (Baatour et al., 2017; Roychowdhury, 2006). Therefore, the combined index captures the cumulative effect of various real activities manipulation strategies undertaken by firms to influence reported earnings.

3.2.2. Independent variables: Audit committee competencies

AC competencies in this study are operationalised across three dimensions. AC financial expertise is operationalised based on MIA membership status, consistent with BMLR (Bursa Malaysia, 2023). First, *ACMIA* is measured as the proportion of AC members registered with the MIA. This includes members registered directly with MIA and those who are members of professional bodies (e.g., Malaysian Institute of Certified Public Accountants) to the extent that they are also registered with MIA, thereby reflecting governance expertise that is embedded in Malaysia's statutory professional and ethical oversight framework (Bursa Malaysia, 2023; Haji-Abdullah & Wan-Hussin, 2015; MIA, 2022b).

Second, *ACFIN* is measured as the proportion of AC members who meet the financial expertise criteria through international professional qualifications such as the Association of Chartered Certified Accountants, Certified Public Accountant, or the Institute of Chartered Accountants in England and Wales, or those who have acquired substantial financial expertise through senior executive roles, such as chief financial officer positions, but not registered to MIA (Bursa Malaysia, 2023). This measure captures financially qualified members whose expertise is not institutionally anchored to Malaysia's statutory accounting body.

Finally, *ACDIGI* is defined as the proportion of AC members with formal qualifications or relevant professional experience in digital domains, including data analytics, cybersecurity, digital finance, and IT governance. This dimension encompasses both academic training in IT-related disciplines and professional roles involving digital leadership. *ACDIGI* reflects the committee's capacity to address technology-driven risks and to utilise emerging tools like AI, blockchain, and big data analytics to enhance financial oversight and reporting quality (Betti et al., 2024; Erhan et al., 2022; Haislip et al., 2020; Matta et al., 2019).

3.2.3. Control variables

In line with prior research on REM (Al-Absy, 2022; Haji-Abdullah & Wan-Hussin, 2015; Nurjanah et al., 2025), three firm-level control variables were incorporated into the analysis.

Profitability (return on assets, *ROA*) is measured as net income divided by total assets and captures firms' financial performance. More profitable firms are generally expected to rely less on REM because they face lower pressure to manipulate operational activities.

Leverage (*LEV*) is defined as total debt divided by total assets and reflects a firm's financial pressure. Firms with higher leverage may have stronger incentives to engage in earnings management to meet debt covenant requirements.

Audit quality (*BIG4*) is measured using a dummy variable, coded 1 if the firm is audited by a Big Four audit firm and 0 if otherwise. The inclusion of this variable is based on the assumption that higher-quality auditors provide stronger monitoring and impose greater constraints on opportunistic financial reporting.

3.3. Econometric approach

The hypotheses were tested using panel-corrected standard errors (PCSE) regression. PCSE is particularly suited to short panels with large cross-sections, as it adjusts for heteroskedasticity and contemporaneous correlation across firms (Beck & Katz, 1995; Law, 2018). Alternative techniques such as the generalised method of moments (GMM) or two-stage least squares (2SLS) can address endogeneity, but they are less appropriate here, as GMM suffers from instrument proliferation in short panels, while 2SLS requires strong instruments that are unavailable for governance variables. PCSE thus offers efficient and robust estimates given the data structure and research design (Daniel-Vasconcelos et al., 2023). The baseline specification incorporates the three AC competency variables (*ACMIA*, *ACFIN*, *ACDIGI*) and control variables (*ROA*, *LEV*, *BIG4*):

$$REMALL = \beta_0 + \beta_1 ACMIA_{it} + \beta_2 ACFIN_{it} + \beta_3 ACDIGI_{it} + \beta_4 ROA_{it} + \beta_5 LEV_{it} + \beta_6 BIG4_{it} + \varepsilon_{it} \quad (5)$$

where,

• *REMALL* denotes aggregate REM;

• *ACMIA* represents AC members with MIA membership;

• *ACFIN* captures financial expertise among AC members without MIA accreditation;

• *ACDIGI* measures digital competence within the AC;

• *ROA* refers to return on assets;

• *LEV* denotes the leverage ratio;

• *BIG4* indicates whether the firm is audited by a Big Four audit firm.

Robustness checks included alternative REM proxies and lagged specifications to mitigate potential endogeneity concerns (Nassir Zadeh et al., 2023).

4. FINDINGS AND DISCUSSION

4.1. Descriptive statistics

Table 2 presents the descriptive statistics for the *REMALL*. The mean value of 0.003 suggests that, on average, firms in the sample engage in relatively low levels of REM. This near-zero mean value indicates that upward and downward REM largely offset each other across firms. Positive values of REMALL indicate income-increasing REM, typically achieved through operational actions such as overproduction (*APCO*) or reductions in discretionary expenditures (*ADEX*). In contrast, negative values represent income-decreasing real activities, which may occur when firms adjust operations to reduce reported earnings in a given period.

The distribution of REMALL ranges from -1.550 to 1.120, indicating considerable variation in REM practices among Malaysian PLCs. Such dispersion suggests that while some firms follow relatively conservative reporting practices, others engage in more aggressive REM. This heterogeneity is consistent with prior evidence showing that the intensity of REM varies significantly across firms in emerging markets (Enomoto et al., 2018; Hasnan et al., 2022; Nurjanah et al., 2025). Although the extreme minimum and maximum values may influence the mean, the median value of 0.020 and the standard deviation of 0.249 indicate that the overall distribution of REM practices is not driven solely by outliers but reflects meaningful variation across the sample firms.

Table 2. Descriptive statistics for real earnings management practices

Variable	*Mean*	*Std. dev.*	*Median*	*Min*	*Max*
REMALL	0.003	0.249	0.020	-1.550	1.120

Note: N = 1302.

Table 3 presents the descriptive statistics for the independent and control variables used in the regression analysis. For dummy variables, frequency distributions provide a clearer representation of the presence of specific governance attributes across firms.

With respect to AC competencies, 36.1% of firm-year observations report the presence of at least one AC member holding MIA membership (*ACMIA*), while 63.9% do not. This suggests that although professionally accredited accounting expertise is present in a considerable proportion of Malaysian PLCs, it is not universally adopted across firms. In comparison, studies in Indonesia reported lower levels of formal financial accreditation among AC members (Susanto & Pradipta, 2016), while in developed markets, such as the United States and the UK financial expertise, they are more consistently represented due to stricter governance requirements (Carcello et al., 2006; FRC, 2024).

Similarly, 28.5% observations indicate the presence of financial expertise without MIA membership (*ACFIN*), whereas 71.5% firms do not report such expertise. This pattern suggests that some firms rely on financial expertise obtained through professional experience or international credentials rather than domestic professional accreditation. Such reliance on experiential expertise is commonly observed in emerging economies characterised by concentrated ownership and family-controlled firms (Nuhu et al., 2023).

In contrast, digital competence within the AC (*ACDIGI*) appears in only 4.9% observations, indicating that very few firms include members with formal digital or technological expertise. This finding highlights a notable digital capability gap among Malaysian boards. Governance surveys have similarly reported limited technological literacy among board members in Malaysia (Grant Thornton, 2023). Compared with jurisdictions where digital oversight has increasingly been incorporated into governance frameworks (Gao et al., 2020; Wu et al., 2024), the relatively low prevalence of digital competence suggests that Malaysian firms may still be at an early stage of integrating digital expertise into board oversight structures.

Regarding audit quality, 36.9% firms in the sample were audited by Big Four audit firms, while 63.1% were audited by non-Big Four auditors. Although this proportion is lower than that typically observed in developed markets, it remains consistent with evidence from other emerging economies, where engagement of Big Four auditors is often associated with larger firms or those with greater exposure to international investors (Sagitaria & Mita, 2019).

Table 3. Descriptive statistics for independent and control variables

Variables	*Mean*	*Std. dev.*	*Median*	*Min*	*Max*
ACMIA	0.361	0.198	0.330	0.000	1.000
ACFIN	0.285	0.277	0.330	0.000	1.000
ACDIGI	0.049	0.131	0.000	0.000	1.000
ROA (%)	3.281	8.368	2.955	–44.430	52.590
LEV	0.249	0.963	0.214	0.000	32.177
BIG4	0.369	0.483	0.000	0.000	1.000

Note: N = 1302; ACMIA represents AC members with Malaysian Institute of Accountants (MIA) membership; ACFIN captures financial expertise among AC members without MIA accreditation; ACDIGI measures digital competence within the AC; ROA refers to return on assets; LEV denotes the leverage ratio; BIG4 indicates whether the firm is audited by a Big Four audit firm.

Turning to the continuous control variables, the average *ROA* is 3.281%, indicating modest profitability across the sample firms. However, the wide range (-44.430% to 52.590%) reflects substantial variation in firm performance. Large negative *ROA* values may arise from distressed firms experiencing significant losses, while unusually high *ROA* values may occur in firms with relatively small asset bases or temporary profit spikes. Such dispersion in profitability is frequently observed in emerging market firms (Ge & Kim, 2014).

Leverage (LEV) records a mean value of 0.249, indicating that firms finance approximately one-quarter of their assets through debt. However,

the maximum value of 32.177 indicates the presence of several highly leveraged observations. These extreme values may occur when firms have very low equity bases or experience financial restructuring, which can inflate leverage ratios.

To mitigate the potential influence of extreme observations on the empirical analysis, all continuous variables were winsorised at the 1st and 99th percentiles prior to the regression analysis. This approach reduced the influence of outliers while preserving the overall distribution of the data. Overall, the descriptive statistics reveal substantial variation in AC competencies, profitability, and capital structure among Malaysian PLCs, providing a suitable basis for examining the relationship between governance characteristics and REM.

4.2. Correlation analysis

Table 4 reports the Pearson correlation coefficients for this study's variables. With respect to AC competencies, the presence of MIA-accredited financial experts (*ACMIA*) is negatively associated with *REMALL* ($r = -0.110$; $p < 0.01$), suggesting that certified domestic expertise enhances oversight effectiveness and reduces the likelihood of manipulative reporting. In contrast, AC financial expertise without MIA accreditation (*ACFIN*) shows a positive correlation with *REMALL* ($r = 0.100$; $p < 0.01$), implying that such expertise may be less effective—or even counterproductive in constraining REM. This outcome may reflect the limited alignment of internationally trained or experience-based members with Malaysia's jurisdiction-specific regulatory environment.

Digital competence within the AC (*ACDIGI*) is also negatively correlated with *REMALL* ($r = -0.040$), though the relationship is statistically insignificant ($p > 0.10$). This result highlights the emerging yet still underdeveloped role of digital literacy in financial oversight during the study period. Among the control variables, profitability (*ROA*) is negatively correlated with *REMALL* ($r = -0.132$; $p < 0.01$), consistent with the notion that more profitable firms face fewer incentives to engage in opportunistic earnings manipulation. Audit quality (*BIG4*) is also negatively associated with *REMALL* ($r = -0.101$; $p < 0.01$), supporting the argument that higher-quality external audits act as a disciplining mechanism. Leverage (*LEV*), however, is not significantly correlated with *REMALL* ($r = 0.043$; $p > 0.10$), suggesting that capital structure alone does not strongly explain variations in earnings management practices among Malaysian PLCs.

Table 4. Correlation matrix for *REMALL*

Variables	*REMALL*	*ACMIA*	*ACFIN*	*ACDIGI*	*ROA*	*LEV*	*BIG4*
REMALL	1.000						
ACMIA	-0.110***	1.000					
ACFIN	0.100***	-0.103***	1.000				
ACDIGI	-0.040	-0.088***	-0.014	1.000			
ROA (%)	-0.132***	-0.004	-0.017	0.010	1.000		
LEV	0.043	-0.005	-0.046*	-0.054*	-0.026	1.000	
BIG4	-0.101***	0.002	0.081***	0.026	0.029	0.008	1.000

*Note: REMALL denotes aggregate REM as per Model 1; ACMIA represents AC members with MIA membership; ACFIN captures financial expertise among AC members without MIA accreditation; ACDIGI measures digital competence within the AC; ROA refers to return on assets; LEV denotes leverage; BIG4 indicates whether the firm is audited by a Big Four audit firm. Statistical significance is denoted as *** p < 0.01, ** p < 0.05, * p < 0.10.*

4.3. Regression results

Table 5 presents the baseline regression results examining the relationship between AC competencies and REM. The model is statistically significant (Prob > $\chi^2 = 0.000$). The R^2 of 0.051 indicates that the model explains approximately 5.1% of the variation in REM. Although relatively modest, such explanatory power is common in REM studies because REM arises from complex operational decisions influenced by many firm-specific and unobservable managerial factors (Al-Absy, 2022; Baatour et al., 2017). The model focuses specifically on AC competencies; therefore, the explanatory variables are intentionally limited to governance attributes relevant to the research objective. While other factors, such as firm size, firm age, sales growth, ownership structure, or chief executive officer duality, may also influence REM, the study incorporates key control variables like profitability (*ROA*), leverage (*LEV*), and audit quality (*BIG4*) to mitigate omitted variable bias while preserving the focus on AC competencies. These results confirm that AC characteristics play a meaningful role in shaping firms' reporting practices.

Table 5. Regression results

Variables	*Coefficient*	*Standard error*
ACMIA	-0.113***	0.023
ACFIN	0.110***	0.011
ACDIGI	-0.074***	0.029
ROA	-0.156***	0.059
LEV	0.029***	0.005
BIG4	-0.054***	0.004
Constant	0.038***	0.011
Observations	1,302	
R-squared	0.051	
Prob > χ^2	0.000	
Number of firms	434	

*Note: REMALL denotes aggregate REM. ACMIA represents AC members with MIA membership; ACFIN captures financial expertise among AC members without MIA accreditation; ACDIGI measures digital competence within the AC; ROA refers to return on assets; LEV denotes the leverage ratio; BIG4 indicates whether the firm is audited by a Big Four audit firm. Statistical significance: *** p < 0.01, ** p < 0.05, * p < 0.10.*

Consistent with *H1a*, AC financial expertise with MIA membership (*ACMIA*) is negatively and significantly associated with REM ($\beta = -0.113$; $p < 0.01$). This finding suggests that MIA-registered expertise strengthens monitoring over operational manipulation. A plausible explanation is that MIA membership reflects not only technical competence but also jurisdiction-specific knowledge of Malaysian reporting practices, regulatory expectations, and

enforcement routines, reinforced by professional ethics and continuing professional development requirements (MIA, 2022b; May-Amy et al., 2020). From an agency perspective, ACMIA members may be more likely to exercise professional scepticism and challenge REM-related operational distortions; from an RDT perspective, their local standing can improve engagement with external auditors and reduce reliance on external consultants (Abad & Bravo, 2018; Jensen & Meckling, 1976; Pfeffer & Salancik, 1978).

In contrast, *ACFIN* is positively and significantly associated with REM ($\beta = 0.110$; $p < 0.01$), indicating that the presence of non-MIA financial experts is associated with higher REM. While seemingly counterintuitive given that many ACFIN members hold internationally recognised qualifications (often difficult to obtain), several explanations are plausible and consistent with the Malaysian institutional context.

First, the technical difficulty of international professional qualifications does not necessarily translate into effective constraints on REM. Unlike AEM, REM often occurs through operational decisions (e.g., overproduction or reductions in discretionary expenditures), which may appear as legitimate business activities. Effective monitoring, therefore, requires familiarity with firm operations, local reporting incentives, and the willingness to challenge management. Financial experts without MIA membership may possess strong technical knowledge but may lack the same institutional alignment with Malaysia's regulatory and governance environment. Second, selection effects may also explain the positive association. Firms with higher REM incentives may appoint internationally qualified experts to enhance credibility or signal strong governance to investors, without necessarily improving actual monitoring effectiveness. Third, the positive association does not contradict the negative effect observed for Big Four auditors. Big Four auditors function as independent external monitors with strong reputational incentives and regulatory oversight. In contrast, AC members are part of the firm's internal governance structure and may face organisational and ownership-related constraints that limit their ability to curb managerial discretion.

Turning to *H2*, the results indicate that digital competence within the AC (*ACDIGI*) is negatively and significantly associated with REM ($\beta = -0.074$; $p < 0.01$). This finding suggests that ACs possessing digital expertise are better positioned to monitor financial reporting processes embedded within increasingly digitalised organisational environments. Specifically, digitally competent AC members may be more capable of interrogating system-generated financial information, identifying anomalies in automated reporting processes, and evaluating technology-driven internal controls.

From an agency theory perspective, digital competence enhances the AC's ability to reduce information asymmetry between management and shareholders by strengthening oversight over how financial data is generated, processed, and reported within complex digital systems. As financial reporting increasingly relies on integrated platforms, such as ERP systems and data analytics tools, directors with technological expertise are better able to detect unusual patterns or operational decisions that may signal REM.

From the perspective of RDT, digitally competent AC members represent valuable organisational resources that enhance firms' capacity to respond to technological risks and regulatory expectations. Their presence may improve communication with internal auditors, information system specialists, and external auditors, thereby strengthening the governance infrastructure surrounding digital financial reporting processes (Cooper et al., 2019). Although the coefficient magnitude is smaller relative to *ACMIA*, the result provides preliminary empirical support that digital expertise contributes to improved governance oversight in technology-intensive reporting environments. The relatively modest effect size may reflect the limited prevalence of digital expertise among AC members in Malaysian PLCs, as indicated by the low frequency of *ACDIGI* within the sample. This suggests that while digital competence can enhance monitoring effectiveness, its governance impact may remain constrained unless combined with broader financial expertise and institutional regulatory knowledge, consistent with the multidimensional board effectiveness framework proposed by Masli et al. (2018). Overall, the findings highlight the emerging governance importance of digital competence in strengthening AC oversight and mitigating REM in increasingly digitalised corporate reporting environments.

Control variables behave largely as expected. Profitability (*ROA*) is negatively associated with REM ($\beta = -0.156$; $p < 0.01$), consistent with the view that profitable firms face reduced incentives for manipulation (Gunny, 2010). Leverage (*LEV*) is positively and significantly related to REM ($\beta = 0.029$; $p < 0.01$), reflecting the pressure of debt covenants and refinancing incentives (Al-Absy, 2022; Cohen & Zarowin, 2010). Audit quality (*BIG4*) is negatively associated with REM ($\beta = -0.054$; $p < 0.01$), underscoring the role of high-quality auditors in deterring opportunistic reporting through reputational capital and rigorous monitoring (Chi et al., 2011; Sani et al., 2018).

4.4. Robustness check

To assess the stability and reliability of the baseline results, two robustness tests were performed. First, alternative proxies for REM were employed. Specifically, two commonly used REM measures were constructed: *REM1* (*APCO + ADEX*), and *REM2* (*ACFL + ADEX*), following prior REM literature. These proxies capture different operational channels through which managers manipulate real activities, thereby providing a more comprehensive test of the relationship between AC competencies and REM.

As reported in Table 6, the results remain largely consistent with the baseline findings. *ACMIA* continues to exhibit a negative and statistically significant association with REM across all alternative proxies (*REMALL*: $\beta = -0.133$; *REM1*: $\beta = -0.098$; *REM2*: $\beta = -0.064$; all $p < 0.01$). This persistence indicates that financial expertise accredited by the MIA consistently constrains opportunistic real activities manipulation.

In contrast, *ACFIN* remains positively and significantly associated with REM across all specifications (*REMALL*: $\beta = 0.110$; *REM1*: $\beta = 0.089$;

REM2: $\beta = 0.050$; all $p < 0.01$). The consistency of this positive relationship reinforces the earlier interpretation that financial expertise without MIA membership may not provide the same level of monitoring effectiveness within the Malaysian governance environment.

The results for *ACDIGI* reveal a more nuanced pattern. Digital competence shows a negative and significant relationship with *REMALL* ($\beta = -0.074$; $p < 0.01$) and *REM1* ($\beta = -0.040$; $p < 0.05$) but remains statistically insignificant with *REM2* ($\beta = -0.015$; $p > 0.10$). This suggests that digital literacy within the AC may be more effective in monitoring operational decisions related to production and sales activities, rather than managerial adjustments to discretionary expenditures. Overall, the alternative REM specifications confirm that the core findings are robust to different measures of real activities manipulation.

Table 6. Regression results for alternative real earnings management proxies

Variables	*REM1 (Model 2)*		*REM2 (Model 3)*	
	Coefficient	*Standard error*	*Coefficient*	*Standard error*
ACMIA	-0.098***	0.024	-0.064***	0.009
ACFIN	0.089***	0.013	0.050***	0.005
ACDIGI	-0.040**	0.017	-0.015	0.023
ROA	-0.094**	0.040	-0.058**	0.028
LEV	0.021***	0.005	0.011***	0.003
BIG4	-0.026***	0.001	-0.038***	0.004
Constant	0.023**	0.010	0.027***	0.007
Observations	1,302		1,302	
R-squared	0.039		0.044	
Prob > χ^2	0.000		0.000	
Number of firms	434		434	

*Note: REM1 = APCO + ADEX; REM2 = ACFL + ADEX; ACMIA represents AC members with MIA membership; ACFIN captures financial expertise among AC members without MIA accreditation; ACDIGI measures digital competence within the AC; ROA = return on assets; LEV = leverage ratio; BIG4 = Big Four auditor dummy. Statistical significance: *** p < 0.01, ** p < 0.05, * p < 0.10.*

Second, lagged model specifications were estimated to mitigate potential concerns regarding reverse causality and endogeneity. Lagged independent variables allow governance characteristics to precede REM outcomes temporally, thereby strengthening causal interpretation. The results of the lagged regression models are presented in Table 7. The findings remain consistent with the baseline estimations.

Lagged *ACMIA* continues to exhibit a negative and statistically significant association with REM across all measures (*REMALL*: $\beta = -0.105$; *REM1*: $\beta = -0.094$; *REM2*: $\beta = -0.060$; all $p < 0.01$). This result further confirms the stabilising effect of MIA-membership financial expertise in constraining REM. Similarly, lagged *ACFIN* remains positively associated with REM across all models, indicating that non-MIA membership financial expertise does not provide an effective deterrent against opportunistic reporting behaviour.

Lagged *ACDIGI* also demonstrates a consistently negative relationship with REM (*REMALL*: $\beta = -0.105$; *REM1*: $\beta = -0.044$; *REM2*: $\beta = -0.034$; all $p < 0.01$). The persistence of this effect suggests that digital competence within the AC contributes to improved oversight of technology-driven reporting processes over time.

Table 7. Regression results for robustness test for endogeneity

Variables	*REMALL*		*REM1 (Model 2)*		*REM2 (Model 3)*	
	Coefficient	*Standard error*	*Coefficient*	*Standard error*	*Coefficient*	*Standard error*
L_ACMIA	-0.105***	0.033	-0.094***	0.035	-0.060***	0.013
L_ACFIN	0.101***	0.011	0.090***	0.005	0.049***	0.007
L_ACDIGI	-0.105***	0.019	-0.044***	0.015	-0.034***	0.009
L_ROA	-0.150*	0.080	-0.088	0.056	-0.067*	0.035
L_LEV	0.027***	0.001	0.025***	0.004	0.005***	0.002
L_BIG4	-0.057***	0.003	-0.026***	0.002	-0.042***	0.003
Constant	0.043***	0.014	0.025*	0.014	0.032***	0.006
Observations	868		868		868	
R-squared	0.050		0.037		0.048	
Prob > χ^2	0.000		0.000		0.000	
Number of firms	434		434		434	

*Note: REMALL = aggregate REM (Model 1); REM1 = APCO + ADEX; REM2 = ACFL + ADEX. L_ACMIA represents lagged AC members with MIA membership; L_ACFIN captures lagged financial expertise among AC members without MIA accreditation; L_ACDIGI measures lagged digital competence within the AC; L_ROA = lagged return on assets; L_LEV = lagged leverage ratio; L_BIG4 = lagged Big Four auditor dummy. Statistical significance: *** p < 0.01, ** p < 0.05, * p < 0.10.*

5. DISCUSSION

5.1. Discussion of key findings

This study provides empirical evidence that AC competencies exert differentiated effects on REM in Malaysian PLCs. The findings indicate that ACMIA is consistently associated with lower levels of REM across all model specifications. This result underscores the importance of statutory professional registration, ethical obligations, and jurisdiction-specific regulatory familiarity in strengthening board oversight. In contrast, ACFIN is positively associated with REM, suggesting that financial expertise alone may not guarantee effective monitoring when it is not embedded within Malaysia's institutional and regulatory environment. Meanwhile, ACDIGI exhibits a significant negative

relationship with REM, although its effect size is smaller, reflecting its emerging but still limited role in governance oversight.

From an agency theory perspective, ACMIA members enhance monitoring effectiveness by reducing information asymmetry between managers and shareholders (Jensen & Meckling, 1976). Their familiarity with Malaysian financial reporting standards, regulatory expectations, and ethical requirements enables them to apply professional scepticism when evaluating managerial decisions that may distort operational performance (MIA, 2022b; May-Amy et al., 2020). From the perspective of RDT, MIA-registered experts represent valuable governance resources that strengthen the board's capacity to interpret financial information, interact with auditors, and navigate Malaysia's institutional reporting environment (Pfeffer & Salancik, 1978; Abad & Bravo, 2018).

The positive association between ACFIN and REM warrants careful interpretation. First, the technical difficulty of international professional qualifications does not automatically translate into effective constraint of REM, particularly because REM is often embedded in operational decisions rather than accounting adjustments (Roychowdhury, 2006). Detecting such practices requires strong familiarity with firm operations, local reporting incentives, and the willingness to challenge managerial actions. Financial experts without MIA membership may possess strong technical capabilities but may not share the same level of institutional alignment with Malaysia's regulatory environment.

Second, the results may reflect selection effects, whereby firms with stronger incentives to manage earnings appoint internationally recognised experts to signal credibility to investors without necessarily strengthening monitoring effectiveness. Under such circumstances, ACFIN may function partly as a legitimacy signal rather than as a direct governance mechanism, a phenomenon previously observed in emerging-market governance settings (Nuhu et al., 2023).

Third, ACFIN members may be more commonly appointed in firms with complex structures, concentrated ownership, or stronger performance pressures, where managerial discretion is greater, and monitoring is inherently more difficult (Yunos et al., 2014; Mazza et al., 2023). In such settings, financial expertise without strong institutional anchoring through MIA membership may be less effective in constraining opportunistic behaviour.

Importantly, this finding does not contradict the negative association observed for Big Four auditors. Big Four audit firms operate as external independent monitors with strong reputational incentives and established audit methodologies, which can effectively constrain opportunistic financial reporting (Carcello et al., 2006; Sagitaria & Mita, 2019). In contrast, AC members—regardless of their international qualifications—operate within the firm's internal governance structure and may face organisational or ownership-related constraints that limit their ability to challenge management.

Finally, digital competence (ACDIGI) also contributes to REM mitigation. Digitally competent AC members may be better able to evaluate system-generated financial information, scrutinise data analytics outputs, and interrogate automated reporting processes embedded within ERP systems or digital dashboards (Gao et al., 2020; Wu et al., 2024). Although the effect size is smaller than that of ACMIA, this finding highlights digital expertise as an emerging governance capability. In line with RDT, digital competence provides boards with strategic knowledge that enhances resilience to technological change and increasingly digitalised reporting environments (Cooper et al., 2019). However, the modest effect size suggests that digital competence alone may not fully constrain REM unless it is complemented by financial expertise and institutional regulatory familiarity (Masli et al., 2018).

5.2. Theoretical and empirical implications

The findings contribute to the literature on CG and earnings management by extending Masli et al.'s (2018) multidimensional framework of board effectiveness. Specifically, the results demonstrate that financial expertise is not a homogenous construct. Rather, its effectiveness depends on institutional embeddedness and regulatory alignment. The consistent negative association between ACMIA and REM highlights the importance of professional registration and jurisdiction-specific expertise as critical boundary conditions for agency theory's assumption that financial expertise enhances monitoring effectiveness (Jensen & Meckling, 1976).

The results also extend RDT by illustrating how different forms of expertise provide distinct governance resources. MIA membership reflects institutional knowledge embedded within the Malaysian regulatory environment, while digital competence represents an emerging form of board capital that enables directors to respond to technological change and data-driven reporting systems (Pfeffer & Salancik, 1978; Gao et al., 2020).

Furthermore, the positive association between ACFIN and REM suggests that expertise derived from international professional qualifications or executive experience may not always translate into effective monitoring when institutional familiarity is limited. This finding highlights an important boundary condition for both agency theory and governance research, since the effectiveness of financial expertise depends not only on technical capability but also on contextual alignment with regulatory, cultural, and enforcement environments.

5.3. Practical and policy implications

The findings offer several practical implications for regulators, boards, and nomination committees. First, the consistent effectiveness of ACMIA members suggests that MIA membership remains a critical governance benchmark for AC appointments in Malaysia. Regulators may therefore consider maintaining or strengthening professional registration requirements to ensure that financial experts possess adequate familiarity with domestic reporting standards and regulatory expectations (Bursa Malaysia, 2023; MIA, 2022b).

Second, the mixed results for ACFIN suggest that firms that appoint internationally qualified financial experts may benefit from local professional familiarisation programmes or continuing

professional education related to Malaysian reporting regulations and governance practices. Such initiatives could help bridge potential gaps between international technical expertise and local regulatory understanding.

Third, the results highlight the growing importance of digital competence within ACs. As financial reporting systems become increasingly digitalised, boards may need to incorporate directors with technological expertise or ensure that existing members receive appropriate digital governance training (MIA, 2018; Grant Thornton, 2023). Governance codes and regulatory frameworks may also consider incorporating digital literacy requirements into board composition guidelines.

More broadly, policymakers in jurisdictions without statutory accounting bodies may draw lessons from Malaysia's experience. The results suggest that governance effectiveness is strengthened when financial expertise is embedded within structured professional regulation, ethical oversight, and continuous professional development.

6. CONCLUSION

This study demonstrates that the effectiveness of ACs in constraining REM depends not merely on the presence of financial expertise, but on the institutional context in which that expertise is embedded. Financial expertise associated with MIA membership consistently constrains REM, suggesting that statutory professional registration and regulatory familiarity strengthen board monitoring effectiveness. In contrast, financial expertise without MIA membership is positively associated with REM, indicating that technical capability alone may be insufficient to constrain managerial discretion when institutional alignment is limited.

Digital competence also emerges as an important governance capability, even though it is still developing. While its impact is weaker than that of financial expertise with MIA membership, digitally competent directors contribute to stronger oversight of increasingly technology-driven reporting environments (Gao et al., 2020; Wu et al., 2024).

Overall, the findings extend agency theory and RDT by demonstrating that the effectiveness of governance expertise depends on accreditation, institutional alignment, and technological capability (Jensen & Meckling, 1976; Pfeffer & Salancik, 1978). For policymakers and practitioners, the results highlight the importance of strengthening professional accreditation standards while simultaneously integrating digital competence into board governance frameworks to safeguard financial reporting integrity in increasingly digitalised corporate environments.

This study has several limitations that offer opportunities for future research. First, the analysis focuses on Malaysian PLCs over the period from 2017 to 2019. Comparative studies across other emerging markets with different regulatory environments, ownership structures, or enforcement regimes could test whether the differentiated effects of ACMIA, ACFIN, and ACDIGI observed in this study generalise beyond Malaysia.

Second, the measurement of expertise relies on observable proxies such as professional membership and professional background. These proxies may not fully capture behavioural attributes such as professional scepticism, independence, or the effectiveness of AC deliberations. Future research could therefore employ qualitative or mixed method approaches, like doing interviews with AC chairs or surveys of directors, to better understand how expertise influences boardroom dynamics and monitoring behaviour.

Third, while the inclusion of digital competence represents a novel contribution, its overall impact remains modest due to its relatively low prevalence within the sample. Future studies could examine interaction effects between financial expertise and digital competence (e.g., ACMIA × ACDIGI) or between digital competence and audit quality (e.g., BIG4 × ACDIGI) to explore whether technological expertise strengthens other governance mechanisms (Masli et al., 2018).

Fourth, the study excludes financial institutions, utilities, and REITs to maintain comparability across firms. Future research could extend the analysis to these regulated sectors, where governance structures, technological infrastructures, and reporting requirements differ substantially.

Finally, future studies could explore the evolving role of professional accounting qualifications. Malaysia has set a national target of producing 60,000 professional accountants by 2030, yet recent reports indicate that this objective remains challenging to achieve (Poo, 2023). Further empirical research could examine whether different professional pathways, including MIA membership, international professional qualifications, or academic accounting degrees, can produce differing governance outcomes.

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