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# Entrenchment or Nepotism? The Trade-off between Accrual-Based and Real Earnings Management in Egyptian Family-Owned Firms

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## Abstract

This study investigates the influence of family-owned firms (FFs) in shaping managerial preferences for earnings management approaches, including accrual-based earnings management (AEM) and real earnings management (REM) within a sample of 109 non-financial firms listed on the Egyptian Stock Exchange. Analyzing a substantial dataset comprising 2,711 quarter-year observations from 2015 to 2022, the research employs the standard Jones (1991) accrual model to identify AEM while utilizing Roychowdhury (2006) approach to measure the utilization of REM through abnormal operating cash flows, discretionary expenses, and production levels. The findings of this study reveal that FFs significantly substitute AEM for REM to meet their pre-established family targets, with a significant inclination toward employing the REM approach. In contrast, the reliance on AEM appears statistically insignificant. These results illuminate the unique dynamics of earnings management within FFs, highlighting a potential oversight by auditors and regulators who may prioritize AEM over REM in their evaluations. Consequently, this research contributes important insights into the complexities of earnings management practices in the context of family dynamics, calling for a more nuanced understanding among stakeholders in the realm of corporate governance and financial monitoring.

**KeyWords:** Family-owned firms, Accrual-based earnings management, Real earnings management, Socioemotional wealth theory, Egyptian Stock Exchange.

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# ترسيخ أم محاباة؟ المفاضلة بين إدارة الأرباح عن طريق الاستحقاقات وإدارة الأرباح الحقيقية في الشركات المصرية المملوكة للعائلات

## ملخص البحث

تبحث هذه الدراسة في تأثير الشركات المملوكة للعائلات في تشكيل الأفضليات الإدارية لنهج إدارة الأرباح، بما في ذلك إدارة الأرباح عن طريق الاستحقاقات Accrual-based earnings management وإدارة الأرباح الحقيقية Real earnings management ضمن عينة من 109 شركة غير مالية مدرجة في البورصة المصرية. بتحليل مجموعة مكونة من 2711 مشاهدة ربع سنوية للشركات في الفترة من 2015 حتى 2022، استخدم البحث نموذج Jones (1991) لقياس إدارة الأرباح عن طريق الاستحقاقات، مع استخدام نموذج Roychowdhury (2006) لقياس إدارة الأرباح الحقيقية من خلال وجود مستويات غير عادية من التدفقات النقدية التشغيلية، النفقات التقديرية ومستويات الإنتاج. كشفت نتائج الدراسة أن الشركات المملوكة للعائلات تستبدل بشكل معنوي إدارة الأرباح عن طريق الاستحقاقات بإدارة الأرباح الحقيقية لتحقيق أهداف العائلة المحددة مسبقًا، مع الميل بشكل معنوي نحو استخدام إدارة الأرباح الحقيقية. بينما في المقابل، ظهر اعتماد تلك الشركات على إدارة الأرباح عن طريق الاستحقاقات غير معنوي إحصائيًا. تسلط هذه النتائج الضوء على الديناميكيات الفريدة لإدارة الأرباح داخل الشركات المملوكة للعائلات والتي قد يتم تجاهلها من قبل مراقبي الحسابات والهيئات التنظيمية حيث تكون الأولوية لإدارة الأرباح عن طريق الاستحقاقات على إدارة الأرباح الحقيقية في تقييماتهم. وبالتالي، يساهم هذا البحث في تكوين رؤى مهمة حول ممارسات إدارة الأرباح في سياق ديناميكيات العائلة، مما يدعو إلى فهم أكثر دقة بين أصحاب المصلحة في مجال إدارة الشركات والرقابة المالية.

**الكلمات المفتاحية:** الشركات المملوكة للعائلات، إدارة الأرباح عن طريق الاستحقاقات، إدارة الأرباح الحقيقية، نظرية الثراء الاجتماعي العاطفي socioemotional wealth theory، البورصة المصرية.

# 1- Introduction

Earnings indices have become essential accounting metrics that investors and other stakeholders heavily rely on to evaluate the firm's overall value and performance (Jang and Lee, 2021; Ismail, 2020a). These indices provide a quantitative basis for assessing firms' profitability and financial health, making them critical for informed investment decisions. Consequently, the issue of earnings manipulation practices has captured increasing attention from global researchers and regulatory bodies for their profound implications observed throughout the years, tracing back to the high-profile scandals in the early 2000s, with infamous incidents of Enron and WorldCom (Bansal, 2023), persisting recently with the similar scandals of XL Fleet, Fluor, and Newell Brands Corporations (SEC, 2023a; 2023b; 2023c). The persistence of these scandals has prompted a reevaluation of financial reporting integrity and the underlying motivations for earnings manipulation. Previous research outlined that managers tend to use their personal judgments to deliberately distort financial reports and alter accounting figures to present a misleadingly favorable image of the firm. This strategic manipulation, referred to as earnings management (EM), is frequently driven by the desire to meet specific targets, serve personal interests, mislead stakeholders, or influence contractual outcomes (Healy and Wahlen, 1999).

In a corporate environment characterized by information asymmetries and a clear separation between ownership and management control, managers often conduct EM in two principal strategies: accrual-based earnings management (AEM) and real earnings management (REM). AEM is the EM approach that implies selecting the appropriate accounting principles and procedures and altering the accounting estimates when reporting a specific transaction to reach positive profit-related information in financial statements (Salehi et al., 2020). On the other side, REM refers to manipulating accounting figures by scheduling the timing and scale of normal operational transactions involving sales activities, selling, general and administrative (SG&A) and advertising expenses, and overproduction, or through changing investment activities involving research and development (R&D) expenditures and disposal of fixed assets (Graham et al., 2005).

Recently, the managerial manipulation preference of using both REM and AEM jointly or alternatively to achieve the desired goals has gained growing attention from various stakeholders (Mnif and Ben Hamouda, 2020). While in fact, the switching decision between both EM strategies is triggered by different factors, including the degree of regulatory and auditor scrutiny (Alhadab and Clacher, 2018), the degree of accounting framework flexibility (Viana et al., 2023; Enomoto et al., 2018), the firm's political-connections (Ahmed et al., 2022), and likewise the firm's ownership structure (Dong et al., 2020; Saona et al., 2020).

Emphasizing the specific context of family-owned firms (FFs), these businesses have positioned themselves as key players in the global markets, establishing a significant contribution to the international and national economies (Moubarak, 2024c), accounting for over 70 percent of the worldwide gross domestic product and generating 60 percent of global employment (McKinsey&Company, 2024). Building on the socioemotional wealth (SEW) theory introduced by Gómez-Mejía et al. (2007) based on the theoretical lens of the behavioral agency theory (BAT), family founders' proclivity to particular courses of action or strategic decisions is often shaped by the existing legacy and values of the family (Avabruth and Padhi, 2023). In contrast to non-family-owned firms (NFFs), which primarily focus on deriving utility from maximizing economic resources and financial gains, FFs tend to obtain significant utility from their 'affective endowments', including family pride, long-standing relationships, desire to preserve the family's legacy for future generations. As quoted in Betts (2001) by the Italian family founder Giovanni Agnelli: "The company is an inheritance to be protected and handed on. It is the outcome of the next and each generation's commitment to the last." In a similar vein, John Walton, the son of Walmart's pioneering founder, describes his FF as more than just a commercial business they own; the firm, for him, represents a trust, a legacy that his family upholds (Weber and Lavelle, 2001).

However, the sustainable goals set by family founders often present significant challenges for minority shareholders, leading to type II agency problems. In such scenarios, minority shareholders may experience a distinct disadvantage

when dealing with controlling families who tend to prioritize their private long-term generational objectives over adhering to faithful disclosure and transparency (Al Amosh and Khatib, 2022; Alareeni and Hamdan, 2020). Consequently, strong family ties may foster an environment of furnished unethical practices of managing earnings to further their personal interests and enhance their family's legacy (Naz et al., 2024). Accordingly, the dynamics of family transitions between REM and AEM merit a closer investigation. Specifically, previous studies have indicated that FFs are generally less inclined to engage in REM practices, primarily driven by the desire to avoid real economic actions that would ultimately compromise long-term economic performance. By refraining from REM, Achleitner et al. (2014) evidenced that FFs aim to protect their long-term viability and ensure sustainable profitability for future generations. On the other side, research indicates a contrasting scenario, specifically in developing economies, where family involvement may exhibit different EM patterns due to the unique context characterized by weaker external scrutiny and less robust regulatory regimes. In such environments, FFs feel less pressure from external minority shareholders to maintain strict accounting practices or transparency, thus, these firms often exert more REM (Razzaque et al., 2016).

In these terms, we aim to offer valuable insights into the mixed findings regarding the families' tendencies to engage in EM practices, which appear to stem from various factors, particularly surrounding environmental conditions and the degree of external scrutiny present within the business market. Specifically, the study contributes to the current body of literature on FFs dynamics by focusing on firms listed on the Egyptian Stock Exchange (EGX) from 2015 through 2022. Despite being a leading notion of rich financial and regulatory institutions history that shaped the Middle East and North Africa (MENA) region's economic and professional landscapes (Moubarak and Elamer, 2024), Egypt, like most emerging and developing economies, faces unique challenges of low external scrutiny, limited investor control, concentrated ownership structure, and weak legal protection for minority shareholders (Moubarak, 2024b; Ismail, 2020b), which creates greater opportunities for manipulating earnings. In the unique context of

FFs, Egypt has experienced a significant resurgence in these firms, particularly following the implementation of free market policies that began in the 1970s. According to the analysis of the Egyptian Center for Economic Studies (ECES), as reported by PwC (2021), FFs play a crucial role in the Egyptian economy by accounting for nearly 50 percent of the total economic activity in the country and representing around 75 percent of activities within the private sector. Furthermore, FFs contribute significantly to the employment of a large portion of the population by employing approximately 70 percent of the labor force (Abouelseoud, 2019).

Apart from their economic importance and vital role in sustaining livelihoods in Egypt, FFs have recently encountered a series of political and economic changes that posed significant challenges to their continued existence, beginning with the Egyptian revolutions, subsequent amendments to the Egyptian constitution, and implementation of new regulatory policies, the frequent devaluations of the Egyptian currency, and the latest global outbreak of COVID-19 pandemic which has dramatically impacted the economies worldwide, including Egypt (Moubarak, 2024c; 2024a). Given these backdrops, there is a growing concern that Egyptian FFs may resort to EM as a strategy to navigate these precarious circumstances in an attempt to strengthen their financial standing and ensure their long-term survival in the increasingly competitive economic landscape. As such, this study seeks to empirically explore the effect of family involvement in a firm's management, given their relative alignment and entrenchment characteristics, on their likelihood of utilizing EM (i.e., AEM and REM). Secondly, the study intends to shed light on the treatment of these firms to the different EM approaches, specifically whether they are viewed as complementary or alternative approaches in comparison to NFFs in Egypt. Given that, to the best of the researchers' acknowledgment, there is a lack of prior evidence on how Egyptian FFs treat EM strategies. Thus, the dynamics of this relationship remain largely unexplored within the context of the country.

The primary finding of this paper provides evidence that the FFs have a significant tendency to trade-off between both EM approaches, AEM and REM. Moreover, the conducted analyses demonstrate a significant preference among FFs to manipulate their earnings through the firm's real activities (i.e., REM practices). This preference is consistent with the findings of previous studies within comparable emerging and developing economies (Calabrò et al., 2022; Razzaque et al., 2016). The reason behind this conclusion stems from the unique challenges and circumstances encountered by FFs in the emerging contexts of low levels of investor protection, weak governance structure, and inefficient enforcement of laws and regulations creating an enhanced opportunity and incentive for FFs to prioritize meeting short-term financial objectives over pursuing sustained long-term firm value, which stands in contrast to the practices observed among FFs in developed contexts (Achleitner et al., 2014). Moreover, the findings indicate that AEM is not significantly exercised in FFs compared to NFFs, suggesting that both firms possess comparable incentives to engage in an accounting-related EM approach.

By achieving the research objectives, this study seeks to introduce several contributions to the literature. On one hand, it provides unique empirical evidence on the trade-off between AEM and REM practices in a distinct and highly influential sector: the FFs. In addition, the evidence introduced by the current study adds to the EM literature by shedding light on FFs in emerging and developing economies, particularly Egypt, which, to the best of the researchers' knowledge, may seem to be under-researched compared to that of developed economies. On the other hand, from the professionals' points of view, the current research might be of interest to several parties. First, the financial statements users should recognize the dual influence of both operational practices and discretionary accruals when evaluating a firm's financial performance since FFs engage significantly in REM. This, in turn, necessitates heightened caution when analyzing the disclosed financial information, as REM diminishes the overall quality and reliability of earnings information content in a way that significantly affects valuation decisions in capital markets. Third, the findings of the study car-

ry an important call for both local and foreign investors looking to invest in Egyptian FFs as they have to prudently analyze their portfolio selection to mitigate risks associated with possible economic repercussions of REM. Finally, from a regulatory body's perspective, the study advocates for heightened "back door" scrutiny of REM to ensure transparency and integrity of financial statements.

The remainder of this paper is organized as follows: Section 2 reviews the related literature and develops the research hypotheses. Section 3 delves into the research methodology employed. Section 4 outlines the data analysis and discusses the empirical results. Finally, Section 5 concludes the paper and provides its limitations and opportunities for future research.

# 2- Literature Review and Hypotheses Development

## 2-1 Earnings Management: Theoretical Overview

The extant body of accounting literature has proposed various definitions of EM. For instance, one comprehensive definition introduced by Healy and Wahlen (1999) describes EM as the process by which managers leverage their personal judgment and discretion in financial reporting, involving strategically structuring transactions to manipulate the financial reports, with the dual intent of misleading stakeholders or influencing contractual outcomes based on the reported figures. Similarly, another definition by Leuz et al. (2003) emphasizes EM as the insider's alterations in the firms' economic performance aimed at deceiving users or affecting contractual benefits. More recently, Baskaran et al. (2020) emerges a more contemporary perspective by defining EM as a systematic strategy employed by firm managers to deliberately manipulate reported earnings to achieve a predetermined target and create an overly positive view of the firm and its financial position.

EM can be conducted through the deliberate selection of different accounting methods and policies, which often results in discrepancies between the accounting recognition of income and the occurrence of actual cash flows (Francis and Schipper, 2011), referred to as AEM. Furthermore, EM can also manifest in the form of REM, where managers alter the real operating decisions by acceler-

ating sales, adjusting shipment schedules, and delaying R&D expenditures (Dechow and Skinner, 2000; Healy and Wahlen, 1999). Roychowdhury (2006) referenced that firm managers alter normal operational practices by offering facilitated credit terms or higher sales discounts, engaging in overproduction, and aggressively reducing discretionary expenditures to increase margins. Under these definitions, previous research highlighted the significant differences between AEM and REM, particularly in terms of the associated benefits and costs (Baatour et al., 2017). Specifically, AEM has no direct effect on a firm's cash flows, which leads to a less severe effect on the firm's long-term valuation. However, AEM falls within the scope of the audit procedures, which makes it more susceptible to detection by auditors and regulatory authorities (Cohen and Zarowin, 2010).

Conversely, REM is integrated into daily business operations, rendering them less visible and more difficult for stakeholders to track. While this operational camouflage protects REM from immediate detection (Manowan and Lin, 2013), on the other side, it compromises the firm's performance, severely threatening its overall financial health in subsequent years (Roychowdhury, 2006). Expanding upon these influences of different EM approaches, a substantive body of research has explored how managers prefer to treat different EM approaches, considering them as either complements or substitutes in different contexts. Even though the majority of studies conclude that managers tend to substitute AEM and REM to meet their predetermined earnings targets (Shah et al., 2024; Khunkaew and Qingxiang, 2019; Zhu et al., 2015; Zang, 2012), a few other studies have concluded that both EM approaches play complementary roles in earnings reporting, suggesting that managers jointly and simultaneously employ AEM and REM in manipulating earnings (Das et al., 2017; Sellami, 2016; Chen et al., 2012).

These distinct associations between AEM and REM have motivated an increasing number of researchers to explain this variation in terms of a plethora of specific country-level and firm-level determinants, including national corruption levels (Christopoulos et al., 2023), political connections (Ahmed et al., 2022),

specific regulatory reforms (Ismail, 2017; Szczesny et al., 2008), compensation clawback provisions (Chan et al., 2015), the adoption of principles-based International Financial Reporting Standards (IFRS) (Viana et al., 2023; Ismail, 2017; Ferentinou and Anagnostopoulou, 2016), multiple directorships (Baatour et al., 2017), chosen business strategies (Purba et al., 2022), corporate diversification (Alhadab and Nguyen, 2018), audit quality (Mnif and Ben Hamouda, 2020), and auditor gender (Owusu et al., 2022).

In a similar vein, Achleitner et al. (2014) have also investigated whether family dominance in a firm's ownership and management structures within the German context results in treating AEM and REM in a substitutive or complementary way compared to NFFs. The findings of the study provide compelling empirical evidence that suggests a significant substitution relationship between AEM and REM in FFs, highlighting that family founders tend to trade-off between both EM strategies to achieve their financial objectives. Aside from the work of Achleitner et al. (2014), to the best of the researchers' acknowledgments, there is a lack of sufficient evidence on the complementary or substitutive relationship between AEM and REM in the FF's unique setting. Thus, to address this research gap, the current study aims to contribute to the ongoing debate on the relationship between EM different approaches in the Egyptian FFs context by proposing the following non-directional research hypothesis:

***H1****:* There is a significant association between REM and AEM practices in FFs listed on the Egyptian Stock Exchange.

## 2-2 Earnings Management Approaches in Family-Owned Firms

The SEW theory posits that family owners exhibit a heightened commitment to pursuing and preserving a favorable reputation of the firm since it is closely linked to the family's identity, dynastic succession, and emotional connections (Moubarak, 2024c; Sageder et al., 2018). Unlike NFFs, which tend to prioritize financial returns above all else, family founders approach their businesses with a broader perspective. They view their firm's reputation as not just a measure of their commercial success but also as a vital extension of their family legacy (Ber-

rone et al., 2012). For FFs, a strong reputation underscores their dedication to ethical practices and community values, reflecting their commitment to maintaining the family's trustworthiness. This sense of responsibility often drives family founders to make decisions that align with their sensitivity to reputational damage (Sundkvist and Stenheim, 2023), regardless of the transparency of their reporting. In this regard, the primary motivation driving the family owners to ignore the easily identifiable signs of AEM stems from their strong desire to evade scrutiny and detection by external parties. This is especially relevant since AEM is particularly vulnerable to detection by high-quality auditors and regulatory bodies (Zang, 2012). Thus, the potentially severe impact the detection of EM may have on a family's reputation is likely to lead family members to view the AEM strategy as less favorable (Sundkvist and Stenheim, 2023).

On the other hand, previous research has concluded inconsistent findings regarding the preferences of FFs to engage in REM. A particular study conducted within the German context by Achleitner et al. (2014) highlight that FFs tend to be less inclined to practice REM than NFFs. The study attributes this reluctance to the heightened concerns these family owners have about the potential long-term severe ramifications of REM on their overall future value. These concerns are grounded in the SEW theory, which posits that family founders prioritize the preservation of their family legacy for subsequent generations. As a result, Achleitner et al. (2014) suggest that FFs are less likely to engage in the EM approach, which consumes significant real resources over the long term and consequently puts the firm's survival in doubt. Moreover, a recent research by Durén-dez and Madrid-Guijarro (2018) confirm that increased family involvement in small and medium-sized FFs within the Spanish manufacturing sector leads to a significant reduction of REM practices.

However, Razzaque et al. (2016), referencing Bangladesh's specific context, suggest contradictory findings in emerging complex landscapes characterized by weak investor protections and ineffective enforcement of legal regulations. In such settings, family ownership dynamics play a key role in not only fortifying the authority of family owners but also exacerbating the risk of expropriation of

minority shareholders. As a result, family founders often exploit avenues to reinforce their entrenched positions within the firm, leading them to adopt more aggressive REM practices. These findings were further confirmed by the research conducted by Calabrò et al. (2022), which indicates that family founders demonstrate a greater willingness to bear the financial consequences associated with REM to avoid the reputational damage that may be caused by AEM practices. Therefore, REM is expected to occur more frequently among FFs in Egypt, which operate within a relatively weak governance setting. In light of the aforementioned discussion, the following research hypotheses have been formulated to further investigate the relationship between FFs and the various forms of EM approaches in the unique context of Egypt:

***H2a**: Compared to NFFs, FFs listed on the Egyptian Stock Exchange are less likely to engage in AEM practices.*

***H2b**: Compared to NFFs, FFs listed on the Egyptian Stock Exchange are more likely to engage in REM practices.*

# 3- Research Methodology

## 3-1 Population, Sample Selection, and Data Collection

The research analysis focuses on firms listed on the Egyptian Stock Exchange (EGX) over an eight-year period from 2015 to 2022. This research period was selected to avoid the impact of regulatory instabilities from the Egyptian Revolution in 2013, as well as the constitutional referendum and presidential elections in 2014. To ensure the study's relevance and accuracy, a purposive sampling technique was applied, which involved selecting a specific sample of firms based on the following criteria:

a) Financial institutions engaged in banking, insurance, and other financial activities were excluded from the analysis as they operate under distinct regulatory Acts governed by the Central Bank of Egypt and the Financial Regulatory Authority, which differ significantly from non-financial listed firms on the EGX.

b) Observations of missing firm-quarter-year that lacked dependent or independent variables were eliminated from the sample to ensure the analysis was based on a complete dataset.

c) Firm-quarter-year observations of extreme values or potential outliers have been excluded to avoid distorting the analysis. Table 1 presents an overview of the data cleansing process and the specification of the final sample used in this research.

Following the above procedures, the final research sample consists of 2,711 quarter-year observations of 109 firms belonging to 16 industries, as shown in Figure 1. Out of the 2,711 firm-quarters, FFs have been selected based on the definition of Moubarak (2024c) and Muttakin et al. (2014) who operationalized FFs as firms whose founders or a member of their family own at least 20 percent of controlling shares. Besides, the founder or a member of that family holds an influential managerial position in the firm, such as CEO, chairman, or executive director. Based on this definition, the data consisted of 771 firm-quarter-year observations of FFs, while the remaining 1,940 belonged to NFFs.

The research utilized secondary data sourced from multiple authorized sources. Firms' financial information was obtained from official financial statements publicly available on the sample firms' official websites, EGX official database, and Refinitiv Datastream databases (previously known as the Thomson Reuters Datastream database). Moreover, the researchers hand-collected non-financial information about the firm's ownership structure and board of directors (BOD)-related information extracted from the firms' published governance reports.

**Table 1: Data Cleansing Procedure and Final Research Sample**

| | **Firm-quarter-year Observations** |
|---|---|
| Number of firm-quarter-year observations for 8 years | 7,136 |
| *Less*: Financial institutions' quarter-year observations | (1,504) |
| *Less*: Missing firm-quarter-year observations | (2,699) |
| *Less:* Extreme firm-quarter-year observations | (222) |
| | 2,711 |
| Family-owned firms-quarter-year observations | *771* |
| Non-family-owned firms-quarter-year observations | *1,940* |

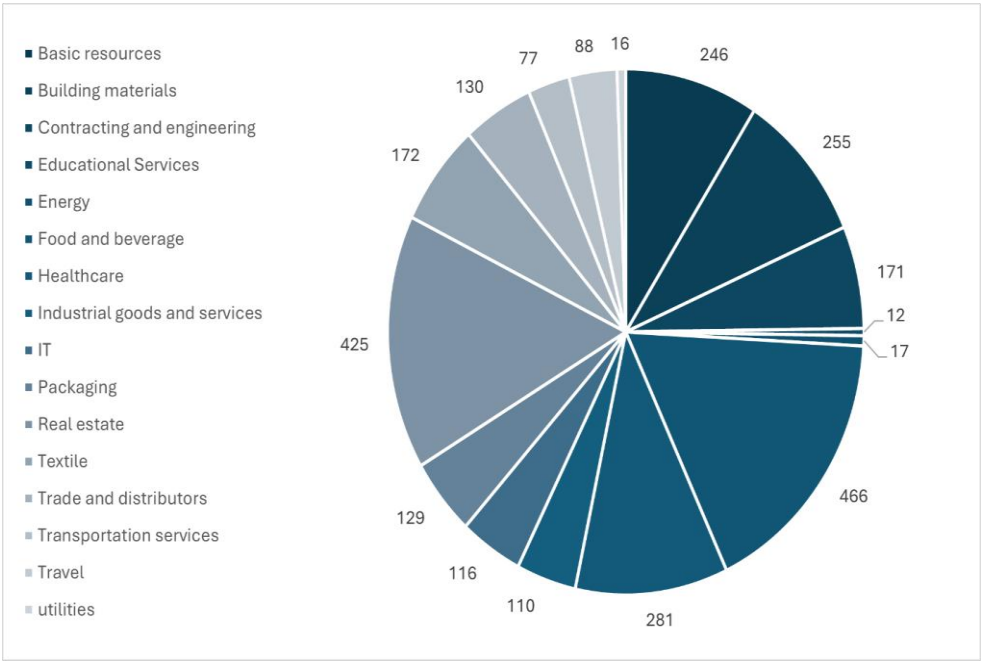


**Figure 1: Research Sample Classification by Industry**

Source: Researchers' own creation

## 3-2 Definition and Measurement of Research Variables

### 3-2-1 Dependent Variables

#### 3-2-1-1 Accrual-Based Earnings Management

Following the established body of accounting literature, this research assessed the presence of AEM by estimating discretionary accruals through the standard Jones model (SJM) as described in Jones (1991). The SJM was explicitly selected, following the previous research of Shah et al. (2024) and Duréndez and Madrid-Guijarro (2018), since it is identified as the most frequently used model in contemporary research published in reputable accounting journals, as evidenced by Christensen et al. (2022). To estimate discretionary accruals, the study employed the following model:

$$TACC_{it}/TA_{it-1} = \beta(1/TA_{it-1}) + \beta_1(\Delta SALES_{it}/TA_{it-1}) + \beta_2(PPE_{it}/TA_{it-1}) + \varepsilon_{it} \quad (1)$$

Where TACCt represents total accruals, including non-discretionary and discretionary accruals, ΔSALESit is the change in the firm's sales revenues, while PPEit refers to the gross property, plant, and equipment. The residual error term (εit) represents discretionary accruals that capture AEM. All variables in Equation (1) are divided by the firm's lagged total assets (TAit-1) to avoid the heteroskedasticity problem.

#### 3-2-1-2 Real Earnings Management

The research relies on the widely recognized model introduced by Roychowdhury (2006) to investigate the existence of REM. The model considers several potential scenarios that may indicate the existence of REM, including abnormally low levels of operational cash flows (CFO), abnormally low levels of discretionary expenditures (DIEXP), and abnormally high levels of production (PROD). According to by Roychowdhury (2006) the normal level of CFO can be expressed as a linear function of sales and change in sales as follows:

$$CFOit/TAit\text{-}1 = \beta\,(1/TAit\text{-}1) + \beta1(SALESit/TAit\text{-}1) + \beta2(\Delta SALESit/TAit\text{-}1) + \varepsilon it \quad (2)$$

while a normal level of DIEXP is calculated based on the following equation:

$$DIEXPit/TAit\text{-}1 = \beta(1/TAit\text{-}1) + \beta1(SALESit\text{-}1/TAit\text{-}1) + \varepsilon it \quad (3)$$

finally, the level of normal PROD is estimated based on the following equation:

$$PRODit/TAit\text{-}1 = \beta(1/TAit\text{-}1) + \beta1(SALESit/TAit\text{-}1) + \beta2(\Delta SALESit/TAit\text{-}1) + \beta3(\Delta SALESit\text{-}1\ /TAit\text{-}1) + \varepsilon it \quad (4)$$

where PROD represents the production costs calculated by adding the cost of goods sold to the change in inventory level.

The residuals from Equations (2), (3), and (4) are used as the proxy for REM, which corresponds to the abnormal levels of operating cashflows (AB_CFO), abnormal levels of discretionary expenditures (AB_DIEXP), and abnormal levels of production (AB_PROD), respectively. The research employs an aggregate index (AGG_REM) to capture the overall effect of REM, which is computed by adding the (-1) multiplication of standardized values of ACFO and ADIEXP to the standardized value of APROD, as follows:

$$AGG\_REMit = - AB\_CFOit - AB\_DIEXPit + AB\_PRODit \quad (5)$$

All variables used in equations from (1) – (5) are defined in Table 2, Panel A.

### 3-2-2 Independent Variable

To effectively identify FFs in Egypt, the study adopts the specific definition drawn by the previous research of Moubarak (2024c) and Muttakin et al. (2014), which assumes that FFs are characterized by an ownership structure where at least 20 percent of the firm's shares are owned by family members. Additionally, at least one member of the family holds an influential managerial role, such as CEO, chairman, or executive director. Therefore, based on this definition, the study measures FFs as a binary variable, which is assigned the value of 1 if the firm meets the aforementioned ownership and management criteria and 0 if otherwise. Table 2 Panel B defines this variable used to identify FFs.

### 3-2-3 Control Variables

Following a broad stream of previous research, the current study selects a set of control variables that may potentially affect AEM and REM practices. Table 2 Panel C defines the variables controlled in this study and their detailed measurements.

## 3-3 Regression Models

To test for the first hypothesis (H1) that investigates the substitutive relationship between AEM and REM practices in FFs, an interactive variable (AEM*FF) is used, following the research work of Achleitner et al. (2014). A negative (positive) coefficient of AEM*FF would be interpreted as evidence of a substitutive (complementary) relationship between different EM approaches in FFs. The first model is expressed as follows:

$$AGG\_REM_{it} = \beta_0 + \beta_1 AEM_{it} + \beta_2 FF_{it} + \beta_3 AEM_{it}*FF_{it} + \beta_4 FSIZE_{it} + \beta_5 LEV_{it} + \beta_6 DTE_{it} + \beta_7 ROE_{it} + \beta_8 ROA_{it} + \beta_9 CUR_{it} + \beta_{10} ATR_{it} + \beta_{11} NPM_{it} + \beta_{12} SGROW_{it} + \beta_{13} EPS_{it} + \beta_{14} LOSS_{it} + \beta_{15} CASH_{it} + \beta_{16} DEP_{it} + \beta_{17} BIG4_{it} + \beta_{18} Industry + \beta_{19} Quart + \varepsilon_{it} \quad (6)$$

Moreover, the following models have been used to test the research prediction of having smaller (larger) amounts of AEM (REM) in FFs in listed firms in Egypt (i.e., H2a and H2b), respectively:

$$AEM_{it} = \beta_0 + \beta_1 FF_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 DTE_{it} + \beta_5 ROE_{it} + \beta_6 ROA_{it} + \beta_7 CUR_{it} + \beta_8 ATR_{it} + \beta_9 NPM_{it} + \beta_{10} SGROW_{it} + \beta_{11} EPS_{it} + \beta_{12} LOSS_{it} + \beta_{13} CASH_{it} + \beta_{14} DEP_{it} + \beta_{15} BIG4_{it} + \beta_{16} Industry + \beta_{17} Quart + \varepsilon_{it} \quad (7)$$

$$AGG\_REM_{it} = \beta_0 + \beta_1 FF_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 DTE_{it} + \beta_5 ROE_{it} + \beta_6 ROA_{it} + \beta_7 CUR_{it} + \beta_8 ATR_{it} + \beta_9 NPM_{it} + \beta_{10} SGROW_{it} + \beta_{11} EPS_{it} + \beta_{12} LOSS_{it} + \beta_{13} CASH_{it} + \beta_{14} DEP_{it} + \beta_{15} BIG4_{it} + \beta_{16} Industry + \beta_{17} Quart + \varepsilon_{it} \quad (8)$$

**Table 2: Definitions and Measurements of Research Variables**

| **Panel A: Variables used to measure dependent variables (AEM & AGG_REM)** | |
|---|---|
| **Symbol** | **Definition** |
| $TACC_{it}$ | Total accruals for firm *i* at quarter *t*; calculated as the difference between a firm's net income and operating cash flows |
| $\Delta SALES_{it}$ | Change in firm *i* sales from quarter *t* and *t-1* |
| $PPE_{it}$ | Book value of gross property, plant, and equipment for firm *i* at the end of quarter *t* |
| $TA_{it-1}$ | Total assets of firm *i* at the end of quarter *t-1* |
| $CFO_{it}$ | Cash flows from operations of firm *i* at quarter *t* |
| $SALES_{it}$ | Sales revenue of firm *i* during the quarter *t* |
| $DIEXP_{it}$ | Discretionary expenses of firm *i* during quarter *t* are calculated as the sum of advertising and selling, general and administrative ($SG\&A_{it}$) expenses, and research and development ($R\&D_{it}$) expenses. |
| $SALES_{it-1}$ | Sales revenue of firm *i* during the quarter *t-1* |
| $PROD_{it}$ | Production costs of firm *i* in quarter *t*; calculated by adding cost of goods sold ($COGS_{it}$) to the changes in inventory level ($\Delta INV_{it}$) |
| $\Delta SALES_{it-1}$ | Change in firm *i* sales from quarter *t-1* and *t-2* |
| $AB\_CFO_{it}$ | Abnormal operating cash flows of firm *i* in quarter *t* |
| $AB\_DIEXP_{it}$ | Abnormal discretionary expenses of firm *i* in quarter *t* |
| $AB\_PROD_{it}$ | Abnormal production cost of firm *i* in quarter *t* |
| $AGG\_REM_{it}$ | Aggregate measure of three real earnings management practices; calculated by adding the (-1) multiplication of standardized values of AB_CFO and AB_DIEXP to the standardized value of AB_PROD |
| $AEM_{it}$ | Measure of accrual-based earnings management practices |

| **Panel B: Independent Variable** | |
|---|---|
| **Symbol** | **Definition** |
| $FFs_{it}$ | A dummy variable equals 1 if a family owns at least 20 percent of the firm's shares and a member of this family holds a managerial position (e.g., CEO, chairman, executive director, etc.) and 0 if otherwise |

| **Panel C: Control Variables** | | |
|---|---|---|
| **Variable** | **Symbol** | **Definition** |
| Firm Size | $FSIZE_{it}$ | The natural log of total assets in quarter *t* |
| Leverage | $LEV_{it}$ | The ratio of total debt at the end of quarter *t* by the total assets at the end of quarter *t* |
| Debt to Equity | $DTE_{it}$ | The ratio of total debt at the end of quarter *t* by the total equity at the end of quarter *t* |
| Return on Equity | $ROE_{it}$ | The ratio of net income during quarter *t* divided by the average total equity |

| | | |
|---|---|---|
| Return on Assets | $ROA_{it}$ | The ratio of net income during quarter *t* divided by the average total assets |
| Current Ratio | $CUR_{it}$ | The ratio of current assets at the end of quarter *t* divided by the current liabilities at the end of quarter *t* |
| Acid-Test Ratio | $ATR_{it}$ | The ratio of most liquid current assets at the end of quarter *t* (Current assets – inventory – prepaid expenses) divided by the current liabilities at the end of quarter *t* |
| Net Profit Margin | $NPM_{it}$ | The ratio of net income during quarter *t* divided by average total assets |
| Sales Growth | $SGROW_{it}$ | The ratio of change in sales during quarter *t* ($Sales_{it} – Sales_{it-1}$) divided by sales during quarter *t-1* |
| Earnings per Share | $EPS_{it}$ | The ratio of distributable net income during quarter *t* divided by the average number of outstanding ordinary shares |
| Loss | $LOSS_{it}$ | A dummy variable equals the value of 1 if the firm achieves a negative net income during quarter *t* and 0 if otherwise |
| Cash Ratio | $CASH_{it}$ | The ratio of cash and cash equivalents at the end of quarter *t* divided by current liabilities at the end of quarter *t* |
| Depreciation Expense Ratio | $DEP_{it}$ | The ratio of depreciation expense during quarter *t* divided by average total assets at the end of quarter *t* |
| Audit Firm Size | $BIG4_{it}$ | A dummy variable equals the value of 1 if the audit firm assigned in quarter *t* is one of the big 4 audit firms (Deloitte, PwC, EY, or KPMG) and 0 if otherwise |

# 4- Results and Discussion

## 4-1 Models Testing Results

A series of statistical tests have been conducted to validate the application of appropriate regression analysis and to verify the adherence to the assumptions underlying panel or ordinary least squares (OLS) models. First, the Kolmogorov–Smirnov test was employed to confirm the normality of the residuals derived from the models, and the results confirmed that the residual data followed a normal distribution. Moreover, an examination of the heteroscedasticity problem using the Breush–Pagan test. The findings indicated that the p–value is insignificant (i.e., more than 0.05) for independent variables, suggesting that heter–

oscedasticity is absent in the data. Thus, the outcome supports the assumption of homogeneity in both regression models. The Durbin-Watson was also conducted to further investigate the potential of autocorrelation statistical problem, and the analysis results showed no evidence of serial correlation. Moreover, the variance inflation factor (VIF) was calculated for independent variables to examine the existence of multicollinearity among variables. The results indicated that the highest VIF value was 4.180, which is below the threshold of 10, therefore suggesting the absence of multicollinearity in the variables of this study. Given these evaluations and their corresponding findings, it is evident that the OLS regression is well-suited for the analysis of this research, in line with the pioneer Achleitner et al. (2014).

## 4-2 Descriptive Statistics

Table 3 provides a comprehensive descriptive analysis of the research variables focusing on the two distinct groups of FFs and NFFs. Regarding the AEM practices, the analysis reveals that the difference in the mean value between both groups is insignificant, with FFs reporting a mean of 0.0055 and NFFS at -0.1318. Furthermore, this finding is further confirmed by analyzing median values for both groups, which indicates a similar insignificant difference in their AEM practices. The comparable medians suggest that despite the numerical differences in mean values, both FFs and NFFs exhibit a similar approach toward AEM, therefore, providing initial insufficient evidence to support *H2*a. In contrast, the analysis of REM practices reveals compelling results, specifically, the mean estimate of FFs equals 0.1777, which is significantly greater than the 0.0050 reported by NFFs. Additionally, when comparing median values, the trend remains consistent, as FFs exhibit a median value of 0.2382, while NFFs show a significantly lower REM median value of 0.0074. This indicates that FFs engage in a greater extent of REM practices than NFFs, aligning with the hypothesis (*H2*b) developed in this research.

In addition to the findings presented, Table 3 highlights the significant differences in various controlling variables between FFs and NFFs. One of the most prominent findings is that FFs exhibit a markedly larger firm size compared to

their NFFs counterparts, which not only suggests a greater market presence but also implies enhanced market power and the ability to influence sector dynamics. Therefore, the analysis aligns with the findings of previous research that emphasizes the positive influence of FFs on the economy. This increased size is further complemented by a significantly higher liquidity position for FFs, as indicated by the measure of the acid-test ratio, which illustrates their greater capacity to meet short-term financial obligations and navigate economic uncertainties. Additionally, FFs outperform NFFs significantly in terms of profitability, as evidenced by their mean earnings per share of 1.8719, compared to 0.3231 for NFFs, highlighting their efficiency in generating substantial returns for their shareholders. Beyond these critical metrics, the analysis reveals important distinctions in average and median cash ratios, depreciation expense ratios, and the size of audit firms engaged, indicating that FFs not only exhibit superior financial health but also engage in different operational practices that may further influence their overall performance in the market.

**Table 3: Descriptive Statistics**

| Variables | Mean | | Median | | Standard Deviation | | Significant of Differences | |
|---|---|---|---|---|---|---|---|---|
| | FFs | NFFs | FFs | NFFs | FFs | NFFs | Mean | Median |
| AEM | 0.0055 | -0.1318 | -0.0179 | 0.0104 | 0.7771 | 1.4285 | n.s. | n.s. |
| AGG_REM | 0.1777 | -0.0050 | 0.2382 | 0.0074 | 0.5997 | 1.0814 | sig. | sig. |
| FSIZE | 20.9571 | 20.4226 | 20.8446 | 20.4557 | 2.4616 | 1.9300 | sig | n.s. |
| LEV | 0.5281 | 0.5572 | 0.5250 | 0.5213 | 0.2779 | 0.5567 | n.s. | n.s. |
| DTE | 1.6217 | 1.1699 | 1.0517 | 0.9712 | 5.7519 | 10.6957 | n.s. | n.s. |
| ROE | 0.0259 | 0.0385 | 0.0217 | 0.0257 | 0.2493 | 0.1902 | n.s. | n.s. |
| ROA | 0.0139 | 0.0133 | 0.0095 | 0.0109 | 0.0293 | 0.0488 | n.s. | n.s. |
| CUR | 2.6024 | 2.4402 | 1.3299 | 1.3971 | 6.4970 | 4.6650 | n.s. | n.s. |
| ATR | 0.8532 | 1.5102 | 0.8251 | 0.9007 | 6.6134 | 5.2098 | sig. | sig. |
| NPM | 0.0061 | 0.0939 | 0.0620 | 0.0730 | 0.7076 | 1.2006 | n.s. | sig. |
| SGROW | 0.1411 | 0.3013 | 0.0332 | 0.0210 | 0.6830 | 4.1645 | n.s. | n.s. |
| EPS | 1.8719 | 0.3231 | 0.1300 | 0.0700 | 11.2727 | 1.2272 | sig. | sig. |
| LOSS | 0.2387 | 0.2165 | 0.0000 | 0.0000 | 0.4265 | 0.4120 | n.s. | n.s. |
| CASH | 0.5018 | 0.6888 | 0.1671 | 0.1443 | 1.3731 | 2.1556 | sig. | sig. |
| DEP | 0.0054 | 0.0069 | 0.0044 | 0.0049 | 0.0041 | 0.0118 | sig. | sig. |
| BIG4 | 0.4338 | 0.3491 | 0.0000 | 0.0000 | 0.4959 | 0.4768 | sig. | sig. |

Notes: (sig.) denotes significance and (n.s.) denotes non-significance

## 4-3 Correlation Matrix

A Pearson correlation analysis was performed to examine the relationships among all relevant variables, and the findings are detailed in Table 4. The examination of the correlation coefficients between FFs and EM practices offers further support to the descriptive statistics previously analyzed. Specifically, this analysis reveals an insignificant correlation between FFs and AEM. In contrast, a significant positive correlation was found between FFs and REM, suggesting that FFs are significantly engaged in REM practices. Additionally, the analysis reveals significant correlations within the data. For example, firm size demonstrated a significant positive correlation with the aggregate measure of REM, indicating that larger firms tend to engage in higher levels of REM. This observation aligns with expectations, as larger firms are often presented with more opportunities and incentives to manipulate their earnings in order to maintain their competitive market position. On the other hand, leverage showed a significant negative correlation with REM and an insignificant correlation with AEM. This suggests that firms with higher levels of debt are less likely to practice in EM, possibly due to the heightened scrutiny and monitoring faced by highly leveraged firms. Furthermore, other financial ratios, including debt-to-equity, return on equity, and the current ratio, also exhibited significant correlations with both approaches to EM.

## 4-4 Regression Results

This subsection explores the empirical results of the tests for research hypotheses concerning the relationship between various EM approaches (i.e., *H*1), and the directional influence of FFs on both AEM and REM practices (i.e., *H*2a and *H*2b).

### 4-4-1 Tests for H1

Table 5 presents the detailed regression estimates related to the research hypothesis (*H*1), which investigates the association between AEM and REM approaches within the context of Egyptian FFs. The statistical analysis demonstrates that the model is significant, as indicated by a *p*-value of less than 0.05. Further-

more, the model exhibits a multiple coefficient of determination ($R^2$) of 57.2 percent, suggesting that a substantial portion of the variance in the dependent variable can be explained by the independent variables included in the model. The findings indicate a significant negative relationship between AEM and REM in the context of these FFs. This negative correlation suggests that as one approach of EM increases, the other tends to decrease, reflecting a substitutive relationship. Specifically, the interactive variable (AEM*FF) shows a negative and significant coefficient. This result implies that FFs are likely to shift between AEM and REM approaches in order to meet their financial goals and performance targets. Such behavior is aligned with the initial predictions of the research and the findings from antecedent work (Achleitner et al., 2014; Zang, 2012). Consequently, these insights provide robust support for **accepting hypothesis *H*1**, confirming that the two EM approaches serve as alternatives to one another in the Egyptian FFs.

### 4-4-2 Tests for H2a/H2b

Table 6, Model (1), presents the findings related to hypothesis (*H*2a), which investigates the relationship between FFs and AEM practices during the specified research period. The model reveals statistical significance as indicated by a *p*-value of less than 0.05, accompanied by an $R^2$ value of 14.5 percent. These results align with the prior descriptive and correlation analyses, which suggest that there is no significant association between FFs and AEM practices (coeff. = 0.005, *p*-value = 0.911). This lack of significant correlation implies that both FFs and NFFs in Egypt employ AEM strategies in a comparable manner, potentially to mislead stakeholders and fulfill their respective objectives. This finding contradicts with previous literature of Achleitner et al. (2014), which suggests a significant relationship between FFs and AEM practices in Germany. One possible explanation for this discrepancy is the unique context of Egypt's emerging market, characterized by inadequate investor protection and weak governance across all firms. These factors may contribute to a regulatory environment where the distinction between FFs and NFFs in terms of AEM practices becomes

blurred, leading to similar behavior among both types of firms. Therefore, ***H2*a is rejected**.

In analyzing the control variables, it becomes evident that the coefficient related to the profitability indicator, the return on assets (ROA), demonstrates a significant positive relationship with the adoption of AEM practices. This suggests that firms exhibiting higher levels of overall performance, as measured by ROA, are more inclined to engage in AEM strategies. Conversely, the indicators measuring net profit margin and sales growth present a significant and opposite trend. These findings indicate that companies operating with lower profit margins and experiencing lower rates of sales growth are more likely to employ AEM practices. This behavior can be interpreted as these firms striving to enhance their market performance and align with investor expectations, potentially compensating for their less favorable profit margins. Additionally, the ratio of depreciation expense plays a significant controlling role in this context, revealing a positive significant effect on the implementation of AEM. In other words, firms that incur higher depreciation expenditures appear more inclined to utilize AEM, possibly as a method to manage their reported earnings strategically. In contrast, the other control variables included in the analysis do not demonstrate a statistically significant impact on the extent to which firms engage in AEM practices.

In advancing the analysis for hypothesis (*H2*b), which posits a positive and significant relationship between FFs and REM. The corresponding results are presented in Table 6, Model (2), indicating a strong statistical significance, as evidenced by a *p*-value of less than 0.05, which is commonly accepted as an indicator of a reliable result. Moreover, the model's $R^2$ value is 37.1 percent, reflecting that a substantial portion of the variance in REM can be explained by the variations in FFs. The results support the hypothesized positive correlation between the two variables. This is further confirmed by the coefficient for FFs, reported at 0.232 with a p-value of 0.000. This indicates that in Egypt, FFs are significantly more likely to engage in REM practices to meet their financial objectives. Consequently, ***H2*b is accepted**. Additionally, these results align with the existing

literature (Calabrò et al., 2022; Razzaque et al., 2016), which suggests that FFs operating in emerging economies tend to adopt REM approaches more frequently than their counterparts in developed economies. These findings highlight circumstances of unique emerging and developing markets that often drive firms to employ aggressive EM approaches, in the long run, to navigate financial reporting and meet stakeholder expectations.

Concerning the control variables, the regression analysis reveals significant relationships between several variables and the firm's tendency to exercise REM practices. Consistent with the earlier findings from the correlation analysis, firm size demonstrates a positive and statistically significant relationship with REM, suggesting that larger firms are likely to engage in higher levels of REM, which aligns with the expectations of larger firms having more substantial incentives to manipulate earnings. In addition, a firm's leverage also exhibits a significant negative effect on REM, indicating that firms with higher levels of debt are less likely to engage in REM practices, probably due to the increased stakeholders and creditors' scrutiny and monitoring faced by higher-leveraged firms. Moreover, other control variables, such as profitability, measured by ROA, sales growth, and liquidity, measured by current and acid test ratios, also demonstrate significant influence on REM. For instance, firms with higher profitability may have lower incentives to sacrifice their long-term value to manipulate their reported earnings. Moreover, the results suggest that the cash and cash equivalents ratio negatively and significantly influences REM, suggesting that firms with higher cash ratios may be less likely to engage in such an EM approach. The results indicate that firms with higher cash reserves feel more secure exercising REM. Also, the depreciation expense ratio shows a negative and significant relationship with REM. Finally, a negative and significant influence of audit firm size on REM is attributed to the unique characteristics of the audit market in Egypt where smaller audit firms tend to be more influential and thus may exhibit a higher tolerance for managerial manipulations in order to maintain their market share (El-Dyasty and Elamer, 2021).

## Table 4: Pearson Correlation Coefficients

| | AEM | AGG_REM | FF | FSIZE | LEV | DTE | ROE | ROA | CUR | ATR | NPM | SGROW | EPS | LOSS | CASH | DEP | BIG4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AEM | 1 | | | | | | | | | | | | | | | | |
| AGG_REM | .655** | 1 | | | | | | | | | | | | | | | |
| FF | 0.005 | .109** | 1 | | | | | | | | | | | | | | |
| FSIZE | -0.021 | .073** | .114** | 1 | | | | | | | | | | | | | |
| LEV | -0.031 | -.085** | -0.027 | .098** | 1 | | | | | | | | | | | | |
| DTE | -0.011 | 0.024 | 0.021 | .062** | 0.008 | 1 | | | | | | | | | | | |
| ROE | 0.028 | -0.001 | -0.027 | 0.015 | 0.022 | -.132** | 1 | | | | | | | | | | |
| ROA | .052** | 0.017 | 0.006 | .060** | -.484** | 0.009 | .251** | 1 | | | | | | | | | |
| CUR | -0.033 | 0.030 | 0.014 | -.183** | -.234** | -0.026 | -0.014 | 0.033 | 1 | | | | | | | | |
| ATR | -.055** | 0.009 | -.052** | .060** | -.159** | -0.020 | -0.006 | 0.016 | .787** | 1 | | | | | | | |
| NPM | -0.017 | -0.001 | -0.037 | 0.033 | -.168** | 0.002 | .081** | .368** | 0.030 | 0.003 | 1 | | | | | | |
| SGROW | -.087** | -.220** | -0.020 | 0.006 | 0.002 | 0.004 | 0.024 | 0.026 | 0.003 | .041* | 0.001 | 1 | | | | | |
| EPS | 0.002 | 0.030 | .114** | .130** | 0.017 | .057** | .094** | .052** | -0.008 | 0.005 | 0.015 | -0.002 | 1 | | | | |
| LOSS | -.039* | -0.014 | 0.024 | -.143** | .146** | -.045* | -.142** | -.479** | 0.000 | -.039* | -.242** | -0.024 | -.056** | 1 | | | |
| CASH | -.048* | -0.014 | -.043* | -.102** | -.210** | -0.028 | 0.008 | .107** | .565** | .467** | .048* | -0.014 | -0.002 | -0.028 | 1 | | |
| DEP | .065** | -.098** | -.066** | -.047* | -.061** | -0.036 | 0.001 | -0.016 | 0.008 | -0.016 | -0.003 | -0.005 | -0.019 | -0.001 | 0.034 | 1 | |
| BIG4 | 0.012 | -.175** | .079** | .391** | .080** | 0.026 | 0.023 | .041* | -.154** | -.105** | 0.011 | 0.015 | 0.004 | -.061** | -.126** | .143** | 1 |

**. Correlation is significant at the 0.01 level.
*. Correlation is significant at the 0.05 level.

**Table 5: Test of the relationship between AEM and REM**

| Variables | Coefficient | *p*-value |
|---|---|---|
| Constant | -1.913 | 0.000 |
| AEM | 0.9042 | 0.000 |
| FFs | 0.2287 | <0.001 |
| AEM*FFs | -0.1387 | 0.014 |
| FSIZE | 0.1117 | <0.001 |
| LEV | -0.2940 | <0.001 |
| DTE | 0.0030 | 0.085 |
| ROE | 0.0632 | 0.459 |
| ROA | -3.3959 | <0.001 |
| CUR | 0.0308 | <0.001 |
| ATR | -0.0231 | <0.001 |
| NPM | 0.0628 | 0.008 |
| SGROW | -0.0761 | <0.001 |
| EPS | -0.0011 | 0.694 |
| LOSS | -0.0040 | 0.935 |
| CASH | -0.0246 | 0.024 |
| DEP | -11.9975 | <0.001 |
| BIG4 | -0.6202 | <0.001 |
| Industry fixed effect | Controlled | |
| Quarter fixed effect | Controlled | |
| Number of valid observations | 2,711 | |
| Model sig. | 0.000 | |
| R-squared | 0.572 | |

**Table 6: Test of the relationship between FFs and EM approaches (AEM & REM)**

| Variables | Model (1) - AEM | | Model (2) - REM | |
|---|---|---|---|---|
| | Coefficient | *p*-value | Coefficient | *p*-value |
| *Constant* | 0.0947 | 0.676 | -1.8498 | 0.000 |
| FFs | 0.0051 | 0.911 | 0.2315 | 0.000 |
| FSIZE | -0.0056 | 0.611 | 0.1077 | 0.000 |
| LEV | -0.0060 | 0.900 | -0.3019 | 0.000 |
| DTE | -0.0009 | 0.664 | 0.0024 | 0.345 |
| ROE | 0.0666 | 0.489 | 0.1323 | 0.274 |
| ROA | 1.8722 | 0.007 | -1.7512 | 0.044 |
| CUR | -0.0002 | 0.973 | 0.0312 | 0.001 |
| ATR | -0.0018 | 0.785 | -0.0252 | 0.003 |
| NPM | -0.0791 | 0.003 | -0.0081 | 0.811 |
| SGROW | -0.0281 | 0.000 | -0.1015 | 0.000 |

| | | | | |
|---|---|---|---|---|
| EPS | 0.0001 | 0.969 | -0.0010 | 0.808 |
| LOSS | -0.0814 | 0.144 | -0.0727 | 0.299 |
| CASH | -0.0163 | 0.186 | -0.0385 | 0.013 |
| DEP | 5.7404 | 0.003 | -6.9046 | 0.004 |
| BIG4 | -0.0009 | 0.984 | -0.6208 | 0.000 |
| Industry fixed effect | Controlled | | Controlled | |
| Quarter fixed effect | Controlled | | Controlled | |
| Number of valid observations | 2,711 | | 2,711 | |
| Model sig. | <0.001 | | <0.001 | |
| R-squared | 0.145 | | 0.371 | |

# 5- Conclusion

The paper aims to empirically investigate the family's ownership and control over managerial preferences between AEM and REM approaches. Accordingly, the analyses are based on a sample of 109 non-financial firms listed on the Egyptian Stock Exchange with a total of 2,711 firm-quarter-year observations from 2015 to 2022. This sample observation includes 771 quarter-observations for firms owned by families in 16 different industries based on the definition of FFs identified in several previous research (Moubarak, 2024c; Muttakin et al., 2014). The findings provide support for the first hypothesis, indicating that FFs prefer the trade-off decision of AEM and REM practices but exhibit a significant inclination toward REM practices. However, while testing the influence of FFs on their extent to exercise AEM, the results derived indicate that engaging in such type of an EM approach demonstrates no significant difference between FFs and their counterparts of NFFs. The FFs market, all over the world, is a very promising sector for international investment portfolios, given the fact that families are often associated with the notion of entrenchment and emotional kinship. Therefore, credible financial information reported by these firms is of utmost importance to make efficient investment decisions. However, magic may harm magicians themselves, as the valuable characteristics that distinguish family founders act as a double-edged sword that may lead them to exercise nepotism

for their families and prioritize achieving short-term financial returns over long-term firm profitability and growth prospects.

The research discussions create significant regulatory and auditing implications, emphasizing the urgent need for substantial organizational governance improvements to regulate financial reporting within FFs and prevent misrepresentation of disclosed financial information, particularly in relation to EM practices. Given that Egypt's current presidential initiatives are mainly aimed at bolstering foreign investment and consequently enhancing financial reporting credibility. Specifically, the current paper's findings can serve as a valuable resource for regulatory bodies in Egypt, prompting them to consider the REM implications when establishing disclosure and reporting requirements. Furthermore, auditors are also urged to intensify their scrutiny of potential sources of REM through this research, recognizing its economic consequences that may have far-reaching effects on the firm's operations. The insights provided by this study also enhance the investors' and shareholders' understanding of FF's unique financial reporting landscape, which is expected to encourage them to improve their investment decisions and carefully assess their portfolio selections.

The study is subject to several limitations that not only restrict the current findings but also create avenues for future research. One significant limitation is the varying definitions of FFs, which complicate comparisons between studies and suggest the need for a standardized criterion. Additionally, difficulties in accessing extensive information databases, typical in research focused on emerging and developing economies, led to a limited sample size that may not fully represent the complexities of family firms. Future research should aim for larger, more representative samples. Moreover, future researchers are also advised to explore the impact of generational succession on managerial preference of EM approaches, which was not addressed in this study. Furthermore, the study compares FFs with NFFs regarding EM, like most existing literature. However, to the researchers' best acknowledgment, there is a gap in understanding other managerial opportunistic behaviors such as financial statements fraud, asset misappropriation, and corruption, which can significantly affect sustainable

firm value. Finally, examining how FFs and NFFs respond to macro and microeconomic events, such as the Russian and Ukrainian conflicts or the recurring devaluations of the Egyptian currency, could provide valuable insights into their trade-off decisions and enhance understanding of their resilience in changing economic conditions.

## References

Abouelseoud, N. (2019) 'A Review of the Family Business Landscape in Egypt'. Available at: https://www.tamimi.com/law-update-articles/a-review-of-the-family-business-landscape-in-egypt/ [Accessed 20 November 2024].

Achleitner, A.-K., Günther, N., Kaserer, C. and Siciliano, G. (2014), "Real Earnings Management and Accrual-based Earnings Management in Family Firms", *European Accounting Review,* Vol.23 No.3, pp.431-461. http://dx.doi.org/10.1080/09638180.2014.895620.

Ahmed, A.S., Duellman, S. and Grady, M. (2022), "Political Connections and the Trade-Off Between Real and Accrual-Based Earnings Management", *Contemporary Accounting Research,* Vol.39 No.4, pp.2730-2757. http://dx.doi.org/https://doi.org/10.1111/1911-3846.12811.

Al Amosh, H. and Khatib, S.F.A. (2022), "Ownership structure and environmental, social and governance performance disclosure: the moderating role of the board independence", *Journal of Business and Socio-economic Development,* Vol.2 No.1, pp.49-66. http://dx.doi.org/10.1108/JBSED-07-2021-0094.

Alareeni, B.A. and Hamdan, A. (2020), "ESG impact on performance of US S&P 500-listed firms", *Corporate Governance: The International Journal of Business in Society,* Vol.20 No.7, pp.1409-1428. http://dx.doi.org/10.1108/CG-06-2020-0258.

Alhadab, M. and Clacher, I. (2018), "The impact of audit quality on real and accrual earnings management around IPOs", *The British Accounting Review,* Vol.50 No.4, pp.442-461.http://dx.doi.org/https://doi.org/10.1016/j.bar.2017.12.003.

Alhadab, M. and Nguyen, T. (2018), "Corporate diversification and accrual and real earnings management", *Review of Accounting and Finance,* Vol.17 No.2, pp.198-214. http://dx.doi.org/10.1108/RAF-06-2016-0098.

Avabruth, S.M. and Padhi, S.K. (2023), "Earnings management by family firms to meet the debt covenants: evidence from India", *Journal of Accounting in Emerging Economies,* Vol.13 No.1, pp.93-117. http://dx.doi.org/10.1108/JAEE-12-2020-0331.

Baatour, K., Ben Othman, H. and Hussainey, K. (2017), "The effect of multiple directorships on real and accrual-based earnings management", *Accounting Research Journal,* Vol.30 No.4, pp.395-412. http://dx.doi.org/10.1108/ARJ-06-2015-0081.

Bansal, M. (2023), "Earnings management: a three-decade analysis and future prospects", *Journal of Accounting Literature,* Vol.ahead-of-print No.ahead-of-print. http://dx.doi.org/10.1108/JAL-10-2022-0107.

Baskaran, S., Nedunselian, N., Ng, C.H., Mahadi, N. and Abdul Rasid, S.Z. (2020), "Earnings management: a strategic adaptation or deliberate manipulation?", *Journal of Financial Crime,* Vol.27 No.2, pp.369-386. http://dx.doi.org/10.1108/jfc-07-2019-0098.

Berrone, P., Cruz, C. and Gomez-Mejia, L.R. (2012), "Socioemotional Wealth in Family Firms: Theoretical Dimensions, Assessment Approaches, and Agenda for Future Research", *Family Business Review,* Vol.25 No.3, pp.258-279. http://dx.doi.org/10.1177/0894486511435355.

Betts, P. (2001), "Family companies are ready for the worst", *Financial Times,* Vol.30 No.2001, pp.18-19.

Calabrò, A., Cameran, M., Campa, D. and Pettinicchio, A. (2022), "Financial reporting in family firms: a socioemotional wealth approach toward information quality", *Journal of Small Business Management,* Vol.60 No.4, pp.926-960. http://dx.doi.org/10.1080/00472778.2020.1745003.

Chan, L.H., Chen, K.C.W., Chen, T.Y. and Yu, Y. (2015), "Substitution between Real and Accruals-Based Earnings Management after Voluntary Adoption of Compensation Clawback Provisions", *The Accounting Review,* Vol.90 No.1, pp.147-174. http://dx.doi.org/10.2308/accr-50862.

Chen, C.-L., Huang, S.-H. and Fan, H.-S. (2012), "Complementary association between real activities and accruals-based manipulation in earnings reporting", *Journal of Economic Policy Reform,* Vol.15 No.2, pp.93-108. http://dx.doi.org/10.1080/17487870.2012.667965.

Christensen, T.E., Huffman, A., Lewis-Western, M.F. and Scott, R. (2022), "Accruals earnings management proxies: Prudent business decisions or earnings manipulation?", *Journal of Business Finance & Accounting,* Vol.49 No.3-4, pp.536-587. http://dx.doi.org/10.1111/jbfa.12585.

Christopoulos, A., Dokas, I., Leontidis, C. and Spyromitros, E. (2023), "The effect of corruption on the level of real and accrual earnings management in cases of target firms", *EuroMed Journal of Business,* Vol.18 No.4, pp.575-603. http://dx.doi.org/10.1108/emjb-03-2022-0055.

Cohen, D.A. and Zarowin, P. (2010), "Accrual-based and real earnings management activities around seasoned equity offerings", *Journal of Accounting and Economics,* Vol.50 No.1, pp.2-19. http://dx.doi.org/https://doi.org/10.1016/j.jacceco.2010.01.002.

Das, R.C., Mishra, C.S. and Rajib, P. (2017), "Real Versus Accrual-based Earnings Management:Do Indian Firms Prefer One over the Other?", *Paradigm,* Vol.21 No.2, pp.156-174.http://dx.doi.org/10.1177/0971890717736214.

Dechow, P.M. and Skinner, D.J. (2000), "Earnings Management: Reconciling the Views of Accounting Academics, Practitioners, and Regulators", *Accounting Horizons,* Vol.14 No.2, pp.235-250. http://dx.doi.org/10.2308/acch.2000.14.2.235.

Dong, N., Wang, F., Zhang, J. and Zhou, J. (2020), "Ownership structure and real earnings management: Evidence from China", *Journal of Accounting and Public Policy,* Vol.39 No.3, pp.106733.http://dx.doi.org/https://doi.org/10.1016/j.jaccpubpol.2020.106733.

Duréndez, A. and Madrid-Guijarro, A. (2018), "The impact of family influence on financial reporting quality in small and medium family firms", *Journal of Family Business Strategy,* Vol.9 No.3, pp.205-218. http://dx.doi.org/https://doi.org/10.1016/j.jfbs.2018.08.002.

El-Dyasty, M.M. and Elamer, A.A. (2021), "The effect of auditor type on audit quality in emerging markets: evidence from Egypt", *International Journal of Accounting & Information Management,* Vol.29 No.1, pp.43-66. http://dx.doi.org/10.1108/IJAIM-04-2020-0060.

Enomoto, M., Kimura, F. and Yamaguchi, T. (2018), "A cross-country study on the relationship between financial development and earnings management", *Journal of International Financial Management & Accounting,* Vol.29 No.2, pp.166-194.http://dx.doi.org/https://doi.org/10.1111/jifm.12078.

Ferentinou, A.C. and Anagnostopoulou, S.C. (2016), "Accrual-based and real earnings management before and after IFRS adoption", *Journal of Applied Accounting Research,* Vol.17 No.1, pp.2-23. http://dx.doi.org/10.1108/jaar-01-2014-0009.

Francis, J. and Schipper, K. (2011), "Earnings management: Emerging Insights in Theory, Practice and Research", *The Accounting Review,* Vol.86 No.6, pp.2193-2196. Available at: http://www.jstor.org/stable/41408055.

Gómez-Mejía, L.R., Haynes, K.T., Núñez-Nickel, M., Jacobson, K.J.L. and Moyano-Fuentes, J. (2007), "Socioemotional Wealth and Business Risks in Family-controlled Firms: Evidence from Spanish Olive Oil Mills", *Administrative Science Quarterly,* Vol.52 No.1, pp.106-137. http://dx.doi.org/10.2189/asqu.52.1.106.

Graham, J.R., Harvey, C.R. and Rajgopal, S. (2005), "The economic implications of corporate financial reporting", *Journal of Accounting and Economics,* Vol.40 No.1, pp.3-73. http://dx.doi.org/https://doi. org/10.1016/j.jacceco.2005.01.002.

Healy, P.M. and Wahlen, J.M. (1999), "A Review of the Earnings Management Literature and Its Implications for Standard Setting", *Accounting Horizons,* Vol.13 No.4, pp.365-383. http://dx.doi.org/10.2308/acch.1999.13.4.365.

Ismail, M.A.-A. (2017), "Real Earnings Management versus Accrual-based and Its Effect on Firm Performance: Evidence from Egypt", *Alexandria Journal of Accounting Research,* Vol.1 No.2, pp.1-38. http://dx.doi.org/10.21608/aljalexu.2017.58318.

Ismail, M.A.-A. (2020a), "Effect of Audit Quality on Earnings Quality Given Firm's Operational Characteristics: An Empirical Study on Companies Listed on the Egyptian Stock Exchange", *Alexandria Journal of Accounting Research,* Vol.4 No.1, pp.1-44. http://dx.doi.org/10.21608/aljalexu.2020.79027.

Ismail, M.A.-A. (2020b), "The Interaction Effect of Auditor Industry Specialization and Ownership Concentration on Investment Efficiency: Evidence from Egyptian Stock Exchange", *Alexandria Journal of Accounting Research,* Vol.4 No.3, pp.1-45. http://dx.doi.org/10.21608/aljalexu.2020.123651.

Jang, J. and Lee, E. (2021), "Do record earnings affect market reactions to earnings news?", *Review of Quantitative Finance and Accounting,* Vol.56 No.4, pp.1259-1287. http://dx.doi.org/10.1007/s11156-020-00927-4.

Jones, J.J. (1991), "Earnings Management During Import Relief Investigations", *Journal of Accounting Research,* Vol.29 No.2, pp.193-228.

Khunkaew, R. and Qingxiang, Y. (2019), "Substitution between accruals-based and real activities earnings management of listed Thai firms", *Journal of Corporate Accounting & Finance,* Vol.30 No.4, pp.99-110. http://dx.doi.org/10.1002/jcaf.22406.

Leuz, C., Nanda, D. and Wysocki, P.D. (2003), "Earnings management and investor protection: an international comparison", *Journal of Financial Economics,* Vol.69 No.3, pp.505-527. http://dx.doi.org/https://doi.org/10.1016/S0304-405X(03)00121-1.

Manowan, P. and Lin, L. (2013), "Dual class ownership structure and real earnings management", *International Journal of Accounting and Finance,* Vol.4 No.1, pp.86-97. http://dx.doi.org/10.1504/ijaf.2013.053120.

McKinsey&Company (2024) 'All in the family business'. Available at: https://www.mckinsey.com/featured-insights/sustainable-inclusive-growth/charts/all-in-the-family-business [Accessed 30 November 2024].

Mnif, Y. and Ben Hamouda, A. (2020), "Audit quality and the trade-off between real and accrual earnings management in the oil and gas industry: the GCC evidence", *Journal of Applied Accounting Research,* Vol.22 No.2, pp.223-251. http://dx.doi.org/10.1108/jaar-12-2019-0167.

Moubarak, H. (2024a), "The Impact of Audit Fees Stickiness on Audit Quality - The Moderating Effect of Client's Financial Distress: Evidence from Egypt", *Jordan Journal of Business Administration,* Vol.ahead-of-print No.ahead-of-print.

Moubarak, H. and Elamer, A.A. (2024), "Navigating uncertainty: the role of auditor demographics in key audit matters reporting amid COVID-19 in Egypt", *Journal of Financial Reporting and Accounting,* Vol.ahead-of-print No.ahead-of-print. http://dx.doi.org/10.1108/JFRA-04-2024-0183.

Moubarak, H.M.R. (2024b), "Detecting the Probability of Fraud in Interim Financial Statements Using Machine Learning Models: Do Correlation-Based Analysis and Principal Component Analysis for Dimensionality Reduction Matter?", *Alexandria Journal of Accounting Research,* Vol.8 No.3, pp.87-138. http://dx.doi.org/10.21608/aljalexu.2024.381069.

Moubarak, H.M.R. (2024c), "Family Ownership and the Business Financial and Nonfinancial Performance In the Midst of COVID-19 Pandemic Implications: Evidence from MENA Region", *Journal of Accounting Research,* Vol.11 No.3, pp.73-95. http://dx.doi.org/10.21608/abj.2024.380801.

Muttakin, M.B., Khan, A. and Subramaniam, N. (2014), "Family firms, family generation and performance: evidence from an emerging economy", *Journal of Accounting in Emerging Economies,* Vol.4 No.2, pp.197-219. http://dx.doi.org/10.1108/JAEE-02-2012-0010.

Naz, A., Sheikh, N.A., Khatib, S.F.A., Al Amosh, H. and Ananzeh, H. (2024), "Illuminating the shadows: a systematic review of earnings management practices in family-owned enterprises and future research directions", *Journal of Business and Socio-economic Development,* Vol.4 No.4, pp.340-358. http://dx.doi.org/10.1108/JBSED-07-2023-0051.

Owusu, A., Zalata, A.M., Omoteso, K. and Elamer, A.A. (2022), "Is There a Trade-Off Between Accrual-Based and Real Earnings Management Activities in the Presence of (fe) Male Auditors?", *Journal of Business Ethics,* Vol.175 No.4, pp.815-836. http://dx.doi.org/10.1007/s10551-020-04672-5.

Purba, G.K., Fransisca, C. and Joshi, P.L. (2022), "Analyzing earnings management preferences from business strategies", *Journal of Financial Reporting and Accounting,* Vol.20 No.5, pp.979-993. http://dx.doi.org/10.1108/jfra-04-2021-0103.

PwC (2021) *Egypt Family Business Survey*, Egypt: PricewaterhouseCoopers (PwC) Middle East. Available at: https://www.pwc.com/m1/en/publications/family-business-survey/egypt-family-business-survey/documents/egypt-family-business-survey-2021.pdf.

Razzaque, R.M.R., Ali, M.J. and Mather, P.R. (2016), "Real earnings management in family firms: Evidence from an emerging economy", *Pacific-Basin Finance Journal,* Vol.40 No., pp.237-250. http://dx.doi.org/https://doi.org/10.1016/j.pacfin.2015.12.005.

Roychowdhury, S. (2006), "Earnings management through real activities manipulation", *Journal of Accounting and Economics,* Vol.42 No.3, pp.335-370. http://dx.doi.org/https://doi.org/10.1016/j.jacceco.2006.01.002.

Sageder, M., Mitter, C. and Feldbauer-Durstmüller, B. (2018), "Image and reputation of family firms: a systematic literature review of the state of research", *Review of Managerial Science,* Vol.12 No.1, pp.335-377. http://dx.doi.org/10.1007/s11846-016-0216-x.

Salehi, M., Hoshmand, M. and Rezaei Ranjbar, H. (2020), "The effect of earnings management on the reputation of family and non-family firms", *Journal of Family Business Management,* Vol.10 No.2, pp.128-143. http://dx.doi.org/10.1108/JFBM-12-2018-0060.

Saona, P., Muro, L. and Alvarado, M. (2020), "How do the ownership structure and board of directors' features impact earnings management? The Spanish case", *Journal of International Financial Management & Accounting,* Vol.31 No.1, pp.98-133. http://dx.doi.org/https:// doi.org/10.1111/jifm.12114.

SEC (2023a) 'SEC Charges Electric Vehicle Co. for Misleading Revenue Projections Ahead of SPAC Merger'. Available at: https://www.sec.gov/newsroom/press-releases/2023-208 [Accessed 1/8/2024].

SEC (2023b) 'SEC Charges Fluor Corp. for Accounting Improprieties'. Available at: https://www.sec.gov/newsroom/press-releases/2023-170 [Accessed 1/8/2024].

SEC (2023c) 'SEC Charges Newell Brands and Former CEO for Misleading Investors About Sales Performance'. Available at: https://www.sec.gov/newsroom/press-releases/2023-210 [Accessed 1/8/2024].

Sellami, M. (2016), "The interaction between real and accrual-based earnings management: analysis based on the mandatory IFRS adoption", *International Journal of Accounting and Economics Studies,* Vol.4 No.1, pp.24-31. http://dx.doi.org/https://doi.org/10.14419/ijaes.v4i1.5721.

Shah, S.F., Rashid, A. and Malik, W.S. (2024), "Potential Substitution Between Accrual Earnings Management and Real Earnings Management Among Pakistani Listed Firms", *Global Business Review,* Vol.25 No.1, pp.180-197. http://dx.doi.org/10.1177/0972150920957617.

Sundkvist, C.H. and Stenheim, T. (2023), "Does family identity matter for earnings management? Evidence from private family firms", *Journal of Applied Accounting Research,* Vol.24 No.4, pp.635-654. http://dx.doi.org/10.1108/jaar-02-2022-0040.

Szczesny, A., Lenk, A. and Huang, T. (2008), "Substitution, availability and preferences in earnings management: empirical evidence from China", *Review of Managerial Science,* Vol.2 No.2, pp.129-160. http://dx.doi.org/10.1007/s11846-008-0018-x.

Viana, D.B.C., Lourenço, I.M.E.C. and Paulo, E. (2023), "The effect of IFRS adoption on accrual-based and real earnings management: emerging markets' perspective", *Journal of Accounting in Emerging Economies,* Vol.13 No.3, pp.485-508. http://dx.doi.org/10.1108/jaee-05-2021-0172.

Weber, J. and Lavelle, L. (2001) 'Family, Inc.'. Available at: https://www.bloomberg.com/news/articles/2003-11-09/family-inc-dot [Accessed 30 November 2024].

Zang, A.Y. (2012), "Evidence on the Trade-Off between Real Activities Manipulation and Accrual-Based Earnings Management", *The Accounting Review,* Vol.87 No.2, pp.675-703. http://dx.doi.org/10.2308/accr-10196.

Zhu, T., Lu, M., Shan, Y. and Zhang, Y. (2015), "Accrual-based and real activity earnings management at the back door: Evidence from Chinese reverse mergers", *Pacific-Basin Finance Journal,* Vol.35 No.A, pp.317-339. http://dx.doi.org/https://doi.org/10.1016/j.pacfin.2015.01.008.