EARNINGS MANAGEMENT IN ITALIAN FAMILY AND NON-FAMILY UNLISTED COMPANIES: THE MODERATING EFFECT OF GENDER DIVERSITY[1]

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Abstract

Purpose. *Building upon the stakeholder theory, this paper aims to investigate the relationship between family control and earnings management practices while considering the potential moderating effect of gender diversity on the Board of directors.*

Design/methodology/approach. *Using a longitudinal sample of 1,461 manufacturing Italian Small and Medium-sized Enterprises over the period 2014-2020, we performed panel regression analyses to empirically investigate the relationship between earnings management, family firm status and the moderating effect of gender diversity on board.*

Findings. *The empirical findings show that family firms are less likely to engage in the practices of earnings management than non-family firms are. The association between family firm status and earnings management is moderated negatively by gender diversity.*

Practical and Social implications. *This study emphasizes the critical role of family control and board gender diversity in reducing financial manipulation practices and improving accounting transparency. These findings offer practical guidance for implementing measures aimed at enhancing the quality of financial reporting in unlisted Small and Medium-sized Enterprises. Greater women's representation on the family businesses board can promote accounting transparency and integrity, carrying significant social implications.*

Originality of the study. *This study contributes to the literature on the quality of financial information in both family firms and unlisted companies, exploring new areas of research. The study is original also considering the moderating variable chosen: to the best of our knowledge, no study has already explored the moderating influence of gender diversity on the relationships between family control and earnings management.*

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1. Introduction

Earnings management (EM) has dominated the accounting research landscape for about three decades (Habib et al., 2022). The term refers to "any practice intentionally carried out by management, with opportunistic and/or informative purposes to report the desired number of results, different from the real one" (García Lara et al., 2005).

EM practices prevent knowing the truthful and appropriate image of the economic-financial situation of the company. Therefore, it influences the decisions of investors and funders, affecting both the confidence of economic agents, and the ability to attract resources, which can affect a wide range of stakeholders (Gómez-Mejía et al., 2014).

The existing literature regarding EM is really extensive (e.g., Cascino et al., 2010; Lennox et al., 2018; Prencipe et al., 2011; Songini et al., 2013), although empirical research has focused mainly on listed companies (e.g. Landry et al., 2013; Vieira, 2016) whose EM practices are generally linked to the pressure of the capital market (Mafrolla & D'Amico, 2017).

However, understanding the dynamics of EM within unlisted companies remains unexplored (Paiva et al., 2016), leaving a notable gap in the literature. Addressing this gap is significant as unlisted small and medium enterprises (SMEs) play a vital role in the economy, contributing significantly to employment, innovation, and Gross Domestic Product (GDP).

Despite their importance, these firms are subject to different regulatory and oversight environments compared to their listed counterparts (Borralho et al., 2020). Unlisted companies often have less stringent reporting requirements and less external scrutiny, potentially creating a fertile ground for EM practices. Therefore, analyzing EM practices within unlisted firms can provide insights into the quality of financial reporting and the transparency of business operations in a substantial segment of the economy.

Although EM is a relevant topic in accounting research, few researchers have studied this issue in family businesses (Stockmans et al., 2010, 2013; Paiva et al., 2016; Borralho et al., 2020).

The limited existent evidence shows that family and non-family firms differ in their financial reporting decisions, but results are in contrast: most of the studies show that family firms have better financial reporting practices and lower EM than non-family firms (e.g., Ali et al., 2007; Jiraporn & DaDalt, 2009; Achleitner et al., 2014; Ramírez-Orellana et al., 2017; Dechow et al., 1995), others reveal opposite outcomes (Chi et al., 2015; Prencipe et al., 2014).

This makes up a research gap that is important to cover.

Examining EM practices – particularly in the context of family versus non-family businesses – is relevant for several reasons. First, family businesses, which constitute a significant portion of firms globally (Gómez-

Mejía et al., 2014; Diéguez-Soto et al., 2015), including in Italy, have unique characteristics that distinguish them from non-family firms. These characteristics can significantly influence financial practices and reporting.

Second, family businesses often feature concentrated ownership and control, which can lead to agency problems compared to publicly traded firms (Azila-Gbettor et al., 2022). For instance, the alignment of interests between owners and managers may reduce the inclination towards EM to meet short-term performance goals. Conversely, the desire to maintain family control and legacy (Gómez-Mejía et al., 2014) might sometimes incentivize EM to smooth earnings and present financial stability.

Third, the reputational concerns and long-term orientation typical of family firms may cause more conservative financial reporting practices (Lumpkin et al., 2010). Family owners are more invested in preserving the firm's reputation for future generations, which can lead to a lower propensity for EM practices.

In summary, the influence of family control on EM is an area that has not been extensively explored in the existing literature, particularly in unlisted SMEs. Our study aims to fill this gap by assuming these firms as our units of analysis, providing insights into how family ownership affects financial reporting practices in a substantial yet under-researched segment of the economy.

This research also contributes to the literature by analyzing the potential moderating role of gender diversity on the board of directors (BoD) of SMEs.

The topic of board gender diversity and EM is widely documented in the literature. Prior evidence indicates that, on average, women directors can positively affect financial reporting quality by engaging less in EM (Arun et al., 2015; Gavious et al., 2012). In particular, prior empirics show that firms with women directors on the board have a higher quality of reported earnings than firms without gender-diverse boards (Srinidhi et al., 2011; Adams & Ferreira, 2009).

Despite the interest in this topic, also in this case, not many researchers have studied this issue from a family business perspective (Helal, 2022; Alhebri & Al-Duais, 2020). Despite previous studies showed that the association between EM and family control can be moderated by other factors (Habib et al., 2022) – such as family business generation (Borralho et al., 2020; Bansal, 2021); family ownership (Kumala & Siregar, 2021; Widagdo et al., 2021), board characteristics (Gavana et al., 2022) – the role of gender diversity was under investigated.

Yet, the literature shows that women in family firms play a key role: compared to non-family firms, they are more motivated to pass on their activities to future generations, demonstrate a greater aptitude for long-term commitment and a greater protective instinct towards family reputation (García-Meca & Santana-Martín, 2023). Other studies (Shukla & Teraiya,

2022) demonstrated that in family businesses, the influence of women managers on a company's innovation and creativity is stronger than in non-family businesses; and more recently, some authors have identified potential benefits resulting from the presence of women in family businesses, including greater diversity of thought and perspectives, better organizational performance and improved planning capacity (Bannò et al., 2024).

In this framework, understanding their impact on reducing EM practice is fundamental to improving financial reporting quality (Bannò et al., 2024).

Building upon the stakeholder theory, this paper aims to investigate the relationship between family control and EM practices. Moreover, it also examines the potential moderating effect of gender diversity on the BoDs.

In order to achieve our research objective, we used a longitudinal sample consisting of 1,461 Italian manufacturing SMEs over the period 2014-2020. To test the research hypotheses, we performed a panel regression analysis to examine the interrelations between EM, family firms' status and the potential moderating effect of gender diversity on boards.

Our results show that family firms are less prone to engaging in EM practices than non-family firms are. Moreover, the empirical findings also provide evidence on the role of gender diversity on boards in moderating the relationship between family firm status and EM practices.

The choice to focus on the Italian context is based on the following reasons. First, Italy is a civil law country means that accounting and tax regulations are perfectly aligned: the rules governing accounting (i.e. financial reporting) and those governing tax reporting are consistent with each other. This means that the figures reported in financial statements for accounting purposes are likely the same as those reported for tax purposes (Lamb, 1998). For these reasons, firms may have an incentive to engage in EM to minimize tax payments (Matonti et al., 2021).

Furthermore, the predominance within the market of Italian family and non-family unlisted companies, more specifically SMEs, and a presence of diversified investors and their preferences, can represent factors favorable to financial manipulation (Corbetta & Minichilli, 2005).

Finally, the fact that Italian policy makers have enforced Law 120\2011, which imposes gender quotas for Italian public companies' BoDs and the consequent promotion of gender equality in management positions (Shabbir, 2018), pushed us to choose gender diversity as a moderating factor.

The study is structured as follows. After the present introduction, section 2 summarizes the relevant literature about EM focusing on family firms; section 3 addresses the theoretical framework that led us to propose research hypotheses. In the section 4, the research methodology is presented and in section 5, the empirical results are provided. Section 6 concludes

the study with a general discussion of our findings, description of limitations, and future research steps.

2. Literature review

2.1 EM: general definition

EM has been a widely studied topic in both academic research and financial markets. Although there is no unanimous definition of "EM", it is commonly known as a practice employed by management in order to misrepresent or conceal economic-financial firm's information, aimed at satisfying the expectations of analysts (García Lara et al., 2005; Dyreng et al., 2022) or investors (Ewert & Wagenhofer, 2013; Nguyen et al., 2021). Prior studies have classified EM in two forms: i) accounting EM, whose effects only affect the subtotal cash flow and ii) economic EM, affects total cash flows negatively (Ewert & Wagenhofer, 2013). In both cases, it is possible to deduce that EM negatively affects the quality of economic-financial communication: introducing biases to financial reports, in fact, prevents knowing the real firm's economic-financial performance (Gómez-Mejía et al., 2014).

The literature identifies different motivations underlying the adoption of EM practices: i) to achieve of certain targets for managers who have remuneration contracts based on a given level of profits ii) to reduce the volatility of profits (maintaining improving trends) to preserve and strengthen the financial situation, image and corporate reputation on the market; iii) to minimize political control and regulatory effects (Nia et al., 2015; Temile et al., 2018; Callao et al., 2021).

2.2 EM in listed and unlisted companies

Several studies consistently reveal a broader use of EM behaviors aimed at increasing income among listed companies (Ding et al., 2007; Landry et al., 2013; Vieira, 2016; Ado et al., 2020). On the contrary, few studies discuss it in unlisted companies (Matonti et al., 2021; Paiva et al., 2019) or present comparison results between the two types of companies (Campa, 2019; Gaio et al., 2020).

In general, EM practices differ among listed and unlisted companies in relation to the number and type of stakeholders (Campa, 2019) and to the market regulation and tax policies (Ball & Shivakumar, 2005; Campa, 2019).

The literature identifies two contrasting hypotheses to explain the differences between listed and unlisted companies in the adoption of finan-

cial management practices (Hope et al., 2013; Campa, 2019).

The first, called the "demand" hypothesis, assumes that listed companies adopt poorer EM practices than unlisted companies because they need to provide their many stakeholders with better quality and more reliable financial information.

On the other hand, stakeholders of unlisted companies, which are typically banks and capital providers, have greater access to internal information and therefore rely less on institutional annual reports (Campa, 2019).

The second, called the "opportunistic behavior" hypothesis, states that listed firms have greater incentives than unlisted entities to manipulate earnings due to market and stakeholder pressure to meet earnings expectations and the presence of capital equity (Hope et al., 2013).

Not least, studies based on samples of companies from emerging markets (Aharony et al., 2000; Liu & Lu, 2007; Chen & Wang, 2004; Jian & Wong, 2010), provide clear evidence of the fact that listed Chinese companies drastically increase their profits for obtaining authorization for an Initial Public Offer (IPO), for issuing new shares or for avoiding being delisted.

The implicit assumption is that compliance with regulatory requirements is the incentive for companies to manage their profits.

On the contrary, a study by Gaio et al. (2020), analyzing 8,752 listed and unlisted European companies between 2005-2012 suggest a greater propensity for the adoption of EM practices of unlisted companies compared to listed companies and that the latter show higher quality profits tending to manage it further downwards, suggesting more conservative accounting earnings.

2.3 EM in family firms

EM has been studied in relation to different governance characteristics, such as independence and board size (Davidson et al., 2005), existence and independence of the audit committees (Jaggi & Leung, 2007), ownership concentration (Yeo et al., 2002) and presence of institutional investors (Rajgopal et al., 2007) but only recent few studies have considered ownership and have addressed EM in family businesses.

The results, although sometimes contrasting, show a different propensity to adopt this manipulation practice in family and non-family businesses (Prencipe et al., 2008; Stockmans et al., 2010; Achleitner et al., 2014; Chi et al., 2015; Gavana et al., 2019).

Evidence in the literature suggests that family businesses are significantly less likely to engage in EM practices than their non-family counterparts because of the enormous reputational capital invested in the business (Jiraporn & DaDalt, 2009; Martin et al., 2016; Gavana et al., 2019).

In fact, given the concentration of ownership in family businesses (Fac-

cio & Lang, 2002) and the high risk to which the invested capital is subject, the owning family has a greater incentive (Bennedsen & Nielsen, 2010) to monitor managers and prevent opportunistic behaviors.

Since family members often hold top management positions, there is a convergence of interests between managers and the controlling family (Blanco-Mazagatos et al., 2016).

An extensive body of American literature confirms that family businesses have better corporate and financial reporting practices than non-family businesses (Wang, 2006; Ali et al., 2007; Tong, 2007; Jiraporn & Dadalt, 2009).

In particular, Ali et al. (2007) report better earnings quality in family firms than in non-family firms, suggesting that family ownership among large American firms leads to fewer agency problems.

Meanwhile, at the European level, few empirical studies have discussed EM in family and non-family businesses (Prencipe et al., 2008; Cascino et al., 2010; Prencipe et al., 2011; Paiva et al., 2019).

Using a sample of 1,043 UK-listed family and non-family firms, Paiva et al. (2019) investigated the potential impact of the monitoring from analysts on EM practices. Contrary to prior studies, they found that family firms have higher levels of EM as compared to non-family firms unless they are followed by a significant number of analysts.

Another study by Prencipe et al. (2008) shows that family and non-family businesses show a similar aptitude for manipulating profits through the capitalization of research and development costs.

2.4 Board gender diversity and EM

In recent years, several researchers have investigated the moderating role of gender diversity in board composition (Gull et al., 2018; Zalata et al., 2018; Fan et al., 2019; Umer et al., 2020). However, the results are inconclusive.

Most studies found that gender diversity on boards helps to improve the quality of financial reporting, introducing a broader talent pool as well as better and more accountable corporate governance (Adams & Ferreira, 2009; Vieira & Madaleno, 2019; Mnif Sellami & Cherif, 2020).

More specifically, some studies detailed the positive impact of gender diversity in reducing EM practices, linking it with particular socio-psychological aspects and behavioral characteristics typically associated with women.

In particular, women on board: i) have superior monitoring ability compared with men directors (Adams & Ferreira, 2009; Kao et al., 2020); ii) are more conservative in the choice of financial reporting policy and standard (Panzer & Müller, 2015); iii) are good at collecting personal information, reducing the information asymmetry (Li et al., 2023); iv) are more inclined to

be cautious and risk averse than men (Powell & Ansic, 1997); v) bring a collaborative leadership style that benefits boardroom dynamics by increasing the amount of listening, social support, and win-win problem solving (Kramer et al., 2006); vi) are more likely to adopt ethical behavior than men (Dayanandan et al., 2012).

Li et al. (2023) confirmed that women's participation on supervisory boards and executives reduces real EM. Particularly, they also found that women executives - excluding Chief Executive Officers (CEOs) and Chief Financial Officers (CFOs) - who are also directors are more likely to limit earnings manipulation.

An analysis conducted by Triki Damak (2018) on a sample of 85 French listed companies from 2010 to 2014, within the French context, demonstrates a significant negative correlation between the presence of women on the board and the level of EM practices.

Consistent with previous findings, Umer et al. (2020) reveal that the CEO woman plays a pivotal role in constraining EM practices based on a sample of 100 listed non-financial companies over the period of 2010-2015.

On the contrary, other studies find no association between earnings manipulation and gender diversity on boards (Srinidhi et al. 2011; Sun et al., 2011; Kuo et al., 2014). For example, the study conducted by Pavlovic et al. (2018) on Serbian agriculture companies listed at the Belgrade Stock Exchange found a negative but not statistically significant relationship between women's representation on the board and EM.

Similarly, Sun et al. (2011) finds no gender-based effect in constraining EM, suggesting that ethical beliefs concerning EM do not significantly differ between man and woman audit committee directors.

3. Theoretical framework and hypotheses development

Regarding the framework used in explaining EM in family firms, agency theory (Jensen & Meckling, 2019) has been identified as the dominant paradigm (Prencipe et al., 2008, 2011, 2014; Paiva et al., 2016; Ali et al., 2007; Jiraporn & DaDalt, 2009; Cascino et al., 2010), followed by the stewardship theory (Anderson & Reeb, 2003; Miller & Le Breton-Miller, 2006; Miller et al., 2008) and the socio-emotional wealth theory (Martin et al., 2016; Stockmans et al., 2010).

However, to justify our study, we adopt arguments from stakeholder theory (Freeman, 1984), which are considered more suitable than other theories used in the literature. There are at least three reasons behind this choice. First, the theory is based on maximizing value for all stakeholders who have relationships with the company and not just maximizing wealth for shareholders (Zellweger & Nason, 2008).

About that, as suggested by Zellweger and Nason (2008), in contrast to their non-family counterparts, family firms have de facto an additional stakeholder group, the family; second, family firms may have a higher incentive to ensure the satisfaction of stakeholders because individuals in family firms often play multiple stakeholder roles (e.g. employee, owner, manager and family member); finally, there is some evidence that family firms display strong community relations and are embedded in the societal context of their firms (Dyer & Whetten, 2006).

Second, the stakeholder theory, based on ethical behavior and corporate transparency, is suitable for the context of family businesses which have shown a greater propensity to adhere to ethical standards in their financial reporting compared to non-family businesses (Dyer & Whetten, 2006).

Third, contrary to agency theory which focuses only on the divergences between managers and shareholders, stakeholder theory aims to align the interests of all subjects who cooperate within the company and to reduce agency problems arising from the separation between ownership and control within family businesses (Gómez-Mejía et al., 2007).

Finally, stakeholder theory aligns well with the family business perspective of considering the interests of various stakeholders and preserving the wealth of the business in the long term (Miller & Le Breton-Miller, 2006; Prencipe et al., 2008, 2011).

Given these considerations, previous studies show that family firms have lower EM than non-family firms (Ali et al., 2007; Jiraporn & DaDalt, 2009) and provide high-quality financial information as compared to non-family firms (Prencipe et al., 2008, 2011; Cascino et al., 2010).

The pressure to meet short-term expectations from shareholders is lower and managers are more prone to focus on the long-term development of firms and to be more focused on creating and developing long-term relations with stakeholders, including employees, suppliers, and lenders (Prencipe et al., 2008, 2011).

The management of these relationships would be driven by a concern to foster more open dealings with stakeholders and to enhance transparency. In view of these findings, we formulated our first research hypothesis as follows:

H1: *Family firms exhibit a lower propensity for EM practices compared to non-family firms.*

Building upon prior literature, we hypothesize that gender diversity on boards moderates the relationship between family business status and the quality of financial information (Gull et al., 2018).

The BoD can play a crucial role in influencing EM practices in SMEs. According to Jensen and Meckling (1976), the primary function of the BoD is

to supervise and regulate a company's management, ensuring that managers prioritize the interests of shareholders. Therefore, the BoD's oversight is crucial for ensuring the quality and transparency of financial reporting (Dechow et al., 1996).

However, as highlighted by Fama and Jensen (1983), the effectiveness of the BoD hinges significantly on its composition. Against this background, we hypothesize that greater gender diversity on the board might improve board effectiveness. Specifically, we propose that the relationship between family control and EM practices decreases as the number of women directors on the board increases.

Women directors bring unique skills in communication, risk management, and ethical oversight (Bøhren & Staubo, 2016; Dang et al., 2014), which are crucial for effective board governance. Their emphasis on monitoring and independence (Ararat & Yurtoglu, 2021; Farrell & Hersch, 2005) and better attendance records further enhance board effectiveness.

Furthermore, BoD with a greater representation of women directors exhibits better quality decision-making. Women directors are more acquisitive (Levi et al., 2014), adopt less aggressive investment policies (Chen et al., 2019), and implement better acquisition decisions because of their greater risk aversion (Arun et al., 2015; Belounia et al., 2020).

These attributes contribute to enhanced board effectiveness in overseeing corporate strategies and operational decisions. Women directors' acquisitive nature and prudent risk management approach are beneficial in mitigating the likelihood of earnings management practices in family firms.

Therefore, we formulated the second hypothesis as follows:

H2: *Gender diversity strengthens the negative relationship between family control and EM.*

In other words, a higher number of women directors on the board will strengthen board governance effectiveness and reduce the incidence of EM practices, improving the overall integrity of financial reporting in these firms.

4. Research method

4.1. Sample, data collection and conceptual model

This study uses a sample of Italian manufacturing firms spanning the period 2014-2020. Firm-level data were sourced from AIDA-Bureau van Dijk, a comprehensive database containing detailed accounting data and general information, including governance and ownership, for approximately 980,000 Italian companies. Furthermore, this database provides a historical series extending up to 10 years.

The manufacturing sector is a cornerstone of the Italian economy, contributing significantly to GDP and employment growth. According to a recent report by the Confindustria Study Center, Italy's manufacturing sector ranks among the top 10 globally for added value, investments, production diversification, and export competitiveness (Romano & Traù, 2020). Therefore, manufacturing SMEs represents a compelling research focus within the Italian context (Trianni et al., 2013).

To mitigate the potential distortive effects of Covid-19 on corporate balance sheets and to prevent biased regression estimates, we set the upper time limit of our analysis in the year 2020.

Furthermore, to address the challenges associated with manually identifying family businesses, we opted to use a random sample rather than the entire population for our empirical analysis. Following Palia and Lichtenberg (1999), we carefully selected a representative sample aimed at minimizing size and survival biases. Therefore, our focus was exclusively on active manufacturing firms meeting the SMEs criteria established by the European Commission. Specifically, we identified manufacturing companies using the ISTAT-ATECO 2007 classification system, encompassing only those within section "C" (divisions 10 to 32 based on the first 2 digits). SME classification was based on criteria including headcount (10 to 250 employees) and turnover (2 to 50 million euros), aligning with EU Recommendation 2003/361.

Based on these criteria (size, sector, and legal status), we randomly selected a sample of 1,536 companies from the identified population of 24,600 Italian manufacturing SMEs available in the AIDA-Bureau van Dijk database as of June 2023. Firms lacking complete data necessary for estimating discretionary accruals (DA) or determining their family or non-family status were removed from the sample (*n=75*).

It is important to highlight that in this study, DA was calculated using the modified Jones model proposed by Dechow et al. (1995) and used as a proxy for EM. Key variables used for calculating DA included Earnings Before Interest and Taxes (EBIT), total assets, turnover, receivables, and operating cash flow (CFO).

In contrast, identifying the family or non-family business status required ownership and management data, including the surnames of shareholders and directors. Companies were excluded if it was impossible to find out the surnames of the shareholders and/or directors, such as those controlled by entities or foreign parent companies not included in the AIDA database.

This process yielded a longitudinal dataset of 10,062 firm-year observations, covering 1,461 Italian manufacturing SMEs over the period 2014-2020. Within this sample, 732 companies (50.10%) were classified as family firms, while the remaining 729 (40.90%) were classified as non-family firms.

To examine the potential moderating effect of gender diversity on the

relationship between the status of "family firm" and EM, a moderator variable Z *(Gender diversity)* was introduced in the regression model. Gender diversity was measured as the proportion of women directors on the board (Hillman, 2015; Post & Byron, 2015). We measure this variable as the ratio of the total number of women directors and the total number of directors on board (e.g., Ahmadi et al., 2018; Dwaikat et al., 2021).

4.2. Econometric model

In line with prior research (e.g., Borralho et al., 2020; Cascino et al., 2010; Paiva et al., 2019; Prencipe et al., 2011), we conducted panel regression analyses to test our hypotheses.

Our study explores the association between family firm status and EM, incorporating the moderating effect of gender diversity. Therefore, we used a two-step estimation approach.

The first step involved regressing family firm status against EM practices (HP1). This was operationalized through the following regression equation [1]:

[1] $DA_{it} = \beta_0 + \beta_1 Family\ firm_i + \beta_2 Firm\ size_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Firm\ age_{i,t} + \beta_5 Board\ size_i + \beta_6 Generation + \beta_7 Board\ age + \beta_8 Liquidity + Regional\ dummies + Years + \varepsilon_{i,t}$

In the second step, we performed a regression analysis to examine the potential moderating effect of gender diversity, measured by the proportion of women on boards (HP2).

This model incorporated the interaction term, which represents the product of gender diversity and family firm status. Accordingly, we estimated the following regression equation [2]:

[2] $DA_{it} = \beta_0 + \beta_1 Family\ firm_i + \beta_1 Gender\ diversity + \beta_2 Firm\ size_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Firm\ age_{i,t} + \beta_5 Board\ size_i + \beta_7 Board\ age + \beta_8 Generation + \beta_9 Liquidity + \beta_{10} Family\ firm^* \qquad Gender\ diversity + Regional\ dummies + Years + \varepsilon_{i,t}$

In Equations [1] and [2], DA represents the absolute values of DA, estimated using the modified Jones model (Dechow et al., 1995) (see section 4.3.1).

"*Family Firm*" denotes the explanatory variable of our interest, while "*Gender diversity*" serves as a moderating variable.

The interaction effect is represented by their product of these variables (i.e., "*Family firm x Gender diversity*").

Fig. 1 illustrates how the effect of the independent variable "*Family Firm*" on the outcome variable "*Discretional Accruals*" is expected to be influenced by the moderating variable "*Gender Diversity*" and the expected sign of these relationships.

Fig.1 Research design
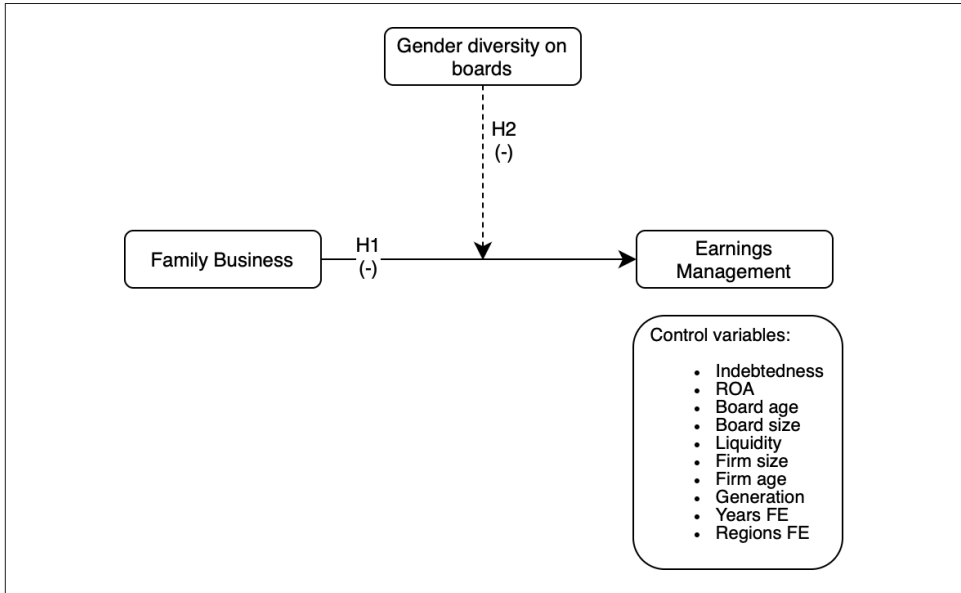
Source: author's elaboration

4.3. Variables

In this section, we provide a comprehensive description of the variables used in the empirical analysis, detailing their measurements, descriptions, and expected effects on EM.

4.3.1 Dependent variable: earnings management

In line with Borralho et al. (2020), we used the DA adjustments method (Jones, 1991) as a proxy for measuring EM. This approach enables the separation of the expected component of accounting outcomes, which are yet to be converted into cash flows, from the unexpected component associated with EM (Borralho et al., 2020; Dechow et al., 1995; Jara-Bertin & López-Iturriaga, 2008).

To estimate DA, we adopted a two-step approach. In the first step, we calculated total accruals (TA) using a cash-flow approach (Borralho et al., 2020; Stockmans et al., 2010; 2013; Nguyen et al., 2021).

In the accounting literature, TA is commonly defined as the difference between operating income and operating cash flow. This difference reflects the cumulative effect of accrual basis implementation in traditional accounting practices (Mendes et al., 2012). Therefore, we derived the following equation [3] to quantify the TA for each company i at time t:

$$TA_{i,t} = EBIT_{i,t} - CFO_{i,t} \qquad [3]$$

Where $EBIT_{i,t}$ represents Earnings Before Interests and Taxes for firm i in year t and $CFO_{i,t}$ denotes Operating Cash Flow for firm i in year t.

In the second step, to estimate DA, we employed the modified Jones model introduced by Dechow et al. (1995), which is widely adopted in research on unlisted firms (Borralho et al., 2020; Stockmans et al., 2010, 2013). Since DA are not directly observable using accounting data, we first estimated the following ordinary least squares (OLS) regression equation [4] annually from 2014 to 2019:

$$\frac{TA_{i,t}}{A_{i,t\text{-}1}} = a_0 + \beta_0 \frac{1}{A_{i,t\text{-}1}} + \beta_1 \left(\frac{\Delta REV_{i,t}\text{-}\Delta REC_{i,t}}{A_{i,t\text{-}1}}\right) + \beta_2 \left(\frac{\Delta INVEST_{i,t}}{A_{i,t\text{-}1}}\right) + \varepsilon_{i,t} \qquad [4]$$

In Equation [4], TA is the value of the TA for company i in year t, scaled by the one-year lagged value of total asset. $\Delta REV_{i,t}$ and $\Delta REC_{i,t}$ represent, respectively, the change in revenues (Turnover sales t - Turnover sales $t\text{-}1$) and in receivables (Receivable t – Receivables $t\text{-}1$) from year t and year $t\text{-}1$ scaled by 1-year lagged values of the total asset. $A_{t\text{-}1}$ is the 1-year lagged value of total asset. INVEST represents the book value of tangible fixed assets and intangible assets. $\varepsilon_{i,t}$ is the residual for firm i in year t

Then, the estimated coefficients from the regression equation [4] ($\widehat{\beta_0}, \widehat{\beta_1}$ and $\widehat{\beta_2}$) were used to estimate non-discretionary accruals (NDAC), as shown in Equation [5]:

$$\frac{NDAC_{i,t}}{A_{i,t\text{-}1}} = \widehat{\beta_0} \frac{1}{A_{i,t\text{-}1}} + \widehat{\beta_1}\left(\frac{\Delta REV_{i,t}}{A_{i,t\text{-}1}}\right) + \widehat{\beta_2}\left(\frac{\Delta INVEST_{i,t}}{A_{i,t-1}}\right) \qquad [5]$$

Finally, DA was calculated as the difference between TA and NDAC, as shown in Equation [6]:

$$DA_{i,t} = TA_{i,t}\text{-}NDAC_{i,t} \qquad [6]$$

In essence, DA are the residuals from the regression equation [4] and serve as a proxy for EM, which was used as the dependent variable of the final regression models (Callao & Jarne, 2010).

4.3.2 Independent variable: family firm status

Due to the lack of an official, publicly accessible database specifically for family businesses in Italy, we used AIDA as the primary data source to gather information on the ownership and governance structures of the firms in our sample.

Following the definition outlined by the European Commission (EC) (2009), we defined family firm as enterprises where the majority of voting rights were held by one or more family members, and at least one family member was involved in the BoD. This definition, endorsed by international organizations, including the OECD, AIDAF, and Eurostat (AIDAF, 2014), offers a standardized approach for identifying family businesses.

Following prior literature (Cucculelli & Peruzzi, 2020; Megaravalli & Sampagnaro, 2018) that used secondary data, we implemented a rigorous procedure to identify family firms within our sample. First, we accessed historical data on ownership and governance structures from the "*Ownership structure*" and "*Board of directors and managers*" sections of AIDA-BvD. These data were meticulously organized and recorded in an Excel spreadsheet.

Subsequently, we manually screened the board composition and ownership details of each company to find out familial ties among directors and shareholders, primarily using surnames as key identifiers (Arosa et al., 2010; Gómez-Mejía et al., 2011).

However, some businesses in our sample were sole proprietorships, where the owner also held the sole directorship.

According to Andersson et al. (2018), these companies were categorized as family firms.

Conversely, for non-sole proprietorships, we classified a company as a family business if at least two shareholders with identical surnames collectively held a majority (at least 50.01%) of equity shares, and if at least one family member served on the board, as in the studied by Baù et al. (2019) and Andersson et al. (2018).

Once companies were classified, we coded this information using a binary variable, assigning it value of 1 to denote family firms, and 0 otherwise (Vieira, 2016)[2].

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[2] Given that AIDA typically provides data for the most recent two years for the majority of firms, we inferred the family control status of preceding years by assuming a continuity in family ownership and involvement on the BoD.

4.3.3 Moderating variable: Gender diversity in the BoD

Gender diversity was proxied using the proportion of women on the BoD (Hillman, 2015; Post & Byron, 2015).

This measure was calculated by dividing the number of women directors by the number of directors on board (Ahmadi et al., 2018; Dwaikat et al., 2021).

Prior studies have shown that gender diversity on boards can provide firms with valuable resources (Alves, 2023).

A higher representation of women directors has been associated with more cautious decision-making, less aggressive investment strategies (Chen et al., 2019), and reduced opportunistic behaviors (Srinidhi et al., 2011).

Consequently, we anticipate that a higher women's representation on board, contributing to enhanced gender diversity, will strengthen board oversight and governance mechanisms.

Therefore, we expect this to exert a negative moderating effect on the relationship between family firm status and EM practices.

4.3.4 Control variables

In the regression analysis, we included a range of control variables to control for firm-level characteristics, governance structures, and geographical location.

First, we controlled for firm size, measured by the number of employees. Larger firms typically have more robust internal control mechanisms, which can deter the adoption of EM practices (Paiva et al., 2019).

Second, we introduced financial leverage as a control variable by introducing the long-term debt to total asset ratio (Borralho et al., 2020). According to Rodríguez-Pérez and Van Hemmen (2010), firms with higher levels of indebtedness often face greater scrutiny from creditors. This heightened scrutiny can discourage managers from manipulating earnings and encourage them to report higher quality financial information to maintain creditor confidence and secure future financing. Therefore, we expect that higher levels of debt will reduce incentives for managers to engage in earnings manipulation, leading to lower levels of DA.

Another control variable we included is firm age, measured as the natural logarithm of the number of years since a firm's incorporation (Gavana et al., 2019), due to its potential effect on EM practices. Younger firms may lack established organizational structures and face increased pressure to meet investor expectations, potentially leading managers to manipulate earnings. Therefore, we hypothesize that as firm age increases, the propensity for EM to decrease, suggesting a negative relationship between firm age and DA.

Since firm liquidity can potentially motivate managers to engage in EM

(Huang et al., 2017), we also controlled for this factor using the current ratio, defined as the ratio of current assets to short-term liabilities.

Similarly, Return on Asset (ROA), calculated as the ratio of EBIT to total assets, was included as a control variable to account for its potential positive impact on EM (Borralho et al., 2020).

Given the potential influence of board characteristics on EM practices, we controlled for a set of governance-related control variables. First, we controlled the average age of BoD, using the natural logarithm of the average age of directors as a proxy. Older board members typically bring more experience and established reputations, often adopting a more conservative approach and showing reluctance toward EM practices compared to their younger counterparts (Le & Nguyen, 2023).

Second, we controlled for the size of the BoD, measured by the natural logarithm of the number of directors on the board. A larger board size may potentially reduce the effectiveness of oversight, as a more directors board could limit the ability of each member to monitor management closely (Kao & Chen, 2004).

Following Borralho et al. (2020), we also included a control variable for company generation, categorizing firms into different generations based on firm age. First-generation companies were those less than 25 years old, second-generation between 25 and 50 years old, and third generation firms older than 50 years.

Finally, to account for regional and temporal effects, we introduced a set of dummy variables for geographical location and year. Geographical location was proxied using 20 dummy variables, each corresponding to distinct regions at the NUTS:2 subdivisions in Italy. Similarly, year dummies were employed to account for time fixed effects.

Tab. 1 - Description and measurements of the variables used in the regression analyses

Variables	Measurement/Definition	Reference	Expected sign
Dependent variable			
Earnings Management (EM)	Discretionary Accruals calculated using the Modified Jones Model	Dechow et al., (1995)	
Independent variable			
Family Firm	Dummy variable equals 1 if a firm is classified as a family firm, 0 otherwise	Vieira, (2016)	Negative
Moderating variable			
Gender diversity	The ratio of women directors to the total number of directors	Ahmadi et al., (2018); Dwaikat et al., (2021)	Negative
Control variables			
Firm size	Natural log of the number of employees	Paiva et al., (2019)	Negative
Indebtedness	The ratio of long-term debt to total asset	Borralho et al., (2020)	Negative
Return on Asset (ROA)	The ratio of operating income to total assets	Borralho et al., (2020)	Positive
Liquidity	The ratio of current assets to short-term liabilities	Mauro et al., (2023); Delen et al., (2013)	Positive
Board Age	Natural logarithm of the average age of directors	Le & Nguyen, (2023)	Negative
Board Size	Natural logarithm of the number of directors on board	Kao & Chen, (2004)	Positive
Generation	Categorical variable: 1 if a firm < 25 years old, 2 if 25-50 years, 3 if > 50 years old	Borralho et al., (2020)	Negative
Regional dummies	20 dummy variables representing distinct regions based on the NUTS:2 subdivisions in Italy.		-
Temporal dummies	Dummy variable equals for each year of analysis		-

Source: author's elaboration

5. Results

Table 2 presents the descriptive statistics for the variables used in the empirical analysis.

Across all firms in our sample, the average value of DA is 0.028, suggesting a moderate engagement. On average, each firm boast at 16.4% representation of women on the board, as denoted by the mean value of "*Gender diversity*" at 0.164.

Turning to financial metrics, the mean debt-to-asset ratio of 0.103 shows a relatively low level of indebtedness among the sampled firms. With a mean ROA of 7.384, the firms exhibit moderate levels of operating profitability. The liquidity ratio also reflects positive average values, showing a mean of 1.803.

In terms of workforce and company age, firms in the sample have an average of 11 employees and an average age of 31 years. Furthermore, on average, the firms in the sample are second-generation firms.

Moving to Panel B and Panel C, we observe notable differences in the average values of DA between family (0.024) and non-family firms (0.031). Family firms, on average, exhibit lower levels of DA compared to their non-family counterparts.

Regarding gender diversity, family firms show a slightly higher women's representation on the boards, with a mean of 0.200. In contrast, non-family firms have an average gender diversity score of 0.129, indicating approximately 12.9% representation.

Turning to financial indicators, family firms exhibit higher levels of debt but also higher operating profits than non-family firms. Specifically, family businesses show an average ROA of 7.442, slightly surpassing the 7.327 observed for non-family businesses. Conversely, non-family firms exhibit a lower debt-to-asset ratio (0.096), indicating less debt compared to family businesses.

Marginal differences emerge in terms of board size and the age of directors between family and non-family firms. The average age of directors in family firms is 58, slightly higher than the average of 56 of non-family firms. Likewise, both family and non-family firms have, on average, 4 directors on their board.

Non-family businesses exhibit structural characteristics that distinguish them from their family-owned counterparts. On average, non-family businesses are younger, with an average age of 27 years, compared to family businesses, which have an average age of 33 years.

Furthermore, non-family businesses tend to be larger in terms of workforce size: non-family businesses have an average of 117 employees, whereas family businesses have an average of 111 employees.

Tab.2 Descriptive statistics

	Obs.	Mean	SD	Min	Max
Panel A – Full sample (n = 1,461)					
Family firm	10,062	0.501	0.500	0	1
Discretionary accruals (abs)	10,062	0.028	0.040	0.000	1.953
Gender diversity	10,062	0.164	0.208	0	1
Debt to asset ratio	10,062	0.103	0.106	0	0.817
Return on Asset (ROA)	10,062	7.384	8.291	-83.06	97.88
Board age	10,062	57.828	8.143	35	175
Board size	10,062	3.961	1.933	1	21
Liquidity	10,062	1.803	1.070	0.16	9.95
N. employees	10,062	11	92	0	1953
Firm age	10,062	31	17	1	147
Generation	10,062	1.751	0.649	1	3
Panel B – Family firms (n = 732)					
Discretionary accruals (abs)	5,035	0.024	0.027	0.000	0.449
Gender diversity	5,035	0.200	0.224	0	1
Debt to asset ratio	5,035	0.111	0.098	0	0.703
Return on Asset (ROA)	5,035	7.442	7.088	-33.35	64.02
Board age	5,035	58.84	8.66	38	175
Board size	5,035	3.92	1.84	1	11
Liquidity	5,035	1.85	1.12	0.33	9.95
N. employees	5,035	111	99	0	1953
Firm age	5,035	33	18	1	121
Generation	5,035	1.827	0.653	1	3
Panel C – Non-family firms (n = 729)					
Discretionary accruals (abs)	5,027	0.031	0.050	0.000	1.953
Gender diversity	5,027	0.129	0.184	0	1
Debt to asset ratio	5,027	0.096	0.114	0	0.817
Return on Asset (ROA)	5,027	7.327	9.342	-83.06	97.88
Board age	5,027	56.812	7.450	35	148
Board size	5,027	3.997	2.025	1	21
Liquidity	5,027	1.756	1.009	0.16	9.93
N. employees	5,027	117	85	2	1104
Firm age	5,027	29	17	1	147
Generation	5,027	1.675	0.635	1	3

Notes: *Panel A presents the descriptive statistics for the entire sample. Panel B provides descriptive statistics for the subset of family businesses. Panel C displays descriptive statistics for the subset of non-family firms.*

Source: author's elaboration

The correlation coefficients displayed in Tab.3, along with the average Variance Inflation Factor (VIF) below 5.00 (O'brien, 2007), suggest the absence of multicollinearity among the variables in our models.

Tab.3 Correlation matrix and VIF

Variables	1	2	3	4	5	6	7	8	9	10	11	VIF
1. Discretionary Accruals	1											
2. Family Firm	-0.09*	1										1.97
3. Gender Diversity	-0.01	0.17*	1									1.04
4. Debt to asset ratio	-0.07*	0.07*	-0.02*	1								1.18
5. Return on Asset	0.20*	0.01	0.01	-0.25*	1							1.09
6. Board age	-0.03*	0.13*	0.02	-0.01	-0.01	1						1.05
7. Board size	0.04*	-0.04*	0.09*	0.01	0.01	-0.13*	1					1.05
8. Liquidity	0.07*	0.04*	0.03*	-0.15*	0.32*	0.02*	0.03*	1				1.13
9. N. employees	0.07*	-0.03*	0.01	0.04*	-0.04*	0.03*	0.11*	-0.01	1			1.15
10. Firm age	-0.05*	0.13*	0.06*	-0.07*	-0.02*	0.13*	0.04*	0.12*	0.05*	1	1	3.27
11. Generation	-0.04*	0.13*	0.06*	-0.05*	-0.04*	0.13*	0.04*	0.10*	0.04*	0.83*	0.83*	3.25
Mean VIF												**1.52**

Notes: (*) Correlation is significant at the 0.05 level (one tailed) ($p < 0.05$)

Source: author's elaboration

Tab.4 presents the results of pooled OLS regression. Model (1) presents the results of the baseline model (1), which includes only the control variables and the independent variable (*Family Firm*). Model (2) incorporates the moderating variable (*Gender Diversity*). Model (3) reports the results of the full regression model, which adds the interaction term "*Family firms x Gender Diversity*".

Tab.4 The outcomes of the Pooled OLS regression

Variables	(1) DA	(2) DA	(3) DA
	Coeff./S.E.	Coeff./S.E.	Coeff./S.E.
Hypothesis 1			
Family firm	-0.006** (0.001)	-0.006** (0.002)	-0.002 (0.002)
Hypothesis 2			

Gender diversity		-0.001 (0.002)	-0.006 (0.005)
Family firm x Gender diversity			-0.011** (0.005)
Debt to asset ratio	-0.004 (0.005)	-0.005 (0.005)	-0.004 (0.005)
ROA	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Board age	-0.002 (0.003)	-0.002 (0.003)	-0.002 (0.003)
Board size	0.002 (0.003)	0.002 (0.001)	0.001 (0.001)
Liquidity	0.0001 (0.001)	0.0001 (0.001)	0.0001 (0.001)
N. Employees	0.0001*** (0.0001)	0.0001*** (0.0001)	0.0001*** (0.0001)
Firm age	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)
Generation	0.002** (0.001)	0.002** (0.001)	0.002** (0.001)
Intercept	0.049*** (0.014)	0.049*** (0.014)	0.048*** (0.014)
Year dummies	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes
Observations	10,062	10,062	10,062
R^2	0.0672	0.0672	0.0680
Adjusted R^2	0.0640	0.0639	0.0647
F-statistic	10.90***	10.82***	10.90***

Notes: *The table presents the results of the panel data regressions for equations [1]-[2]. Robust standard errors are reported in parentheses. The dependent variable is DA, used as a proxy of AM practices. Model (1) presents the results of the baseline regression, which includes only the control variables and the independent variable (Family Firm). Model (2) incorporates the moderating variable (Gender Diversity). Model (3) reports the results of the full regression model, which adds the interaction term between family business status and gender diversity on the company's BoDs. Regional and temporal dummies have been omitted due to space constraints but are available upon request from the authors.*

*** Denotes significance at the 1% (p<0.01)
** Denotes significance at the 5% (p<0.05)
* Denotes significance at the 10% (p<0.10)

Source: author's elaboration.

In Model (1), the coefficient of "*Family Firm*" variable shows a negative relationship with DA at the 5% significance level (β=-0.006, p<0.05). This result indicates that family firms exhibit lower levels of DA than non-family firms, which supports our HP1.

Our findings align with existing research suggesting that family-owned businesses are less likely to manipulate earnings (Borralho et al., 2020; Prencipe et al., 2008; Bansal, 2021; Ali et al., 2007).

Family businesses Family firms are known for their distinctive organizational characteristics and values (Corbetta & Salvato, 2012) that shape their management practices, including their approach to EM. These traits include a strong commitment to stakeholders, greater adherence to ethical principles, reduced agency costs and greater focus on long-term sustainability (Borralho et al., 2020).

Furthermore, family businesses' emphasis on corporate reputation, promoting trust relationship, and maintaining intergenerational wealth (Cascino et al., 2010; Prencipe et al., 2011) may further reduce their inclination to engage in EM.

In Model (2), which introduces the moderating variable, we observe a non-statistically significant negative coefficient for the "*Gender diversity*" (β=-0.001, p>0.10). This suggests that there is no significant relationship between gender diversity on boards and DA. In essence, the presence of women on boards does not appear to have a significant impact on EM.

This finding aligns partly with the research of Kyaw et al. (2015), who found no significant relationship between women representation on the board and EM as measured by DA. As noted by Sanad et al. (2022), the empirical literature presents mixed findings regarding the influence of gender diversity on EM, contributing to the inconclusiveness of this relationship.

Model (3) includes the interaction term "*Family Firm x Gender Diversity*" to examine whether and how board gender diversity moderates the relationship between family business status and DA. The coefficient of the interaction term is negative and statistically significant at the 5% level (β=-0.011, *p*<0.05), indicating a significant moderating effect. The negative sign of the interaction term shows that greater gender diversity on boards strengthens the negative relationship between family firms and EM. In other words, as the representation of women on boards increases, the negative impact of family firm status on DA becomes stronger. This means that family firms with a higher proportion of women on the board are even less likely to engage in EM than family firms with fewer or no women directors. This evidence strongly supports our HP2 and aligns with the findings of a recent study by Helal (2022) on a sample of SMEs in Bangladesh.

To provide a clearer understanding of the moderating effect of gender diversity, Figure. 2 displays a graph illustrating the marginal effects of board gender diversity on EM. Consistent with HP2, the graph illustrates

how the negative impact of family control on EM practices decreases as levels of board gender diversity increase. This indicates that a greater presence of women on the board further reduces the likelihood of family businesses engaging in EM practices.

Regarding the control variables, the regression estimates in Table 4 reveal a negative but not statistically significant relationship between indebtedness (debt-to-asset ratio) and DA.

This result may be due to the increased scrutiny indebted companies receive from creditors. Although debt does not exert a statistically significant impact on EM, the observed negative relationship may suggest that companies may strategically leverage debt to capitalize on growth opportunities. This finding is consistent with the research of Pazzaglia et al. (2013) and Rodríguez-Pérez and Van Hemmen (2010), who noted that highly indebted firms are subjected to greater scrutiny from creditors. This increased oversight pushes these firms to provide more transparent financial information, which in turn can bolt investor confidence and facilitate access to credit.

On the contrary, it appears that more profitable firms tend to exhibit higher levels of DA, indicating reduced accounting transparency. The coefficient of ROA is consistently positive and statistically significant ($p<0.001$) across all estimated models. This result, in line with Borralho et al. (2020), contradicts prior studies (e.g., Paiva et al., 2019; Prencipe et al., 2011, 2008; Vieira, 2016) that reported a negative association between financial performance and EM.

The coefficient of "*Liquidity*" displays a statistically significant positive relationship with DA, aligning with the findings of Moghaddam and Abbaspour (2017). As expected, there is a positive association between DA and firm size, whereas a negative relationship exists between DA and firm age. This implies that larger and younger firms are more inclined to engage in EM.

Despite the expectation that larger firms would have robust internal control mechanisms to deter EM practices (Paiva et al., 2019), our study reveals a positive relationship between firm size and DA. This finding aligns with the research of Ali et al. (2015). One explanation may lie in the growing pressure that larger firms face from investors and stakeholders to consistently demonstrate positive or growing earnings.

In contrast, our findings indicate that younger firms are more prone to engage in EM than their older counterparts are. The coefficient of "*Firm Age*" consistently shows a negative sign and is statistically significant across all estimated models. Young firms often lack established organizational structures and routines, often facing pressure from investors to fulfill ambitious growth expectations. This may incentivize managers to resort to EM practices.

Regarding board characteristics, our findings reveal a lack of significant association between certain board attributes, particularly age and size, and DA. However, as expected, our results suggest that firms with larger and

younger boards are more prone to engaging in EM. This aligns with the findings of Le and Nguyen (2023) and Kao and Chen (2004).

Fig.2 The moderating effect of gender diversity on the relationship between family firm status and EM
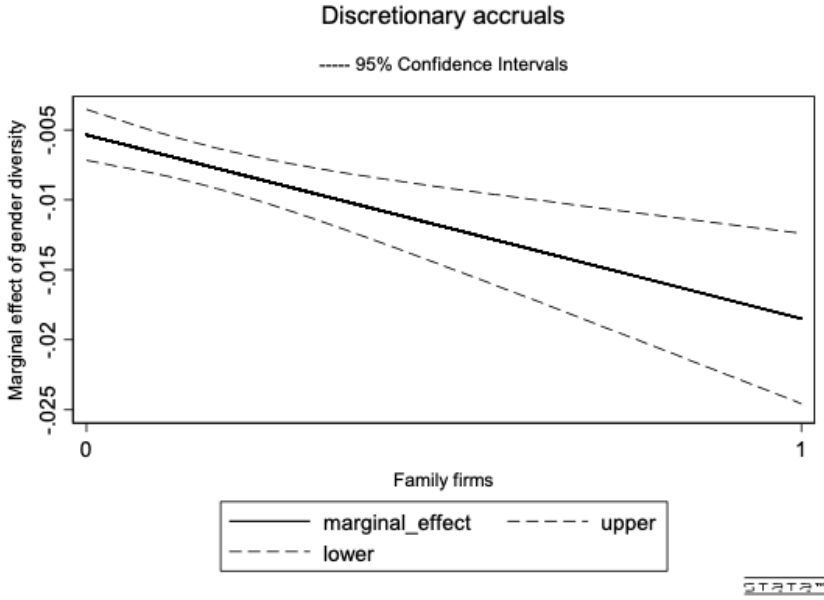
Source: author's elaboration.

5.1. Robustness test

Given the time-invariant nature of both our independent variable (*family firms*) and the moderator (*gender diversity*), we considered the use of a Fixed-Effects (FE) regression model inappropriate for this study. Therefore, following the recommendation of D'amato (2017), we repeated the regression analyses using the Generalized Least Squares (GLS) with Random-Effects (RE) as a robustness test.

This method was chosen to mitigate potential cross-sectional autocorrelation disturbances or unobservable heterogeneity linked to panel data (Baltagi & Wu, 1999). Using GLS Random-Effects allows for more efficient and unbiased estimations, particularly useful when analyzing longitudinal data that does not meet the assumptions of pooled OLS.

Table 5 presents the estimates of the influence of family control on EM practices using GLS-RE. These findings are consistent with those obtained using Pooled OLS. This consistency enhances the reliability and validity of our findings regarding the impact of family control on EM practices and the moderating effect of gender diversity on boards.

Tab.5 The outcomes of GLS Random-Effects regression

Variables	DA (4) Coeff./S.E.	DA (5) Coeff./S.E.	DA (6) Coeff./S.E.
Hypothesis 1			
Family firm	-0.006**	-0.006**	-0.004
	(0.001)	(0.001)	(0.007)
Hypothesis 2			
Gender diversity		0.001	0.006
		(0.003)	(0.005)
Family firm x Gender diversity			-0.011**
			(0.005)
Debt to asset ratio	-0.005	-0.005	-0.005
	(0.005)	(0.005)	(0.007)
Return on Asset	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Board age	-0.002	-0.002	-0.002
	(0.005)	(0.004)	(0.004)
Board size	0.002	0.002	0.002
	(0.001)	(0.001)	(0.001)
Liquidity	0.0001	0.001	0.001
	(0.000)	(0.001)	(0.001)
N. Employees	0.0001***	0.0001***	0.0001***
	(0.000)	(0.0001)	(0.0001)
Firm age	-0.005***	-0.005***	-0.005***
	(0.001)	(0.002)	(0.002)
Generation	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)
Intercept	0.050***	0.050***	0.049***
	(0.020)	(0.020)	(0.020)
Year dummies	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes
Observations	10,062	10,062	10,062
N. cluster	1,443	1,443	1,443
R^2 (overall)	0.0658	0.0658	0.0666
Wald Chi^2	311.50***	275.71***	277.09***

Notes: The table presents the outcomes of GLS-RE regressions analysis. Robust standard errors are in parentheses. Model (4) presents the results of the baseline regression model, which includes only the control variables and the independent variable (Family Firm). Model (5) incorporates the moderating variable (Gender Diversity). Model (6) reports the results of the full model, which includes the interaction term between family business status and gender diversity on the board. Regional and temporal dummies have been omitted due to space constraints but are available upon request from the authors.
*** Denotes significance at the 1% ($p < 0.01$).
 ** Denotes significance at the 5% ($p < 0.05$)
 * Denotes significance at the 10% ($p < 0.10$)

Source: author's elaboration.

6. Conclusions

This research examined the adoption of EM in Italian unlisted companies, comparing family and non-family businesses. It also explored the moderating effect of gender diversity on the BoD to reduce this manipulative practice.

The analyses were conducted using a sample of 1,461 manufacturing Italian SMEs during the period 2014-2019.

The study focuses on Italy due to its civil law system aligning accounting and tax regulations, potentially incentivizing EM to avoid debt agreement violations and minimize tax payments. Additionally, the prevalence of SMEs and diverse investor preferences in the market may favor financial manipulation. Italian policy enforcing gender quotas for public companies' boards and promoting gender equality in management roles prompted the examination of gender diversity as a moderating factor. Our results showed that family firms are less prone to the practices of EM than non-family firms, and that the association between family firm status and EM is negatively moderated by gender diversity.

Despite similar studies in the literature, the context or moderating variable differs.

For example, also Borralho et al. (2020), analyzing 263 Spanish companies between 2011 and 2015, show that family firms are less prone to the practices of EM than non-family firms. However, differently from our studies, they showed that the association between family firm status and EM is moderated by the firm generation. Contrary, in England, Paiva et al. (2019) argued that, among 1,043 listed companies, family firms have higher levels of EM as compared to non-family firms, unless they are followed by a significant number of analysts considered the moderator variable.

Consistent with our results, other studies showed a significant negative effect of board women's presence on EM practices level (Lakhal, 2015; Triki Damak, 2018; Gull et al., 2018), although the context of family businesses is not always specified.

More similar to our results, Mnif Sellami and Cherif (2020), empirically analyzed a sample of 198 French family firms over the period 2010–2018 and revealed that the negative linkage between women board directorship and EM remained constant for independent women directors while the opposite holds for their family-affiliated counterparts.

This study complements prior literature in different ways.

First, although EM is a major research topic in the financial accounting field, this stream of research has directed only limited attention to accounting behavior in family firms (Paiva et al., 2016).

Especially noteworthy is the dearth of research on EM in unlisted family firms (Paiva et al., 2016). This is undoubtedly a consequence of the difficulties in obtaining data from private family firms (Prencipe et al., 2014). We contribute to the scant research on EM in unlisted family businesses (e.g., Stockmans et al., 2010, 2013), confirming empirically that the family context affects the quality of financial information by reducing EM practices.

Second, there are a limited number of studies focused on the Italian context (Prencipe et al., 2008; Cascino et al., 2010; Prencipe et al., 2011; Ferramosca & Allegrini, 2018).

In this sense, we contribute to the literature by adding first evidence from a

country in which most firms are still controlled by family ownership. We have chosen to focus the analysis on the manufacturing sector, as this represents the core of Made in Italy (Banca d'Italia, 2020; Cucculelli & Peruzzi, 2020).

Third, our study is original also considering the moderating variable chosen.

Although some researchers have generally explored the impact of gender diversity on both financial reporting quality and EM (Gull et al., 2018; Arun et al., 2015; Gavious et al., 2012; Srinidhi et al., 2011), this issue requires further investigation, particularly in family firms. To the best of our knowledge, no study has already explored the moderating influence of gender diversity on the relationships between family control and EM. Our results confirm our research hypothesis 2, suggesting that gender diversity has a mitigating effect on the relationship between family firms and EM practices. In other words, a higher concentration of women directors on the BoD further reduces the propensity of a family firm to engage in EM practices.

Finally, despite most of the previous studies referred to the agency theory (Ali et al., 2007; Jiraporn & DaDalt, 2009; Cascino et al., 2010; Prencipe et al., 2011, 2008), to the stewardship theory (Anderson & Reeb, 2003) or to the socio-emotional wealth theory (Stockmans et al., 2010; Achleitner et al., 2014), we extend family business literature by applying stakeholder theory (Freeman, 1984) to the family firm and EM context, as suggested by family business scholars (Paiva et al., 2016; Zellweger & Nason, 2008).

Although these strengths of our research, we recognize some limitations to our study, which suggest directions for research future.

First, our sample only comprises 1,461 Italian manufacturing SMEs over the six years period spanning from 2014 to 2020 and it is not clear whether the current findings can be generalized to other countries or other time periods.

Furthermore, the composition of the sample may not accurately represent the broader population of Italian SMEs or the manufacturing sector as a whole.

Therefore, future studies may offer new insights by conducting their analyses over an extended sample and time period.

The second limitation of this study is the use of secondary data sources to classify family and non-family firms. Since AIDA typically provides information for the last two years for most firms, we inferred the family control status of previous years by assuming continuity in family ownership and involvement in the BoD. While this approach allows us to make reasonable estimations regarding the family/non-family classification for periods where direct data is unavailable, it is essential to acknowledge the inherent limitations of this method.

Relying solely on secondary data sources may lead to inaccuracies or classification bias, as these sources may not always provide up-to-date information on ownership structures or familial involvement in governance. Additionally, this method assumes that ownership and governance structures remain unchanged throughout the observation period, which

may not always be the case in practice. Therefore, future studies could use alternative methods for inferring family control status over longer time frames, perhaps by incorporating additional data sources or employing more sophisticated classification techniques.

Third, although the literature provides empirical evidence of a trade-off between accrual and real EM techniques (Zang, 2012; Azzam et al., 2021) in our study, we considered only accrual EM and this may underestimate the total EM activities (Braam et al., 2015).

Fourthly, our study results assume that women directors are homogeneous without exploring interpersonal differences. In line with the previous search (Gull et al., 2018; Zalata et al., 2022), there is a need to further explore this area by analyzing other proxies or characteristics (i.e., qualification, type of assignment, ecc.) of women directors that influence EM. For example, Zalata et al. (2022) showed that it is not the gender difference that improves the quality of earnings, but the financial background of women directors that determines the quality of profits.

Also, Gull et al. (2018) suggest that business expertise and audit committee membership are key attributes of women directors for promoting the effective monitoring of EM.

Last, our research design does not show the mechanisms that women directors use to improve earnings quality.

Our results might be relevant practical implications for financial accounting users and monitoring bodies to prevent the risk of EM practice. In fact, understanding the impact of family control and the moderating effect of a board gender diversity in reducing financial manipulation practices could help improve the quality, transparency, and integrity of financial reporting, as well as increase investor confidence in family businesses.

Finally, the social implications are not negligible: our study confirms and strengthens the positive effects deriving from the presence of women on the board to improve practices aimed at supporting the sustainability and integrity of family businesses.

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