ENVIRONMENTAL, SOCIAL AND GOVERNANCE DISCLOSURE'S IMPACTS ON EARNINGS MANAGEMENT: FAMILY VERSUS NON-FAMILY FIRMS

ABSTRACT

Firms may strategically disclose corporate social responsibility (CSR) activities to compensate for their earnings management practices and, in this way, deflect stakeholders' attention from non-standard reporting procedures. However, CSR dimensions can contribute differently to these practices, and these impacts may be affected by specific business contexts. This study investigated how each component of environmental, social and governance (ESG) disclosure individually affects earnings management in family versus non-family firms. The analysis used data from 2009 to 2018 on listed companies in France and Spain as these code law countries both have concentrated ownership. The results show that not all ESG dimensions are equally important for reducing earnings management and that the relationship between ESG disclosure and earnings management is affected by firms' family or non-family status. The findings contribute to resolving the debate generated by inconsistent results reported regarding the relationship between disclosure of CSR activities and earnings management.

Keywords: Corporate social responsibility (CSR), Earnings management, environmental, social and governance (ESG) disclosure, Family business, Listed company, Transparency

1. Introduction

Corporate social responsibility (CSR) disclosure and earnings management intersect when 'managers use [their] judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that rely on reported accounting numbers' (Healy and Wahlen, 1999, p. 368). The CSR-earnings management relationship has been widely studied (Chih et al., 2008; Ferramosca and Allegrini, 2018; Kim et al., 2012; Stockmans et al., 2013), yet the nature of this link remains unclear (Kim et al., 2012; López-González et al., 2019a; Martínez-Ferrero et al., 2017). Two main reasons can be given for the contradictory findings reported in the literature. On the one hand, researchers have mostly treated CSR as a single construct (Gavana et al., 2017; Gras-Gil et al., 2016; Martínez-Ferrero et al., 2016) even though investors often value each CSR dimension differently (Miralles-Quirós et al., 2018; Sassen et al., 2016). On the other hand, CSR disclosure and earnings management's relationship appears to vary according to the business context involved and, in particular, to take on singular characteristics in family firms (Liu et al., 2017; Martínez-Ferrero et al., 2016). More specifically, family ownership's influence on this link remains controversial because some studies have found that these firms' disclosure of CSR activities mitigates earnings management practices (e.g. Liu et al., 2017; López-González et al., 2019a; Martínez-Ferrero et al., 2016) while other investigations (Gavana et al., 2017) have reported the opposite findings (Gavana et al., 2017).

To shed light on these contradictory results, the present research searchs to achieve two objectives. The first is to explore the relationship between CSR disclosure and earnings management, treating environmental, social and governance (ESG) disclosure as three separate dimensions, which has recently been suggested by various scholars (e.g. Gerged et al., 2020; Oh et al., 2019). The second objective is to study the relationship between CSR disclosure and earnings management, focusing specifically on the differences between family firms (i.e. companies in which a single family plays a significant role in ownership and management [Mahto et al., 2010]) and non-family firms. Family members' joint involvement in one company confers on these firms unique characteristics and behaviours that contrast with those of non-family businesses (Cruz et al., 2014; Doluca et al., 2018). For instance, a family's participation in one company means that the owners supervise managers and ensures fewer conflicts of interest arise between management and shareholders (i.e. type I agency conflict), thereby mitigating unethical practices such as earnings management (Liu et al., 2017; Martínez-Ferrero et al., 2016). However, agency problems between the family, investors and other stakeholders (i.e. type II agency conflict) may be exacerbated in these firms as the family members' majority position allows them to invest in CSR initiatives that serve their own interests at the expense of other concerns (Block and Wagner, 2014; Liu et al., 2017). This tendency can contribute to an increase in earnings management practices for the founding family's benefit (López-González et al., 2019b). In addition, family businesses have longer lasting relationships with their stakeholders (Bingham et al., 2011; Van Gils et al., 2014), and these companies are more focused on issues related to corporate reputation (Campopiano et al., 2019; López-González et al., 2019b). These characteristics can lead them to invest in CSR projects in order to avoid situations that are generally considered unethical (Bingham et al., 2011; Cruz et al., 2014). Family firms may divulge information on these initiatives to gain more legitimacy and improve their reputation (García-Sánchez and Martínez-Ferrero, 2019; López-González et al., 2019a) and divert attention from earnings management practices (Gavana et al., 2017; Prior et al., 2008).

The present research's approach was based on stakeholder theory (Freeman, 1984; Freeman and Gilbert, 1988) and agency theory (Jensen and Meckling, 1976). The model developed proposed that the different dimensions of ESG disclosure have different impacts on the quality of earnings management and that these effects are stronger for family firms. This model is tested using data from 2009 to 2018 on a sample of 243 French and Spanish listed companies. The analysis focuses on these two countries because their law systems are based on Roman law (i.e. code law), which is known for its legalistic view (Gallen and Grado, 2016), and their orientation towards stakeholders and concentrated property ownership. Both nations' economies include a high proportion of family firms (Borralho et al., 2020a). In general, the current study's results confirm that the relationship between ESG disclosure and earnings management is stronger in family businesses than in non-family businesses .

This research's approach makes three substantive contributions to the existing literature. *First*, the study revisits the relationship between CSR – assessed via ESG disclosure scores – and earnings management. The findings included that not all dimensions of ESG disclosure contribute to mitigating earnings management practices, thereby highlighting this link's complexity. *Second*, the results add to the limited knowledge about CSR-earnings management relationship within family firms (Gavana et al., 2017; Martínez-Ferrero et al., 2015) by revealing that the dimensions of ESG disclosure vary in their effect on earnings management for family versus non-family businesses. This finding emphasises that researchers need to consider the ESG dimensions individually and companies' family and non-family status when examining ESG disclosure's relationship with earnings management. *Last*, the results emphasise family firms' stronger focus on their stakeholders. The findings also highlight the need to identify mechanisms that reduce the gap between capital markets' short-term perspective and longer-term concerns about environmental risk, which is also of interest to managers and regulatory bodies.

2. Theoretical Framework and Rationale for Hypotheses

2.1 ESG disclosure and earnings management

The literature contains two opposing currents in research on the relationship between ESG disclosure and earnings management. The first stream accepts that ESG disclosure presupposes companies' voluntary integration of ESG concerns into decisions made about their business operations. Disclosure is thus used to display behaviours aligned with socially accepted rules (Campopiano and De Massis, 2015; Kim et al., 2012). For example, disclosure of CSR activities can help investors understand whether firms' activities are truly beneficial and value them accordingly (Prior et al., 2008). Firms that disclose information on CSR activities seek to gain legitimacy by showing external stakeholders that they meet ethical standards, respect the social contract that defines legitimacy (Deegan, 2002; Liu et al., 2016) and minimise earnings management practices (Kim et al., 2012; Kumala and Siregar, 2021; Muttakin et al., 2015). Empirical research has also found evidence that higher quality disclosure of CSR information contributes to reducing earnings management practices (Chih et al., 2008; Kim et al., 2012; Martínez-Ferrero et al., 2015).

In contrast, the second stream considers ESG disclosure to be a way for managers to protect themselves from the consequences of using earnings management practices for their own benefit (e.g. e.g., when their retribution is linked to company's profits). Increased CSR disclosure is associated with these professionals' increased credibility among stakeholders (Prior et al., 2008) since greater disclosure of CSR practices causes managers to be seen as more ethical and compliant with regulations (Kim et al., 2012; López-González et al., 2019a). This information can, therefore, be used as a defensive measure to avoid negative reactions and minimise stakeholder monitoring (Anderson and Reeb, 2003; Gavana et al., 2017; Martínez-Ferrero et al., 2017).

Companies thus may present deficient, low-quality financial data in mandatory documents but provide social and environmental information voluntarily in highly attractive non-standardised reports. The latter disclosure is a way to turn the spotlight on non-financial information in order to mask earnings management (Muttakin et al., 2015) and prevent investors from examining these practices (Anderson and Frankle, 1980; Dhaliwal et al., 2014). Empirical research has provided confirmation of this opportunistic behaviour, namely, ESG disclosure that hides earnings management practices with a negative effect on financial information's reliability (Muttakin et al., 2015; Prior et al., 2008). In short, managers who focus on serving their own best interests seek to divert stakeholders' attention by disclosing CSR activities as a way to hide discretionary practices (Prior et al., 2008).

The nature of the CSR-earnings management relationship remains controversial (Kim et al., 2012; López-González et al., 2019a; Martínez-Ferrero et al., 2017). One explanation for this debate is that most scholars have treated ESG disclosure as a single construct (e.g. Gras-Gil et al., 2016; Martínez-Ferrero et al., 2016; Velte, 2019) instead of exploring whether ESG dimensions' impact can vary independently (Kim et al., 2012; Martínez-Ferrero et al., 2016). The lack of attention given to each component's individual influence is somewhat surprising given that stakeholders do not attach the same value to all CSR initiatives (Abeysekera and Fernando, 2020; Miralles-Quirós et al., 2018), which means companies may meet different expectations (Campopiano and De Massis, 2015). These variations can have a positive or negative influence on earnings management (López-González et al., 2019a) as CSR activities can strengthen businesses' ethical behaviour (Bae et al., 2018) or generate greater conflict of interest between stakeholders (Gavana et al., 2017; Prior et al., 2008).

To shed more light on this controversy, the present study sought to address previous calls for investigations to consider ESG dimensions' impacts individually (Campopiano et al., 2019; Gerged et al., 2020; Oh et al., 2019). This research's first hypothesis thus proposed the following:

Hypothesis 1*: ESG disclosure dimensions are not equally associated with earnings management practices.*

Another explanation for the inconsistent results reported in the literature on CSR disclosure and earnings management is the minimal attention paid to business contexts (Filser et al., 2019; Kumala and Siregar, 2021; Miroshnychenko and De Massis, 2022). To help fill this gap, the current study focused on the differences between family and non-family firms because the former companies have unique behaviours in terms of both CSR (Block and Wagner, 2014; Liu et al., 2017) and earnings management (Borralho et al., 2020a; Cascino et al., 2010).

2.2 ESG disclosure and earnings management: family and non-family firms

2.2.1 Environmental disclosure

Environmental information disclosure refers to reports of initiatives related to the state and conservation of the natural environment, responsible use of energy and natural resources, reduction of pollutant emissions and research into sustainable design and innovation (Campopiano and De Massis, 2015; Sanches et al., 2017). This disclosure can be advantageous for companies since it has been shown to improve corporate reputation, reduce the cost of capital and strengthen firms' negotiation power (Bae et al., 2018; Sarumpaet et al., 2017).

Companies may use environmental disclosure as a legitimisation tool (Chen et al., 2014; Lu and Abeysekera, 2017) or a greenwashing method to cover up earnings management practices (Gerged et al., 2020). While the former situation suggests a negative relationship between environmental disclosure and profit manipulation, the latter is expected to reflect the opposite connection (Kim et al., 2012). Researchers have reported that managers invest in environmental initiatives to avoid political costs (Amar and Chakroun, 2018) incurred by meeting objectives not valued by shareholders (Abeysekera and Fernando, 2020) while maintaining attractive returns on capital that safeguard managers' positions (Prior et al., 2008).

However, environmentally committed companies must invest additional resources, and family firms are characterised by greater resource constraints than non-family businesses are (Amit and Villalonga, 2020; De Massis et al., 2018). Undertaking environmental investment and disclosing this implies fewer funds will be available for other activities, which in family firms may be seen as unlikely to benefit any descendants as the money invested will not remain in the family (Campopiano et al., 2019; Dyer and Whetten, 2006). This situation can result in earnings management involving downgrading financial results to avoid green activism pressures that emphasise investing resources in environmental protection measures (Gargouri et al., 2010).

In contrast, family businesses may be seen as a mirror of family values (Berrone et al., 2010; Dyer and Whetten, 2006), including showing genuine concern about protecting the environment and disclosing the relevant initiatives (Campopiano et al., 2015). From this perspective, any malpractice can damage family companies' image in the stakeholders' eyes (Block and Wagner, 2014). Protecting the family name and invested assets is linked to maintaining family control, so family members may abuse their majority control and use it for their own benefit. These owners can opt to engage in opportunistic earnings management (Kumala and Siregar, 2021) camouflaged by increasing environmental activities' visibility for the relevant stakeholders (Gavana et al., 2017). In addition, family firms' long-term orientation (Bingham et al., 2011; Miller et al., 2013) can aggravate type II agency problems. Green investment may also be used to increase managers' prestige and emotional remuneration without investors receiving any clear benefits (Abeysekera and Fernando, 2020).

In non-family businesses, the long-term return on environmental investment means investors, with a higher propensity to demand short-term profitability feel disadvantaged by green initiatives that may imply lower dividends (Abeysekera and Fernando, 2020; Fernando et al., 2017). This conflict of interest is likely to increase earnings management practices aimed at maintaining a stable dividend policy (Block and Wagner, 2014). Based on the above findings, the present study's next hypotheses were worded as follows:

Hypothesis 2a*: Higher* e*nvironmental disclosure scores are associated with more earnings management in family firms.*

Hypothesis 2b*: Higher* e*nvironmental disclosure scores are associated with more earnings management in non-family firms.*

2.2.2 Social disclosure

Social information disclosure refers to work quality, job satisfaction, human rights, community engagement and product responsibility. Labour relations encompass workers' rights and duties and encourage equal opportunities and non-discrimination when companies build their workforce (Miralles-Quirós et al., 2018). Human rights reflect the principles of respect for human dignity in line with major conventions (e.g. the Universal Declaration of Human Rights and the International Labour Organisation). Communities are attentive to firms' commitment to good citizenship including protecting the public's health and respecting business ethics, as well as producing goods and services that safeguard individuals' health, safety, integrity and third-party data privacy (Amar and Chakroun, 2018; Sanches et al., 2017).

Employee representation on company boards can reduce earnings management because workers tend to report situations they deem unethical (Amar and Chakroun, 2018), but the results reported on this topic are inconsistent (Amar and Chakroun, 2018; Kim et al., 2012). Family nepotism could give rise to unfair compensation systems that discriminate against non-family employees versus family members (Cruz et al., 2014). However, family firms are associated with long-term orientation (Campopiano and De Massis, 2015) and social and geographical proximity (Ernst et al., 2022b; Lähdesmäki et al., 2019), so these companies tend to create stable relationships with all their stakeholders (e.g. local communities, customers, suppliers and workers) (Block and Wagner, 2014; Brigham et al., 2011). These firms also can be more concerned about the surrounding community and their employees' welfare (Block and Wagner, 2014). Thus, family businesses' fair treatment of their workforce favours an alignment of interests with external stakeholders such as customer and suppliers in order to create lasting relationships, which translates into benefits for family businesses and their owners (Bingham et al., 2011; Block and Wagner, 2014).

Firms concerned about their image use social media to disseminate information on social issues, which legitimises them in their stakeholders' eyes (Lodhia et al., 2020). For this reason, family businesses develop and disclosure socially beneficial initiatives because they enhance the image projected by these companies (i.e. improve their corporate reputation) (López-González et al., 2019b). This strategy fosters a more adequate alignment with workers' interests based on their non-financial performance (Miller et al., 2013) including, among other things, productivity and customer satisfaction (Hassabelnaby et al., 2010). These initiatives encourage workers to achieve future goals, imply a move away from financial goals and thus reduce earnings management practices (Campopiano and De Massis, 2015; Hassabelnaby et al., 2010).

Conversely, non-family businesses tend to have greater difficulty reconciling their short-term financial goals with social strategies' nebulous returns (De Massis et al., 2018a; Miller et al., 2013). When firms focus on shareholders' expectations regarding profitability, these companies may not be able to invest fully in any long-term commitment to creating value for future generations (Doluca et al., 2018; Miralles-Quirós et al., 2018). Non-amily firms are thus less likely to incur high social costs in order to guarantee their survival in the relevant markets, which makes it difficult for them makes it difficult for them avoiding breaches of legitimacy-related social contracts (Abeysekera and Fernando, 2020).

The research on family and non-family firms identifies any conditions provided by the family ownership that are related to lasting relationships with their stakeholders (Block and Wagner, 2014; Dyer and Whetten, 2006) and may be difficult to imitate for non-family firms (Campopiano and De Massis, 2015). Therefore, non-family firms need to resolve more conflicts of interest in the social domain, which can lead them to engage in earnings management (López-González et al., 2019a; Prior et al., 2008). The above results were incorporated in the present research's next two parallel hypotheses:

Hypothesis 3a*: Higher* social *disclosure scores are associated with less earnings management in family firms.*

Hypothesis 3b*: Higher* social *disclosure scores are associated with more earnings management in non-family firms.*

2.2.3 Governance disclosure

Governance disclosure refers to company systems and processes that aim to ensure that … board members and executives act in the best interests of … [each] company's long-term shareholders (Sassen et al., 2016). This disclosure thus encompasses firms' commitment to and effective implementation of principles of good governance. For instance, all shareholders must be treated equally, and companies need to communicate information on economic, financial, social and environmental aspects of relevance to their decision-making processes (Miralles-Quirós et al., 2018). Externally published reports on financial and non-financial information constitute governance tools and serve to align managers and shareholders' interests (Ferramosca and Ghio, 2018).

In family firms, family members' dominant role can lead to more fragile and informal governance structures due to fewer information asymmetries between owners and managers (Anderson and Reeb, 2003; Iyer and Lulseged, 2013), as well as less concern about minority interests (Campopiano and De Massis, 2015; Cruz et al., 2014; Oh et al., 2019), which may affect ESG disclosure. Prior studies have found no difference between family and non-family businesses' level of governance disclosure (Campopiano and De Massis, 2015; Iyer and Lulseged, 2013), although a higher percentage of family ownership has been associated with less disclosure (Labelle et al., 2018). This tendency can contribute to problems with aligning family shareholders and minority shareholders' interests, which has consequences for earnings management (Ferramosca and Ghio, 2018). Gavana et al. (2017), for example, observe that family firms' greater reliance on self-financing leads to more earnings management as a way to reduce dividends payments and thus increase the company resources available for future investments.

Conversely, the need to protect family wealth can contribute to a closer alignment with other shareholders' interests, thereby generating a search for more effective governance mechanisms (Borralho et al., 2020b; Liu et al., 2016). This search for legitimacy focuses on increasing investors' trust in family management and maintaining shares' attractiveness in capital markets (Block and Wagner, 2014). In addition, family firms more closely supervise managers, with family members making decisions about investments (Martínez-Ferrero et al., 2016) and downplaying managers' initiatives that may increase their prestige to the investors' detriment (Iyer and Lusseged, 2013; Martínez-Ferrero et al., 2017). Ultimately, the alignment of owners and managers' interests (Wang, 2006) and family businesses' long-term orientation create incentives for developing stronger governance structures (Liu et al., 2016). The disclosure of good governance practices mitigates conflicts of interest, reduces agency costs and thus contributes to better quality financial reporting (Borralho et al., 2020b; García-Sánchez and Martínez-Ferrero, 2019; Liu et al., 2016) and limits earnings management (Martínez-Ferrero et al., 2016).

Non-family businesses' more dispersed capital intensifies the agency conflicts that can arise as part of managers and shareholders' relationships (Liu et al., 2016), which also generates a need for effective governance mechanisms. In this sense, an adequate board of directors structure and clear compensation system facilitate the alignment of all stakeholders' interests with regard to agency relationships (Wang, 2006). A broad body of research has focused on these governance mechanisms' role in constraining earnings management (Amar and Chakroun, 2018), producing support for the idea that good governance practices generally lead to higher quality financial and non-financial reporting (Campopiano et al., 2019; Chi et al., 2015; Liu et al., 2016).

To reflect the above arguments, the current study included the following hypotheses:

Hypothesis 4a*: Higher governance disclosure scores are associated with less earnings management in family firms.*

Hypothesis 4b*: Higher governance disclosure scores are associated with lower levels of earnings management in non-family firms.*

2.3 ESG disclosure and earnings management: family firms versus non-family firms

Family members' emotional attachment to their business leads to decisions focused on the long term that protect their successors' interests (Doluca et al., 2018) by guaranteeing the company's continuity (López-González, 2019b). Family firms also tend to establish long-lasting relationships with their stakeholders (Bingham et al., 2011; Block and Wagner, 2014; Dyer and Whetten, 2006; Van Gils et al., 2014) and appear to pay more attention to stakeholders' expectations in terms of developing and accumulating social and reputation capital (Dayan et al., 2019).

The research associating ESG disclosure with family companies' earnings management is still sparse (Lui et al., 2017; Martínez-Ferrero et al., 2016), but the existing literature indicates that this link is stronger in family versus non-family businesses for all three dimensions of ESG disclosure. Studies have found that the environmental dimension covers sustainability practices that contribute to extraordinary financial performance (Miroshnychenko et al., 2017) and that environmental financial returns have more favourable results for family businesses than for non-family ones (Gómez-Mejía et al., 2019), which reduces the former firms' tendency to manage earnings. Therefore, the positive connection between environmental disclosure and earnings management posited in the present study's Hypotheses 2a and 2b would be stronger for family firms.

Regarding the social dimension, family firms pay more attention to generating and accruing social and reputational capital (Dayan et al., 2019). These efforts benefit their external stakeholders (e.g. suppliers and clients), with whom family companies create stable and long-lasting relationships and share social and regional ties (Ernst et al., 2022b; Lähdesmäki et al., 2019). These types of capital also enhance these businesses' bonds with internal stakeholders (i.e. mainly workers), which are characterised by affection, trust and loyalty (Campopiano and De Massis, 2015; Zientara, 2017) and are rarely present in other types of companies. Family firms' better alignment with employees' interests is based on non-financial performance (Miller et al., 2013) such as greater output and good customer service (Hassabelnaby et al., 2010), thereby encouraging workers to achieve organisational goals. This strategy implies a move away from financial goals, which further reduces earnings management practices (Campopiano and De Massis, 2015; Hassabelnaby et al., 2010). The relationships between companies and their stakeholders are closer in family versus non-family businesses (Block and Wagner, 2014). The current research's Hypothesis 3a thus focused on the negative connection between social disclosure and earnings management for family firms. This link is not as clear in non-family businesses, which must deal with stronger short-term pressures to achieve financial performance objectives (Prencipe et al., 2011).

Finally, governance disclosure appears to contribute to reducing earnings management for both family and non-family firms (i.e. Hypotheses 4a and 4b). However, this association tends to be stronger in family businesses for two reasons.

First, they are more concerned about their image and reputation due to their need to establish governance legitimacy with stakeholders, which has a positive effect on external support and resource mobilisation (Borralho et al., 2020b; García-Sánchez and Martínez-Ferrero, 2019; Liu et al., 2016). Second, good governance practices require long-term investment, and a long-term orientation is more consistent with family businesses' objectives because of their focus on passing on the wealth they have invested in the firm to their descendants (López-González et al., 2019b).

Owners of non-family companies, in contrast, see their business primarily as a source of assets, so they are more interested in ensuring return on invested capital (Prencipe et al., 2011). To reflect the above findings, the current research's final hypothesis stated the following:

Hypothesis 5*: ESG disclosure and earnings management are more strongly associated in family firms than in non-family firms.*

3. Methodology

3.1 Sample and data

This study's sample was gathered from the Thomson Reuters Eikon database, which has been widely used in previous investigations (e.g. Gallego-Álvarez et al., 2018; Sanches et al., 2017). The sample was composed of all Spanish and French firms for which the ESG index was available but excluded the financial and insurance sector in line with recent studies' procedures (e.g. Liu et al., 2017; Martínez-Ferrero et al., 2017). The final sample comprised 114 companies: 77 French and 37 Spanish.

The relevant literature (e.g. Stockmans et al., 2010, 2013) indicates that the data could be strengthened by including a further 129 companies without the ESG index to provide a large enough sample of companies that was representative of all the sectors of activity considered. Thus, information on 243 listed companies was used to determine their level of earnings management, but the analysis model was developed based on the subsample of 114 firms with the ESG index (see Table I).

Insert Table I near here

A total of 1,062 observations with the index were recorded, which corresponds to all the information available in the Thomson Reuters Eikon database within the defined period. Some new companies present in the data did not have the same information for all the years examined (i.e. 2009 to 2018). The observations for family and non-family firms were 341 (32%) and 721 (68%), respectively.

3.2 Measures

3.2.1 Dependent variables

Earnings management was measured by using discretionary accruals as a proxy, as suggested by Schipper (1989) and commonly done in accounting and finance research (e.g. Martínez-Ferrero et al., 2016; Prior et al., 2008). Accruals correspond to the portion of accounting results that has not yet generated cash flows (i.e. total accruals) and represent the variations that occur in current assets minus the variations in current liabilities. Accruals are an intrinsic part of companies' ongoing operations, so they are not all discretionary, hence the need to separate discretionary from non-discretionary accruals.

Jones' (1991) model represents a breakthrough in this type of measurement because the cited author identified the portion of discretionary accruals that corresponds to managers' potential distortions of accounting results. Recent researchers (Ferramosca and Allegrini, 2018; López-González et al., 2019a) have developed a modified Jones model (Dechow et al., 1995) to use in cross-sectional studies, which is estimated by country, sector of activity and year. The latter model was applied in the present research using Equation (1), which consists of first calculating the total accruals (*TA*) by finding the difference between continuing operations' income and the cash flow from operations (CFO) for each year. The modified Jones model assumes that variations in sales (*ΔSales*) minus variations in customers (*ΔClients*) generate the changes in current accruals, which are normally positive if a growth in activity exists. The property, plant and equipment item (*PPE*) is used to measure depreciation and amortisation expenses that have the opposite effect on accruals as these costs correspond to the expenses included in accounting results that are not associated with payments and that thus reduce current accruals. All variables are divided by total assets present at the beginning of the period in question ($ASS_{i,t-1}$):

$$TA_{i,t} / ASS_{i,t-1} = \alpha / ASS_{i,t-1} + \beta\ (\Delta Sales_{i,t} / ASS_{i,t-1} - \Delta Clients_{i,t} / ASS_{i,t-1}) + \mu\ PPE_{i,t} / ASS_{i,t-1} + \varepsilon_{i,t} \quad \textbf{(1)}$$

This model estimates for each company *i* in year *t* the expected accruals based on the total accruals found and, using the difference between these, calculates the unanticipated accruals, which can be interpreted as earnings management. The modified Jones model is considered to provide an accurate assessment of higher levels of accounting manipulation (i.e. 4% to 5% of asset value) (Licerán-Gutiérrez and Cano-Rodríguez, 2019).

To corroborate the results obtained for the present study, the modified Jones model was adjusted for CFO (Larcker and Richardson, 2004) by country, year and sector of activity using Equation (2):

$$TA_{i,t} / ASS_{i,t-1} = \alpha / ASS_{i,t-1} + \beta\ (\Delta Sales_{i,t} / ASS_{i,t-1} - \Delta Clients_{i,t} / ASS_{i,t-1}) + \mu\ INVEST_{i,t} / ASS_{i,t-1} + w\ CFO_{,t,t} / ASS_{i,t} + \varepsilon_{i,t} \quad \textbf{(2)}$$

This model was based on the assumption that discretionary accruals correlate with companies' current performance. The adjustments were made to address the problems arising during applications of the modified Jones model to firms that report extreme financial performance (Borralho et al., 2020a; Dechow et al., 1995).

3.2.2 Independent variables

ESG disclosure (*ESG*) was measured using the Thomson Reuters Eikon ESG index compiled by Thomson Reuters, which is based on information grouped into the three dimensions. All three were quantified as a percentage as explained in more detail below.

Environmental disclosure *(Envir)* was assessed using 61 indicators related to three key elements. These were reduction in energy or water use based on more eco-efficient solutions, reduction of environmental emissions and environmental costs for customers due to new environmental technologies and processes adopted.

Social disclosure (*Social*) was quantified using 63 indicators. The latter focused overall on four areas. The first was workforce development that maintains diversity and equal opportunity, while the second was respect for fundamental human rights conventions. The third area was commitment to citizenship, public health and business ethics. That last was producing products and services that ensure health, safety and data protection.

Governance disclosure (*Govern*) was measured using 54 indicators focused on three aspects. These comprised good practices in corporate governance, equal treatment of shareholders and reports including economic, financial, social and environmental information that guided decision-making processes.

Family business (*Family*) was assessed based on the information available in the Thomson Reuters Eikon database. Companies were classified as family or non-family by applying the European Commission definition of listed family businesses. Family firms are those in which the majority of share capital is owned by a single family and at least one representative of the family serves on the board or manages the company (Mandl, 2009). These criteria were applied by confirming both a minimum share capital of 20% owned by an individual or legal entity (Anderson and Reeb, 2003; Jones et al., 2008) and members of the board of directors with the same surname or a surname shared by the directors and the majority shareholders. The family variable was thus a dummy variable (1 = family firm; 0 = non-family firm).

3.2.3 Control variables

Firm size (*Size*) was measured as the natural logarithm of assets (Cascino et al., 2010). This variable was controlled for because financial information quality is better in larger companies because they are subjected to greater regulation and control (Borralho et al., 2020a).

Indebtedness (*Debt*) was operationalised as the ratio of total liabilities to total assets. This control variable was included because more indebted companies tend to be more closely scrutinised by their creditors, so these firms tend to report higher quality financial information (Paiva et al., 2019).

Return on assets (*ROA*) was assessed as the ratio of operating income to total assets. This index was included as a control variable as low profitability is often associated with more earnings management (Gavana et al., 2017).

Cash flow from operations (*CFO*) reflects firms' liquidity, so this variable was measured as the value of CFO scaled by total assets at the beginning of each year. Companies with higher cash flow levels are more prone to earnings management (Stockmans et al., 2013).

Market-to-book (*MtoB*) quantifies the relationship between market value and book value as shares' market price and firms' net worth value. These data are commonly interpreted as indicators of opportunities for growth and investment.

Companies with the potential for growth generally rely more heavily on capital reinforcements, which creates incentives for earnings management because managers believe bad news can harm their company through higher cost of capital (Paiva et al., 2019).

Country (*Country*) was controlled for using a dummy variable (0 = France; 1 = Spain) to reflect these nations' different economic conditions during the period analysed, mainly due to the more intense financial crisis in Spain (Jara and López-Iturriaga, 2014). This variable could potentially be associated with differentiated earnings management practices.

Industry (*Industry*) was included as a control variable because 'every area of economic activity has different characteristics' (Martínez-Ferrero et al., 2016, p. 765). The first digit of Standard Industrial Classification codes (e.g., Cascino et al., 2010) was used to create a binary variable with a value of 1 if the observation belonged to a certain sector and 0 otherwise.

Year (*Year*) was incorporated as a dummy variable representing the years covered by the sample. This item facilitated the identification of each year's specific effect on companies' earnings management (López-González et al., 2019a).

4. Results

4.1 Descriptive statistics

All the model variables' descriptive statistics are listed in Table II. The mean values of the discretionary accruals dependent variable were calculated: *DA (J)* with the modified Jones model (Dechow et al., 1995) and *DA (CFO)* with the modified CFO-adjusted Jones model (Larcker and Richardson, 2004). The results are extremely close for the total sample and ESG subsample. In the latter, family firms have higher discretionary accrual mean values than non-family companies do, with differentiated levels of dispersion (i.e. standard deviation/mean). In addition, family businesses have higher average scores than non-family firms for environmental and social disclosure and lower for governance disclosure.

Insert Table II near here

The correlation coefficients between the independent variables (see Table III) are below the recommended minimum level of 0.65 (Tabachnick and Fidell, 2012). Multicollinearity, therefore, does not appear to be a serious concern in the present study.

Insert Table III near here

4.2 Multivariate analysis

Research Hypotheses 1 through 4 were tested using multiple linear regression based on ordinary least squares estimations. Table IV presents the regression analysis's results. Columns C1 and C2 show the results for the entire sample (i.e. family and non-family firms). Columns C3 and C4 show the results for family firms and columns C5 and C6 for non-family firms.

Insert Table IV near here

Three control variables (i.e. size, debt and CFO) are significantly associated with earnings management for both family (beta [β] = –0.802, 0.037 and 0.401, respectively; statistical probability [p] < 0.01) and non-family firms (β = –0.514, 0.030 and 0.110; $p <$ 0.01). However, the result for the *ROA* variable (β = –0.151; $p < 0.01$) is only significant for family companies, while the results for *MtoB* (β = –0.110; $p < 0.01$) and country (β = 0.113; $p < 0.01$) are only significant for non-family businesses.

To test Hypothesis 1, the three ESG dimensions were added to Model 1 (see Table IV above, column C1), which generated a significant change in the coefficient of determination (R^2) (R^2 = 0.013; $p < 0.001$) (see Table IV above, column C2).

Environmental disclosure (β = 0.031; $p < 0.01$) is positively associated with earnings management, while social disclosure (β = –0.018; $p < 0.05$) and governance disclosures (β = –0.011; $p < 0.05$) are negatively associated with earnings management. These results support Hypothesis 1.

Hypotheses 2a through 4a were tested by combining the ESG disclosure dimensions with the control variables listed in Table IV's column C3 above – but only for family firms (see Table IV above, column C4), which produced a significant change in R^2 (ΔR^2 = 0. 047; $p < 0.001$). To test Hypotheses 2b through 4b, the same three dimensions were added to the model (see Table IV above, column C5) for non-family companies, which also produced a significant change in R^2 (ΔR^2 = 0.02; $p < 0.001$) (see Table IV above, column C6).

Environmental disclosure is not significantly associated with earnings management within family businesses, but this dimension has a statistically significantly positive effect (β = 0.030; $p < 0.01$) on earnings management within non-family firms. The results thus do not support Hypothesis 2a but do validate Hypothesis 2b. Social (β = –0.063; $p < 0.01$) and governance (β = –0.025; $p < 0.05$) disclosure are, in contrast, significantly and negatively related to earnings management in family companies, which supports Hypotheses 3a and 4a. These two dimensions are not significantly associated with earnings management in non-family businesses, so Hypotheses 3b and 4b are not supported.

Finally, Hypothesis 5 was tested, as has been done in other studies (e.g. Borralho et al., 2020b; Zahra et al., 2004) using Chow's (1960) test to determine if a significance difference exists between the family and non-family firm subsamples. The results show that the relationship is stronger for family businesses' ESG disclosure (ΔR^2 = 4.7%) versus non-family businesses (ΔR^2 = 2%). The Chow test revealed a statistically significant structural change in the three ESG dimensions, thereby confirming Hypothesis 5. This finding indicated that the subsamples need to be analysed separately (Borralho et al., 2020b; Zahra et al., 2004).

4.2 Robustness and additional analyses

To assess the results' empirical robustness, analyses were conducted using discretionary accruals adjusted to reflect CFO (Larcker and Richardson, 2004) as a proxy for earnings management (see Appendix A). The findings support the main analysis's results.

Various additional analyses were carried out of which the first focused on the reason for the non-statistically significant effects of environmental disclosure on family businesses' earnings management. To this end, a dummy variable was created that assumed the value 1 for observations that fell below the median ROA and 0 otherwise. These companies may be under greater pressure to enhance their financial results, so these firms could be more motivated to engage in earnings management practices. The results indicate that this dummy variable's interaction with environmental disclosure is positively associated with earnings management in both the main model and the one using discretionary accruals adjusted to reflect CFO (see Appendix B). The next analysis checked if potential distortions existed in the relationship between discretionary accruals and the ESG dimensions due to omissions of explanatory variables in the model (Jiraporn et al., 2011; Prior et al., 2008).

An additional analysis was conducted that included instrumental variables for each pair of independent variables (i.e. the three ESG disclosure dimensions). More specifically, a two-stage least-squares regression (2SLS) model was estimated. According to Feng et al. (2021, p. 4), this kind of model 'selects appropriate instrumental variables instead of the original endogenous explanatory variables to estimate the regression coefficient, which can effectively alleviate the endogeneity problem and has high estimation accuracy'. The instrumental variables were the one-period lagged values of each endogenous independent variable (Coles et al., 2008).

To carry out the 2SLS regression, the Hausman test had to be run first, which, given a nonrejection obtained by an asymptotic chi-square test, indicates that the least squares estimates are consistent. The results for the instrumental variables are similar to those found for the endogenous variables: environment (β = 0.038; p = 0.000) and family (β = –0.056; p = 0.000); social (β = 0.029; p = 0.000) and family (β = –0.096; p = 0.000); and governance (β = 0.006; p = 0.411) and family (β = –0.039; p = 0.002). The Hausman test's results further show that the null hypothesis cannot be rejected: environment (chi-square statistic [$\chi 2$] = 3.024; p = 0.220), social ($\chi 2$ = 2.413; p = 0.296) and governance ($\chi 2$ =3.618; p = 0.163). These findings indicate that endogeneity is not a problem in this research.

5. Discussion

This study analysed the relationship between earnings management and ESG disclosure, with a focus on two aspects not covered by previous investigations. First, the influence of ESG disclosure's three components on earnings management was considered independently, in contrast to previous studies that treated ESG disclosure as a single construct (Kim et al., 2012; Prior et al., 2008). The present results for Hypothesis 1 confirm that a relationship exists between ESG disclosure and earnings management practices (Muttakin et al., 2015; Prior et al., 2008) corroborating previously reported findings (Chih et al., 2008; Martínez-Ferrero et al., 2015), and providing for fist time empirical evidence that environmental, social and governance disclosure contribute differently to earnings management. The first hypothesis's confirmation justified the current research's separate analyses of each dimension.

Regarding the *environmental dimension* of ESG disclosure, the proposed model associates higher scores with more earnings management in family firms (i.e. Hypothesis 2a). However, the results do not offer support this hypothesis because the relationships is positive, but not significant, which also happened to Amar and Chakroun (2018) and Kim et al. (2012). The present findings thus do not corroborate Gavana et al.'s (2017) results. Nevertheless, family firms that appear to be under greater pressure in capital markets are characterised by a significant positive relationship between earnings management and environmental disclosure.

Results confirm, however, the positive relationship between environmental disclosure and earnings management in non-family firms (Hypothesis 2b). Therefore, this type of disclosure does promote earnings management in non-family companies. These firms tend to have more conflicts of interest between managers and shareholders, which could explain this result (Abeysekera and Fernando, 2020; Martínez-Ferrero et al., 2016; Prior et al., 2008).

Focusing on ESG disclosure's *social dimension*, the proposed model posits that higher social disclosure scores are associated with less earnings management in family businesses (i.e. Hypothesis 3a) but more earnings management in non-family businesses (i.e. Hypothesis 3b). The results support the first of these hypotheses perhaps because family firms' greater commitment to their workforce may lead to more extensive applications of ethical principles as their workers could report management practices deemed non-compliant (Amar and Chakroun, 2018). This tendency can contribute to reducing earnings management practices. The current findings are consistent with Kim et al.'s (2012) results regarding companies' workforce and product responsibility motivating them to foster their staff's knowledge and improve their relationship with customers, in particular, and consumers, in general.

Hypothesis 3b, however, was not supported by the data. This finding could be explained by non-family firms' stronger link between environmental disclosure and earnings management, as described previously. This explanation is in line with the idea that managers may favour social and environmental disclosures to which shareholders attach greater value (Miralles-Quirós et al., 2018).

Regarding the *governance dimension*, the proposed model suggests that higher scores for the disclosure of information about corporate governance is associated with less earnings management for both family (i.e. Hypothesis 4a) and non-family businesses (i.e. Hypothesis 4b). However, the results only support the hypothesis for family businesses. Notably, these firms are associated with lower governance disclosure levels due to family members' involvement in company operations (Anderson and Reeb, 2003; Iyer and Lulseged, 2013).

Family businesses search for legitimacy in their stakeholders' eyes and need to protect the family's wealth, which leads these companies to disclose governance information having a positive effect on financial information quality. In other words, these priorities have a negative effect on earnings management, in line with what has been reported by other studies (Amar and Chakroun, 2018; Chi et al., 2015; Kim et al., 2012). The present results thus corroborate the idea that family firms' greater alignment of interests between majority and minority shareholders can contribute to improving financial reporting practices (Wang, 2006).

The hypothesis for non-family firms (i.e. Hypothesis 4b) was not confirmed. But the relationship between earnings management and governance disclosure was found to be statistically significant for the entire sample. This finding is in line with prior theoretical studies (Campopiano et al., 2019; Chi et al., 2015; Liu et al., 2016) and with Amar and Chakroun's (2018) results.

Finally, the proposed model posits that the link between the three ESG disclosure dimensions and earnings management is stronger for family versus non-family companies (i.e. Hypothesis 5), which is supported by the data. This finding reflects that family businesses pay greater attention to their external and internal stakeholders to establish lasting relationships, which reduces the need for short-term financial control and profits. These patterns are reflected in not only less earnings management (Campopiano and De Massis, 2015; Kim et al., 2012; Kumala and Siregar, 2021) but also a weaker relationship between earnings management and the factors that drive these practices. Non-family firms are more concerned about meeting immediate financial objectives, which can cause these companies to give a lower priority to the long-term returns on CSR investments (Prencipe et al., 2011; Prior et al., 2008; Zahra et al., 2004).

6. Conclusions

The above results confirm that ESG disclosure alleviates information opaqueness and improves its transparency (Yuan et al., 2022) and that the three ESG dimensions have different effects on companies' earnings management practices. These variations underline that researchers need to differentiate between CSR or ESG dimensions when studying their consequences (Block and Wagner, 2013; Cruz et al., 2014). The present investigation's results also reveal that ESG disclosure's impact on earnings management varies between family and non-family firms, which means scholars must pay attention to the singularities of family business contexts in earnings management studies (e.g. Amar and Chakroun, 2017; Borralho et al., 2020a; Martínez-Ferrero et al., 2016).

6.1 Contributions and practical implications

The current research makes various contributions to the literature. First, this study explored the complex relationship between CSR activities and financial information quality, thereby answering previous calls for research on the consequences of CSR dimensions' differences (Block and Wagner, 2014; Chowdhury et al., 2019; Cruz et al., 2014). More specifically, the CSR-earnings managements link was analysed via ESG disclosure scores, which measure firms' transparency rather than performance (Wasiuzzaman and Mohammad, 2020).

Second, the present investigation responded to calls in the literature to consider companies' family or non-family status in studies of the CSR-earnings management relationship (López-González et al., 2019a; Martínez-Ferrero et al., 2016). The current results thus add to the limited existing knowledge about the link between CSR disclosure and earnings management within family firms (Gavana et al., 2017; Martínez-Ferrero et al., 2016). The present study revealed that both social and environmental disclosure are connected to less earnings management in family businesses (Block and Wagner, 2014; Chowdhury et al., 2019; Cruz et al., 2014).

Non-family firms were, in contrast, found to have higher levels of earnings management mainly in association with environmental disclosure as a result of managers and investors' diverging interests. Thus, the third contribution of this study to literature is providing empirical evidence that capital markets' short-term pressures may weaken managers' appreciation of investments made solely for the environment's benefit. These investments can enhance managers' image but can make the company's shares unattractive and cause investors' portfolios to lose value (Fernando et al., 2017).

Therefore, the reduction the gap between markets' short-term perspective and longer-term concerns about environmental risk is emphasized.

The current findings have practical implications for investors, auditors and regulatory agencies. Investors should consider each ESG disclosure dimension's effect on financial reports' reliability. Auditors, in turn, need to pay attention to the risks of overlooking significant misstatements in these reports as more environmental disclosure can generate conflicts of interest between shareholders and managers, which promotes earnings management. This perspective can provide useful guidelines for allocating audit resources, especially given companies' greater geographic dispersion as globalisation has intensified. Finally, standards organisations should conduct separate analyses of ESG disclosure dimensions for family versus non-family firms in order to define ethical mechanisms and procedures to be considered when CSR manuals are applied. These standards can include, among others, representation of the workforce in companies' ethics decision-making processes (Gras-Gil et al., 2016).

6.2 Limitations and future research lines

Despite the present study's contributions to scholarship and practice, this research was not exempt from limitations, some of which offer opportunities for future investigations. First, the ESG scores available for French and Spanish companies cover only a limited population, so the sample size was smaller than might have been ideal. Globalisation tends to reduce differences in business conduct across countries (e.g. Carr, 2005), but interesting results might be obtained by expanding the sample to include other nations, especially those with different code law traditions.

Second, the current dataset included two countries to obtain a more empirically robust sample, especially as the CSR information available for just one nation proved to be limited. Further investigations are needed to verify the results' consistency for only one country.

Third, family firms were treated as homogeneous entities, but the relevant literature widely acknowledges their heterogeneity (Chua et al., 2012; Hernández-Linares et al., 2017). To overcome this limitation, researchers should explore the role of family businesses' focus on preserving socioemotional wealth (Gómez-Mejía et al., 2007) and enhancing their corporate reputation, with reference to the CSR-earnings management relationship. More specifically, scholars need to study how socioemotional wealth moderates the link between ESG disclosure and earnings management. Another topic of interest could be the moderating role of families' name in their company's name since this raises family members' awareness of being a part of the same business and makes them more conscious of their position in the surrounding community (Deephouse and Jaskiewicz, 2013).

Last, another limitation of the current study was the model's exclusion of current concerns about sustainable finance and the integration of environmental risk into corporate financial risk. Future research can be made more pertinent by assessing how investors react to this unfolding context and its effects on firms' cost of capital (Abeysekera and Fernando, 2020; Fernando et al., 2017).

Declaration of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the research reported in this paper.

References

Abeysekera, A.P., Fernando, C.S., 2020. Corporate social responsibility versus corporate shareholder responsibility: A family firm perspective. J. Corp. Finance 61, 101370. https://doi.org/10.1016/j.jcorpfin.2018.05.003

Amar, A., Chakroun, S., 2018. Do dimensions of corporate social responsibility affect earnings management? Evidence from France. J. Financial Report. Account. 16 (2), 348-370. https://doi.org/10.1108/JFRA-05-2017-0033

Amit, R., Villalonga, B., 2020. Family ownership. Oxford Rev. Econ. Policy 36 (2), 241–257. https://doi.org/10.1093/oxrep/graa007

Anderson, J.C., Frankle, A.W., 1980. Voluntary social reporting: An iso-beta portfolio analysis. Account. Rev. 55, 467–479. https://www.jstor.org/stable/246408

Anderson, R., Reeb, D., 2003. Founding-family ownership and firm performance. Evidence from the S&P 500. J. Finance 58 (3), 1301-1328. https://doi.org/10.1111/1540-6261.00567

Bae, S.C., Chang, K., Yi, H.C., 2018. Corporate social responsibility, credit rating, and private debt contracting: New evidence from the syndicated loan market. Rev. Quantitat. Financ. Account. 50 (1), 261–299. https://doi:10.1007/s11156-017-0630-4

Berrone, P., Cruz, C., Gómez-Mejía, L., Larraza-Kintana, M., 2010. Socioemotional wealth and corporate responses to institutional pressures. Admin. Sci. Q. 55 (1), 82–113. https://doi.org/10.2189/asqu.2010.55.1.82

Bingham, J., Dyer Jr., W., Smith, I., Adams, G., 2011. A stakeholder identity orientation approach to corporate social performance in family firms. J. Bus. Ethics 99 (4), 565-585. https://doi.org/10.1007/s10551-010-0669-9

Block, J., Wagner, M., 2014. The effect of family ownership on different dimensions of corporate social responsibility: Evidence from large US firms. Bus. Strateg. Environ. 23 (7), 475-492. https://doi.org/10.1002/bse.1798

Borralho, J., Gallardo-Vázquez, D., Hernández-Linares, R., 2020a. Earnings management in private family versus non-family firms. The moderate effect on family business generation. Span. J. Finance Account. (REFC) 49 (2), 210-233. https://doi.org/10.1080/02102412.2019.1616480

Borralho, J., Gallardo-Vázquez, D., Hernández-Linares, R., Paiva, I., 2020b. The effect of corporate governance factors on the quality of financial reporting in family and non-family firms. Spanish Account. Rev. 23 (2), 167-179. https://www.doi.org/10.6018/rcsar.358451

Campopiano, G., De Massis, A., 2015. Corporate social responsibility reporting: A content analysis in family and non-family firms. J. Bus. Ethics 129 (3), 511–534. https://doi.org/10.1007/s10551-014-2174-z

Campopiano, G., De Massis, A., Cassia, L., 2012. The relationship between motivations and actions in corporate social responsibility: An exploratory study. Int. J. Bus. Soc. 13, 391–412.

Campopiano, G., Romana Rinaldi, F., Sciascia, S., De Massis, A., 2019. Family and nonfamily women on the board of directors: effects on corporate citizenship behavior in family-controlled fashion firms. J. Clean. Prod. 214, 41-51. https://doi.org/10.1016/j.jclepro.2018.12.319

Carr, C., 2005. Are German, Japanese and Anglo-Saxon strategic decision styles still different in the context of globalization? J. Manag. Stud. 42 (6) 1155–1188. https://doi.org/10.1111/j.1467-6486.2005.00537.x

Cascino, S., Pugliese, A., Mussolino, D., Sansone, C., 2010. The influence of family ownership on the quality of accounting information. Fam. Bus. Rev. 23 (3), 246-265. https://doi.org/10.1177/0894486510374302

Chen, J.C., Cho, C.H., Patten, D.M., 2014. Initiating disclosure of environmental liability information: An empirical analysis of firm choice. J. Bus. Eth. 125 (4), 681–692. https://doi.org/10.1007/s10551-013-1939-0

Chi, C.W., Hung, K., Cheng, H.W., Lieu, P.T., 2015. Family firms and earnings management in Taiwan: influence of corporate governance. Internat. Rev. Econ. Financ. 36 (C), 88-98. https://doi.org/10.1016/j.iref.2014.11.009

Chih, H., Shen, C., Kang, F., 2008. Corporate social responsibility, investor protection, and earnings management: Some international evidence. J. Bus. Ethics 79 (1), 179–198. https://doi.org/10.1007/s10551-007-9383-7

Chow, G., 1960. Tests of equality between sets of coefficients in two linear regressions. Econometrica 28 (3), 591-605. https://doi.org/10.2307/1910133

Chowdhury, R., Choi, S., Ennis, S., Chung, D., 2019. Which dimension of corporate social responsibility is a value driver in the oil and gas industry? Can. J. Adm. Sci. 36 (2), 260-272. https://doi.org/10.1002/cjas.1492

Chua, J., Chrisman, J., Steier, L., Rau, S., 2012. Sources of heterogeneity in family firms: An introduction. Entrep. Theory Pract. 36 (6), 1103-1113. https://doi.org/10.1111/j.1540-6520.2012.00540.x

Coles, J., Daniel, N., Naveen, L. (2008). Boards: Does one size fit all?. J. Financ. Econ. 87 (2), 329-356. https://doi.org/10.1016/j.jfineco.2006.08.008

Cruz, C., Larraza-Kintana, M., Garcés-Galdeano, L., Berrone, P., 2014. Are family firms really more socially responsible? Entrep. Theory Pract. 38 (6), 1295-1316. https://doi.org/10.1111/etap.12125

Dayan, M., Ng P., Ndubisi, N., 2019. Mindfulness, socioemotional wealth, and environmental strategy of family businesses. Bus. Strateg. Environ. 28 (3), 466-481. https://doi.org/10.1002/bse.2222

De Massis, A., Audretsch, D., Uhlaner, L., Kammerlander, N., 2018. Innovation with limited resources: Management lessons from the German Mittelstand. J. Prod. Innov. Manage. 35 (1), 125–146. https://doi.org/10.1111/jpim.12373

Dechow, M., Sloan, R., Sweeney, A., 1995. Detecting earnings management. Account. Rev. 70 (2), 193-225. https://www.jstor.org/stable/248303

Deegan, C., 2002. Introduction: the legitimising effect of social and environmental disclosures–a theoretical foundation. Account. Audit. Account. J. 15 (3), 282-311. https://doi.org/10.1108/09513570210435852

Deephouse, D.L., Jaskiewicz, P., 2013. Do family firms have better reputations than on-family firms? An integration of socioemotional wealth and social identity theories. J. Manag. Stud. 50 (3), 337-360. https://doi.org/10.1111/joms.12015

Dhaliwal, D., Li, O.Z., Tsang, A., Yang, Y.G., 2014. Corporate social responsibility disclosure and the cost of equity capital: The roles of stakeholder orientation and financial transparency. J. Account. Public Policy 33 (4), 328–355. https://doi.org/10.1016/j.jaccpubpol.2014.04.006

Doluca, H., Wagner, M., Block, J., 2018. Sustainability and environmental behaviour in family firms: A longitudinal analysis of environment-related activities, innovation and performance. Bus. Strateg. Environ. 27 (1), 152–172. https://doi.org/10.1002/bse.1998

Dyer, W., Whetten, D., 2006. Family firms and social responsibility: Preliminary evidence from the S&P 500. Entrep. Theory Pract. 30 (6), 785-802. https://doi.org/10.1111/j.1540-6520.2006.00151.x

Ernst, R.A., Gerken, M., Hack, A., Hülsbeck, M., 2022a. Family firms as agents of sustainable development: A normative perspective. Technol. Forecast. Soc. 174, 121135. https://doi.org/10.1016/j.techfore.2021.121135

Ernst, R.A., Gerken, M., Hack, A., Hülsbeck, M., 2022b. SMES´ reluctante to embrace corporate sustainability: The effect of stakeholder pressure on self-determination and the role of social proximity. J. Clean. Prod. 335, 130273. https://doi.org/10.1016/j.jclepro.2021.130273

Feng, Y., Chen, H., Chen, Z., Wang, Y., Wei, W., 2021. Has environmental information disclosure eased the economic inhibition of air pollution? J. Clean. Prod. 284, 125412. https://doi.org/10.1016/j.jclepro.2020.125412

Fernando, C.S., Sharfman, M.P., Uysal, V.B., 2017. Corporate environmental policy and shareholder value: Following the smart money. J. Financial Quant. Anal. 52 (5), 2023-2051. https://doi.org/10.1017/S0022109017000680

Ferramosca, S., Allegrini, M., 2018. The complex role of family involvement in earnings management. J. Fam. Bus. Strat. 9 (2), 128-141. https://doi.org/10.1016/j.jfbs.2018.01.001

Ferramosca, S., Ghio, A., 2018. Corporate disclosure in family firmas. In Ferramosca, S., Ghio, A. Accounting choices in family firms: An analysis of influences and implications (pp. 165-221). Springer international publishing.

Filser, M., Kraus, S., Roig-Tierno, N., Kailer, N., Fischer, U., 2019. Entrepreneurship as catalyst for sustainable development: opening the black box. Sustainability 11 (16), 4503. https://doi.org/10.3390/su11164503

Freeman, R.E., 1984. Strategic Management: A stakeholder Approach. Pitman, Boston.

Freeman, R.E., Gilbert, D.R., 1988. Corporate Strategy and The Search for Ethics. Prentice Hall, Englewood Cliffs.

Gallego-Álvarez, I., Lozano, M., Rodríguez-Rosa, M., 2018. An analysis of the environmental information in international companies according to the new GRI standards. J. Clean. Prod. 182 (2), 57-66. https://doi.org/10.1016/j.jclepro.2018.01.240

Gallen, M., Grado, C., 2016. Información de responsabilidad social corporativa y teoría institucional. Intang. Cap. 12 (4), 942-977. http://hdl.handle.net/2117/96444

García-Sánchez, I.M., Martínez-Ferrero, J., 2019. The relevance of assurance statements on CSR information to independent directors. Eur. J. Int. Manag. 13 (1), 1-24. https://doi.org/10.1504/EJIM.2019.096495

Gargouri, R., Francoeur, S., Shabou, R., 2010. The relationship between corporate social performance and earnings management. Can. J. Adm. Sci. 27 (4), 320-334. https://doi.org/10.1002/cjas.178

Gavana, G., Gottardo, P., Moisello, A., 2017. Earnings management and CSR disclosure. Family vs. non-family firms. Sustainability 9, 2327. https://doi.org/10.3390/su9122327

Gerged, A., Al-Haddad, L., Al-Hajri, M., 2020. Is earnings management associated with corporate environmental disclosure? Evidence from Kuwaiti listed firms. Acc. Res. J., 33 (1), 167–185. https://doi.org/10.1108/ARJ-05-2018-0082

Gómez-Mejía, L., Haynes, K., Núñez-Nickel, M., Jacobson, K., Moyano-Fuentes, J., 2007. Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. Admin. Sci. Q. 52 (1), 106-137. https://doi.org/10.2189/asqu.52.1.106

Gómez-Mejía, L.R., Lannelongue, G., Múñoz-Bullón, F., Requejo, I., Sánchez-Bueno, M.J., 2019. Family firms' concern for the environment: does it pay off to pollute less? Acad. Manag. Proc. 2019 (1), 14454. https://doi.org/10.5465/AMBPP.2019.14454abstract

Gras-Gil, E., Palacios-Manzano, M., Hernández-Fernández, J., 2016. Investigating the relationship between corporate social responsibility and earnings management: Evidence from Spain. BRQ Bus. Res. Q. 19 (4), 289-299. https://doi.org/10.1016/j.brq.2016.02.002

Hassabelnaby, H., Mohammad, E., Said, A. 2010. Nonfinancial performance measures and earnings management. In Epstein, M.J., Lee, J.Y. (ed.). Advances in Management Accounting, 18 (pp. 55-79). Emerald.

Healy, P. M., Wahlen, J. M., 1999. A review of the earnings management literature and its implications for standard setting. Account. Horizons 13 (4), 365-383. http://dx.doi.org/10.2139/ssrn.156445

Hernández-Linares, R., Sarkar, S., López-Fernández, M.C., 2017. How has the family firm literature addressed its heterogeneity through classification systems? An integrated analysis. Eur. J. Fam. Bus. 7 (1-2), 1-13. https://doi.org/10.1016/j.ejfb.2017.06.003

Iyer, V., Lulseged, A., 2013. Does family status impact US firms' sustainability reporting? Sustain. Account. Manag. Policy J. 4 (2), 163–189. https://doi.org/10.1108/SAMPJ-Nov-2011-0032

Jara, M., López-Iturriaga, F.J., 2014. Earnings management and the contest to the control: an international analysis of family-owned firms. Span. J. Finance Account. (REFC) 43 (4), 355-379. https://doi.org/10.1080/02102412.2014.965922

Jensen, M., Meckling, W., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. J. Financ. Econ. 3 (4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

Jiraporn, P., Kim, J., Kim, Y. (2011). Dividend payouts and corporate governance quality: an empirical investigation. Financ. Rev. 46 (2) 251–279. https://doi.org/10.1111/j.1540-6288.2011.00299.x

Jones, C., Makri, M., Gómez-Mejía, L., 2008. Affiliate directors and perceived risk bearing in publicly-traded, family-controlled firms: The case of diversification. Entrep. Theory Pract. 32 (6), 1007-1026. https://doi.org/10.1111/j.1540-6520.2008.00269.x

Kim, Y., Park, M., Wier, B., 2012. Is earnings quality associated with corporate social responsibility? Account. Rev. 87 (3), 761–796. https://doi.org/10.2308/accr-10209

Kumala, R., Siregar, S.V.,2021, Corporate social responsibility, family ownership and earnings management: the case of Indonesia. Soc. Resp. J. 17 (1), 69-86. https://doi.org/10.1108/SRJ-09-2016-0156

Labelle, R., Hafsi, T., Francoeur, C., Amar, W., 2018. Family firms corporate social performance: a calculated quest for socioemotional wealth. J. Bus. Ethics 148 (3), 511-525. https://doi.org/10.1007/s10551-015-2982-9

Lähdesmäki, M., Siltaoja, M., Spence, L.J., 2019. Stakeholder salience for small businesses: a social proximity perspective. J. Bus. Ethics 158, 373-385. https://doi.org/10.1007/s10551-017-3707-z

Larcker, D., Richardson, S., 2004. Fees paid to audit firms, accrual choices, and corporate governance. J. Account. Res. 42 (3), 625-658. https://doi.org/10.1111/j.1475-679X.2004.t01-1-00143.x

Licerán-Gutiérrez, A., Cano-Rodríguez, M., 2019. A review on the multidimensional analysis of earnings quality. Span. Account. Rev. 22 (1), 41-60. https://doi.org/10.6018/rc-sar.22.1.354301

Liu, M., Shi, Y., Wilson, C., Wu, Z., 2017. Does family involvement explain why corporate social responsibility affects earnings management? J. Bus. Res. 75, 8-16. https://doi.org/10.1016/j.jbusres.2017.02.001

Liu, Y., Valenti, A., Chen, Y., 2016. Corporate governance and information transparency in Taiwan's public firms. The moderating effect of family ownership. J. Manag. Organ. 22 (5), 662–679. https://doi.org/10.1017/jmo.2015.56

Lodhia, S., Kaur, A., Stone, G., 2020. The use of social media as a legitimation tool for sustainability reporting. A study of the top 50 Australian Stock Exchange (ASX) listed companies. Meditari Account. Res. 28 (4), 613-632. https://doi.org/10.1108/MEDAR-09-2019-0566

López-González, E., Martínez-Ferrero, J., García-Meca, E., 2019a. Does corporate social responsibility affect earnings management? Evidence from family firms. Span. Account. Rev. 22 (2), 233-247. https://doi.org/10.6018/rcsar.349601

López-González, E., Martínez-Ferrero, J., García-Meca, E., 2019b. Corporate social responsibility in family firms: A contingency approach. J. Clean. Prod. 211, 1044-1064. https://doi.org/10.1016/j.jclepro.2018.11.251

Lu, Y., Abeysekera, I., 2017. What do stakeholders care about? Investigating corporate social and environmental disclosure in China. J. Bus. Eth. 144 (1), 169–184. https://doi:10.1007/s10551-015-2844-5

Mahto, R.V., Davis, P.S., Pearce, J.A., Robinson Jr, R.B., 2010. Satisfaction with firm performance in family businesses. Entrep. Theory Pract. 34 (5), 985-1002. https://doi.org/10.1111/j.1540-6520.2010.00393.x

Mandl, I., 2009. Final report of the expert group. Overview of family business relevant issues. Available online: https://ec.europa.eu/docsroom/documents/10389/attachments/1/translations/en/renditions/native (accessed on 4 September 2022).

Martínez-Ferrero, J., Garcia-Sanchez, I.M., Cuadrado-Ballesteros, B., 2015. Effect of financial reporting quality on sustainability information disclosure. Corp. Soc. Resp. Environ. Manag. 22 (1), 45–64. https://doi.org/10.1002/csr.1330

Martínez-Ferrero, J., Rodríguez-Ariza, L,. García-Sánchez, I.M., 2016. Corporate social responsibility as an entrenchment strategy, with a focus on the implications of family ownership. J. Clean. Prod. 135 (1), 760-770. https://doi.org/10.1016/j.jclepro.2016.06.133

Martínez-Ferrero, J., Villaron-Peramato, O., García-Sánchez, I.M., 2017. Can investors identify managerial discretion in corporate social responsibility practices? The moderate role of investor protection. Australian Account, Rev. 80 (27), 1-16. https://doi.org/10.1111/auar.12138

Miller, D., Le Breton-Miller, I., Lester, R.H., 2013. Family firm governance, strategic conformity and performance: Institutional versus strategic perspectives. Organ. Sci. 24 (1), 189–209. http://doi.org/10.1287/orsc.1110.0728

Miralles-Quirós, M.M., Miralles-Quirós, J.L., Gonçalves, L., 2018. The value relevance of environmental, social, and governance performance: The Brazilian case. Sustainability 10 (3), 574. http://doi.org/10.3390/su10030574

Miroshnychenko, I., De Massis, A., 2022. Sustainability practices of family and nonfamily firms: A worldwide study. Technol. Forecast. Soc. 174, 121079. https://doi.org/10.1016/j.techfore.2021.121079

Muttakin, M.B., Khan, A., Azim, M.I., 2015. Corporate social responsibility disclosures and earnings quality: are they a reflection of managers' opportunistic behavior?. Manag. Audit. J. 30 (3), 277-298. https://doi.org/10.1108/MAJ-02-2014-0997

Oh, W., Chang, Y., Jung R., 2019. Board characteristics and corporate social responsibility: Does family involvement in management matter?. J. Bus. Res. 103, 23-33. https://doi.org/10.1016/j.jbusres.2019.05.028

Paiva, I., Lourenço, I., Curto, J., 2019. Earnings management in family versus non-family firms: the influence of analyst coverage. Span. J. Financ. Account. (REFC) 48 (2) 113-133. https://doi.org/10.1080/02102412.2018.1463764

Prencipe, A., Bar-Yosef, S., Mazzola P., Pozza, L., 2011. Income smoothing in family firm-controlled companies: Evidence from Italian listed companies. Corp. Gov. 19 (6), 529-546. https://doi.org/10.1111/j.1467-8683.2011.00856.x

Prior, D., Surroca, J., Tribó, J., 2008. Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social. Corp. Gov. 16 (3), 160-177. https://doi.org/10.1111/j.1467-8683.2008.00678.x

Sanches, A., Mendes-Da-Silva, W., Orsato, R.J., 2017. Sensitive industries produce better ESG performance: Evidence from emerging markets. J. Clean. Prod. 150, 135–147. https://doi.org/10.1016/j.jclepro.2017.02.180

Sarumpaet, S., Nelwan, M.L., Dewi, D.N., 2017. The value relevance of environmental performance: Evidence from Indonesia. Soc. Resp. J. 13 (4), 817–827. https://doi.org/10.1108/SRJ-01-2017-0003

Sassen, R., Hinze, A., Hardeck, I., 2016. Impact of ESG factors on firm risk in Europe. J. Bus. Econ. 86 (8), 867-904. https://doi.org/10.1007/s11573-016-0819-3

Schipper, K., 1989. Commentary on earnings management. Account. Horiz. 3 (4), 91-102. https://doi.org/10.12691/jfa-3-3-3

Stockmans, A., Lybaert, N., Voordeckers, W., 2010. Socioemotional wealth and earnings management in private family firms. Fam. Bus. Rev. 23 (3), 280-294. https://doi.org/10.1177/0894486510374457

Stockmans, A., Lybaert, N., Voordeckers, W., 2013. The conditional nature of board characteristics in constraining earnings management in private family firms. J. Fam. Bus. Strat. 2 (4), 84-92. https://doi.org/10.1016/j.jfbs.2013.01.001

Tabachnick B., Fidell, S., 2012. Using Multivariate Statistics, 6th Edition. Pearson Education, Boston.

Thomson Reuters Eikon. Thomson Reuters ESG Scores. Available online: https://financial.thomsonreuters.com/content/dam/openweb/documents/pdf/financial/esg-scores-methodology.pdf (accessed on 12 March 2019).

Van Gils, A., Dibrell, C., Neubaum, D., Craig, J., 2014. Social issues in the family enterprise. Fam. Bus. Rev. 27 (3), 193–205. https://doi.org/10.1177/0894486514542398

Velte, P., 2019. The bidirectional relationship between ESG performance and earnings management – empirical evidence from Germany. J. Global Resp. 10 (4), 322-338. https://doi.org/10.1108/JGR-01-2019-0001

Wang, D., 2006. Founding family ownership and earnings quality. J. Account. Res. 44 (3), 619-656. https://doi.org/10.1111/j.1475-679X.2006.00213.x

Wasiuzzaman, S., Wan Mohammad, W.M., 2020. Board gender diversity and transparency of environmental, social and governance disclosure: evidence from Malaysia. Manag, Decis. Econ. 41, 145–156. https://doi.org/10.1002/mde.3099

Yuan, X., Li, Z., Xu, J., Shang, L., 2022. ESG disclosure and corporate financial irregularities–Evidence from Chinese listed firms. J. Clean. Prod. 332, 129992. https://doi.org/10.1016/j.jclepro.2021.129992

Zahra, S., Hayton, J., Salvato, C.. 2004. Entrepreneurship in family vs. non-family firms: A resource-based analysis of the effect of organizational culture. Entrep. Theory Pract. 28 (4), 363-381. https://doi.org/10.1111/j.1540-6520.2004.00051.x

Zientara, P., 2017. Socioemotional wealth and corporate social responsibility: A critical analysis. J. Bus. Eth. 144 (1), 185–199. https://doi.org/10.1007/s10551-015-2848-1

Table I Observations by activity sector

Industry	Total				Family firms	Non-family firms	CSR	
	No.	%	Average turnover (10^6 €)	Average total assets (10^6 €)	No.	No.	No.	Family No.
Agriculture and food (SIC 1)	297	12%	6,075	1,504	120	177	136	65
Manufacturing (SIC 2, 3)	1,111	46%	6,621	9,304	541	570	416	118
Utilities, trade, wholesale, retail (SIC 4, 5)	498	21%	14,623	25,979	177	321	301	80
Services (SIC 7, 8)	515	21%	2,567	4,370	216	299	203	78
Total	**2,421**	**100 %**	**7,338**	**11,722**	**1,054**	**1,367**	**1,062**	**341**
%					**44%**	**56%**	**44%**	**32% (*)**

(*) 341/1.062 = 0.32. Notes: No: Number; SIC: Standard Industrial Classification

Table II Descriptive statistics of dependent and independent variables

	N	DA (J)	DA (CFO)	Envir	Social	Govern	Family	Size	Debt	ROA	CFO	MtoB	Country
Total sample	**2,421**												
Mean		0.039	0.034				0.44	14.50	0.635	0.039	0.069	2.37	0.44
Median		0.027	0.025				0	14.52	0.618	0.041	0.068	1.55	0
Standard deviation		0.044	0.036				0.50	2.09	0.250	0.076	0.076	5.58	0.5
Total sample ESG	**1,062**												
Mean		0.034	0.032	73.77	69.93	49.66	0.32	16.07	0.648	0.051	0.085	2.56	0.31
Median		0.025	0.029	76.96	72.67	50.84	0	15.97	0.634	0.047	0.076	1.93	0
Standard deviation		0.036	0.035	17.68	18.22	21.18	0.47	1.43	0.295	0.059	0.064	2.76	0.46
Family firms ESG	**341**												
Mean		0.040	0.040	76.32	72.15	42.77		15.76	0.585	0.059	0.096	3.42	0.33
Median		0.028	0.028	78.90	73.50	40.46		15.71	0.559	0.048	0.079	2.39	0
Standard deviation		0.047	0.043	15.83	17.69	21.59		1.40	0.216	0.072	0.81	3.48	0.47
Non-family firms ESG	**721**												
Mean		0.031	0.028	72.56	68.88	52.91		16.22	0.678	0.047	0.082	2.16	0.30
Median		0.023	0.027	75.87	72.13	53.98		16.03	0.655	0.046	0.075	1.79	0
Standard deviation		0.031	0.030	18.37	18.38	20.19		1.42	0.322	0.051	0.053	2.23	0.46
Difference in means (Est. t)		0.009***	0.012***	3.76***	3.27***	-10.14***		-0.46	-0.093***	0.014***	0.014***	1.26***	0.03*

***p < 0.01; **p < 0.05; *p < 0.1

Table III Bivariate correlations – Total sample ESG

Var.	DA (J)	DA (CFO)	Envir	Social	Govern	Family	Size	Debt	ROA	CFO	MtoB	Country
DA (J)	1											
DA (CFO)	0.743***	1										
Envir	-0.070**	-0.064**	1									
Social	-0.136***	-0.064***	0.649***	1								
Govern	-0.132***	-0.114***	0.259***	0.318***	1							
Family	0.114***	0.157***	0.099***	0.084***	-0.224***	1						
Size	-0.336***	-0.340***	0.414***	0.414***	0.301***	-0.199***	1					
Debt	-0.142***	0.211***	0.034	0.047	-0.056*	-0.144***	0.021	1				
ROA	0.181***	0.323***	-0.060***	0.001	0.004	0.089***	-0.199***	-0.001	1			
CFO	0.402***	0.432***	-0.138***	-0.090***	-0.010	0.121***	-0.269***	-0.107***	0.562***	1		
MtoB	0.000	0.020***	-0.010***	0.010	-0.056*	0.075**	-0.032***	0.011*	-0.012	0.017	1	
Country	0.083***	0.108***	-0.099***	0.129***	-0.045	0.026	-0.157***	0.012	0.072**	-0.006	0.076**	1

***p < 0.01; **p < 0.05; *p < 0.1

Table IV Regression estimates of discretionary accruals – family and non- family (ESG Sample)

	C1	C2	C3	C4	C5	C6
	Dependent variable: Discretionary accruals (DA-J)					
	Total		Family		Non-Family	
Independent variables	**β/S.E.**		**β/S.E.**	**β/S.E.**	**β/S.E.**	**β/S.E.**
α (constant)	10.187***	9.165***	11.042***	9.110***	8.237***	9. 238***
	(1.825)	(1.851)	(2.707)	(2.831)	(1.774)	(1.786)
Size	-0.586***	-0.581***	-0.802***	-0.404**	-0.514***	-0.694***
	(0.073)	(0.084)	(0.154)	(0.166)	(0.079)	(0.091)
Debt	0.023***	0.025***	0.037***	0.030**	0.030***	0.030***
	(0.003)	(0.003)	(0.014)	(0.014)	(0.003)	(0.003)
ROA	-0.066***	-0.065***	-0.151***	-0.125***	-0.005	0.001
	(0.019)	(0.019)	(0.034)	(0.033)	(0.024)	(0.024)
CFO	0.246***	0.250***	0.401***	0.383***	0.110***	0.107***
	(0.019)	(0.019)	(0.037)	(0.036)	(0.048)	(0.023)
MtoB	-0.003	-0.004	-0.003	-0.003	-0.110**	-0.094**
	(0.005)	(0.005)	(0.006)	(0.006)	(0.048)	(0.048)
Country	0.575**	0.768***	-0.018	1.019*	1.113***	1.102***
	(0.226)	(0.234)	(0.522)	(0.541)	(0.243)	(0.248)
Envir		0.031***		0.016		0.030***
		(0.008)		(0.017)		(0.008)
Social		-0.018**		-0.063***		-0.003
		(0.008)		(0.017)		(0.008)
Govern		-0.011**		-0.025**		0.001
		(0.005)		(0.011)		(0.006)
Sector dummies	Included		Included			
Years dummies	Included		Included			
R^2	28.0%	29.3%	40.4%	45.1%	26.9%	28.9%
Adjusted R^2	26.6%	27.8%	37.0%	41.5%	25.0%	26.6%
Significance level	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1,062		341		721	
Chow test			0.000			

***p < 0.01; **p < 0.05; *p < 0.1; S.E.: Standard error (in brackets); Sig.: Significant; Not Sig.: Not significant

Appendix A. Regression estimations of discretionary accruals in family firms – additional model

	C1	C2	C3	C4	C5	C6
	Dependent variable: Discretionary accruals (DA-CFO					
	Total		Family		No Family	
Independent variables	**β**	**β**	**β**	**β**	**β**	**β.**
α (constant)	Include		Include		Include	
Control variables						
Sector dummies						
Years dummies						
Envir		0.021***		0.013		0.012*
Social		0.004		-0.029**		0.007
Govern		-0.010**		-0.007		-0.004
R^2	34.6%	35.7%	41.0%	41.9%	40.4%	41.0%
Adjusted R^2	33.4%	34.4%	37.7%	38.1%	38.8%	39.2%
Observations	1.062		341		721	

***p < 0.01; **p < 0.05; * p < 0.1.

Appendix B Additional analysis of the environmental dimension in family firms

	C1	C2
Dependent variable	**DA**	**DA-CFO**
Independent variables	**β**	**β**
α (constant)	Included	
Control variables		
Sector dummies		
Years dummies		
Dummy ROA	0.307*	0.609***
Envir	0.278	0.254
Social	-0.908***	-0.531*
Govern	-0.569**	-0.094
Dummy ROA*Envir	0.690***	0.533***
R^2	48.3%	44.6%
Adjusted R^2	44.6%	40.6%
Observations	341	