Family involvement in ownership and governance and internal auditing quality

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Abstract

Purpose – *This paper aims to investigate the impact of family involvement in ownership and governance on the quality of internal auditing.*

Design/methodology/approach – *Leveraging a hand-collected data set of listed family firms from 2014 to 2020, this study uses regression analyses to investigate the impact of family ownership, family involvement on the board, family CEO and the generational stage of the family business on the quality of internal auditing.*

Findings – *The results provide evidence that family ownership is positively associated with the quality of internal auditing, while later generational stages of family businesses have the opposite effect. Additional analyses reveal that the presence of a sustainability board sub-committee moderates the relationship between generational stages of family businesses and the quality of internal auditing function.*

Research limitations/implications – *This paper does not consider country-institutional factors and other potentially family-related antecedents or governance factors that may affect the quality of internal auditing.*

Practical implications – *The results are informative for investors and non-family stakeholders interested in understanding under which conditions family-related factors influence the quality of internal auditing functions.*

Originality/value – *This study offers fresh evidence regarding the relationship between family-related factors and the quality of internal auditing and board sub-committees that moderate such a relationship in family businesses.*

Keywords *Internal auditing, Family business, Family ownership, Generational stage, Corporate governance, Sustainability board sub-committee*

Paper type *Research paper*

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1. Introduction

Family influence via ownership and governance on firms' decisions, internal governance mechanisms and business outcomes is at the centre of the academic debate (Cascino *et al.*, 2010; De Massis *et al.*, 2018; Ferramosca and Ghio, 2018). However, a fundamental question is to what extent family-related factors influence the effectiveness of internal auditing functions to ensure managerial attention on business risks, value-destroying activities and opportunistic behaviours (Carey *et al.*, 2000; Prencipe *et al.*, 2014). In spite of an increase in the importance of internal auditing, little is known about the relationship between family involvement in ownership and governance and the quality of internal auditing (Carey *et al.*, 2000; Trotman and Trotman, 2010; Suh *et al.*, 2021). This is surprising, as family businesses are an important pillar of economic growth (Ginesti and Ossorio, 2021) and play a major role in countries' socio-economic development (Bardhan *et al.*, 2015). Compared with other types of firms, family businesses have specific resource allocation (Sirmon and Hitt, 2003; Debellis *et al.*, 2022) and risk-taking preferences (Gómez-Mejía *et al.*, 2010; Boubaker *et al.*, 2022) and thus they tend to behave in a distinctive way (Berrone *et al.*, 2012). In this regard, scholars claim that beyond financial parameters, there

are noneconomic factors that may explain managerial choices in family businesses (Gómez-Mejía *et al.*, 2007; Ginesti *et al.*, 2023). Hence, we rely on socioemotional wealth (SEW) (Gómez-Mejía *et al.*, 2011) perspective to predict whether the level of family ownership and components of family involvement in governance are sources of heterogeneity in the quality of internal auditing among family firms.

We argue that the quality of internal auditing is a combination of chief audit executives' (CAEs) characteristics linked to their level of experience, qualification and educational background and also the organization of internal auditing functions within the governance architecture (Prawitt *et al.*, 2009; Abbott *et al.*, 2016).

Using hand-collected data for a sample of Italian-listed family firms over the period 2014–2020, we provide evidence that family ownership is positively associated with internal auditing quality (IAQ), while later generational stages of family businesses have a negative effect. We also find that the presence of the sustainability board sub-committee negatively moderates the relationship between later generational stages of family business and IAQ. This study focuses on the Italian setting because it provides an interesting scenario for investigating issues related to family business (Campopiano and De Massis, 2015).

This study contributes to the current literature as follows. Unlike most prior family business research, which focuses on the antecedents of financial performance, financial reporting quality and the voluntary demand for internal auditing (Carey *et al.*, 2000; Bardhan *et al.*, 2015), we offer evidence on the role of family involvement in ownership and governance for IAQ. Moreover, our results suggest that the presence of the sustainability board sub-committee leads to a negative moderation effect on the relationship between the generational stages of a family business and the IAQ. This suggests that companies may implement the sustainability board sub-committee only to improve stakeholders' perceptions of family governance without considering the impact on internal governance mechanisms. This study offers further insights for research on the effects of family-related antecedents on family firms regarding risk-monitoring mechanisms, beyond the comparison between family and non-family firms (Weiss, 2014; Bardhan *et al.*, 2015; Jadoon *et al.*, 2021). Finally, our research reinforces the importance for scholars, investors and practitioners of the role of the internal auditing function as a key component of the internal control system in the field of family businesses (Pizzini *et al.*, 2015; Abbott *et al.*, 2016).

This study is also of interest for investors because it informs how the level of family involvement in ownership and components of family governance influence the internal auditing effectiveness and thus the monitoring of corporate risks. Therefore, investors may improve their risk assessment and capital allocation based on the level of family ownership as well as on the generational stage of family business.

The remainder of the paper is structured as follows. Section 2 provides the theoretical background and develops our research hypotheses. Section 3 presents the research methodology, including the sample, variables, and empirical model. Section 4 includes the main empirical results and robustness analysis. The discussion, limitations, future research directions and conclusions are described in Section 5.

2. Literature review and hypothesis development

2.1 Role of internal auditing

Internal auditing is a key element of internal governance mechanisms (Goodwin-Steward and Kent, 2006; Vadasi *et al.*, 2019) that ensures the effectiveness of internal control over a firm's operations, risks, reporting activities and compliance with laws and rules (Chang *et al.*, 2019).

In academic research, there are two main perspectives on how to evaluate IAQ (Kotb *et al.*, 2020). On the one hand, the "supply-side" perspective generally involves an assessment of

the key factors affecting IAQ, such as skills and competencies, as well as the internal auditing role within the governance structure. This stream of research uses data on internal auditors that includes the percentage of certified auditors or the amount of training that they have received over the years (Mihret and Yismaw, 2007). Other works identify the size of the internal auditing function as a proxy for its quality because larger teams increase the ability to provide higher quality services (Abdolmohammadi and Sarens, 2011). On the other hand, scholars embrace the "demand-side" perspective and analyse how IAQ is perceived by internal stakeholders (i.e. the top management, the audit committee and external auditors). Under this perspective, empirical research generally uses questionnaires to capture stakeholders' perceptions of the factors that affect IAQ. For example, Cohen and Sayag (2010) argue that IAQ is related to the level of satisfaction of the auditees' needs, while Alzeban and Gwilliam (2014) claim that the top management's support for internal auditing represents a key element of IAQ.

Overall, scholars operationalize the IAQ (Turetken *et al.*, 2020) by using several proxies, including the fulfilment degree of the internal auditing plan (Bednarek, 2018), the time required to complete an audit plan (Soh and Martinov-Bennie, 2011), the time devoted to the risk assessment (Selim *et al.*, 2009), as well as the number of recommendations proposed by internal auditors and implemented by the auditees (Arena and Azzone, 2009).

Empirical research points to other determinants of IAQ, including the professional experience, formal certification, training of internal auditors (Prawitt *et al.*, 2009) and financial resources allocated to the internal auditing function (Gros *et al.*, 2017). In this regard, Abbott et al. (2016) suggest that the quality of the internal auditing function is a combination of the auditor's independence and ability (i.e. competence and experience) to detect risks and accounting misstatements.

Finally, there are studies that investigate the impact of corporate governance characteristics on IAQ (Vadasi *et al.*, 2021). For example, Jiang *et al.* (2018) find that the board audit committee is positively associated with IAQ, while chief executive officer (CEO) power is negatively linked to IAQ. Alzeban and Sawan (2015) show that the audit committee's independence has a positive effect on IAQ because it ensures a fair evaluation of internal auditing activities.

2.2 Family businesses and internal auditing

Family business research has focused on a wide range of family-related antecedents of earnings management and financial reporting quality (Prencipe *et al.*, 2014). For example, prior studies show that accrual-based earnings management is negatively associated with the generational stage of family business (Stockmans *et al.*, 2010; Borralho *et al.*, 2020), while real earnings management is negatively linked to family involvement in governance and management (Duréndez and Madrid-Guijarro, 2018) but it is positively associated with the family name (Calabrò *et al.*, 2022; Sundkvist and Stenheim, 2022). In spite of the relevance of internal auditing activities for companies' strategy and operations (Prawitt *et al.*, 2009; Abbott *et al.*, 2016; Gros *et al.*, 2017; Almashhadani and Almashhadani, 2022), prior research has mainly focused on the quality of internal control, and little is known about the relationship between family-related antecedents and IAQ. For example, Bardhan *et al.* (2015) argue that the quality of internal control in family businesses is lower than that in non-family businesses, possibly because family owners invest less in internal control mechanisms because of their active involvement in managing the business. Jadoon *et al.* (2021) claim that family involvement in top management has a negative impact on internal control quality and disclosure because family directors are interested in maintaining weaker internal controls to serve their own interests. Gontara *et al.* (2022) find that the percentage of family directors mitigates the negative association between internal control quality and audit report lag because family owners exert an adverse effect on the internal control environment. As a result, auditors will perform more substantive tests, and this leads to a

longer audit delay. Chen *et al.* (2020) show that weak internal control in family firms is associated with entrenchment activities exhibited by family members, such as the extraction of private benefits at the expense of minority shareholders. They also argue that the weakness of the internal control system could be overcome by the internal auditing function, which is a key component of internal control.

By contrast, Weiss (2014) suggests a positive association between family ownership and internal control quality, aiming at preserving family wealth, reputation, and long-term performance. Huacca-Incacutipa *et al.* (2022) show that the establishment of internal control is crucial to consolidating the position and reputation of family businesses in the market.

In general, a family can influence business activities via the extent of its ownership and governance involvement (Klein *et al.*, 2005). Hence, family involvement in ownership and governance has a significant impact on firms' risk side, as it has a bearing on their preferences regarding the quality of the internal auditing functions. This is of particular importance for the Italian context, which is characterized as having underdeveloped capital markets and weaker shareholder protection as well as higher information asymmetries (La Rocca *et al.*, 2010). Moreover, Italian public firms are characterized by a high ownership concentration and a substantial family involvement in governance and top management teams (Mazzola *et al.*, 2013; Drago *et al.*, 2018).

The distinctive features of family businesses have led scholars to investigate what family-related factors influence business decision-making through the theoretical lens of SEW (Sciascia *et al.*, 2014; Calabrò *et al.*, 2022). This is because scholars claim that socioemotional considerations in family business may prevail over financial ones and thus influence strategic decisions (Gómez-Mejía *et al.*, 2011; Le Breton-Miller and Miller, 2013). In particular, the proponents of the SEW perspective argue that family firms are driven by the need to preserve a variety of potential non-economic returns, such as family control or the preservation of the firm's identity and reputation, rather than safeguarding the firm's financial goals (Gómez-Mejía *et al.*, 2007; Molly *et al.*, 2019).

Hence, we develop our hypothesis by relying on SEW, which considers the family's emotional endowment, distinguishing family firms' behaviour from that of other types of firms (Gómez-Mejía *et al.*, 2007). These considerations point out that family businesses' decisions relating to internal auditing roles and activities may depend on which SEW dimension family members prioritize (Drago *et al.*, 2018). For example, when "family control" is prioritized, family members may weaken the role of internal auditing if they perceive that monitoring activities lead to losing the control over the business and harm the preservation of socioemotional endowments. By contrast, when "family identity" is the main reference point, family principals feel a greater responsibility towards external and internal stakeholders (Dyer and Whetten, 2006; Weiss, 2014). Accordingly, family principals are more likely to reinforce the role – and thus the quality – of the internal auditing to avoid damage to the family's image because of the lack of monitoring of risks and value-destroying operations.

2.2.1 Family ownership and internal auditing. The SEW perspective provides arguments to predict the impact of family ownership on the quality of internal auditing. For example, when family priority is to preserve its identification with the firm, family owners could be emotionally devastated by the external parties' criticisms (Berrone *et al.*, 2012) and thus they will be more concerned about damage to their reputation (Pazzaglia *et al.*, 2013; Campopiano and De Massis, 2015). Hence, when the "family identity" is prioritized, it is plausible that family principals would improve the capability of the internal auditing function to safeguard the firm's longevity (Bennedsen *et al.*, 2007; Gómez-Mejía *et al.*, 2014) by preventing risks and uncertainties. Previous studies support this view and reveal that family companies with a higher level of family ownership are likely to show a better quality of earnings and transparent corporate disclosure (Abudy and Shust, 2022; Chen *et al.*, 2022), as well as an increase in the demand for a higher internal and external audit quality

(Carey *et al.*, 2000). Hence, when family ownership is high, family owners may feel confident that internal auditing services will help the company manage risks to preserve the family's image in the market.

Accordingly, we propose the following hypothesis:

H1. Family ownership is positively associated with the internal auditing quality in family businesses.

2.2.2 Family members on the board of directors and internal auditing. The internal auditors assist the board of directors by developing procedures that ensure the effectiveness of operations and corporate strategies with the general aim of protecting shareholders' interests (Fama and Jensen, 1983; Carcello *et al.*, 2002).

One could argue that when family members are involved in the board of directors, they may have a sense of shared identity with the firm (Uhlaner *et al.*, 2015) and thus the emotional attachment leads them to be sensitive to reputational costs (Bingham *et al.*, 2011). As a result, when family principals view "family identity" as the main dimension of SEW, they are more likely to strengthen the supervisory and advisory role of the internal auditing function (Jiang *et al.*, 2018).

By contrast, when family principals prioritize the control dimension of SEW, they are more concerned with preserving their position and preventing threats of monitoring (Berrone *et al.*, 2012; Pazzaglia *et al.*, 2013; Molly *et al.*, 2019), even at the expense of non-family shareholders (Al-Okaily, 2020). For example, family directors may exert influence in the selection of board members (Hope *et al.*, 2012) and have an incentive to replace formal control processes with informal and relationship-based controls (Mustakallio *et al.*, 2002). This in turn may push family directors to weaken the ability of the internal auditing function to oversee managerial actions.

Based on the above arguments, we propose the following non-directional hypothesis:

H2. The involvement of family members in the board of directors is associated with the internal auditing quality in family businesses.

2.2.3 Family leadership and internal auditing. The SEW perspective suggests that family CEOs have a greater incentive to protect the family firm's identity than non-family CEOs (Abdulmalik *et al.*, 2020; Ghafoor *et al.*, 2022) and thus they would be more willing to consider non-economic goals (Garcés-Galdeano and García-Olaverri, 2020). Hence, when the family priority is to preserve its identification with the firm (i.e. "family identity"), family CEOs are more careful about supporting the family's values over financial goals in the long term (Berrone *et al.*, 2012). This is because family CEOs aim to ensure that their leadership will be recognized among investors and stakeholders, and therefore they prefer to preserve the family image rather than gain short-term financial advantages (Ferramosca and Ghio, 2018). Consequently, family CEOs are more sensitive to the value of internal auditing functions to detect risks and value-destroying activities (Jiang *et al.*, 2018).

Hence, we develop the following hypothesis:

H3. Family CEOs are positively associated with the internal auditing quality in family businesses.

2.2.4 Generational stage of the family business and internal auditing. When the family business's succession occurs, family ties weaken because of the potential divergence between interests among family generations (Fama and Jensen, 1983; Harris and Ogbonna, 2007). Accordingly, later generations of family businesses may be motivated to pursue excessive remuneration and invest in low-return projects to advance their career perspectives (Poza *et al.*, 2004). Beyond the second generation, family members show stronger interests towards their branch-specific family (e.g. their own children) than towards other family branches (i.e. their brothers, sisters or cousins) (Corten *et al.*, 2015). As a

result, there will be a decrease in the emotional attachment of family members with different perceptions concerning management styles, risks and targets of the business (Okorafo, 1999). Therefore, financial wealth becomes more central and the focus on SEW conservation is less important (Gómez-Mejía *et al.*, 2007), leading family members at later generational stages of the family business to preserve "family control" instead of "family identity". Hence, family members of later generational stages may have more incentives to protect their position and avoid interference from monitoring activities (Drago *et al.*, 2018; Al-Qadasi *et al.*, 2019). Based on this, our fourth hypothesis is as follows:

H4. Later generational stages of family businesses are negatively associated with internal auditing quality.

3. Methodology

3.1 Sample selection and data

Based on prior empirical studies in an Italian setting, we identify a company as a family firm if the family holds at least 50% of the outstanding shares and at least one of its members is involved in the board of directors (Cascino *et al.*, 2010; Drago *et al.*, 2018; Ginesti *et al.*, 2023). This criterion led to an initial sample of 79 Italian-listed family firms over the period 2014–2020. From this list, we excluded family firms (31) for which information about the internal auditing function and executives' characteristics (i.e. educational background, professional experience, professional certification of the CAE, and independence) were not available or missing from our data sources. We also removed observations (16) for firms included in the sample because of the lack of data over the period under investigation. Overall, our final sample is composed of 48 Italian-listed family firms for the period 2014–2020 (320 firm-year observations) [1].

We used several sources to create our data set. First, we collected data on corporate ownership and board of directors from the website of the Italian Security Stock Exchange Commission (CONSOB), as well as corporate governance reports. Next, we retrieved information on the generational stage of family business by analysing company websites, the Lexis/Nexis database and the internet via Google. Moreover, we manually collected information on internal auditing functions (i.e. educational background, professional experience, and professional certification of the CAE) by perusing corporate documents (i.e. annual reports, corporate governance reports), companies' websites, and via LinkedIn. Finally, all accounting and financial data were extracted from the Aida *Bureau van Dijk database*.

3.2 Variables

Dependent variable. The dependent variable in our analysis is a proxy of the IAQ that we measured following prior literature (Lin *et al.*, 2011; Ege, 2015; Pizzini *et al.*, 2015). This proxy includes two components. The first component is the expertise of the CAE, and the second component considers the independence of the internal auditing functions within the corporate governance system (Abbott *et al.*, 2016). The first component refers to:

- professional experience owned by the CAE in internal auditing functions;
- certification as a public accountant or internal auditor of the CAE; and
- educational background of the CAE.

The second component refers to *independence of the internal auditing function within the governance architecture on the basis of the recommendations of international standards for the professional practice of internal auditing* (Institute of Internal Auditors Standard 1110 (IIA Standard, 1110), 2013). Hence, we considered internal auditing independence when

the CAE interacts directly with the board of directors and top management team (Institute of Internal Auditors Standard 1110 (IIA Standard, 1110), 2013).

Accordingly, we constructed our measure of IAQ by summing these four variables related to the above-mentioned two components (i.e. *professional experience; certification; educational background; and independence of the internal auditing function*).

Our measure of IAQ ranges from 0 to 4 and means that the higher the score of the IAQ, higher the IAQ.

Independent variables. In our analysis, we considered several variables as proxies of family involvement in ownership and governance in family business. Following prior research, we measured family involvement in ownership (FAM_OW) as the percentage of shares held by family members (Chen *et al.*, 2008; Cascino *et al.*, 2010). Moreover, we measured family involvement in governance as the percentage of family members on the board of directors (FIB) (Poutziouris *et al.*, 2015) and as the presence of a family member who serves as the firm's CEO (F_LEAD) (Anderson and Reeb, 2003). Finally, we also identified the generational stage of family business by ascertaining the latest generation (number) of the family members involved in the board of directors (F_GEN) (Ginesti *et al.*, 2023).

Control variables. We also controlled for several firm characteristics that may influence IAQ. Following prior literature (Goodwin-Steward and Kent, 2006; Regoliosi and d'Eri, 2014), we controlled for firm size (SIZE), firm profitability (PROFIT), firm leverage (LEV) and firm sales growth (GROWTH) because these variables affect family firms' decisions and processes (Drago *et al.*, 2018). Furthermore, we included the location of headquarters (GEO_LOC), as an indicator variable that takes the value of 1 if the corporate headquarter is located in northern Italy, the value of 2 if the corporate headquarter is located in central Italy and the value of 3 if the corporate headquarter is located in southern Italy. We include this variable because geographical context influences resource availability, incentives and restrictions on business activities (Dawson *et al.*, 2020). We also included the board size (B_SIZE) (Jiang *et al.*, 2018), the number of independent directors (N_IND) (Hermalin, 2005) and the CEO_DUALITY (Tuggle *et al.*, 2010), because these corporate governance characteristics influence the oversight of managerial activities (Anderson and Reeb, 2003). Moreover, we control for the presence of the sustainability board sub-committee (SUST_COM) in the governance structure because it may have an impact on the internal control mechanisms and outcomes (Jiang *et al.*, 2018).

Finally, we included industry and year-dummy variables in our analyses. The industry dummy variables are based on the classification derived from the AIDA database, which classifies all listed firms into three main industries (i.e. manufacturing, services, and wholesale).

All the variables are described in Table 1.

3.3 Empirical model

To implement the empirical analysis, we performed preliminary diagnostic tests with panel data. Therefore, we performed the Hausman and Breusch-Pagan Lagrange multiplier tests (Onali *et al.*, 2017) to decide whether an ordinary least squares, fixed effects or random effects (RE) model was more appropriate. The results of these suggested that the RE model was preferable for our data set.

Therefore, we first included the control variables and ran Model (1):

$$\begin{aligned} \text{IAQ} = {} & \beta_0 + \beta_1 \text{LEV} + \beta_2 \text{PROFIT} + \beta_3 \text{SIZE} + \beta_4 \text{GROWTH} + \beta_5 \text{GEO\_LOC} + \beta_6 \text{B\_SIZE} \\ & + \beta_7 \text{CEO\_DUALITY} + \beta_8 \text{N\_IND} + \beta_9 \text{SUST\_COM} + \text{Industry Dummies} \\ & + \text{Year Dummies} + \varepsilon \end{aligned} \tag{1}$$

Table 1 Description of the variables

Variables	*Measurement*
Internal auditing quality	
IAQ	*A composite score composed of the following variables:* *1. Dummy variable equal to 1 (one) if the Chief Audit Executive (CAE) has obtained a Master in Business Administration (MBA) and/or a PhD, 0 (zero) otherwise* *2. Dummy variable equal to 1 (one) if the Chief Audit Executive (CAE) possesses a number of years of internal auditing professional experience higher than the median of our sample, 0 (zero) otherwise* *3 Dummy variable equal to 1 (one) if the Chief Audit Executive (CAE) has certifications and/or qualifications in internal auditing areas, 0 (zero) otherwise* *4. Dummy variable equal to 1 (one) if the Chief Audit Executive (CAE) reports directly to the board of directors or the audit committee, 0 (zero) otherwise*
Family involvement in governance	
FAM_OW	*Percentage of family-held shares*
FIB	*Percentage of family members on the board of directors*
F_LEAD	*Dummy variable equal to 1 (one) if the CEO is from the owning family, 0 (zero) otherwise*
F_GEN	*The number of family generations that are on the board of directors*
Firm-specific characteristics	
LEV	*Long-term debt to total assets*
PROFIT	*Net income to total assets*
SIZE	*Natural logarithm of total assets*
GROWTH	*Annual variation of sales divided by total assets*
GEO_LOC	*Ordinal variable that takes the value of 1 (one) if the firm headquarters is in northern Italy; the value of 2 (two) if the firm headquarters is in central Italy; the value of 3 (three) if the firm headquarters is in southern Italy*
B_SIZE	*Total number of directors on the board of directors*
CEO_DUALITY	*Dummy variable equal to 1 (one) when the Chief Executive Officer (CEO) is also the Chair of the Board, 0 (zero) otherwise*
N_IND	*Number of independent directors on the board of directors*
SUST_COM	*Dummy variable that takes the value of 1 (one) if the firm has established the board sustainability sub-committee, 0 (zero) otherwise*

Source: Authors' own creation

Then, we explored the impact of family involvement in ownership and governance by introducing our proposed family-related variables into Model (1):

$$\begin{aligned} \text{IAQ} = {} & \beta_0 + \beta_1 \text{FAM\_OW} + \beta_2 \text{LEV} + \beta_3 \text{PROFIT} + \beta_4 \text{SIZE} + \beta_5 \text{GROWTH} + \beta_6 \text{GEO\_LOC} \\ & + \beta_7 \text{B\_SIZE} + \beta_8 \text{CEO\_DUALITY} + \beta_9 \text{N\_IND} + \beta_{10} \text{SUST\_COM} \\ & + \text{Industry Dummies} + \text{Year Dummies} + \varepsilon \end{aligned} \tag{2}$$

$$\begin{aligned} \text{IAQ} = {} & \beta_0 + \beta_1 \text{FAM\_OW} + \beta_2 \text{FIB} + \beta_3 \text{LEV} + \beta_4 \text{PROFIT} + \beta_5 \text{SIZE} + \beta_6 \text{GROWTH} \\ & + \beta_7 \text{GEO\_LOC} + \beta_8 \text{B\_SIZE} + \beta_9 \text{CEO\_DUALITY} + \beta_{10} \text{N\_IND} + \beta_{11} \text{SUST\_COM} \\ & + \text{Industry Dummies} + \text{Year Dummies} + \varepsilon \end{aligned} \tag{3}$$

$$\begin{aligned} \text{IAQ} = {} & \beta_0 + \beta_1 \text{FAM\_OW} + \beta_2 \text{FIB} + \beta_3 \text{F\_LEAD} + \beta_4 \text{LEV} + \beta_5 \text{PROFIT} + \beta_6 \text{SIZE} \\ & + \beta_7 \text{GROWTH} + \beta_8 \text{GEO\_LOC} + \beta_9 \text{B\_SIZE} + \beta_{10} \text{CEO\_DUALITY} + \beta_{11} \text{N\_IND} \\ & + \beta_{12} \text{SUST\_COM} + \text{Industry Dummies} + \text{Year Dummies} + \varepsilon \end{aligned} \tag{4}$$

$$\begin{aligned} IAQ = {} & \beta_0 + \beta_1 FAM\_OW + \beta_2 FIB + \beta_3 F\_LEAD + \beta_4 F\_GEN + \beta_5 LEV + \beta_6 PROFIT \\ & + \beta_7 SIZE + \beta_8 GROWTH + \beta_9 GEO\_LOC + \beta_{10} B\_SIZE + \beta_{11} CEO\_DUALITY \\ & + \beta_{12} N\_IND + \beta_{13} SUST\_COM + \text{Industry Dummies} + \text{Year Dummies} + \varepsilon \end{aligned} \quad (5)$$

4. Results

4.1 Main results

Table 2 reports the descriptive statistics for the variables used in the main regression analysis. We observe that firms present an average IAQ of 1.98, meaning that the quality of internal auditing functions in our sample does not achieve a high score. Overall, our sample is composed of family firms that are, on average, in the second-generation stage of family business. The average percentage of CEOs from the owning family (F_LEAD) is about 57% of the total observations, reflecting the importance of family CEOs in family businesses. Moreover, the percentage of family members involved in the board of directors (FIB) is on average around 24%, while the average level of family ownership (FAM_OW) is around 62%, in line with our restricted definition of a family firm.

Table 3 reports the correlation matrix for all the variables used in our main regression models. In line with our predictions, FAM_OW is positively associated with IAQ, while FIB, F_LEAD and F_GEN are not associated with IAQ. We also performed a diagnostic test using the variance inflation factor (VIF). The results of the VIF analysis show that multicollinearity is not a problem in our analysis because the values are below 10 (Kennedy, 2008).

In Table 4, we report the regression results by showing the impact of our proposed family-related variables on IAQ from Model (2) to Model (5). Table 4 also presents an increase in R-squared (from 0.24 to 0.31) from Model (1) to Model (5).

In line with the prediction of *H1*, the coefficient of FAM_OW is positively and significantly associated with IAQ from Model (2) to Model (5), suggesting that firms with a high level of family ownership are more likely to increase the quality of their internal auditing functions. In line with the SEW perspective, these findings suggest that when family power increases, family members prioritize the dimension of "family identity" and thus they are more prone to reinforce the quality of internal auditing services (Shleifer and Vishny, 1997; Gómez-Mejía *et al.*, 2007).

Table 2 Descriptive statistics

Variable	*No. of observations*	*Mean*	*Std. dev.*	*Min.*	*Max.*
IAQ	320	1.981	1.047	0	4
FAM_OW	320	62.055	8.095	50.020	87.400
FIB	320	24.260	11.265	0.071	50
F_LEAD	320	0.575	0.495	0	1
F_GEN	320	2	0.719	1	4
LEV	320	0.206	0.160	0	0.867
PROFIT	320	0.034	0.104	−0.427	0.631
SIZE	320	13.065	1.264	8.665	15.900
GROWTH	320	0.103	0.839	−0.993	9.917
GEO_LOC	320	1.259	0.529	1	3
B_SIZE	320	10.059	2.569	4	18
CEO_DUALITY	320	0.321	0.467	0	1
N_IND	320	4.409	1.821	1	11
SUST_COM	320	0.306	0.461	0	1

Note: Variables are described in Table 1
Source: Authors' own creation

Table 3 Correlation matrix

	IAQ	*FAM_OW*	*FIB*	*F_LEAD*	*F_GEN*	*LEV*	*PROFIT*	*SIZE*	*GROWTH*	*GEO_LOC*	*B_SIZE*	*CEO_DUALITY*	*N_IND*	*SUST_ COM*
IAQ	–													
FAM_OW	0.191*	–												
FIB	−0.068	−0.071	–											
F_LEAD	0.025	−0.007	0.414*	–										
F_GEN	−0.079	−0.158*	0.083	−0.019	–									
LEV	−0.042	−0.063	−0.137*	−0.186*	0.048	–								
PROFIT	−0.087	−0.121*	0.013	−0.005	0.085	0.026	–							
SIZE	0.240*	−0.335*	−0.213*	−0.182*	0.324*	0.210*	0.210*	–						
GROWTH	−0.062	0.020	0.046	0.089	−0.003	−0.006	0.192*	0.005	–					
GEO_LOC	0.188*	−0.129*	0.131*	0.131*	0.018	0.013	0.151*	0.113*	0.024	–				
B_SIZE	−0.042	−0.152*	−0.191*	−0.128*	0.423*	0.070	0.083	0.558*	− 0.106	−0.206*	–			
CEO_DUALITY	−0.018	0.06	0.418*	0.429*	−0.083	0.080	−0.012	−0.219*	0.037	0.014	−0.237*	–		
N_IND	0.124*	−0.170*	−0.339*	−0.212*	0.374*	0.137*	0.008	0.549*	− 0.095	−0.069	0.700*	−0.317*	–	
SUST_COM	0.175*	−0.179*	−0.148*	−0.306*	0.150*	0.193*	−0.039	0.406*	−0.169*	0.075	0.248*	−0.124*	0.344*	–

Note: *Significance at 5% level
Source: Authors' own creation

Table 4 Regression results

	Dependent variable: IAQ Model (1)	*Dependent variable: IAQ Model (2)*	*Dependent variable: IAQ Model (3)*	*Dependent variable: IAQ Model (4)*	*Dependent variable: IAQ Model (5)*
FAM_OW		0.013** (0.005)	0.013** (0.005)	0.013** (0.005)	0.013** (0.005)
FIB			−0.001 (0.006)	−0.001 (0.006)	0.001 (0.006)
F_LEAD				0.029 (0.108)	0.012 (0.107)
F_GEN					−0.291*** (0.110)
LEV	− 0.693*** (0.189)	−0.663*** (0.189)	−0.670*** (0.191)	−0.664*** (0.192)	−0.639*** (0.191)
PROFIT	0.150 (0.270)	0.030 (0.273)	0.033 (0.273)	0.038 (0.274)	0.062 (0.271)
SIZE	0.167*** (0.052)	0.188*** (0.052)	0.188*** (0.052)	0.189*** (0.052)	0.194*** (0.052)
GROWTH	0.099*** (0.028)	0.097*** (0.028)	0.097*** (0.028)	0.096*** (0.028)	0.094*** (0.027)
GEO_LOC	0.174 (0.268)	0.195 (0.255)	0.200 (0.259)	0.197 (0.261)	0.215 (0.262)
B_SIZE	0.000 (0.024)	0.003 (0.024)	0.002 (0.025)	0.002 (0.025)	0.015 (0.025)
CEO_DUALITY	0.064 (0.085)	0.099 (0.086)	0.103 (0.088)	0.102 (0.088)	0.117 (0.087)
N_IND	0.016 (0.028)	0.016 (0.028)	0.016 (0.028)	0.015 (0.028)	0.020 (0.027)
SUST_COM	0.111 (0.081)	0.112 (0.081)	0.109 (0.082)	0.111 (0.083)	0.124 (0.082)
Years, Industry	Yes	Yes	Yes	Yes	Yes
INTERCEPT	−2.008** (1.021)	−3.161*** (1.090)	−3.118*** (1.107)	− 3.151*** (1.119)	−2.920*** (1.118)
Observations	320	320	320	320	320
R-squared (overall)	0.24	0.28	0.28	0.28	0.31
Wald Chi-square	80.06***	87.91***	87.61***	87.37***	95.96***

Notes: Standard errors are in parenthesis. Variables are described in Table 1; $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$
Source: Authors' own creation

The results also show that FIB and F_LEAD are not significantly associated with IAQ, meaning that *H2* and *H3* are not supported by our empirical results.

Finally, the coefficient of F_GEN is significantly and negatively associated with IAQ in Model (5), which is consistent with *H4*. This result supports the theoretical view of the SEW that in later-generational stages, family firms are more prone to prioritize "family control" than "family identity" (Ensley and Pearson, 2005; Le Breton-Miller and Miller, 2013; Drago *et al.*, 2018). Thus, at later generational stages, family members involved in the board of directors may not be interested in reinforcing the role of internal auditing function, because it may lead to interference in managerial decisions and limit "family control" over the business.

With reference to control variables, the coefficient of the variable LEV has a negative and significant relationship with IAQ across all models, suggesting that firms with a higher level of leverage are associated with a lower IAQ. This is consistent with the view that highly leveraged firms are less sensitive to investing in internal auditing functions (Goodwin-Stewart and Kent, 2006). The variable SIZE is positively and significantly associated with IAQ in all Models, suggesting that larger family firms tend to have higher-quality internal auditing services (Dey, 2008), possibly because they must address greater agency costs and stronger external scrutiny (Alzeban and Sawan, 2015; Jiang *et al.*, 2018). Finally, our results show that the coefficient of the variable GROWTH is positively and significantly associated with IAQ in all Models, meaning that growth opportunities have a positive impact on IAQ (Carcello *et al.*, 2005).

4.2 Robustness tests

To increase the robustness of our results, we performed further additional analyses. First, we used lagged values for our family-related antecedent and control variables in Model (6). This addressed the idea that it may take time before family involvement in ownership and governance has an effective impact on the quality of internal auditing functions. Moreover, this strategy also mitigated potential endogeneity concerns (McKnight and Weir, 2009).

Hence, we re-estimated Model (5), and the results of this robustness test, which are similar to those reported in Table 4, are presented in Table 5.

Second, because our dependent variable is left-censored at zero and only takes non-negative values, we used a random-effects Tobit regression (Xiao, 2013). The estimation results (not tabulated) continue to be generally consistent with our main results.

4.3 Analysis extension

Implementation of a sustainability corporate policy requires additional costs because of investments to sustain novel organizational processes and managerial actions (Driessen and Hillebrand, 2013). Consequently, internal auditing functions are required to apply certain professional practices that can help organizations achieve the sustainability of processes and operations and comply with environmental regulations (Darnall *et al.*, 2009).

Family business literature suggests that family firms are characterized by a socially responsible orientation in dealing with all stakeholders and the community in which they operate (Samara *et al.*, 2018; Arzubiaga *et al.*, 2023). However, family firms may also be averse to exposing themselves to greater risks related to the adoption of novel business practices and processes (Patel and Chrisman, 2014). Hence, family involvement in governance and management of the business may also have a negative effect on the adoption of sustainable corporate practices (Campopiano and De Massis, 2015; Le Breton-Miller and Miller, 2016).

Because sustainability issues have an impact on internal auditing practices and family firms' strategic decisions, we also explored whether the presence of a sustainability board subcommittee (SUST_COM) moderates the relationships between family involvement in ownership and governance (FAM_OW, FIB, F_LEAD and F_GEN) and IAQ. Therefore, we ran Model (7) by introducing into Model (5) the interaction terms of FAM_OWXSUST_COM, FIBXSUST_COM, F_LEADXSUST_COM and F_GENXSUST_COM. The regression results reported in Table 6 show that only the coefficient of F_GENXSUST_COM is negatively and significantly associated with IAQ, suggesting that the presence of a sustainability board sub-committee negatively moderates the relationship between F_GEN and IAQ.

Table 5 Robustness regression results

	Dependent variable: IAQ Model (6)
FAM_OW	0.016*** (0.006)
FIB	−0.000 (0.006)
F_LEAD	0.001 (0.115)
F_GEN	−0.233** (0.116)
LEV	−0.804*** (0.205)
PROFIT	−0.033 (0.293)
SIZE	0.194*** (0.055)
GROWTH	0.093*** (0.030)
GEO_LOC	0.259 (0.260)
B_SIZE	0.025 (0.027)
CEO_DUALITY	0.144 (0.093)
N_IND	0.029 (0.030)
SUST_COM	0.054 (0.088)
Years, Industry	Yes
INTERCEPT	−3.315*** (1.156)
Observations	320
R-squared (overall)	0.31
Wald Chi-square	89.34***

Notes: Standard errors are in parenthesis. Variables are described in Table 1; *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$
Source: Authors' own creation

Table 6 Regression results: analysis extension

	Dependent variable: IAQ Model (7)
FAM_OW	0.015** (0.006)
FIB	0.003 (0.007)
F_LEAD	0.028 (0.110)
F_GEN	−0.246** (0.110)
FAM_OW × SUST_COM	−0.003 (0.008)
FIB × SUST_COM	−0.005 (0.006)
F_LEAD × SUST_COM	0.066 (0.144)
F_GEN × SUST_COM	−0.273*** (0.084)
LEV	−0.572*** (0.190)
PROFIT	0.050 (0.269)
SIZE	0.189*** (0.051)
GROWTH	0.089*** (0.028)
GEO_LOC	0.209 (0.258)
B_SIZE	0.015 (0.025)
CEO_DUALITY	0.133 (0.088)
N_IND	0.025 (0.028)
SUST_COM	1.017* (0.550)
Years, Industry	Yes
INTERCEPT	−3.097*** (1.128)
Observations	320
R-squared (overall)	0.27
Wald Chi-square	110.60***

Notes: Standard errors are in parenthesis. Variables are described in Table 1. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$
Source: Authors' own creation

5. Discussion and conclusion

5.1 Practical implications

This study offers several practical implications. First, this research suggests that investors and external parties should increase their attention to the level of family ownership and components of family involvement in governance to understand factors that significantly influence decision-making processes and firm's outcomes. In particular, our results highlight the importance of considering the combination of family variables that create incentives to improve internal auditing to detect risks and maximize the long-term value of the family business. Beyond the positive effect of family ownership, this study shows that when a later generation of family principals occupy key positions in corporate governance, there is a likelihood of a low interest in recruiting high-quality internal auditors. Therefore, in the case of a later generation of a family business, non-family stakeholders should explore other informal and formal monitoring mechanisms for managerial actions, such as an increase in the appointment of independent directors (Solomon, 2007), for the alignment of interests among all parties.

5.2 Limitations and future research

Our study has different limitations. First, this work uses a sample of Italian family-listed firms and does not explore country-level variables or cultural influences that can affect the relationships between family involvement in ownership and governance and IAQ. Hence, interpreting our results requires caution because they are not generalizable to other contexts, and we thus call for future research to corroborate our empirical analysis by including country-level factors. This is important because investigating the effect of differences in regulatory and legal environments among countries on the protection of shareholders and creditors will allow for a better understanding of the context that affects the relationships between the family involvement components in ownership and governance and IAQ.

Second, the results of this study do not consider the impact of other family-related antecedents, such as family involvement in managerial positions, that may directly or indirectly impact the internal auditing function. Future research could examine the impact of other family involvement dimensions (Klein *et al.*, 2005; Mazzola *et al.*, 2013) and the role of the identification of the family principals' name with the firm's name.

Third, this study focuses only on firms that have developed an internal auditing function, and thus future studies may explore whether results hold even when family firms use external auditing services.

5.3 Conclusion

Using hand-collected data for a sample of Italian family-listed firms over the period 2014–2020, we offer novel contributions to the academic debate. First, we show that family involvement in ownership is positively associated with the quality of internal auditing, suggesting that when family power increases a firm's risk exposure, it is more likely to be adequately monitored. Second, we find that, in later generations of family businesses, the quality of internal auditing decreases, possibly because, across subsequent generations, family members tend to prioritize "family control" over the business, leading to a reduction in internal monitoring over managerial actions.

Additional analyses also reveal that the presence of a sustainability board sub-committee negatively moderates the relationship between family generational stage and IAQ. This latter result opens the way to future research to increase our understanding of whether and which internal governance bodies may improve the relationships between family-related factors and IAQ.

Note

1. The number of firm-year observations is lower than 48×7 years (2014–2020), since the full time series of data was not available for all firms.

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