

**Full title: A matter of control or identity? Family firms' environmental reporting decisions  
along the corporate life cycle**

**Short title: Environmental reporting along the corporate life cycle**

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# **A matter of control or identity? Family firms' environmental reporting decisions along the corporate life cycle**

## **Abstract**

Building on the socio-emotional wealth (SEW) perspective, this study explores ED practices in family firms and investigates whether the firm's life cycle stage plays a moderating role in these practices. We focus on two dimensions of the SEW: *family control and influence* and *family identity*. To the extent that different types of family-controlled firms have different reporting behaviors based on their primary SEW dimension, they will undertake the ED strategies that allow them to preserve their SEW. Using a sample of listed firms from the Milan Stock Exchange, we show that family firms for which the family control and influence SEW dimension is most salient provide less environmental information than non-family firms and that this effect is weakened along the family firm's life cycle. Our findings also indicate that middle-aged family firms, where the family identity dimension prevails, provide more environmental disclosure than do non-family firms. Our study contributes to knowledge about how the socio-emotional endowment affects family firms' reporting behaviour.

**Keywords:** family ownership, socio-emotional wealth, environmental disclosure, family firm, firm life cycle

## 1. Introduction

Recent initiatives calling for a global shift toward a sustainable use of natural resources, such as the 21<sup>st</sup> Conference of the Parties of the United Nations Framework Convention on Climate Change, have pushed environmental reporting to the forefront of the corporate agenda (KPMG Survey of Corporate Responsibility Reporting, 2017), requiring firms to identify the natural environment as a stakeholder (Bansal and Clelland, 2004) and to set comprehensive reporting practices that demonstrate responsible environmental stewardship. However, environmental reporting, like other forms of disclosure, comes with costs and benefits that determine the firm's incentives for reporting (Arena *et al.*, 2015; Cormier and Magnan, 2015).

The family nature of family firms is one important, albeit underexplored, factor that explains the heterogeneity in environmental reporting practices (Block and Wagner, 2014; Laguir *et al.*, 2016). While many studies examine reporting strategies in family firms (Salvato and Moores, 2010; Songini *et al.*, 2013), they focus on financial disclosure (voluntary or mandatory), analysed through the lens of agency theory (Prencipe *et al.*, 2014), not on the role of the family's preferences and priorities in shaping voluntary environmental disclosures (EDs). Understanding how family businesses undertake environmental reporting has wide implications for society as a whole, given that family-owned and family-managed firms are among the most widespread organizational forms in the world (La Porta *et al.*, 1999), with substantial influence on the global economy (Astrachan and Shanker, 2003; Morck and Yeung, 2004).

Relying on the socio-emotional wealth (SEW) perspective (Gomez-Mejia *et al.*, 2007; Berrone *et al.*, 2010; Berrone *et al.*, 2012; Cruz *et al.*, 2012; Miller *et al.*, 2013), this paper investigates ED practices in family firms. The SEW perspective is particularly suitable for this research objective, as it focuses on the role of non-economic utility in driving family firms' practices (Achleitner *et al.*, 2014; Gomez-Mejia *et al.*, 2014) and identifies a new set of incentives that may drive ED practices.

We argue that EDs in family firms are driven by SEW motives. While the literature has suggested that ED might be either a response to the accountability needs of stakeholders or a result of a legitimacy stance (Cormier and Magnan, 2015), we contend that SEW is a multidimensional concept (Cennamo *et al.*, 2012; Cruz *et al.*, 2012; Gómez-Mejía *et al.*, 2014) and focus on two dimensions of SEW that are the most sensitive to stakeholder claims: *family control and influence* and *family identity*. Furthermore, following Shepherd and Haynie (2009) and Zellweger and Dehlen (2012), we analyse to what extent family firms' EDs are motivated by the control and identity dimensions and change along the firms' life cycles.

Using the features of the Italian listed companies, we conduct an extensive content analysis of their sustainability reports to disentangle the effects of these two 'family' dimensions on the extent of voluntary EDs. Our results lend support to the theoretical argument that the two dimensions act as guiding references for ED in family firms and that their role is not uniform across family firms' life cycles.

Our research offers important contributions to the growing literature on environmental sustainability in family firms (Gallo, 2004; Uhlaner *et al.*, 2004; Dyer and Whetten, 2006; Berrone *et al.*, 2010; O'Boyle *et al.*, 2010), uncovering the idiosyncratic family business traits that explain their distinctive ED reporting strategies.

The remainder of the article unfolds as follows. First, we review the extant research in the field. Then we discuss our theoretical foundations and develop our hypotheses. Next, we describe the research design and data and describe our empirical findings and robustness tests. We conclude by highlighting the contributions, implications, and limitations of our study.

## ***2. Theoretical Framework and Hypotheses***

### ***2.1 Empirical evidence on disclosure in family firms***

Although many studies examine the reasons that underlie family firms' reporting strategies (Salvato and Moores, 2010; Songini *et al.*, 2013; Prencipe *et al.*, 2014), empirical evidence so far

focuses on mandatory financial disclosures. Some studies suggest a positive relationship between family involvement in ownership and management and financial reporting quality (Ali *et al.*, 2007; Jiraporn and Dadalt, 2009; Cascino *et al.*, 2010), while others report that family businesses' financial reporting quality is lower than that of their non-family-owned counterparts (Prencipe *et al.*, 2008; Yang, 2010).

Unlike financial disclosure, voluntary disclosures often entail unregulated, context-specific, non-accounting and narrative information. Voluntary disclosure is not audited (or is only partially audited), so it is not immediately verifiable by external users (Mercer, 2004). Hence its preparers' incentives are likely to differ from those who prepare mandatory disclosures and to present a wider range of opportunities for manipulation (Merkl-Davies and Brennan, 2007). Family managers have discretion on both the decision to release voluntary disclosures and the content of the disclosure itself.

Family owners' long-term investment horizon and active involvement in management is typically associated with a low level of public information (Anderson and Reeb, 2003; Villalonga and Amit, 2006), so some scholars report a negative relationship of family ownership and management with voluntary disclosure. For example, Ho and Wong (2001) report that the percentage of family members on the board is negatively related to the extent of voluntary disclosure, and Lakhani (2005) suggests a negative association between voluntary disclosure and ownership concentration in the context of French firms. Conversely, Chau and Gray (2010) report a positive relationship between family ownership and voluntary disclosure, and Chen *et al.* (2008) find that family firms provide fewer earnings forecasts and conference calls but more earnings warnings than other firms do.

However, the extant research fails to explain the role of voluntary disclosures by family businesses because it considers family businesses as homogeneous groups and treats voluntary disclosures as a unique set of information. Responding to the call for better identification of

disclosure practices from Salvato and Moores (2010), we rely on idiosyncratic features of family businesses to explain their distinctive ED strategies.

## *2.2 The SEW approach to reporting strategies in family firms*

Family businesses are characterized by a higher level of complexity than that of blockholder-dominated firms because financial and non-financial objectives co-exist in family firms. This complexity is often explained using the SEW perspective, which contends that the set of incentives family businesses face differ from those of firms with other kinds of concentrated ownership, while also recognizing heterogeneity among family firms. Grounded in the behavioural agency model developed by Wiseman and Gómez-Mejía (1998), the SEW approach underscores the role of non-economic utility in driving family firms' decisions and behaviours (Achleitner *et al.*, 2014; Gomez-Mejia *et al.*, 2014). According to the SEW perspective, family firms are motivated by and committed to preserving their SEW (Prencipe *et al.*, 2014), which refers to the stock of affect-related values that the family derives from its ownership and management of its firm (Gomez-Mejia *et al.*, 2007). The SEW construct encompasses several dimensions: the family's desire to exercise control over the firm, its identification with the firm, strong social ties among family members, emotional attachment of family members, and renewal of the family's bonds to the firm through dynastic succession (Berrone *et al.*, 2010; Gomez-Mejia *et al.*, 2010; Cennamo *et al.*, 2012). Proponents of the SEW claim that, as the family's SEW becomes the key reference for family principals, they tend to care more about the potential for decline than they do gains. Hence, family business principals are loss-averse with respect to the SEW and make decisions that preserve SEW, even at the expense of the firm's economic utility. Empirical evidence supports the view that SEW can drive corporate decisions like risk-taking (Gomez-Mejia *et al.*, 2007), diversification (Gomez-Mejia *et al.*, 2010), compliance with environmental standards (Berrone *et al.*, 2010), and R&D investment (Chrisman and Patel, 2012).

Although the number of studies that support the SEW approach is growing, its role in the context of reporting practices remains largely unexplored and is usually studied with respect to earnings management choices (Stockmans *et al.*, 2010). Pazzaglia *et al.* (2013) report empirical evidence that family-owned firms have higher earnings quality than do firms that are acquired through market transactions, arguing that family owners are characterized by a high sense of identification with the firm and the wish to protect the family's reputation in the eyes of external stakeholders. Likewise, Achleitner *et al.* (2014) suggest that family firms engage less in real earnings-management practices—as such practices inhibit the firm's long-term value—than they do in earnings-decreasing practices to help the families retain trans-generational control. In addition, Martin *et al.* (2016) show that founder family firms are less likely than non-founder family firms to use earnings management to avoid its negative effect on the family's SEW.

### *2.3 Family control, family identity, and the firm's life cycle: implications for ED strategies*

SEW research largely ignores voluntary reporting of environmental information in family firms. Gomez-Mejia *et al.*'s (2014) theoretical study acknowledges the multidimensional nature of the SEW, which Berrone *et al.* (2012) contend consists of five major dimensions—*family control and influence, family identity, sense of dynasty, emotional attachment, and social ties*—and predicts that different types of family-controlled firms might have diverse reporting behaviors. The SEW approach is helpful in explaining family firms' distinctive ED strategies, as the strategy that management adopts when engaging in voluntary ED may not be the same as that applied to other types of disclosures (Berthelot *et al.*, 2003; Cho *et al.*, 2014).

Similar to their non-family counterparts, family firms disclose substantive environmental information in response to the demand of stakeholder groups like employees, management, investors, creditors, regulators, unions, and public-interest groups. Such disclosure has been found to lead to financial benefits, such as a lower cost of equity capital, higher firm value, and fewer analysts' forecast errors (Aerts *et al.*, 2008; Dhaliwal *et al.*, 2012; Plumlee *et al.*, 2015).

ED may also bring non-financial benefits since it legitimates the company's actions in its society and facilitates its long-term prosperity (Martin *et al.*, 2016).

However, when dealing with ED decisions, family principals face tension between the benefits from fulfilling stakeholders' expectations for information and the costs associated with ED (i.e., the potential SEW losses that the family firm internalizes). Consistent with Gomez-Mejia *et al.* (2014), we maintain that the evaluation of these benefits and costs depends on the SEW dimension that is most salient, which is then reflected in the firms' ED strategies.

Following Cennamo *et al.* (2012), Cruz *et al.* (2014), and Gómez-Mejía *et al.* (2014), we recognize that the *family control and influence* and the *family identity* dimensions are the most relevant to external stakeholders, so we build on them to explain their distinctive implications for family firms' ED strategies. Specifically, we argue that firms in which family principals prioritise the family control and influence dimension of SEW are more reluctant to provide ED since the detrimental effects of this disclosure on their preservation of control overcome the gains from greater transparency. Voluntary ED often contains substantial proprietary information that reveals the extent to which company operations impact the external environment, as well as the activities and processes that the company has in place to manage and measure environmental efficiency. The nature of this information imposes proprietary costs on the firm (Dye, 1990) that may be a threat to family control. Moreover, the increased visibility associated with ED attracts more external capital and enhances the level of scrutiny from regulators and outside shareholders (Healy and Palepu, 2001; Graham *et al.*, 2005; Haddock-Fraser and Fraser, 2008), potentially limiting the family's ability to exert its influence over the business without interference from other non-family shareholders (Berrone *et al.*, 2012; Gomez-Mejia *et al.*, 2014), a pre-condition for perpetuation of the family's SEW. Furthermore, the decision to issue voluntary ED might signal the firm's commitment to comprehensive and transparent reporting (Verrecchia, 2001), so any subsequent interruption of this practice exposes the firm to negative market reaction



(Diamond and Verrecchia, 1991), challenging the family's ability to exert control over the business.

Hence, we propose that the fear of losing the family's control leads family firms to withhold ED to ensure the preservation of the family's SEW, and we formulate the following hypothesis:

*HP 1: Family firms in which family control and influence is the primary SEW dimension are less likely to engage in voluntary ED than non-family firms.*

In a related argument, we contend that firms whose family principals prioritise the family identity dimension of SEW are willing to provide ED voluntarily to protect their status and image in the community (Gomez-Mejia *et al.*, 2014).

The overlap between the family and the firm, which is often reflected in the choice to carry the family name in the firm, increases the concern about the effect that irresponsible behavior toward the environment may have on the family's reputation (Dyer and Whetten, 2006). In such cases, the visibility of the controlling family is high, increasing external monitoring by means of public opinion (Zellweger *et al.*, 2013). These family firms are more likely than other firms are to provide ED voluntarily since the benefits of doing so exceed its costs. ED strategies create a reputation of transparency that keep the family name secure in the capital market (Healy and Palepu, 2001; Graham *et al.*, 2005; Martin *et al.*, 2016) and that help to legitimize their company, building a corporate image that is consistent with that of a good corporate citizen (Hooghiemstra, 2000). These reputational benefits foster the family's image, thereby perpetuating the firm's SEW over time.

Hence, we anticipate that the desire to preserve the family's identity leads family firms to provide ED voluntarily in an attempt to project a positive image of the business and to increase its reputation over time. Therefore, we hypothesize:

*HP 2: Family firms in which the family identity is the primary SEW dimension are more likely to engage in voluntary ED than non-family firms.*

We also recognize that family firms' ED preferences and priorities may differ based on the firm's life cycle stage (Breton-Miller and Miller, 2013).

During their early years, family firms are typically small and run by the founder, who is keen to retain control and pass the business on to his or her descendants. The founder's strong emotional attachment with the firm enhances the family's commitment to the business and strengthens its identification with the firm. At this stage, family agents' cognitive processes are heavily influenced by emotional considerations (Shepherd and Haynie, 2009; Zellweger and Dehlen, 2012), and the SEW becomes key in making ED-related decisions. As these firms age, the number of family members and generations that are involved in leading the business increases, and the family's stake in the business becomes fragmented. The emergence of family branches weakens and strains the family's identification with the firm (Miller and Breton-Miller, 2011), and conflicts often arise among family members. As a result, family members' emotional attachment to the firm tends to weaken (Sciascia *et al.*, 2014), while their attention to economic objectives, rather than family goals, increases (Lubatkin *et al.*, 2005).

These arguments suggest that the emphasis on the SEW for ED decisions declines as the firm ages, undermining the ability of the SEW dimensions to explain ED. Hence, we argue that the family firm's aging weakens the relationships between the two dimensions of SEW and the likelihood that the firm will engage in voluntary ED.

*HP 3: Family firms' life cycle stage moderates the relationships of the family control and influence and family identity SEW dimensions with voluntary ED.*

### **3. Research Design**

#### *3.1 Data and sample selection*

Our sample is selected among companies listed on the Milan Stock Exchange and covered by Compustat Global during the period from 2012 to 2013. We focus on Italy for two reasons<sup>1</sup>. First, according to the Italian Association of Family Enterprises (Aidaf) almost 85 percent of the nation's companies are family businesses (Aidaf, 2017), and about 60 percent of the companies listed on the Milan Stock Exchange are family-owned, representing more than 25 percent of market capitalization. Because of this institutional setting's high degree of ownership concentration, family-owned companies are easily disentangled from the solely concentrated ones (Cascino *et al.*, 2010). Second, at the time of this study, Italy has no official regulations on EDs, which are completely voluntary<sup>2</sup>.

We started with a sample of 269 companies that are listed on the Milan Stock Exchange and covered by Compustat Global during the period from 2012 to 2013. We excluded financial and insurance companies and football clubs, which have different operating and reporting structures; companies that do not provide an English version of their CSR reports; and companies for which we were unable to collect the data needed for the empirical analysis. These exclusions left a final sample of 167 companies and 288 firm-year observations. Most of the sample companies belong to the manufacturing sector (58.69%), with the remaining companies operating in the transportation and communication sector (17.01%), the service industry (11.45%), the wholesale and retail trade sector (5.56%), the agriculture, mining and construction industries (5.21%), and public administration (2.08%).

### 3.2 Selection and definition of variables

To measure ED, we rely on disclosure indices obtained from the content analysis of sustainability reports, the most commonly recognized methodology for measuring the extent of

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<sup>1</sup> Since EDs differ among countries (Van der Laan-Smith *et al.*, 2005), focusing on one country generates a homogenous dataset that ensures a high degree of comparability of the sample companies. However, we caution against generalizing our findings, as our limited sample size might lead to biased interpretation.

<sup>2</sup> We chose the 2012-2013 period to neutralize the potential confounding effect of the reforms in environmental laws that occurred in subsequent years (i.e., introduction of a tax on waste disposal by the law 147/2013 and the revision of the Robin Hood tax by the D.L. n. 69/2013).

voluntary disclosure (Botosan, 1997; García-Meca and Martínez, 2005; Vourvachis and Woodward, 2015). Content analysis is a well-established procedure in the sustainability disclosure literature, as it provides valid results with which to evaluate the extent of the disclosure of various items (Guthrie and Parker, 1989; Deegan and Gordon, 1996; Guthrie *et al.*, 2004)<sup>3</sup>. We selected sustainability reports for this analysis because they are the most comprehensive means of communicating environmental information (Michelon *et al.*, 2015). The content analysis was carried out by two expert coders who were neither providers nor recipients of the report (the ‘third-party approach’)<sup>4</sup>. Environmental information was coded using a thirty-item checklist that was divided into nine categories or sub-variables, as shown in Table 1, tailored to the Environmental Indicators provided by the Global Reporting Initiative (hereafter GRI) 3.1 Index.

[INSERT TABLE 1]

The use of GRI indicators facilitates a high level of objectivity and replicability during the coding. Similar to Wiseman (1982), we assigned any relevant item ( $ED_i$ ) a score of 1 if the firm provided generic qualitative information, 2 if the firm provided quantitative disclosures, and 3 if the firm provided monetary information. We awarded zero points to the firm if it provided no disclosures and no substantial explanation for the omission<sup>5</sup>.

Based on this procedure, the  $ED$  index compares the actual disclosure with a total possible disclosure, computed as:

$$ENV\_D = \frac{\sum ED_i}{\sum max\_ED_i},$$

where  $ED_i$  is the score assigned to the single item  $i$ , and  $max\_ED_i$  is the maximum score that can be assigned to item  $i$  if complete information is provided. The  $ED$  index ranged from 0 to 1, such

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<sup>3</sup> Content analysis allowed us to codify written text into groups and categories based on selected criteria and to draw logical inferences by analysing large numbers of reports in terms of their disclosures and omissions (Neuendorf, 2002; Krippendorff, 2004).

<sup>4</sup> As a robustness check, we performed an alpha test from Krippendorff (1980) to ensure homogeneity of the content analysis process. Specifically, two coders (one author and one research assistant) rated to the same set of environmental information provided by a sub-sample of sixty companies. The inter-coder reliability, computed as the Krippendorff’s alpha coefficient, was 82 percent, indicating a good level of inter-coder agreement (Neuendorf 2002, p. 145).

<sup>5</sup> Items are considered irrelevant when the firm provides substantial explanations for the omissions.

that the more closely the value of the index approaches to 1, the higher the level of ED provided by company  $j$  in year  $t$ .

To identify family firms, we relied on the level of family ownership (Villalonga and Amit, 2006; Miller *et al.*, 2013). We hand-collected ownership data from company reports, the AIDA, and CONSOB databases and identified family-controlled firms as those in which members of a single family held more half of the firm's capital directly or through other entities (Cascino *et al.*, 2010). We refer to these firms as *CONTROL\_FF* to identify the firms in which family principals prioritise the family control and influence dimension of SEW. We identified family firms in which family principals prioritised the family identity dimension of SEW (*IDENTITY\_FF*) by determining whether the name of the controlling family is part of the firm's name (Deephouse and Janskiewicz, 2013)<sup>6</sup>. We measured the moderating effect of the family firm's life cycle using the variable *AGE*, computed as the natural logarithm of the number of years since the firm's foundation (La Rocca *et al.*, 2011).

We also included several variables that control for potential confounding influences on ED (Brammer and Pavelin, 2008; García-Sánchez, 2008; Monteiro and Aibar-Guzmán, 2010; Michelon and Parbonetti, 2012; Ben-Amar and McIlkenny, 2015): presence of a corporate social responsibility (CSR) committee in the board (*CSR\_COM*), presence of a CEO who belongs the controlling family (*CEO\_FAMILY*), independence (*IND\_BOD*) and size (*N\_BOD*) of the board of directors, firm size (*SIZE*), financial leverage (*LEVERAGE*), and profitability (*PROFIT*).

Detailed descriptions of the measures of all of the variables are provided in Table 2.

[INSERT TABLE 2]

## 4. Empirical Results

### 4.1 Univariate analysis

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<sup>6</sup> Our classification does not assign each firm to one of these dimensions exclusively, as it is possible that a firm gives importance to both family control and influence and family identity. However, the results presented herein do not change if we exclusively assign each firm to one or the other dimension.

Table 3 offers descriptive statistics and the correlation matrix for all of the variables.

[INSERT TABLE 3]

The average value of ED is 0.098, with a standard deviation of 0.246, suggesting that the sample companies report a low average level of ED. Un-tabulated evidence suggests that the most commonly reported items are direct and indirect energy consumption and the monetary value of fines and sanctions for non-compliance with environmental laws and regulations (*EN3*, *EN4*, *EN28*). On the other hand, information on the environmental impacts and initiatives the firm undertook to reduce them (*EN12*, *EN19*, *EN29*) are only briefly referenced or, more frequently, completely omitted. The results of the ANOVA tests (un-tabulated) show that the extent of ED significantly differs between family and non-family firms for all disclosure items, with the exception of the percentage of the weight or volume of recycled input materials (*EN2*) and the percentage of reclaimed products and their packaging materials (*EN27*)<sup>7</sup>. Consistent with D'Amico *et al.* (2016), these findings reveal low dissemination of ED in the Italian context. Relying on Wiseman (1982), we classified the disclosure items into four categories—economic factors, environmental litigation, pollution abatement, and other ED—and we identify the most frequently disclosed ED items in sub-groups of family/non-family firms based on their life cycle stage. Descriptive findings reveal that young family firms tend to disclose general information on environmental policies and their concern for the environment but do not provide information on past or present litigation or disclosures related to economic factors. Middle-stage family firms tend to disclose information about pollution abatement (e.g., waste disposal, air emission) and, infrequently, litigation. Litigation disclosures are the most frequently disclosed items in old family firms, but they still omit information on economic factors. The trends for the most frequently reported items for the sub-groups of young, middle-aged, and old non-family firms are similar to that observed for the family firms. However, non-family firms' level of ED is

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<sup>7</sup> Following Cascino *et al.* (2010), we defined for the purpose of this comparison family businesses as firms in which family members own at least half of the firm.

significantly higher in all four categories of the Wiseman list, and they also report on environmental costs and expenditures, especially in the early and mature stages.

Regarding our variables of interest, the mean value of *CONTROL\_FF* is 0.534, while the mean value of *IDENTITY\_FF* is 0.145. Hence, despite the large number of family-controlled firms among Italy's listed firms, only a small percentage carries a family name. This picture is in line with prior research on family firms in similar settings (Cascino *et al.*, 2010; Campopiano and de Massis, 2015). The mean value of *CSR\_COM* (0.159) suggests that, similar to Cucari *et al.* (2017), only a small percentage of family firms have appointed a manager or a unit to be responsible for CSR strategies. The mean value of *CEO\_FAMILY* is 0.340, so less than half of our sample companies are led by a family member. Although this value is slightly lower than that reported in other studies (Miller *et al.*, 2013), it underscores the prevalence of family leadership and the difference between the leadership style of Italy's family firms and that of family firms in Anglo-Saxon countries (Block and Wagner, 2014).

Our firms' boards of directors have an average of nine members, four of which are independent, a finding that is consistent with Patelli and Prencipe (2007). Finally, companies appear to be relatively small in size, to be highly leveraged, and to have negative operating performance.

Finally, no correlation is larger than the commonly accepted level of 0.70, and the Variance Inflation Factor (VIF) is 1.52, so multicollinearity concerns are not raised (Wooldridge, 2015).

#### 4.2 Multivariate analysis

To test empirically the impact of the *family control and influence* and *family identity* dimensions on ED and the moderating effect of the family firm's life cycle stage, we use the following regression equation:

$$ENV\_D = \beta_0 + \beta_1 CONTROL\_FF + \beta_2 IDENTITY\_FF + \beta_3 CONTROL\_FF*AGE$$

$$+ \beta_4 \text{IDENTITY\_FF*AGE} + \beta_5 \text{AGE} + \beta_6 \text{CSR\_COM} + \beta_7 \text{CEO\_FAMILY} \\ + \beta_8 \text{IND\_BOD} + \beta_9 \text{N\_BOD} + \beta_{10} \text{SIZE} + \beta_{11} \text{LEVERAGE} + \beta_{12} \text{PROFIT} + \varepsilon, \quad [1]$$

where  $\beta_1$  and  $\beta_2$  are the coefficients of interest to test H1 and H2, respectively;

and  $\text{CONTROL\_FF*AGE}$  and  $\text{IDENTITY\_FF*AGE}$  are the interaction terms between  $\text{CONTROL\_FF}$  and  $\text{IDENTITY\_FF}$  and the moderator ( $\text{AGE}$ ) to assess how the effects on ED of *family control and influence* and *family identity* vary along family firms' life cycle. (Hence,  $\beta_3$  and  $\beta_4$  test our H3.) We also control for years and sectors (two-digit SIC codes) to remove unobserved time and industry heterogeneity that may be associated with disclosure behaviour. Table 4 reports the results of these estimations<sup>8</sup>.

[INSERT TABLE 4]

Overall, the tested models' goodness of fit is strong, as the adjusted R<sup>2</sup> is 60.2 percent.

Our results with respect to other control variables are aligned with the extant literature since the extent of ED is significantly and positively affected by firm size and the presence of a CSR committee (Deegan and Gordon, 1996; Patten, 2002).

Consistent with H1, we find that the coefficient of  $\text{CONTROL\_FF}$  is negative and statistically significant, so family firms in which the control dimension is the more prominent are less willing to disclose environmental information than other firms. Conversely, the coefficient of  $\text{IDENTITY\_FF}$  is positive and statistically significant, supporting H2, so family firms in which the identity dimension prevails are more willing to disclose environmental information than other firms. The interaction effects  $\text{CONTROL\_FF\_AGE}$  and  $\text{IDENTITY\_FF\_AGE}$  are not statistically significant, suggesting that the effects of the two SEW dimensions do not change across the firms' life cycle. However, the lack of significance for the interaction effects may hide a non-monotonic role of the 'family' dimensions in ED decisions during family firms' life cycle.

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<sup>8</sup> For the sake of brevity, we do not report or comment on the model without interaction. However, our main results are consistent with our prediction, as they show that the coefficient of  $\text{CONTROL\_FF}$  is negative and statistically significant and the coefficient of  $\text{IDENTITY\_FF}$  is positive, although not statistically significant.



To determine whether the effect of the two SEW dimensions on ED decisions varies non-monotonically across the stages of family firms' life cycle, we adopted a cluster analysis approach and sorted the sample based on an inductive criterion. This approach helped us determine whether there are structural differences among our firms by sorting them into clusters that indicate the greatest separation (distance) among the groups (Chiu *et al.*, 2001). We identified three clusters (Table 5, panel A) based on firm age—that is, the firm's life cycle stage.

[INSERT TABLE 5]

Cluster 1, which contains 21.8 percent of the sample, consists of firms with an average age of eleven years (s.d. = 3.717 years). Cluster 2, which contains 51.3 percent of the sample, consists mainly of middle-aged firms with an average age of thirty years (s.d. = 7.651 years). Cluster 3, which contains 26.7 percent of the sample, consists of older firms with an average age of eighty years (s.d. = 30.050 years). Panel B of Table 5 shows the regression results obtained from running Equation 1 (without the interaction effects) separately for the three clusters. To determine whether the coefficients in the regression model are the same in the three sub-samples, we performed the Chow test (Chow, 1960), which confirmed that the coefficients are not equal, so the parameters differ significantly.

Results for young firms (cluster 1) show that the predominance of the *family control and influence* dimension is negatively related to the extent of ED, and *family identity* does not exert a significant influence on ED. In line with the results for the full sample, these young firms show a positive effect of firm size, board size, and financial leverage.

In the sub-sample of middle-aged firms (cluster 2), the effect of the *family control and influence* dimension is no longer significant, whereas the *family identity* dimension has a positive and significant coefficient. Therefore, after the early stage, the *family identity* dimension starts to play a pivotal role in ED decisions, leading family businesses that bear the family name to increase ED. In addition, in middle-aged firms the presence of a CSR committee positively affects ED, while the firm's profitability has a negative and significant effect.

Finally, the results for old firms (cluster 3) are consistent with the regression results for middle-aged firms, as *family control and influence* does not have a significant effect on ED. However, contrary to our expectation, we find a negative and significant coefficient of *IDENTITY\_FF*, so the *family identity* dimension has a negative effect on ED in family firms as they grow older.

#### 4.3 Additional analysis and robustness tests<sup>9</sup>

Prior work suggests that the reliance on SEW declines in distressed firms (Gomez-Mejia *et al.*, 2007), so the extent to which the two dimensions of SEW drive the ED decision might be affected by the firm's profitability. We perform additional analyses separately for more profitable vs. less profitable firms, splitting the sample on the firms' median net income. We find that more profitable family firms that prioritise the *family control and influence* are less willing to provide ED than other firms, while family firms in which the *family identity* dimension prevails provide more voluntary ED. Less profitable family firms are less likely to report ED than more profitable family firms are, regardless of which SEW dimension is more pronounced. This result corroborates the argument that the extent to which family firms use SEW to frame ED decisions depends on contextual factors.

We also consider that ED may be a more cosmetic than substantive activity that has the primary purpose of gaining or maintaining legitimacy (Michelon *et al.*, 2015). Hence, our results might be affected by the presence of unverifiable soft information a firm voluntarily discloses to manipulate stakeholders' perceptions. To address this concern, we excluded from our ED measure soft qualitative information that was, for example, related to initiatives that mitigate the environmental impact of company activities. We re-ran our analysis using only 'hard' ED (i.e., quantitative information concerning materials, water, greenhouse emissions, monetary value, or

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<sup>9</sup> Results of these analyses are available from the authors upon request.

number of non-monetary environment-related sanctions) as the dependent variable. The results of this additional analysis are consistent with our main evidence.

We also conducted several other robustness tests, the results of all of which aligned with the main evidence reported in Table 4. First, to remove the subjectivity of the multiple scale coding for the measurement of disclosure, we repeated the multivariate analysis using a non-weighted metric for ED. Second, to ensure that the family's nature is captured accurately, we re-ran the analysis using an alternative definition of family firms that considers the presence of the family both in ownership and in administrative positions (Anderson and Reeb, 2003; Villalonga and Amit, 2006). We identified family-controlled firms as those in which members of a single family held more than half of the capital directly or through other entities while at least one family member was on the firm's board or had a managerial position<sup>10</sup>. Third, we acknowledged that, although the variable *AGE* is intended to capture the family's need to retain control and the emotional attachment to the firm along its life cycle, it could also be a rough proxy for the strength of socio-emotional considerations in the firm. Therefore, since these factors may also change across generations (Cruz and Nordqvist, 2012), we re-ran the analysis using the generation in charge (*GEN*) as a moderator to account for the possibility that older firms are still in earlier generational stages. We conducted additional regression analyses using the natural logarithm of employees as an alternative proxy for firm size and an alternative specification of the model, clustering standard errors for firms. Finally, extant studies (Berrone *et al.*, 2012; Cruz *et al.*, 2014) document that family firms and non-family firms differ in their CSR practices, so we re-ran our analysis to control for the level of environmental performance as proxied by the *ENVSCORE* in the Asset4 Thomson Reuters Database. Results for the sub-sample of firms with environmental performance data remained unchanged<sup>11</sup>.

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<sup>10</sup> Following Minichilli *et al.* (2010), we also considered a cut-off of 30 percent of firm ownership directly or indirectly held by a single family, as this threshold must be met for a tender offer in the Draghi Law (D. lgs 58/1998). We also re-ran our analysis using the largest percentage of shares held by a single family as a non-binary variable to capture the family control, and our main results remained unchanged.

<sup>11</sup> We decided not to include this control in the main analysis, as the limited coverage of this database for our sample would affect the generalizability of our results.

## 5. Discussion

This study relies on the SEW approach to explain voluntary ED behaviour in family firms. Our results are generally consistent with the argument that family businesses consider the preservation of SEW in their ED decisions (Gomez-Mejia *et al.*, 2007) but, they indicate that the effects of each of the two SEW dimensions cannot be studied in isolation, without considering the firm's life cycle stage.

We show that the detrimental effect of the family control and influence dimension on voluntary ED is limited to early stages of family firms' life cycle. In these circumstances, the increased stakeholder pressure and regulatory scrutiny that follows the release of proprietary disclosures, such as those related to companies' processes for managing and measuring environmental efficiency, might obstruct the family's control over the business, threatening the preservation of its SEW. This finding is aligned with studies that, following a traditional agency-based approach, report less transparency in family firms than in their non-family-owned counterparts (Ho and Wong, 2001; Lakhali 2005; Chen *et al.*, 2008). However, we diverge from these studies' findings by suggesting that family firms might provide less ED when family control and influence is at stake, even when doing so comes at a financial cost (e.g., higher cost of equity capital and lower firm value). The results also support the argument that the firm's need to retain control over the business and related secrecy is higher in the early stages of the life cycle, when the first generation is usually in place (Sonfield and Lussier, 2004). We document that, as family firms become more mature, the negative effect on ED of the family control and influence dimension disappears.

Our study also expands on previous findings pertaining to the positive link between family identity and financial reporting transparency (Pazzaglia *et al.*, 2013; Achleitner *et al.*, 2014; Martin *et al.*, 2016). Our evidence that middle-aged family firms that prioritise the family identity dimension provide more ED supports the argument that family firms that carry the

family name are particularly motivated to protect and improve their firms' reputations and to protect the family's identity (Deepphouse and Jaskiewicz, 2013). We show that a firm's concern for communicating responsible stewardship toward the environment becomes more evident after the early stage in its life cycle, leading it to enhance ED to project a positive image of the family in the community. This result is consistent with prior findings that indicate family firms' propensity to disseminate CSR information (Prado-Lorenzo *et al.*, 2009; Campopiano and de Massis, 2015), but we show that this propensity is especially true when the family name is part of the firm's name and when the firms is young.

Finally, the negative relationship between the family identity dimension and ED in old family firms deserves some discussion. This relationship challenges the frequent claim that that a powerful family identity dimension always leads family firms to be forthcoming. This unexpected finding could be the result of several concurrent circumstances: (i) the reduced family attachment to the business by family members in subsequent generations (Salvato and Melin, 2008); (ii) the fragmentation of family ownership among multiple branches, which is often accompanied by conflicting agendas (Villalonga and Amit, 2006); (iii) the passive role of family members who occupy managerial positions (Lussier and Sonfield, 2010), and (iv) the presence of external professional managers and the accompanying increased complexity of firm governance (Breton-Miller and Miller, 2013). In all of these circumstances, the predominance of SEW-related considerations decreases, leaving more room for opportunism since family members tend to treat the firm as a personal resource (Gersick *et al.*, 1997; Schulze *et al.*, 2003). As a consequence, during the maturity stage, family firms that bear the family name might be less keen about voluntary ED, preferring instead to take advantage of the lack of transparency to exploit the firm's resources.

## **6. Conclusion**

Family businesses have been the subject of hundreds of studies by management and accounting scholars (Prencipe *et al.*, 2014), but no clear message has emerged regarding the implications for ED practices of the multifaceted dimensions of family firms (Salvato and Moores, 2010). This study shows that the fear of losing control leads family firms that prioritise the family control and influence dimension to be unforthcoming about ED, especially in the early stages of their life cycle, when they are more sensitive to their SEW than to economic considerations. Our evidence also supports the positive effect on ED of the family identity dimension in middle-aged family firms, when the presence of the family name as part of the firm's name increases reputation-related concerns and leads the firm to show environmental stewardship through increased ED. This study contributes in several ways to the management literature and the family business field in particular. First, by addressing the link between family firms and voluntary ED, this paper complements extant studies on family businesses and mandatory reporting practices (Ali *et al.*, 2007; Prencipe *et al.*, 2008) and the growing literature on family firms and sustainability practices (Block and Wagner, 2014; Campopiano and de Massis, 2015) by showing how two dimensions of SEW play a role in explaining their distinctive behaviour in regards to ED. It also complements the studies on sustainability disclosure (Burrit, 2002; Nyquist, 2003; Martin and Hadley, 2008; Vormedal and Ruud, 2009; Fujii *et al.*, 2013; Pedersen *et al.*, 2013; Stanny, 2013) by providing new evidence on the still under-explored Italian setting, which is characterized by highly concentrated ownership structures and many family-owned firms (Noci, 2000; Secchi 2006).

Second, by relying on the SEW theoretical lens to explain family firms' ED choices, this paper expands the SEW literature that examines the difference between family firms and non-family firms in terms of diversification, risk-taking, R&D investments, and other strategic decisions (Gomez-Mejia *et al.*, 2007; Gomez-Mejia *et al.*, 2010; Chrisman and Patel, 2012). This approach is particularly suitable for examinations of family businesses' ED practices, as it

derives its theoretical rationales from family businesses' reality, rather than adjusting them to the setting of family firms (Berrone *et al.*, 2012).

Third, in contrast to the large body of US-based research, most of which discriminates between family firms and nonfamily firms in terms of the degree of ownership concentration (Ali *et al.*, 2007; Chen *et al.*, 2010), this paper explores the influence of family-related characteristics on reporting practices by differentiating among family firms based on the most salient SEW dimension.

From a practical point of view, the evidence provided here may be of help to investors by encouraging them to think carefully about how family firms' preferences and priorities shape their ED. Our evidence is also useful to managers of family firms, who are encouraged not to take for granted that traditional reporting practices can be universally applicable to the case of ED, as the decision to disclose environmental information is the result of tension between the external demand for information and the potential SEW losses that may accrue to the family firm, which could also decrease the level of corporate transparency. Finally, our results could be useful to regulators and standards-setters, as they contribute to the debate concerning whether and to what extent ED should be included in companies' mandatory disclosures and call for the corporate governance mechanisms that fit family firms' idiosyncratic incentive structure to foster their transparency and accountability to stakeholders.

We foresee several venues for future research. First, following Gomez-Mejia *et al.* (2007, 2010), Berrone *et al.* (2010), and Deephouse and Janskiewicz (2013), we focus on the dimensions of family control and influence and family identity and draw on secondary data to explore their implications for family firms' ED decisions. Although our study takes a first step in this direction, our approach may not fully capture the complexity of the SEW concept (Berrone *et al.*, 2012). Future research could rely on primary data based on interviews with family principals to differentiate among other SEW dimensions. Second, our research has limitations with regard to the type of the family firms covered. Although listed family firms account for

most of Italy's shareholding market (Aidaf, 2017), they are not representative of the universe of family businesses. Future research could examine the extent to which family preferences and priorities drive ED decisions in private family businesses, taking into account the role of other individual and organizational conditions (e.g., the roles of founders, CEOs, the generational stage, and firm size). Finally, our research focuses on ED in CSR stand-alone reports, so future research could explore how family businesses use SEW to frame how ED is disseminated through various reporting media (e.g., integrated reporting, media, press).

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**Table 1. Coding Scheme**

<b>Materials</b>		<b>Emissions, effluents and waste</b>	
EN1	Materials used by weight or volume.	EN16	Total direct and indirect greenhouse gas emissions by weight.
EN2	Percentage of materials used that are recycled input materials.	EN17	Other relevant indirect greenhouse gas emissions by weight.
<b>Energy</b>		EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.
EN3	Direct energy consumption by primary energy source.	EN19	Emissions of ozone-depleting substances by weight.
EN4	Indirect energy consumption by primary source.	EN20	NO <sub>x</sub> , SO <sub>x</sub> , and other significant air emissions by type and weight.
EN5	Energy saved due to conservation and efficiency improvements.	EN21	Total water discharge by quality and destination.
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	EN22	Total weight of waste by type and disposal method.
EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	EN23	Total number and volume of significant spills.
<b>Water</b>		EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.
EN8	Total water withdrawal by source.	EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.
EN9	Water sources significantly affected by withdrawal of water.	<b>Products and services</b>	
EN10	Percentage and total volume of water recycled and reused.	EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.
<b>Biodiversity</b>		EN27	Percentage of products sold and their packaging materials that are reclaimed by category.
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	<b>Compliance</b>	
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.
EN13	Habitats protected or restored.	<b>Transport</b>	
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	<b>Overall</b>	
		EN30	Total environmental protection expenditures and investments by type.

**Table 2. Variable description**

<b>Variable</b>	<b>Definition</b>	<b>Measurement</b>
<i>ENV_D</i>	Environmental disclosure index	Weighted index that compares the actual environmental disclosure with total possible environmental disclosure
<i>CONTROL_FF</i>	Family firms that prioritize <i>family control and influence</i> dimension of the SEW	Binary variable equals 1 if single family hold more than 50% of the capital directly or through other entities
<i>IDENTITY_FF</i>	Family firms that prioritize <i>family identity</i> dimension of the SEW	Binary variable equals 1 if single family hold more than 50% of the capital directly or through other entities and the family business carries the family name
<i>AGE</i>	Firm life-cycle	Natural logarithm of the number of years since the foundation date
<i>CSR_COM</i>	CSR unit	Binary variable equals 1 if there is a manager or a unit responsible for CSR policies
<i>CEO_FAMILY</i>	Family CEO	Binary variable equals 1 if CEO belongs to the controlling family; 0 otherwise
<i>IND_BOD</i>	Board independence	Number of independent directors sitting on the board
<i>N_BOD</i>	Board size	Number of directors sitting on the board
<i>SIZE</i>	Firm size	Natural logarithm of total asset
<i>LEVERAGE</i>	Leverage	Total liabilities divided by total equity
<i>PROFIT</i>	Firm profitability	Operating income divided by total asset



**Table 3. Descriptive statistics and correlation matrix**

	mean	p50	sd	1	2	3	4	5	6	7	8	9	10	11
<b>1</b> <i>ENV_D</i>	0.098	0	0.246	1.000										
<b>2</b> <i>CONTROL_FF</i>	0.534	0	0.499	-0.200***	1.000									
<b>3</b> <i>IDENTITY_FF</i>	0.145	0	0.353	-0.026	0.385***	1.000								
<b>4</b> <i>AGE</i>	3.417	3.401	0.732	-0.006	0.059	0.069	1.000							
<b>5</b> <i>CSR_COM</i>	0.159	0	0.366	0.556***	-0.049	-0.019	0.096	1.000						
<b>6</b> <i>CEO_FAMILY</i>	0.340	0	0.474	-0.105	0.347***	0.098	0.024	-0.133*	1.000					
<b>7</b> <i>IND_BOD</i>	4.062	3	2.481	0.328***	-0.137*	-0.026	0.053	0.265***	-0.092	1.000				
<b>8</b> <i>N_BOD</i>	9.364	9	3.003	0.244***	-0.049	0.038	0.120*	0.247***	-0.087	0.687***	1.000			
<b>9</b> <i>SIZE</i>	6.209	5.903	1.846	0.573***	-0.093	0.038	0.138*	0.430***	-0.114	0.522***	0.530***	1.000		
<b>10</b> <i>LEVERAGE</i>	2.147	1.799	1.431	0.178**	-0.033	0.060	0.112	0.045	0.026	0.216***	0.100	0.215***	1.000	
<b>11</b> <i>PROFIT</i>	-0.007	0.005	0.094	0.077	0.217***	0.164**	0.026	0.109	-0.020	0.035	0.118*	0.204***	0.007	1.000

\*, \*\*, \*\*\* denotes significance at the 1%, 5% and 10% level (two-tailed). The table reports descriptive statistics and the correlation matrix among variables of interests. Sample comprises 288 firm-year observations. All variables are defined in Table 2.

**Table 4. Results for *family control and influence, family identity* and firm life cycle**

	<i>ENV_D</i>
<i>CONTROL_FF</i>	-0.205* (0.119)
<i>IDENTITY_FF</i>	0.342* (0.197)
<i>CONTROL_FF_AGE</i>	0.039 (0.035)
<i>IDENTITY_FF_AGE</i>	-0.090 (0.055)
<i>AGE</i>	-0.049** (0.029)
<i>CSR_COM</i>	0.280*** (0.035)
<i>CEO_FAMILY</i>	0.027 (0.026)
<i>IND_BOD</i>	-0.00 (0.006)
<i>N_BOD</i>	-0.006 (0.006)
<i>SIZE</i>	0.052*** (0.009)
<i>LEVERAGE</i>	-1.09e-05 (0.008)
<i>PROFIT</i>	-0.022 (0.136)
Constant	0.572** (0.227)
INDUSTRY_FE	YES
YEAR_FE	YES
Observations	288
R-squared	0.602

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1 (two-tailed). The table reports the results from the moderated regression analysis to test the influence of *family control and influence, family identity* dimensions of SEW on ED and the role of the firm life cycle. *CONTROL\_FF\_AGE* is the interaction term between *CONTROL\_FF* and *AGE*. *IDENTITY\_FF\_AGE* is the interaction term between *IDENTITY\_FF* and *AGE*. All variables are defined in Table 2.

**Table 5. Results for *Family control and influence* and *family identity* at different stages of the firm's life cycle**

**Panel A. Distribution of firm age by clusters**

Cluster	N	min	mean	p50	max	sd
<i>Young firms</i>	63	3	11.952	12	17	3.717
<i>Middle-aged firm</i>	148	18	30.040	29	46	7.651
<i>Old firms</i>	77	47	80.581	72	161	30.050
Total	288	3	39.506	30	161	30.500

Panel A reports the distribution of firm in the three clusters obtained from a cluster analysis performed to identify different stages of the firm's life cycle according to the firm's age. All variables are defined in Table 2.

**Panel B. Cluster analysis results**

	(1)	(2)	(3)
	Young firms' cluster	Middle-aged firms' cluster	Old firms' cluster
<i>CONTROL_FF</i>	-0.178** (0.079)	-0.056 (0.035)	-0.034 (0.047)
<i>IDENTITY_FF</i>	-0.184 (0.117)	0.154*** (0.044)	-0.235*** (0.051)
<i>CSR_COM</i>	-0.018 (0.099)	0.378*** (0.047)	0.330*** (0.046)
<i>CEO_FAMILY</i>	0.060 (0.069)	0.003 (0.032)	-0.013 (0.046)
<i>IND_BOD</i>	-0.010 (0.017)	0.016 (0.010)	-0.024*** (0.009)
<i>N_BOD</i>	0.0172 (0.017)	-0.022** (0.0096)	-0.021*** (0.007)
<i>SIZE</i>	0.134*** (0.034)	0.067*** (0.014)	0.070*** (0.013)
<i>LEVERAGE</i>	0.054*** (0.018)	-0.016 (0.015)	-0.008 (0.014)
<i>PROFIT</i>	0.185 (0.350)	-0.499*** (0.189)	0.288 (0.226)
Constant	-0.611** (0.289)	-0.258 (0.183)	-0.160 (0.147)
INDUSTRY_FE	YES	YES	YES
YEAR_FE	YES	YES	YES
Observations	63	148	77
R-squared	0.805	0.693	0.913

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1 (two-tailed). Panel B reports the results for the role of *family control and influence* and *family identity* dimensions at different stages of the firm's life cycle

obtained running Equation 1 separately for the three sub-groups of identified with the cluster analysis. Column 1 reports results for the cluster of young firms. Column 2 reports results for the cluster of middle-aged firms. Column 3 reports results for the cluster of old firms. All variables are defined in Table 2.