

Socially responsible downsizing: Comparing family and non-family firms

Maria J. Sanchez-Bueno¹ | Fernando Muñoz-Bullón¹  | Jose I. Galan²

¹Department of Business Administration, Universidad Carlos III de Madrid, Getafe, Spain

²Department of Business Administration, Universidad de Salamanca, Salamanca, Spain

Correspondence

Fernando Muñoz-Bullón, Department of Business Administration, Universidad Carlos III de Madrid, Calle Madrid, 126, 28903 Getafe, Madrid, Spain.
Email: fernando.munoz@uc3m.es

Funding information

Spanish Ministry of Economy and Competitiveness, Grant/Award Number: ECO2016-75379-R, AEI/FEDER, UE; Community of Madrid, Grant/Award Number: S2015/HUM-3353 (EARLYFIN-CM); Ibero-American Chair in Management and Corporate Social Responsibility/Santander Bank.

Abstract

This study seeks to investigate whether family firms are more likely to downsize their workforce than their non-family counterparts. Drawing on socioemotional wealth approach, we first explore the effect of family presence on workforce downsizing. Furthermore, we examine the moderating role of R&D activity on the family presence–downsizing relationship. Our sample covers a panel of manufacturing SMEs in Spain over the 1993–2014 period. We find that family firms are less likely to downsize than non-family firms. Our results also reveal a negative association between R&D activity and workforce downsizing. Finally, the relationship between family presence and downsizing is contingent upon R&D activity, that is, family firms engaged in R&D activities are less likely to downsize than non-innovative family firms.

1 | INTRODUCTION

The adoption of different social initiatives (e.g., care for workforce relationships, eco-friendly and sustainable practices, and philanthropy) has received growing attention in recent years (Jamali, El Dirani, & Harwood, 2015), and more specifically in the family business context (e.g., Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010; Campopiano & De Massis, 2015; Dou, Zhang, & Su, 2014; Van Gils, Dibrell, Neubaum, & Craig, 2014; Zientara, 2017). This stream of research has stressed that the firm's ownership structure may constitute a key factor for further advancing our understanding of how best to meet employees' needs and expectations (e.g., Block, 2010; Stavrou, Kassinis, & Filotheou, 2007). As employees are a major resource for most firms, it is important to explore how firms contribute to their well-being. Note that workforce downsizing has been on the up in recent years in the United States, Europe, and some emerging economies (e.g., Block & Wagner, 2014; Brauer & Laamanen, 2014; Cascio & Young, 2003; Gandolfi & Littler, 2012), despite its severely negative consequences for employees (Brockner, Grover, O'Malley, Reed, & Glynn, 1993; Datta, Guthrie, Basuil, & Pandey, 2010; Stavrou et al., 2007).

Family firms (FFs) account for a high percentage of the overall stock of companies in the global economy, employing millions of people (about 60% of the global workforce) (Gomez-Mejia, Larraza-Kintana, Moyano-Fuentes, & Firfiray, 2018; Neckebrouck, Schulze, & Zellweger, 2018). In Spain, family businesses account for 90% of all companies and employ 70% of the total workforce (Spanish Institute of Family Businesses, the Spanish Network of Chairs of Family Businesses, 2018). A distinctive feature of FFs is that they face the challenge not only of ensuring their financial viability, but also of engaging in the pursuit of emotional endowment (Berrone, Cruz, & Gomez-Mejia, 2012; Deniz-Deniz, Cabrera-Suárez, & Martin-Santana, 2018; Gomez-Mejia, Cruz, Berrone, & De Castro, 2011; Kotlar & De Massis, 2013; Kotlar, De Massis, Wright, & Frattini, 2018). The adoption of practices that are damaging to employees may therefore be discouraged in FFs, contributing to greater workforce preservation (Block, 2010; Stavrou et al., 2007). Accordingly, in this study, our first research question focuses on whether and why family firms may behave differently from non-family firms (NFFs) in terms of their propensity to downsize their workforce. We draw on the socioemotional wealth (SEW) approach (Gomez-Mejia, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007) to develop our

theoretical framework and hypotheses. One key aspect in which family firms are different to non-family ones is their emphasis on affective goals over and above financial concerns, and more specifically, on the preservation of their SEW (Gomez-Mejia et al., 2007). Factors linked to SEW include the emotional engagement of family members, the desire to perpetuate family values, and the preservation of the founder's legacy (Berrone et al., 2012; Gomez-Mejia et al., 2007). Previous literature has consistently indicated that SEW is a vital concern for FFs, as SEW has become their key consideration when making managerial choices. We argue that SEW is a crucial difference with NFFs that in turn leads to different downsizing decisions between these two types of businesses.

Our analysis not only explores whether FFs are different from non-FFs in their downsizing likelihood (e.g., Block, 2010; Stavrou et al., 2007), but also we address another important research question: do technological innovation decisions affect the family presence–downsizing relationship? Therefore, the second purpose of this paper is to explore whether R&D activity has a moderating effect on the aforementioned relationship. R&D's influence on employment has received increasing attention in recent years, and is currently the focus of growing debate (e.g., Dachs & Peters, 2014; Vicente-Lorente & Zuñiga-Vicente, 2012, 2018; Vivarelli, 2014). However, this is an under-examined topic in the family business field in spite of the fact that existing literature has provided a thorough understanding of innovation in FFs (e.g., Calabrò et al., 2018; Colombo, De Massis, Piva, Rossi-Lamastra, & Wright, 2014; De Massis, Frattini, & Lichtenthaler, 2013; Filser, De Massis, Gast, Kraus, & Niemand, 2018; Souder, Zaheer, Sapienza, & Ranucci, 2017). This stream of research has shown that FFs have emotional goals (Berrone et al., 2012; Gomez-Mejia et al., 2007)—as well as specific human resources (Sirmon & Hitt, 2003)—which might impact innovation decisions. Overall, the present paper proposes a framework in order to integrate the social and strategic behaviour in FFs in order to better understand the downsizing effects of FFs' R&D activity.

To examine these research questions, our empirical evidence is based on a broad sample of 4,223 Spanish companies (30,174 firm-year observations) operating in different manufacturing industries, and for which we obtained information for the period 1993–2014. Our results suggest that FFs differ from NFFs in terms of workforce downsizing because the former are less likely to downsize than the latter, in line with existing studies (Block, 2010). Moreover, our evidence shows that R&D activity has a negative direct impact on workforce downsizing, and also a negative moderating effect on the family presence–downsizing relationship. Thus, FFs engaged in R&D activities are less likely to downsize than non-innovative FFs.

This study makes several contributions to prior literature and posits certain practical implications. First, we respond to increasing calls to investigate social issues in the specific case of FFs (e.g., Campopiano & De Massis, 2015; Le Breton-Miller & Miller, 2016; Samara & Paul, 2018; Van Gils et al., 2014; Zientara, 2017). While many studies seem to focus on family firms' external social responsibility—for instance, towards the environment (e.g., Berrone et al., 2010; Samara, Jamali, Sierra, & Parada, 2018; Vashchenko,

2017)—our article addresses family firms' commitment to employment and how they may contribute to minimizing redundancy policies (e.g., Block, 2010; Neckebrouck et al., 2018; Stavrou et al., 2007). We stress that family firms' social responsibility in terms of the environment may differ from that involving the workplace (Martin Castejón & Aroca Lopez, 2016). At this point, human resource (HR) practices in family businesses, compared to non-family businesses, constitute a veritable distinction. Managing human resources in FFs is usually more complex than in NFFs. One reason for this is that the close interaction between family and business means family firms tend to apply less formal Human Resource practices (Kidwell, Eddleston, & Kellermanns, 2018). It is generally assumed that family members are coached and mentored more thoroughly compared to other employees (Matlay, 2002). In this setting, extant literature proposes that FFs provide greater job security (Bassanini, Breda, Caroli, & Rebèrioux, 2013), and are generally assumed to be good employers (Miller, Le Breton-Miller, & Scholnick, 2008; Pittino, Visintin, Lenger, & Sternad, 2016). In fact, some studies contend that family businesses are characterized by “profound investment in employees' training, minimum layoff policies, employee participation programs, painstaking staff selection, generous benefits, and miniscule turnover statistics” (Miller & Le Breton-Miller, 2006).

Second, our study advances the SEW approach by showing how SEW reveals its positive or bright side by providing a protective mechanism against workforce downsizing in FFs. Less workforce downsizing is regarded as a socially responsible practice, as FFs face the challenge not only of ensuring their financial viability (downsizing as a way to cut costs), but also because they pursue affective goals (less downsizing reduces the social costs of dismissing staff). Compared to other types of organizations, the preservation of family endowment should be reflected in greater interest in satisfying social demands. Our analysis is therefore in line with recent evidence highlighting family firms' socially responsible behaviour in other areas, such as environmental impact (Berrone et al., 2010) or dealings with the community at large (Dou et al., 2014).

Lastly, we contribute to previous studies by explicitly investigating the moderating effect R&D activity has on the family presence–downsizing relationship. In this regard, we extend our understanding of the impact that the differential behaviour of family versus non-family firms has on employment practices (Block, 2010; Stavrou et al., 2007), specifically considering technological innovation choices (Calabrò et al., 2018; Chrisman & Patel, 2012; Kotlar, Fang, De Massis, & Frattini, 2014). We propose that the distinguishing features of FFs in terms of strong emotional ties over and above financial concerns (Berrone et al., 2012; Gomez-Mejia et al., 2007) have a vital impact not only on several strategic decisions such as R&D investments (Chrisman & Patel, 2012; De Massis, Di Minin, & Frattini, 2015), but also on how the interaction between family participation in the business and R&D activity affects the inclination to maintain workforce size. By including the influence the social and strategic dimensions have on the decision-making process, our analysis will inform redundancy policies in this type of organizations.

The paper is arranged as follows. The second section shows the theoretical framework and hypotheses development. The third section describes the data and methodology applied. The fourth section presents the results and provides some robustness tests. We discuss the main conclusions and implications in the final section.

2 | THEORETICAL BACKGROUND AND HYPOTHESES

In the following sections, we first examine from a social perspective whether family firms are more or less likely to downsize their workforce compared to non-family firms. Second, we investigate the moderating role of R&D activity in the relationship between family presence in the business and workforce downsizing. We also discuss the direct effect of R&D activity on downsizing as a baseline hypothesis.

2.1 | Family firms and workforce downsizing

2.1.1 | Workforce downsizing and CSR

From a conceptual perspective, we define workforce downsizing as a practice involving permanent, conscious and planned reductions in the workforce (Lakshman, Ramaswami, Alas, Kabongo, & Pandian, 2014). In this section, we propose workforce downsizing as a practice that should be aligned with the postulates of companies committed to their employees as they seek to enhance value maximization in their relations with key stakeholders (Stavrou et al., 2007).

Downsizing may be perceived as a socially irresponsible practice due to the different social costs identified (internal and external social costs) (Drzensky & Heinz, 2015; Fisher & White, 2000). First, workforce reductions might imply social costs that internally affect the business, such as human capital losses and victims and survivors' perceptions (Baruch & Hind, 2000; Fisher & White, 2000; Lakshman et al., 2014). In this setting, downsizing represents a violation of the psychological contract between a firm and its employees. As a consequence, those employees who lose their jobs and those who survive job cuts may experience negative feelings (e.g., depression, unfairness). Second, downsizing might involve external social costs. Because a company is expected to respect local values and act as a "good citizen" showing a positive employees' treatment (Orth & Green, 2009; Van Buren, 2000), this practice is often associated with the violation of the implicit contract between an organization and the local community where the company operates, with the ensuing negative impact on firm's reputation and legitimacy, as well as on customer loyalty and satisfaction.

As regards the internal social costs associated with downsizing, it is important to note that family firms that downsize might lose human capital with crucial skills, talent, experience, and valuable knowledge, with the ensuing negative effect on their learning capacity, which is required for a competitive advantage (Fisher & White, 2000). This means that the organizational costs of engaging in downsizing can be

high, and even outweigh future savings. In addition, downsizing has a number of negative psychological and behavioural consequences on the employees affected (De Meuse, Marks, & Dai, 2010; Van Buren, 2000). The latter may perceive downsizing as a breach of their psychological contract, whereby they may respond by showing a lack of motivation, loyalty or commitment, and even commit sabotage in extreme cases. A further social cost of downsizing is typically its negative effect on the "survivors" (Brockner et al., 1993). Among other negative feelings, employees surviving downsizing tend to experience fear of losing their own job, guilt for still remaining in the firm while other colleagues are made redundant, anger, and lack of trust in the organization, depression, or lack of motivation (Baruch & Hind, 2000; Papplan & Teese, 1997).

Regarding the external social costs of downsizing, firms should act as good citizens and respect community values (Lakshman et al., 2014). Over time, the controlling family in family firms may benefit from the reputation of being an important and respected player in the community (these businesses often have strong local roots and links to the community in which the firm is embedded). Moreover, given that FFs prioritize emotional goals over financial considerations, their socially responsible behaviour becomes even more relevant (Berrone et al., 2012; Gomez-Mejia et al., 2007). As workforce downsizing might constitute a traumatic experience within the community in which the family firm operates, downsizing will have to deal with, for example, judges' perceptions of their supposed "economic difficulties" in justifying substantial changes in employment. The external environment will penalize family firms reducing staff, as this practice affects employees' well-being. Downsizing among FFs will therefore be decried as an employee- and community-unfriendly policy (Stavrou et al., 2007).

Therefore, we need to take into account downsizing's major social implications for employees, both for those made redundant and those who survive, as well as for the local community. HR policies are increasingly associated with CSR policies (Díaz-Carrión, López-Fernández, & Romero-Fernández, 2019; Jamali et al., 2015; Voegtlin & Greenwood, 2016). For example, alternative cost-cutting measures, which do not necessarily require sweeping redundancies, may lead to a more socially responsible restructuring strategy (e.g., temporary reductions in employees' working hours until the company gets back on its feet, reductions in overtime, or a wage or recruitment freeze). Likewise, for instance, the attribution of responsibility for downsizing to top managers is negatively related to CSR perceptions, whereas distributive and procedural justice in the implementation of downsizing are positively associated with perceptions of CSR (Lakshman et al., 2014, pp. 115–116).

2.1.2 | Workforce downsizing and family presence in the business

A growing body of literature has investigated the socially responsible behaviour of family firms (e.g., Block & Wagner, 2014; Cruz, Larraza-Kintana, Garcés-Galdeano, & Berrone, 2014; Deephouse & Jaskiewicz, 2013; Labelle, Hafsi, Francoeur, & Ben Amar, 2015;

Morck & Yeung, 2014; Rees & Rodionova, 2015; Samara & Arenas, 2017). As Cennamo, Berrone, Cruz, and Gomez-Mejia (2012, p. 1154) have stated: “understanding whether family owners are more responsive to social claims has wide social implications given that family-controlled firms are the predominant organizational form around the world (La Porta, Lopez-de-Silanes, & Shleifer, 1999), they have a substantial influence on the global economy (Morck & Yeung, 2014), and may be found in all industrial sectors”. The first research question here is to examine how family firms’ distinctive features—such as their desire to preserve their SEW (Berrone et al., 2012; Gomez-Mejia et al., 2007)—may impact on their decision to reduce workforce size (relative to non-family firms). SEW is defined as “non-financial aspects of the firm that meet the family’s affective needs, such as identity, the ability to exercise family influence, and the perpetuation of the family dynasty” (Gomez-Mejia et al., 2007, p. 106). There is ample evidence to show that FFs face a trade-off between family-centric goals and economic motivations (Chrisman, Chua, Pearson, & Barnett, 2012; Kotlar & De Massis, 2013; Kotlar et al., 2018). SEW preservation may have both a bright side and a dark side (Kellermanns, Eddleston, & Zellweger, 2012). Both sides will affect the extent to which family firms are perceived as socially responsible players in terms of adopting fair workplace practices (Samara & Arenas, 2017). According to the bright side of SEW, its preservation involves a set of core values shared among individuals. It generates and maintains a mindset that encourages generosity and solidarity among employees, and greater unity through cohesion. Because affective goals in family firms are frequently preferred to financial concerns (Berrone et al., 2012; Gomez-Mejia et al., 2011; Hasenzagl, Hatak, & Frank, 2018), FFs will prioritize employees’ needs and interests. By boosting employees’ engagement in the workplace and increasing their satisfaction and motivation (Block, Millan, Roman, & Zhou, 2015), family firms ensure they are more willing to closely align their interests with the firm’s goals (Samara & Arenas, 2017). As employees’ needs and preferences are essential for SEW preservation, FFs will pay more attention to the social consequences of their employment decisions. These businesses will therefore provide employees with the job security that they would not otherwise receive. In particular, FFs will avoid breaching their psychological contracts, which may indeed entail important social costs for downsizers.

Therefore, and in response to SEW concerns, FFs are likely to view workforce downsizing as more than just a way to improve financial performance by reducing operating costs or eliminating redundancies. Instead, FFs will be more willing to base their relationships with employees on moral commitments, rather than on a desire to use their abilities and skills solely to maximize firm value (Stavrou et al., 2007). As Gomez-Mejia, Larraza-Kintana, et al. (2018, p. 996) have recently indicated “the values contained in the family’s SEW may make family managers develop a more romantic view of the company’s employees and see them as stewards of the organization ... they think that employees will be as loyal as themselves to the company”. This greater value placed on employees’ needs and interests seems to be incompatible with downsizing, which threatens the decent treatment of employees, leading to negative outcomes

such as lack of motivation, fear, or sickness (Stavrou et al., 2007). Therefore, according to the bright side of SEW, the affective endowment in family firms may incur less workforce downsizing.

Nonetheless, as the overall owner, the family is in a privileged position to exert influence and control over its businesses, and so nepotism may lead to inappropriate staffing decisions. The desire to maintain their affective endowment makes family firms more inclined than their non-family counterparts to overly care for family employees, leading to some kind of favouritism or preferential treatment, and working against the interests of non-family members (Firiray, Cruz, Neacsu, & Gomez-Mejia, 2018; Miller & Le Breton-Miller, 2014). Employees’ career ambitions may be thwarted by a lack of family connections (a socially irresponsible practice; Cruz et al., 2014). Family members may therefore use their power to undertake actions that favour family employees over non-family employees, putting the former in a strong position to pursue their own interests regardless of meritocratic principles (Neckebrouck et al., 2018; Samara & Paul, 2018; Schulze, Lubatkin, & Dino, 2003).

Therefore, according to this dark side of SEW, engaging in job cuts potentially becomes a socially irresponsible practice in FFs due to nepotism and expropriation by the controlling family. In particular, non-family members are more likely to be dismissed than family members, which might indicate bias, discrimination and/or unfair behaviour towards the former based on family status (Samara & Arenas, 2017; Samara & Paul, 2018; Verbeke & Kano, 2012). If this is the case, family involvement in the business will undermine the perception of fair treatment and weaken employee motivation, especially among employees with the highest level of expertise. As Lakshman et al. (2014, p. 105) have indicated “equitable treatment of employees in the decision of which employees to layoff (distributive justice) is likely to have a positive and direct effect on perceptions of CSR. Organizations that do not utilize clearly specified criteria to decide which employees to layoff are not seen by them as being socially responsible”.

Despite this dark side of SEW, as mentioned above, the values contained in the family’s SEW (Berrone et al., 2012; Gomez-Mejia et al., 2007) may make FFs develop a more romantic view of their employees (Gomez-Mejia, Larraza-Kintana, et al., 2018) and treat them as family. These businesses usually invest a large amount of time and resources in introducing employees to the family’s norms and values (Colombo et al., 2014) (the bright side of SEW). As Samara and Arenas (2017, p. 652) state: “family firms invest in their staff training, offer broad jobs and responsibilities for their employees”. Additionally, in many cases, employees have only worked in the family firm, and nowhere else, and have therefore learned skills and practices involving a set of core values that are idiosyncratic to the enterprise. This may involve, for instance, tacit knowledge that cannot be easily transferred to other individuals (the bright side of SEW) (Samara & Arenas, 2017). They are emotionally attached to the business and are conditioned by the company’s affective goals and their shared past and tradition. Family involvement in the firm and the related social norms of support, harmony and benevolence often give rise to a heightened commitment among family and non-family employees alike. The resulting atmosphere of trust and mutual support is absent in many non-family firms, which tend to promote a more impersonal

corporate culture (Zellweger, 2017). In this context, the desire to foster continuity in employment relationships becomes essential to avoid losing a committed workforce (Hauswald, Hack, Kellermanns, & Patzelt, 2016). Due to the ensuing potential loss of human capital, downsizing will be less likely in family firms than in non-family firms.

In addition, the emphasis on emotional goals reinforces family firms' engagement not only with internal stakeholders (e.g., employees), but also with external stakeholders (Cennamo et al., 2012). In order to build and maintain a good reputation (Berrone et al., 2010; Gomez-Mejia et al., 2007), which is associated directly with social responsibility (Strike, Gao, & Bansal, 2006), FFs will tend to support the wellbeing of their communities (Deniz-Deniz & Cabrera-Suarez, 2005; Samara & Arenas, 2017; Zientara, 2017). Indeed, the vast majority of family firms rank socially responsible practices in the workplace as their primary social concern (Marques, Presas, & Simon, 2014; Samara & Arenas, 2017). Although concerns over a negative reputation are also likely to be seriously addressed by non-family firms—such as publicly listed firms whose share price depends on good versus bad news about the company—the fact that FFs prioritize the preservation of SEW will make them project a positive family image (relative to NFFs)—e.g., Berrone et al., 2010, 2012; Block & Wagner, 2014; Gomez-Mejia, Larraza-Kintana, et al., 2018; Samara & Arenas, 2017.

Family firms will therefore avoid actions such as workforce downsizing (Block, 2010), which may damage their reputation for social responsibility in their community. Redundancies in a firm “are often broadcast in the media and send a signal that it is not willing to honour its commitments and that it is not loyal to its employees” (Block, 2010, p. 110). Any harm to the workforce also compromises a family firm's reputation in its community and the perception of its socially responsible behaviour, thereby reinforcing its reluctance to lose valuable human capital (see, e.g., the external perspective on CSR; Vashchenko, 2017). Moreover, a family's preferences for security and transferring its legacy to subsequent generations (Berrone et al., 2012; Gomez-Mejia et al., 2007) may lead to the adoption of strategies consistent with family members' values and priorities, and their interest in avoiding losses of corporate reputation (Berrone et al., 2010). Significant workforce reductions are unlikely to reflect the family's wishes, as these are often driven by affective motivations. As a result, downsizing is generally viewed as a negative response to the family firm's goals. Job cuts thus negatively affect the family's reputation and its relationship with stakeholders (customers and the general public) (Block, 2010). For instance, a firm's customers will be more willing to buy products produced fairly. Overall, therefore, FFs will be more reluctant to downsize than non-family ones.

We therefore propose the following hypothesis:

Hypothesis 1 *Family firms are less prone to downsizing than their non-family counterparts.*

2.2 | The direct effect of R&D activity on workforce downsizing

To better understand the moderating effect that R&D activity has on the relationship between family presence and workforce downsizing,

we first examine the direct impact R&D activity has on workforce downsizing as a baseline hypothesis. Among the implications of technological innovation, its impact on employment becomes especially relevant (Vivarelli, 2014). Nevertheless, as the literature has underlined, the impact of innovation on employment remains understudied and unclear (Lachenmaier & Rottmann, 2011) and “there is a practical and theoretical need to examine the link between the two” (Mellahi & Wilkinson, 2010, p. 2292).

On the one hand, some authors suggest that technological innovation may impact negatively on job creation. Specifically, innovation in productive processes via the introduction of new technology allows companies to downsize thanks to the increase in firm productivity—process innovation allows firms to produce the same output with less labour input and, *ceteris paribus*, lower unit costs. This negative effect of labour-saving technologies is the so-called displacement effect (Peters, 2004; Pianta, 2005). In contrast, other scholars report a positive association between technological innovation and job growth at firm level (Harrison, Jaumandreu, Mairesse, & Peters, 2014; Lachenmaier & Rottmann, 2011). We now focus on the main research stream contending that innovation has a negative impact on employee downsizing. Accordingly, we discuss the benefits of R&D in terms of maintaining the firm's headcount.

Firms engaging in R&D activities can improve efficiency and pass on the lower cost to customers, increasing the market demand for their products. The additional demand following the reduction in costs and prices may lead to new jobs, which could offset the initial labour-displacing effects of innovation activities (Evangelista & Vezzani, 2011). The size of this positive effect on employment at firm level depends on several aspects (e.g., lower prices, the price elasticity of demand, and the nature of competition; Dachs & Peters, 2014). Economists refer to this positive effect of R&D activity on headcount as a compensation effect, and it is usually associated with process innovations (e.g., Harrison et al., 2014; Peters, 2004; Pianta, 2005). A negative association between R&D activities and downsizing can therefore be expected. In this regard, production processes through R&D activity are often accompanied by organizational changes designed to maximize the fit between technology and the organization itself (Evangelista & Vezzani, 2011). The introduction of these new management practices and methods makes the creation of new jobs a likely outcome of innovation (Vicente-Lorente & Zuñiga-Vicente, 2012). As regards product innovation, competitive forces and greater competition drive companies to constantly innovate and launch new products onto the market. As the product lifecycle evolves towards more successful markets, younger sectors experience more demand. Market developments should therefore increase both output and employment (Greenan & Guellec, 2001), so a negative direct relationship can be expected between product innovation and the likelihood of downsizing (Greenan & Guellec, 2001; Pianta, 2005).

Finally, because firms' R&D activities are usually complex, employees' skills have a vital role to play (De Massis, Kotlar, Chua, & Chrisman, 2014). This implies that innovative firms are more likely to have more qualified and talented employees than non-innovative firms. The former frequently benefit from tacit knowledge, as employees in

innovative firms need to provide specific new managerial and creative skills. Deep tacit knowledge is a source of strength, as it is hard to imitate. Innovative firms will therefore benefit from long-term employees, particularly those that are highly experienced. As a result, and because replacing such employees is costly, the propensity towards downsizing will be lower among innovative firms.

Taking into account the previous ideas, we posit the following baseline hypothesis:

Hypothesis 2 *There is a negative association between a firm's R&D activities and workforce downsizing.*

2.3 | The moderating effect of R&D activity on the family presence–downsizing relationship

As mentioned earlier, non-economic considerations in family businesses constitute the primary motivation for their decision-making process and distinguish them from non-family businesses (Gomez-Mejia et al., 2011, 2007). In particular, for example, the strong inclination towards intra-family succession is a vital dimension that reflects the goal of SEW preservation in FFs (Berrone et al., 2012). The desire of family owners to build a lasting legacy for their offspring will then be positively associated with investments in R&D activities, as the latter will increase the likelihood of long-term survival (Classen, Carree, Van Gils, & Peters, 2014). Thus, FFs relying on technological innovation tend to be more long-term oriented than non-innovative FFs, and also less likely to evaluate their investments on a short-term basis (Tsao, Chang, & Koh, 2019). Nevertheless, employees in innovative FFs need to be more qualified and talented than those in their non-innovative counterparts in order to invest in innovative projects, contribute to the enhancement of technological innovation in the long term, and provide the firm with the required specific managerial skills, intangible skills, and new creative knowledge. Under this circumstance, family members are expected to invest a larger fraction of resources and put more effort into mentoring and instructing workers and improving their career development. As a consequence, innovative FFs will more likely prevent employees from leaving the company than non-innovative FFs—i.e., the former are expected to be less likely to downsize than the latter—particularly when they possess valuable knowledge for the organization and are socially embedded in the firm. In this setting, employees' comprehensive understanding of the family business and their entrenchment in the firm puts them in a strong position, which explains why innovative FFs are usually reluctant to downsize. The replacement of these employees becomes very costly in the long term (Brockner et al., 1993; Mellahi & Wilkinson, 2010; Nixon, Hitt, Lee, & Jeong, 2004; Norman, Butler, & Ranft, 2013).

Additionally, technological investments generate new knowledge which is materialized in new products or technologies, helping firms to create the required flexibility to satisfy customers (Dieguez-Soto, Manzanegue, & Rojo-Ramirez, 2016). Specifically, employees' comprehensive understanding of the family business and their entrenchment in the FF puts them in a better position to achieve the required flexibility to respond quickly to innovation requirements. Employees in innovative FFs share the motivation to work long hours, being more

flexible in their work roles and assignments, and adapting better to major changes (Craig & Dibrell, 2006). Moreover, innovative FFs need knowledge sharing among their employees through network development and knowledge transfer within the business (Filser et al., 2018; Sirmon & Hitt, 2003). In these cases, workforce downsizing would damage the FF's social networks and hinder access to valuable technical knowledge, therefore disrupting the firm's learning capacity. In addition, R&D helps family firms to cultivate and develop better relationships with external stakeholders, who may provide advice and complementary expertise, as well as new knowledge. Overall, a commitment to innovation enables FFs to better assess the consequences of downsizing. We therefore expect that FFs engaged in R&D activities will be less likely to downsize than non-innovative family firms.

According to these ideas, we hypothesize as follows:

Hypothesis 3 *The negative relationship between family presence and downsizing will be stronger in family firms involved in R&D activities. That is, FFs' participation in R&D activities will strengthen the negative effect of family presence on downsizing.*

3 | METHODS

3.1 | Data and sample

The analysis is based on a panel of manufacturing firms taken from the Spanish Survey of Business Strategies (SSBS). In particular, we consider the 1993–2014 period. The data set is a yearly survey conducted by the SEPI Foundation with the support of the Spanish Ministry of Industry. The SSBS is the most appropriate data set for this research for a number of reasons. First of all, the SSBS covers a wide range of Spanish firms operating in all the country's manufacturing sectors. One of the SSBS's main features is the representative nature of the reference population of SMEs. As noted, “the innovation management in SMEs is peculiar and differs from innovation management in large companies” (Sciascia, Nordqvist, Mazzola, & De Massis, 2014). Second, the SSBS contains detailed information on the services and products provided by each firm, in addition to key indicators related to employment (e.g., headcount) and technological activities (e.g., R&D expenditure). All the information contained in the SSBS is subject to quality and consistency controls, which means it is highly suitable for our empirical analysis. Third, the SSBS enables us to focus on manufacturing firms, which are very important in terms of technological innovation because their products are subject to a high degree of obsolescence (Dieguez-Soto et al., 2016; Kotlar, De Massis, Frattini, Bianchi, & Fang, 2013). Fourth, given that observations are gathered on an annual basis, we can apply a panel data methodology in contrast to existing literature and traditional cross-sectional analyses. Finally, unlike most prior research on downsizing, which has focused primarily on large firms, the sample involves a large proportion of private family SMEs (firms with fewer than 250 employees and an annual turnover of less than 50 million euros, or a balance sheet of less than 43 million euros) (Commission Recommendation 2003/361/EC), which may be helpful for identifying similarities and differences with previous research.

A number of firms have been discarded from the original sample due to a lack of relevant data. After cleaning the data set, the result is an unbalanced panel data set of 30,174 (firm-year) observations for the 1993–2014 period for a total of 4,223 firms. Table A1 shows variable definitions, and Table A2 the loss of observations from the initial data set (see the Appendix).

3.2 | Variables

3.2.1 | Dependent variable: Downsizing

According to existing data and prior literature, *downsizing* is measured as a dichotomous variable that takes a value of 1 if a firm has reduced its workforce in a given year, and 0 otherwise (e.g., Vicente-Lorente & Zuñiga-Vicente, 2012). In particular, a downsizing event is defined as a decrease in the number of employees by 5% or more between year t and year $t-1$, following Cascio, Young, and Morris (1997)—these authors consider only redundancies of more than 5% as major ones related to downsizing—Block (2010)—who considers firms with redundancies of less than 5% as “stable employers”—and Ahmadjian and Robinson (2001). This procedure is thus consistent with prior empirical studies suggesting that such a threshold can reasonably distinguish between significant planned (or intentional) workforce reductions and other temporary and reactive redundancies (e.g., Ahmadjian & Robinson, 2001; Cascio & Young, 2003; Cascio et al., 1997; Freeman & Cameron, 1993; Guthrie & Datta, 2008; Vicente-Lorente & Zuñiga-Vicente, 2012). Given the dummy nature of the dependent variable, we estimated the empirical models developed to test our hypotheses using a random effects panel data probit estimator. As we have a longitudinal data set, this model allows us to measure not only the effects that observable variables have on the dependent variable, but also the effects of relevant unobservable variables.

3.2.2 | Independent variable: Family firm

As the SSBS database includes the number of owners and their relatives in top managerial positions, we define a firm as belonging to a family (i.e., it is a family firm) when there are one or more family members in top managerial positions (Dieguez-Soto et al., 2016). We therefore construct a dummy variable that takes the value of 1 when one or more family members occupy managerial positions, and 0 otherwise. Likewise, as recently pointed out in the literature (Chrisman, Devaraj, & Patel, 2017, p. 124), “the use of a dummy variable is frequently found in the literature (e.g., Anderson, Duru, & Reeb, 2012; Boiling, Pieper, & Covin, 2016; Chrisman, Memili, & Misra, 2014; Gomez-Mejia et al., 2007). Indeed, recent studies using multiple indicators of the family firm construct find they are strongly intercorrelated (Gomez-Mejia et al., 2014)”.

3.2.3 | Moderating variable: R&D activity

R&D activity reflects different knowledge inputs in the innovation process for characterizing a firm's innovation activities. Firms may

develop their own in-house technology, outsource R&D—which refers to the contractually agreed, non-gratuitous, and temporary performance of R&D tasks for a customer primarily through privately contracted research (Howells, 1999)—or combine these two innovation activities. We code these three dummy variables as 1 if any one of these circumstances applies, and 0 otherwise. This variable is commonly used in technological innovation literature (e.g., Diéguez-Soto et al., 2016).

3.2.4 | Control variables

In line with previous research, we also control for other variables that are likely to impact on the likelihood of downsizing. The following were used as control variables:

Firm size: the variable total sales (in billion euros) is included to control for firm size (Block, 2010). On the one hand, and in line with Cascio and Young (2003, p. 132), small firms, especially small manufacturers, are less willing to downsize because they seek to protect the substantial investments involved in hiring and training employees. On the other hand, because large firms are exposed to public scrutiny, they will tend to adopt practices that respect society, thus avoiding the downsizing option (Dou et al., 2014).

Firm age: we control for firm age by calculating the number of years since the firm's incorporation (Block, 2010; Cruz et al., 2014). On the one hand, maturity involves employee redundancies, bureaucracy and inefficiency, which should prompt downsizing (Budros, 1999; Deephouse & Jaskiewicz, 2013), although concerns about losing social legitimacy also suggest that older firms could be expected to resist downsizing (Ahmadjian & Robinson, 2001; Deephouse & Jaskiewicz, 2013).

Leverage: leverage is calculated as the ratio of debt to total assets. Financial constraints are a crucial reason behind downsizing decisions because they may be viewed as a common response to financial distress (Coucke, Pennings, & Sleuwaegen, 2007).

Liquidity: the current ratio (i.e., the ratio of current assets to current liabilities) is included to control for any liquidity effects. Firms with low profitability and/or liquidity are more likely to downsize (Vicente-Lorente & Suarez-Gonzalez, 2007).

Performance: this is a key driver because a poor one usually leads to downsizing (Datta et al., 2010; Norman et al., 2013). Performance is assessed using return on sales (ROS), defined as operating income over total sales. This measure is widely supported in the literature, particularly for manufacturing firms (see, e.g., Vicente-Lorente & Zuñiga-Vicente, 2018).¹

Market demand: We measure the demand trend through a dummy variable with value 1 if the company's market share has remained constant or shrunk, and value 0 otherwise (*Market size—constant or shrinking*). The literature supports the notion that downsizing is likely to be more prevalent under conditions of falling demand (Dewitt, 1998; Filatotchev, Buck, & Zhukov, 2000; Gandolfi & Hansson, 2011).

Capacity utilization: we control for the firm's average use of capacity because when it is low employers will be eager to downsize (*Avg. degree of capacity utilization*) (Greenhalgh, Lawrence, & Sutton, 1988).

Temporality rate: the proportion of temporary workers is computed by dividing the number of workers with temporary contracts by the total headcount (Booth, Francesconi, & Frank, 2003). Fixed-term or temporary contracts increase firm flexibility: when the need to downsize arises, varying the workforce under fixed-term contracts can help to save costs and accelerate employment adjustment.

Strategic choices related to growth are an important issue for family firms, and they can affect downsizing decisions (Ahmadjian & Robinson, 2001; Brauer & Laamanen, 2014). We therefore control for foreign ownership (through the percentage of equity capital in non-domestic hands) because of the possible association between domestic investors and downsizing (Vicente-Lorente & Suarez-Gonzalez, 2007; Vicente-Lorente & Zuñiga-Vicente, 2012). In addition, the number of product innovations was used as a control variable, as it is a key indicator for ensuring a family firm's long-term success (Chirico & Salvato, 2016), and may affect downsizing (Vicente-Lorente & Zuñiga-Vicente, 2012). Additional information on firm strategies would have been very useful in our analysis. Unfortunately, the SSBS data set does not provide this information.

Industry: past research has indicated that downsizing may be influenced by industry conditions (Coucke et al., 2007; Guthrie & Datta, 2008). We therefore use an indicator for each manufacturing

industry based on the two-digit CNAE (Classification of Economic Activities in the European Community), the Spanish equivalent of SIC codes. Likewise, this study also controls for "home industry density" (Patel, Criaco, & Naldi, 2018), as the degree of competition in the industry, measured indirectly with a set of dummy variables capturing the number of competitors (*atomized market; 10 or fewer competitors; from 11 to 25 competitors; more than 25 competitors*).

Years: All the models include year dummies to control for possible macroeconomic effects on downsizing.

4 | RESULTS

4.1 | Descriptive analyses

Tables 1 and 2 provide the summary statistics of the variables used in the analyses, and the correlations among them, respectively. Panel B in Table 1 presents several differences of means tests that enable us to check whether family firms and non-family firms differ from each other in terms of the characteristics considered in the regression analyses. We find that downsizing occurs in approximately 32.4% of the sample's observations. The descriptive results show that family firms make fewer innovation efforts than non-family firms (on average, 23.1% of family firms perform R&D activities, compared to

TABLE 1 Summary statistics, correlation matrix, and descriptive analysis

Panel A: Summary statistics					Panel B: Descriptive analysis: FFs versus Non-FFs		
Variable	Mean	Std. Dev.	Min.	Max.	Non-Family Firms	Family firms	t-statistic
Family firm	0.447	0.497	0	1	(1)	(2)	(1)-(2)
Downsizing	0.324	0.468	0	1	0.317	0.334	-3.232***
R&D activity	0.362	0.481	0	1	0.468	0.231	43.755***
Foreign ownership	17.054	36.316	0	100	29.632	1.518	72.445***
10 or fewer competitors	0.560	0.496	0	1	0.636	0.467	29.884***
From 11 to 25 competitors	0.147	0.354	0	1	0.134	0.163	-7.165***
More than 25 competitors	0.093	0.290	0	1	0.075	0.114	-11.731***
Atomized market	0.200	0.400	0	1	0.155	0.256	-21.897***
Age	26.081	19.977	1	225	28.290	23.353	21.505***
Temporality rate	0.145	0.199	0	1	0.133	0.161	-12.146***
ROS	7.948	17.148	-1,110	171	8.208	7.628	2.920***
Market size—growing	0.226	0.418	0	1	0.235	0.216	3.877***
Market size—constant or shrinking	0.575	0.494	0	1	0.592	0.554	6.694***
Avg. degree of capacity utilization	79.472	16.448	2	100	80.500	78.202	12.096***
Product innovations	2.265	17.701	0	950	2.442	2.047	1.929*
Leverage	0.136	0.166	0	0.984	0.124	0.151	-13.967***
Current ratio	10.503	138.206	-0.474	22,895.080	11.826	8.868	1.848*
Size	0.043	0.245	1.99E-06	7.617339	0.071	0.009	22.290***

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

TABLE 2 Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. Downsizing	1.00																		
2. Family firm	0.02**	1.00																	
3. R&D activity	-0.06***	-0.24***	1.00																
4. Foreign owners	-0.02***	-0.38***	0.27***	1.00															
5. <= 10 comp.	-0.03***	-0.17***	0.19***	0.19***	1.00														
6. [10, 25] comp.	-0.01*	0.04***	-0.01	-0.04***	-0.47***	1.00													
7. >25 comp.	0.03***	0.07***	-0.08***	-0.08***	-0.36***	-0.13***	1.00												
8. Atom. Market	0.02***	0.13***	-0.18***	-0.14***	-0.56***	-0.21***	-0.16***	1.00											
9. Age	-0.00	-0.12***	0.21***	0.15***	0.11***	-0.01*	-0.05***	-0.10***	1.00										
10. Temp. rate	-0.13***	0.07***	-0.06***	-0.11***	-0.04***	0.02***	0.02**	0.02**	-0.20***	1.00									
11. ROS	-0.10***	-0.02**	0.06***	0.03**	0.06***	-0.02***	-0.02***	-0.04***	0.00	0.05***	1.00								
12. Market growing	-0.10***	-0.02	0.08***	0.03***	0.05***	0.02***	-0.01	-0.07***	-0.04***	0.09***	0.07***	1.00							
13. Market const./shrink	0.10***	0.02	-0.08***	-0.03***	-0.05***	-0.02***	0.01	0.07***	0.04***	-0.09***	-0.07***	-1.00	1.00						
14. Avg. cap. utilization	-0.16***	-0.07***	0.07***	0.06***	0.03***	-0.01*	-0.02***	-0.02**	-0.06***	0.09***	0.17***	0.10***	-0.10***	1.00					
15. Product innov.	-0.01	-0.01	0.10***	0.03***	0.01*	0.01*	-0.00	-0.02***	0.02***	0.01	0.01	0.02**	-0.02**	0.02**	1.00				
16. Leverage	0.04***	0.08***	-0.05***	-0.09***	-0.03***	0.02***	-0.01	0.02***	-0.08***	0.02***	-0.03***	0.01	-0.01	-0.07***	-0.02***	1.00			
17. Current ratio	-0.01	-0.01	0.00	-0.00	0.01	-0.01	-0.00	-0.00	-0.01	0.00	0.00	0.00	-0.00	-0.00	0.00	0.03***	1.00		
18. Size	-0.02***	-0.13***	0.16***	0.20***	0.07***	-0.00	-0.04***	-0.06***	0.12***	-0.04***	0.01	-0.00	0.00	0.05***	0.01	-0.01*	-0.01	1.00	

Notes: (i) ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively; (ii) Number of observations: 30,174; (iii) Number of firms: 4,223.

TABLE 3 Ownership structure by industries

Industry	Observations		Percentage over industry total	
	Non-family firms	Family firms	Non-family firms	Family firms
Meat products	460	507	47.57	52.43
Tobacco and food	1,607	1,494	51.82	48.18
Beverages	491	157	75.77	24.23
Textile products	1,010	1,554	39.39	60.61
Leather and shoes	320	568	36.04	63.96
Wood products	395	536	42.43	57.57
Paper products	650	388	62.62	37.38
Publishing and graphic arts	728	717	50.38	49.62
Chemical products	1,547	567	73.18	26.82
Plastic materials and rubber	959	700	57.81	42.19
Non-metallic minerals	1,183	967	55.02	44.98
Metallurgy	783	245	76.17	23.83
Metallic products	1,582	1,736	47.68	52.32
Machinery and mechanical equipment	1,235	841	59.49	40.51
Office machinery and computers	286	184	60.85	39.15
Electric machinery and equipment	1,025	548	65.16	34.84
Motor vehicles	1,181	286	80.50	19.50
Other transportation equipment	409	171	70.52	29.48
Furniture	523	941	35.72	64.28
Other manufacturing industries	301	392	43.43	56.57

46.8% among non-family firms) (Chrisman & Patel, 2012; Gomez-Mejia et al., 2014; Kotlar et al., 2014). Family firms are smaller, their level of product innovation is lower, and they also perform worse than non-family firms.

To control for multicollinearity problems, the variance inflation factor (VIF) was computed in each one of the estimated models. The VIFs are consistently below the cut-off value of 10.0 in all the models, which indicates that multicollinearity is not a major problem in the analysis.

Table 3 details the distribution of the sample by industry and firm ownership structure (i.e., family firms and non-family firms) in terms of observations and percentages. All the industries in the sample have both family and non-family firms, although the percentage of the former is substantially higher in industries such as furniture, textile products, and leather and shoes. In contrast, these firms are less prevalent in beverages, chemical products, metallurgy and motor vehicles. About 44.74% of the firm-year observations in the sample correspond to family firms, thus confirming the importance of this ownership structure in Spain.

4.2 | Regression results

Table 4 presents the random effects regression results for three alternative specifications. The dependent variable denotes the likelihood of downsizing, and its value is 1 when the company reduces its workforce beyond a 5% threshold. Model 1 includes solely the set of control variables. Model 2 adds the independent variables: *R&D activity* and *Family firm*. Model 3 adds the interaction between *R&D* and *Family firm*.

The estimates in Model 1 (Table 4) corroborate previous empirical results. As expected, downsizing is less likely to coincide with larger capacity utilization. This result supports the evidence in prior studies indicating that in times of weak capacity utilization, employers are eager to downsize (e.g., Greenhalgh et al., 1988). Moreover, the results show that performance is negatively related to the likelihood of downsizing (Stavrou et al., 2007). Similarly, larger companies are less likely to downsize. In contrast, downsizing is more likely in firms with higher leverage. This result is consistent with Jensen (1989, as cited in Ofek, 1993), who argues that firms with higher

TABLE 4 Random effects panel data probit analysis of downsizing

	(1) Control variables	(2) Direct effects	(3) Moderating effect
Constant	2.007*** (0.162)	2.016*** (0.163)	2.002*** (0.163)
Family firm	- (0.022)	-0.047** (0.019)	-0.019 (0.022)
R&D activity	- (0.025)	-0.104*** (0.020)	-0.067*** (0.025)
Family firm × R&D activity	- (0.038)	- (0.038)	-0.097** (0.038)
Foreign ownership	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
10 or fewer competitors	-0.033 (0.023)	-0.023 (0.023)	-0.021 (0.023)
From 11 to 25 competitors	-0.049* (0.029)	-0.041 (0.029)	-0.040 (0.029)
More than 25 competitors	0.064* (0.033)	0.068** (0.033)	0.068** (0.033)
Age	-0.001** (0.000)	-0.001* (0.000)	-0.001* (0.000)
Temporality rate	-0.892*** (0.049)	-0.888*** (0.049)	-0.888*** (0.049)
ROS	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)
Market size—constant or shrinking	0.215*** (0.020)	0.209*** (0.020)	0.208*** (0.020)
Avg. degree of capacity utilization	-0.604*** (0.034)	-0.598*** (0.034)	-0.598*** (0.034)
Number of product innovations	-0.001 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Leverage	0.263*** (0.051)	0.269*** (0.051)	0.267*** (0.051)
Current ratio	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Size	-0.071* (0.038)	-0.060 (0.038)	-0.065* (0.038)
σ_u	0.232*** (0.01)	0.230*** (0.01)	0.229*** (0.015)
P	0.051*** (0.006)	0.050*** (0.006)	0.050*** (0.006)
Likelihood ratio test	$\chi^2 = 91.17^{***}$	$\chi^2 = 89.09^{***}$	$\chi^2 = 87.07^{***}$

Notes: (i) ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively; (ii) all models include sector and year dummies as control variables; (iii) standard errors in parentheses. Number of observations: 30,174.

leverage are more likely to respond operationally to a decline in performance (i.e., downsizing may be a necessary course of action)—see also Coucke et al. (2007). Finally, downsizing is more likely when the firm's market share has remained constant or diminished (see, e.g., Ahmadjian & Robison 2001; Filatotchev et al., 2000).

The regression results in Table 4 (Model 2) provide support for Hypothesis 1 by showing that family firms are more reluctant to downsize than non-family firms. Specifically, the results indicate a negative impact of *Family firm* on the likelihood of downsizing. More precisely, the *Family firm* dummy has a negative effect on this

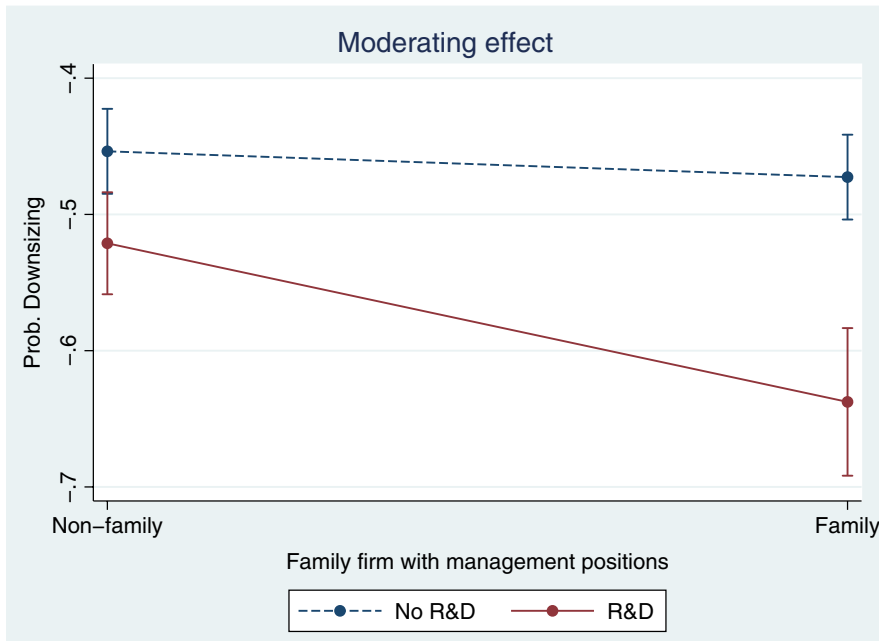


FIGURE 1 Effect of R&D activity and FF status on downsizing [Colour figure can be viewed at wileyonlinelibrary.com]

likelihood ($\beta_2 = -0.047$, $p < .05$). This result raises concerns over potential losses in SEW derived from redundancies in family firms, and is consistent with previous studies (Block, 2010; Stavrou et al., 2007).

Similarly, a negative estimated coefficient for R&D ($\beta_1 = -0.104$, $p < .001$) (Table 4, Model 2) shows that innovative firms are strongly related to a diminishing likelihood of downsizing, providing support for Hypothesis 2. Furthermore, the results in Model 3 (Table 4) provide support for Hypothesis 3, with the negative impact on downsizing being stronger (in absolute terms) in family firms implementing R&D activities than among non-innovative family firms ($\beta_2 = -0.097$, $p < .05$). Involvement in R&D activities therefore has a significant and negative moderating effect on the relationship between family presence and downsizing; that is, the negative influence family presence has on downsizing is strengthened in family firms engaged in R&D activities. This empirical evidence suggests that R&D activities in family firms become primary determinants for avoiding practices such as downsizing, and therefore foster their social behaviour.

To better interpret these results, we have plotted the predicted marginal effects of R&D activities on the relationship between family presence and downsizing, together with their 95% confidence intervals. As the variables that identify family involvement and R&D activity are binary, marginal effects show the impact on the dependent variable when these variables change from 0 to 1, holding control variables constant at mean levels. Figure 1 compares these marginal effects of R&D activity. Compared to non-innovative non-family firms, the estimated likelihood of downsizing for innovative (non-innovative) family firms is reduced by 63 (52) percentage points, respectively. Therefore, as the Figure shows, the likelihood of downsizing for family firms engaged in R&D activities is significantly lower than for family firms that are not engaged in such activities. In contrast, the predicted marginal impact on downsizing

when non-family firms engage in R&D activities is not significantly different from that of non-innovative non-family firms (non-family firms' confidence intervals overlap for "No R&D" in Figure 1). Our interpretation is that when R&D activity is performed, family firms tend to be much more averse to downsizing than family firms not engaged in R&D activity. Therefore, R&D among family firms leads to an even lower likelihood of downsizing.

4.3 | Robustness tests

We conducted additional tests to check the robustness of our results by repeating the analyses using alternative measures of innovation (Table 5). First, we have explicitly taken into account the dynamism of the innovation activities in which the firm is engaged. We define a categorical variable (*Continuous R&D activity*) as the accumulation of the variable *R&D activity* for year t , year/ t , and year/ $t2$. The variable varies between 0 and 3, with higher values indicating greater involvement in R&D activities. *Continuous R&D activity* takes the value 0 when the firm has not engaged in any R&D activities during this 3-year period. It takes the value 1 when the firm has engaged in R&D activities in 1 year during said 3-year period, and it takes the values 2 (3) when it has engaged in R&D activities in 2 (3) years during that same period, respectively. The new regression results are presented in Panel A in Table 5. The regression results presented in Model 1 of Table 5 (Panel A) corroborate that family firms are less prone to downsizing than non-family firms (Hypothesis 1). Moreover, consistent with Hypothesis 3, the new empirical evidence in Model 2 of Table 5 confirms that family firms continuously involved in R&D activities are less likely to downsize ($\beta = -0.031^{**}$, $p < .05$).

Given that a very small amount of R&D investment may not have the effect shown in our results, our second alternative measure of innovation is R&D intensity (Table 5, Panel B). As R&D investment

TABLE 5 Robustness tests of downsizing: Alternative measures of innovation

Panel A: Continuous R&D activities	(1) Direct effects	(2) Moderating effect
Constant	2.066*** (0.169)	2.052*** (0.169)
Family firm	-0.049** (0.020)	-0.022 (0.024)
Continuous innovation performance	-0.030*** (0.008)	-0.019** (0.009)
Family firm × Continuous R&D activities	- (0.014)	-0.031** (0.014)
Firm RE	Yes	Yes
Industry & year dummies	Yes	Yes
Control variables	Yes	Yes
Panel B: R&D intensity	(1) Direct effects	(2) Moderating effect
Constant	2.037*** (0.163)	2.031*** (0.163)
Family firm	-0.038** (0.019)	-0.026 (0.020)
R&D intensity	-0.012*** (0.004)	-0.008* (0.005)
Family firm × R&D intensity	- (0.029)	-0.054* (0.029)
Firm RE	Yes	Yes
Industry & year dummies	Yes	Yes
Control variables	Yes	Yes
Panel C: Innovation performance	(1) Direct effects	(2) Moderating effect
Constant	2.037*** (0.162)	2.016*** (0.162)
Family firm	-0.038** (0.019)	-0.007 (0.023)
Innovation performance	-0.106*** (0.017)	-0.070*** (0.023)
Family firm × Innovation performance	- (0.014)	-0.031** (0.014)
Firm RE	Yes	Yes
Industry & year dummies	Yes	Yes
Control variables	Yes	Yes

Notes: (i) ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively; (ii) all models include the following control variables: Foreign ownership; 10 or fewer competitors; from 11 to 25 competitors; more than 25 competitors; age; temporality rate; ROS; market size—constant or shrinking; avg. degree of capacity utilization; leverage; current ratio, and size (models in panel A and B additionally include the number of product innovations). (iii) standard errors in parentheses. Number of observations: 27,664 (Panel A); 30,740 (Panel B); 30,570 (Panel C).

is essential for enabling a firm to accumulate stronger technological and market capabilities for developing and realizing innovation, the ratio of the firm's R&D expenditure over total sales serves as a reasonable indicator of innovation input (Adams, Bessant, & Phelps, 2006). The new regression results can be found in Panel B in Table 5. We again find that family firms with larger investments in R&D over total sales are less likely to downsize—the estimated coefficient in Model 2 (Panel B) of Table 5, -0.054, is significant at the 10% level. The new empirical findings therefore corroborate the results obtained when *R&D intensity* is taken as a regressor instead of the variable *R&D activity*.

Thus far, our analysis has focused on innovation inputs, as the innovation variables we have used refer to whether the company has carried out or contracted R&D activities (*R&D activity*) and to the extent of its R&D investments (*R&D intensity*). We now use an alternative definition of innovation centred on innovation outputs to check the robustness of our results. Innovation outcome is usually the key dependent variable in empirical studies related to innovation (Crossan & Apaydin, 2010). In particular, for each year, we take managers' responses to two questions in the SSBS data set. One of them reports whether the firm obtained completely new products or made important changes to its products (product innovation). The other question is related to the introduction of significant changes in the production and/or distribution process (process innovation). We then code a dummy variable as 1 if the firm carried out either or both types of innovations (product or process) and 0 otherwise, labelling the new resulting variable as *Innovation performance*. A similar approach is used in Yeh-Yun Lin and Yi-Ching Chen (2007), and in Manzanque, Diéguez-Soto, and Garrido-Moreno (2018), among others. The new regression results are presented in Panel C in Table 5. Models 1 and 2 of Table 5 (Panel C) show that the results obtained are qualitatively similar to those measuring innovation in terms of inputs (Panel A and B), and our conclusions remain unchanged.

5 | DISCUSSION AND CONCLUSIONS

This study has examined whether family firms are more likely to downsize their workforce compared to non-family firms. Our results support the premise that family firms are less likely to engage in personnel reductions than their non-family counterparts (H1). This result is consistent with prior research (e.g., Block, 2010; Stavrou et al., 2007), whereby family firms hiring employees face challenges stemming from the duality of goals—economic and non-economic (Kotlar et al., 2018; Williams, Pieper, Kellermanns, & Astrachan, 2018). Although family firms are also concerned about economic utilities, the shift of priority from financial returns to affective endowment, such as the preservation of SEW (Berrone et al., 2012; Gomez-Mejia et al., 2011), is posited to reduce their likelihood of downsizing. As highlighted by a family manager (Marques et al., 2014, p. 9): “The most important asset for a firm is its human capital. We look for the participation and well-being of our employees”.

Moreover, we have tried to shed light on the role R&D activity has on the family presence–downsizing relationship. More precisely, we contend that the decision to retain employees may ultimately be the result of factors linked to the firm's strategic behaviour in terms of R&D activities. In this sense, our results reveal that R&D activities help firms to refrain from downsizing, in line with previous studies (e.g., Lachenmaier & Rottmann, 2011; Meriküll, 2010; Piva & Vivarelli, 2005). More importantly, our study confirms that innovative family firms are less likely to downsize than their non-innovative family counterparts. Technological innovation may be viewed as a way of ensuring family continuity and their survival over subsequent generations, helping thus to protect family members' emotional attachment to the firm (Berrone et al., 2012; Gomez-Mejia et al., 2007). As a result, guided by the desire to protect their long-term orientation, innovative family firms will try to focus on developing ties with stakeholders by satisfying their demands (Aragon-Amonarriz & Iturrioz-Landart, 2016; Cennamo et al., 2012; Martin Castejon & Aroca Lopez, 2016). Thus, a greater interest in innovative projects with long-term payoffs is therefore compatible with a vision of fostering a firm's relations with its employees as key resources (Sirmon & Hitt, 2003).

5.1 | Theoretical and practical implications

Our findings have major implications for prior theoretical development and managerial practice. First, within the frame of their social responsibility strategy, there is evidence to suggest that family firms tend to undertake less workforce downsizing than non-family firms. This suggests that, together with their respect for the environment (Berrone et al., 2010; Samara et al., 2018), family firms engage very well with internal stakeholders such as employees, showing a high level of commitment to employee retention (Block, 2010; Stavrou et al., 2007).

Second, our findings emphasize the positive or bright side of innovation on downsizing by showing that R&D activities in general contribute to the creation of a favourable workplace, and prevent any deterioration in human resource practices through downsizing. In this sense, firms engaged in R&D activities will be more likely to satisfy employees' needs and foster greater engagement among their workers by avoiding redundancies (Harrison et al., 2014; Lachenmaier & Rottmann, 2011).

Third, we have shown that R&D activity in FFs contributes to the creation of a favourable environment for employment decisions by preventing deterioration in HR practices. Innovative FFs will try to maintain their affective ties and to avoid losing key resources, such as human resources (Sirmon & Hitt, 2003), who possesses high levels of firm-specific tacit knowledge and shows a strong commitment to the business. These resources may be certainly needed to achieve a competitive advantage in the long term (Le Breton-Miller & Miller, 2006).

5.2 | Limitations and future research lines

We cannot conclude the paper without considering some of its limitations and potential lines of future research. First, our arguments rely on the socioemotional approach (see, e.g., Gomez-Mejia et al., 2007; Jiang, Kellermanns, Munyon, & Morris, 2017 for this perspective), in line with other previous studies on the family business workplace (Samara & Arenas, 2017). We recognize that a more nuanced measure that captures SEW would be desirable. Unfortunately, it is not possible to derive this information from the data set used here. Our variable is based on archival data, and we are unable to measure SEW directly. This limitation is common in the literature on family firms (Gomez-Mejia, Patel, & Zellweger, 2018; Miller, Le Breton-Miller, & Lester, 2010; Strike, Berrone, Sapp, & Congiu, 2015) and future studies could try to include, for example, the FIBER dimension. Second, our data set only enables us to compare family firms with non-family ones. More specific analyses of the impact of family involvement in ownership, management, and control might complement our research and broaden our understanding of this under-researched family business phenomenon. This would allow us to explore differences in decisions such as workforce downsizing in family firms compared to non-family ones, as well as within family firms themselves (heterogeneity in family firms) (e.g., Chua, Chrisman, Steier, & Rau, 2012; Jaskiewicz & Dyer, 2017). Finally, the consequences of downsizing for family firms should be explored in future studies. In particular, further research should be conducted not only to analyse the downsizing–firm performance link (Brauer & Laamanen, 2014; Datta et al., 2010; Schenkel & Teigland, 2017; Zorn, Norman, Butler, & Bhussar, 2017), but also whether downsizing will be required to preserve SEW in family firms when financial performance falters—that is, when a firm underperforms.

ACKNOWLEDGEMENTS

The authors appreciate the financial support received from the Spanish Ministry of Economy and Competitiveness through ECO2016-75379-R AEI/FEDER, UE, from the Community of Madrid through S2015/HUM-3353 (EARLYFIN-CM), and from the Ibero-American Chair in Management and Corporate Social Responsibility/Santander Bank.

ORCID

Fernando Muñoz-Bullón  <https://orcid.org/0000-0002-4848-6201>

ENDNOTE

¹ In order to increase the robustness of our findings, we also computed return on assets (ROA)—that is, net operating income over assets (Stavrou et al., 2015)—and return on equity (ROE)—that is, net profits over total equity (Cascio & Young, 1997). The results obtained with ROA and ROE are qualitatively similar to those obtained with ROS (these results are available upon request).

REFERENCES

- Adams, R., Bessant, J., & Phelps, R. (2006). Innovation management measurement: A review. *International Journal of Management Reviews*, 8(1), 21–47. <https://doi.org/10.1111/j.1468-2370.2006.00119.x>
- Ahmadjian, C. L., & Robinson, P. (2001). Safety in numbers: Downsizing and the deinstitutionalization of permanent employment in Japan. *Administrative Science Quarterly*, 46(4), 622–654. <https://doi.org/10.2307/3094826>
- Anderson, R. C., Duru, A., & Reeb, D. M. (2012). Investment policy in family controlled firms. *Journal of Banking & Finance*, 36(6), 1744–1758. <https://doi.org/10.1016/j.jbankfin.2012.01.018>
- Aragon-Amonarriz, C., & Iturrioz-Landart, C. (2016). Responsible family ownership in small- and medium-sized family enterprises: An exploratory study. *Business Ethics: A European Review*, 25(1), 75–93. <https://doi.org/10.1111/beer.12078>
- Baruch, Y., & Hind, P. (2000). “Survivor-syndrome”—A management myth? *Journal of Managerial Psychology*, 15(1), 29–45. <https://doi.org/10.1108/02683940010305289>
- Bassanini, A., Breda, T., Caroli, E., & Rebèrioux, A. (2013). Working in family firms: Paid less but more secure? Evidence from French matched employer-employee data. *Industrial & Labor Relations Review*, 66, 433–466. <https://doi.org/10.1177/001979391306600206>
- Berrone, P., Cruz, C., & Gomez-Mejia, L. R. (2012). Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research. *Family Business Review*, 25(3), 258–279. <https://doi.org/10.1177/0894486511435355>
- Berrone, P., Cruz, C., Gomez-Mejia, L. R., & Larrazza-Kintana, M. (2010). Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less? *Administrative Science Quarterly*, 55(1), 82–113. <https://doi.org/10.2189/asqu.2010.55.1.82>
- Block, J. H. (2010). Family management, family ownership and downsizing: Evidence from S&P 500 firms. *Family Business Review*, 23(2), 109–130. <https://doi.org/10.1177/089448651002300202>
- Block, J. H., Millan, J. H., Roman, C., & Zhou, H. (2015). Job satisfaction and wages of family employees. *Entrepreneurship Theory and Practice*, 39, 183–207. <https://doi.org/10.1111/etap.12035>
- Block, J. H., & Wagner, M. (2014). The effect of family ownership on different dimensions of Corporate Social Responsibility: Evidence from large US firms. *Business Strategy and the Environment*, 23(7), 475–492. <https://doi.org/10.1002/bse.1798>
- Boiling, J. R., Pieper, T. M., & Covin, J. G. (2016). CEO tenure and entrepreneurial orientation within family and nonfamily firms. *Entrepreneurship Theory and Practice*, 40(4), 891–913. <https://doi.org/10.1111/etap.12150>
- Booth, A., Francesconi, M., & Frank, J. (2003). Labour as a buffer: Do temporary workers suffer? In G. Fagan, F. P. Mongelli, & J. Morgan (Eds.), *Institutions and wage formation in the new Europe* (pp. 53–68). Cheltenham, UK: Edward Elgar Publishers. <https://doi.org/10.4337/9781843769682.00010>
- Brauer, M., & Laamanen, T. (2014). Workforce downsizing and firm performance: An organizational routine perspective. *Journal of Management Studies*, 51(8), 1311–1333. <https://doi.org/10.1111/joms.12074>
- Brockner, J., Grover, S., O'Malley, M. N., Reed, T. F., & Glynn, M. A. (1993). Threat of future layoffs, self-esteem, and survivor reactions: Evidence from the laboratory and the field. *Strategic Management Journal*, 14(1), 153–166. <https://doi.org/10.1002/smj.4250140912>
- Budros, A. (1999). A conceptual framework for analyzing why organizations downsize. *Organization Science*, 10, 69–82. <https://doi.org/10.1287/orsc.10.1.69>
- Calabrò, A., Vecchiarini, M., Gast, J., Campopiano, G., De Massis, A., & Kraus, S. (2018). Innovation in family firms: A systematic literature review and guidance for future research. *International Journal of Management Reviews*, in press. <https://doi.org/10.1111/ijmr.12192>
- Campopiano, G., & De Massis, A. (2015). Corporate social responsibility reporting: A content analysis in family and non-family firms. *Journal of Business Ethics*, 129(3), 511–534. <https://doi.org/10.1007/s10551-014-2174-z>
- Cascio, W. F., & Young, C. E. (2003). Financial consequences of employment-change decisions in major US corporations, 1982–2000. In K. P. De Meuse & M. L. Marks (Eds.), *Resizing the organization: Managing layoffs, divestitures and closings* (pp. 1175–1189). San Francisco, CA: Jossey Bass.
- Cascio, W. F., Young, C. E., & Morris, J. R. (1997). Financial consequences of employment-change decisions in major US corporations. *Academy of Management Journal*, 40(5), 1175–1189.
- Cennamo, C., Berrone, P., Cruz, C., & Gomez-Mejia, L. R. (2012). Socioemotional wealth and proactive stakeholder engagement: Why family-controlled firms care more about their stakeholders. *Entrepreneurship Theory and Practice*, 36(6), 1153–1173. <https://doi.org/10.1111/j.1540-6520.2012.00543.x>
- Chirico, F., & Salvato, C. (2016). Knowledge internalization and product development in family firms: When relational and affective factors matter. *Entrepreneurship Theory and Practice*, 40(1), 201–229. <https://doi.org/10.1111/etap.12114>
- Chrisman, J. J., Chua, J. H., Pearson, A. W., & Barnett, T. (2012). Family involvement, family influence, and family-centered non-economic goals in small firms. *Entrepreneurship Theory & Practice*, 36(2), 267–293. <https://doi.org/10.1111/j.1540-6520.2010.00407.x>
- Chrisman, J. J., Devaraj, S., & Patel, P. C. (2017). The impact of incentive compensation on labor productivity in family and nonfamily firms. *Family Business Review*, 30, 119–136. <https://doi.org/10.1177/0894486517690052>
- Chrisman, J. J., Memili, E., & Misra, K. (2014). Nonfamily managers, family firms, and the winner's curse: The influence of noneconomic goals and bounded rationality. *Entrepreneurship Theory and Practice*, 38(5), 1–25. <https://doi.org/10.1111/etap.12014>
- Chrisman, J. J., & Patel, P. J. (2012). Variations in R&D investments of family and non-family firms: Behavioral agency and myopic loss aversion perspectives. *Academy of Management Journal*, 55(4), 976–997. <https://doi.org/10.5465/amj.2011.0211>
- Chua, J. H., Chrisman, J. J., Steier, L. P., & Rau, S. B. (2012). Sources of heterogeneity in family firms: An introduction. *Entrepreneurship Theory and Practice*, 36(6), 1103–1113. <https://doi.org/10.1111/j.1540-6520.2012.00540.x>
- Classen, N., Carree, M., Van Gils, A., & Peters, B. (2014). Innovation in family and non-family SMEs: An exploratory analysis. *Small Business Economics*, 42(3), 595–609. <https://doi.org/10.1007/s11187-013-9490-z>
- Colombo, M. G., De Massis, A., Piva, E., Rossi-Lamastra, C., & Wright, M. (2014). Sales and employment changes in entrepreneurial ventures with family ownership: Empirical evidence from high-tech industries. *Journal of Small Business Management*, 52(2), 226–245. <https://doi.org/10.1111/jsbm.12100>
- Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of Micro, Small and Medium-Sized Enterprises. Official Journal L, 124. EU Commission (2003).
- Coucke, K., Pennings, E., & Sleuwaegen, L. (2007). Employee layoff under different modes of restructuring: Exit, downsizing or relocation. *Industrial and Corporate Change*, 16(2), 161–182. <https://doi.org/10.1093/icc/dtm002>
- Craig, J., & Dibrell, C. (2006). The natural environment, innovation, and firm performance: A comparative study. *Family Business Review*, 19(4), 275–288. <https://doi.org/10.1111/j.1741-6248.2006.00075.x>
- Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of Management Studies*, 47(6), 1154–1191. <https://doi.org/10.1111/j.1467-6486.2009.00880.x>

- Cruz, C., Larraza-Kintana, M., Garcés-Galdeano, M. L., & Berrone, P. (2014). Are family firms really more responsible? *Entrepreneurship Theory and Practice*, 38(6), 1295–1316. <https://doi.org/10.1111/etap.12125>
- Dachs, B., & Peters, B. (2014). Innovation, employment growth, and foreign ownership of firms: A European perspective. *Research Policy*, 43(1), 214–232. <https://doi.org/10.1016/j.respol.2013.08.001>
- Datta, D. K., Guthrie, J. P., Basuil, D., & Pandey, A. (2010). Causes and effects of employee downsizing: A review and synthesis. *Journal of Management*, 36(1), 281–348. <https://doi.org/10.1177/0149206309346735>
- De Massis, A., Di Minin, A., & Frattini, F. (2015). Family-driven innovation: Resolving the paradox in family firms. *California Management Review*, 58(1), 5–19. <https://doi.org/10.1525/cmr.2015.58.1.5>
- De Massis, A., Frattini, F., & Lichtenthaler, U. (2013). Research on technological innovation in family firms: Present debates and future directions. *Family Business Review*, 26(1), 10–31. <https://doi.org/10.1177/0894486512466258>
- De Massis, A., Kotlar, J., Chua, J. H., & Chrisman, J. J. (2014). Ability and willingness as sufficiency conditions for family-oriented particularistic behavior: Implications for theory and empirical studies. *Journal of Small Business Management*, 52(2), 344–364. <https://doi.org/10.1111/jsbm.12102>
- De Meuse, K. P., Marks, L., & Dai, G. (2010). Organizational downsizing, mergers and acquisitions, and strategic alliances: Using theory and research to enhance practice. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (Vol. 3, pp. 729–768). Washington, DC: American Psychological Association.
- Deephouse, D. L., & Jaskiewicz, P. (2013). Do family firms have better reputations than non-family firms? An integration of socioemotional wealth and social identity theories. *Journal of Management Studies*, 50(3), 337–360. <https://doi.org/10.1111/joms.12015>
- Deniz-Deniz, D., & Cabrera-Suarez, M. K. (2005). Corporate social responsibility and family business in Spain. *Journal of Business Ethics*, 56(1), 59–71. <https://doi.org/10.1007/s10551-004-3237-3>
- Deniz-Deniz, M. D. L. C., Cabrera-Suárez, M. K., & Martin-Santana, J. D. (2018). Family firms and the interest of non-family stakeholders: The influence of family managers' affective commitment and family salience in terms of power. *Business Ethics: A European Review*, 27(1), 15–28. <https://doi.org/10.1111/beer.12155>
- Dewitt, R. L. (1998). Firm, industry and strategy influences on choice of downsizing approach. *Strategic Management Journal*, 19(1), 59–79. [https://doi.org/10.1002/\(SICI\)1097-0266\(199801\)19:1<59:AID-SMJ934>3.0.CO;2-2](https://doi.org/10.1002/(SICI)1097-0266(199801)19:1<59:AID-SMJ934>3.0.CO;2-2)
- Diaz-Carrión, R., López-Fernández, M., & Romero-Fernández, P. M. (2019). Evidence of different models of socially responsible HRM in Europe. *Business Ethics: A European Review*, 28(1), 1–18. <https://doi.org/10.1111/beer.12203>
- Dieguez-Soto, J., Manzanogue, M., & Rojo-Ramirez, A. A. (2016). Technological innovation inputs, and performance: The moderating role of family involvement in management. *Family Business Review*, 29(3), 603–634. <https://doi.org/10.1177/0894486516646917>
- Dou, J., Zhang, Z., & Su, E. (2014). Does family involvement make firms donate more? Empirical evidence from Chinese private firms. *Family Business Review*, 27(3), 259–274. <https://doi.org/10.1177/0894486514538449>
- Drzensky, F., & Heinz, M. (2015). The hidden costs of downsizing. *The Economic Journal*, 126(598), 2324–2341. <https://doi.org/10.1111/eoj.12216>
- Evangelista, R., & Vezzani, A. (2011). The impact of technological and organizational innovations on employment in European firms. *Industrial and Corporate Change*, 21(4), 871–899. <https://doi.org/10.1093/icc/dtr069>
- Filatotchev, I., Buck, T., & Zhukov, V. (2000). Downsizing in privatized firms in Russia, Ukraine, and Belarus. *Academy of Management Journal*, 43(3), 286–304. <https://doi.org/10.5465/1556396>
- Filser, M., De Massis, A., Gast, J., Kraus, S., & Niemand, T. (2018). Tracing the roots of innovativeness in family SMEs: The effect of family functionality and socioemotional wealth. *Journal of Production Innovation Management*, 35(4), 609–628. <https://doi.org/10.1111/jpim.12433>
- Firfiray, S., Cruz, C., Neacsu, I., & Gomez-Mejia, L. R. (2018). Is nepotism so bad for family firms? A socioemotional wealth approach. *Human Resource Management Review*, 28, 83–97. <https://doi.org/10.1016/j.hrmr.2017.05.008>
- Fisher, S. R., & White, M. A. (2000). Downsizing in a learning organization: Are there hidden costs? *Academy of Management Review*, 25(1), 244–251. <https://doi.org/10.5465/amr.2000.2791613>
- Freeman, S. J., & Cameron, K. S. (1993). Organizational downsizing: A convergence and reorientation framework. *Organization Science*, 4(1), 10–29. <https://doi.org/10.1287/orsc.4.1.10>
- Gandolfi, F., & Hansson, M. (2011). Causes and consequences of downsizing: Towards an integrative framework. *Journal of Management & Organization*, 17(4), 498–521. <https://doi.org/10.1017/S183336720001413>
- Gandolfi, F., & Littler, C. R. (2012). Downsizing is dead; long live the downsizing phenomenon: Conceptualizing the phases of cost-cutting. *Journal of Management & Organization*, 18(3), 334–345. <https://doi.org/10.1017/S1833367200000833>
- Gomez-Mejia, L. R., Campbell, J. T., Martin, G., Hoskisson, R. E., Makri, M., & Sirmon, D. G. (2014). Socioemotional wealth as a mixed gamble: Revisiting family firm R&D investments with the behavioral agency model. *Entrepreneurship Theory and Practice*, 38(6), 1351–1374. <https://doi.org/10.1111/etap.12083>
- Gomez-Mejia, L. R., Cruz, C., Berrone, P., & De Castro, J. (2011). The bind that ties: Socioemotional wealth preservation in family firms. *The Academy of Management Annals*, 5(1), 653–707. <https://doi.org/10.5465/19416520.2011.593320>
- Gomez-Mejia, L. R., Haynes, K. T., Núñez-Nickel, M., Jacobson, K., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly*, 52(1), 106–137. <https://doi.org/10.2189/asqu.52.1.106>
- Gomez-Mejia, L. R., Larraza-Kintana, M., Moyano-Fuentes, J., & Firfiray, S. (2018). Managerial family ties and employee risk bearing in family firms: Evidence from Spanish car dealers. *Human Resource Management*, 57(5), 993–1007. <https://doi.org/10.1002/hrm.21829>
- Gomez-Mejia, L. R., Patel, P. C., & Zellweger, T. M. (2018). In the horns of the dilemma: Socioemotional wealth, financial wealth, and acquisitions in family firms. *Journal of Management*, 44(4), 1369–1397. <https://doi.org/10.1177/0149206315614375>
- Greenan, N., & Guellec, D. (2001). Technological innovation and employment reallocation. *Labour*, 14(4), 547–590. <https://doi.org/10.1111/1467-9914.00146>
- Greenhalgh, L., Lawrence, A. T., & Sutton, R. I. (1988). Determinants of work force reduction strategies in declining organizations. *Academy of Management Review*, 13(2), 241–254. <https://doi.org/10.5465/amr.1988.4306878>
- Guthrie, J. P., & Datta, D. K. (2008). Dumb and dumber: The impact of downsizing on firm performance as moderated by industry conditions. *Organization Science*, 19(1), 108–123. <https://doi.org/10.1287/orsc.1070.0298>
- Harrison, R., Jaumandreu, J., Mairesse, J., & Peters, B. (2014). Does innovation stimulate employment? A firm-level analysis using comparable micro-data from four European countries. *International Journal of Industrial Organization*, 35, 29–43. <https://doi.org/10.1016/j.ijindorg.2014.06.001>
- Hasenzagl, R., Hatak, I., & Frank, H. (2018). Problematizing socioemotional wealth in family firms: A systems-theoretical reframing. *Entrepreneurship and Regional Development*, 30(1–2), 199–223. <https://doi.org/10.1080/08985626.2017.1401123>
- Hauswald, H., Hack, A., Kellermanns, F. W., & Patzelt, H. (2016). Attracting new talent to family firms: Who is attracted and under

- what conditions? *Entrepreneurship Theory and Practice*, 40(5), 963–989. <https://doi.org/10.1111/etap.12153>
- Howells, J. (1999). Research and technology outsourcing. *Technology Analysis and Strategic Management*, 11, 17–29. <https://doi.org/10.1080/095373299107555>
- Jamali, D., El Dirani, A., & Harwood, I. (2015). Exploring human resource management roles in corporate social responsibility: The CSR-HRM co-creation model. *Business Ethics: A European Review*, 24(2), 125–143. <https://doi.org/10.1111/beer.12085>
- Jaskiewicz, P., & Dyer, W. G. (2017). Addressing the elephant in the room: Disentangling family heterogeneity to advance family business research. *Family Business Review*, 30(2), 111–118. <https://doi.org/10.1177/0894486517700469>
- Jensen, M. (1989). Active investors, LBO's and privatization of bankruptcy. *Journal of Applied Corporate Finance*, 2, 35–44. <https://doi.org/10.1111/j.1745-6622.1989.tb00551.x>
- Jiang, D. S., Kellermanns, F. W., Munyon, T. P., & Morris, M. L. (2017). More than meets the eye: A review and future directions for the social psychology of socioemotional wealth. *Family Business Review*, 31(1), 1–33. <https://doi.org/10.1177/0894486517736959>
- Kellermanns, F. W., Eddleston, K. A., & Zellweger, T. M. (2012). Article commentary: Extending the socioemotional wealth perspective: A look at the dark side. *Entrepreneurship Theory and Practice*, 36(6), 1175–1182. <https://doi.org/10.1111/j.1540-6520.2012.00544.x>
- Kidwell, R. E., Eddleston, K. A., & Kellermanns, F. W. (2018). Learning bad habits across generations: How negative imprints affect human resource management in the family firm. *Human Resource Management Review*, 28(1), 5–17. <https://doi.org/10.1016/j.hrmr.2017.05.002>
- Kotlar, J., & De Massis, A. (2013). Goal setting in family firms: Goal diversity, social interactions, and collective commitment to family-centered goals. *Entrepreneurship Theory and Practice*, 37(6), 1263–1288. <https://doi.org/10.1111/etap.12065>
- Kotlar, J., De Massis, A., Frattini, F., Bianchi, M., & Fang, H. (2013). Technology acquisition in family and nonfamily firms: A longitudinal analysis of Spanish manufacturing firms. *Journal of Production Innovation Management*, 30(6), 1073–1088. <https://doi.org/10.1111/jpim.12046>
- Kotlar, J., De Massis, A., Wright, M., & Frattini, F. (2018). Organizational goals: Antecedents, formation processes and implications for firm behavior and performance. *International Journal of Management Reviews*, 20(S1), S3–S18. <https://doi.org/10.1111/ijmr.12170>
- Kotlar, J., Fang, H., De Massis, A., & Frattini, F. (2014). Profitability goals, control goals, and the R&D investment decisions of family and non-family firms. *Journal of Product Innovation Management*, 31(6), 1128–1145. <https://doi.org/10.1111/jpim.12165>
- La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *The Journal of Finance*, 54(2), 471–517. <https://doi.org/10.1111/0022-1082.00115>
- Labelle, R., Hafsi, T., Francoeur, C., & Ben Amar, W. (2015). Family firms' corporate social performance: A calculated quest for socioemotional wealth. *Journal of Business Ethics*, 32, 1–15. <https://doi.org/10.1007/s10551-015-2982-9>
- Lachenmaier, S., & Rottmann, H. (2011). Effects of innovation on employment: A dynamic panel analysis. *International Journal of Industrial Organization*, 29(2), 210–220. <https://doi.org/10.1016/j.ijindorg.2010.05.004>
- Lakshman, C., Ramaswami, A., Alas, R., Kabongo, J. F., & Pandian, J. R. (2014). Ethics trumps culture? A cross-national study of business leader responsibility for downsizing and CSR perceptions. *Journal of Business Ethics*, 125(1), 101–119. <https://doi.org/10.1007/s10551-013-1907-8>
- Le Breton-Miller, I., & Miller, D. (2006). Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability. *Entrepreneurship Theory and Practice*, 30(6), 731–746. <https://doi.org/10.1111/j.1540-6520.2006.00147.x>
- Le Breton-Miller, I., & Miller, D. (2016). Family firms and practices of sustainability: A contingency view. *Journal of Family Business Strategy*, 7(1), 26–33. <https://doi.org/10.1016/j.jfbs.2015.09.001>
- Manzaneque, M., Diéguez-Soto, J., & Garrido-Moreno, A. (2018). Technological innovation inputs, outputs and family management: Evidence from Spanish manufacturing firms. *Innovation*, 20(4), 299–325. <https://doi.org/10.1080/14479338.2018.1444491>
- Marques, P., Presas, P., & Simon, A. (2014). The heterogeneity of family firms in CSR engagement: The role of values. *Family Business Review*, 27(3), 206–227. <https://doi.org/10.1177/0894486514539004>
- Martin Castejón, P. J., & Aroca Lopez, B. (2016). Corporate Social Responsibility in family SMEs: A comparative study. *European Journal of Family Business*, 6(1), 21–31. <https://doi.org/10.1016/j.ejfb.2016.05.002>
- Matlay, H. (2002). Training and HRD strategies in family and non-family owned small businesses: A comparative approach. *Education and Training*, 44, 357–369. <https://doi.org/10.1108/00400910210449196>
- Mellahi, K., & Wilkinson, A. (2010). Slash and burn or nip and tuck? Downsizing, innovation and human resources. *The International Journal of Human Resource Management*, 21(13), 2291–2305. <https://doi.org/10.1080/09585192.2010.516584>
- Meriküll, J. (2010). The impact of innovation on employment. Firm- and Industry-level evidence from a catching-up economy. *Eastern European Economics*, 48(2), 25–38. <https://doi.org/10.2753/EEEE0012-8775480202>
- Miller, D., & Le Breton-Miller, I. (2006). Family governance and firm performance: Agency, stewardship, and capabilities. *Family Business Review*, 19(1), 73–87. <https://doi.org/10.1111/j.1741-6248.2006.00063.x>
- Miller, D., & Le Breton-Miller, I. (2014). Deconstructing socioemotional wealth. *Entrepreneurship Theory and Practice*, 38(4), 713–720. <https://doi.org/10.1111/etap.12111>
- Miller, D., Le Breton-Miller, I., & Lester, R. H. (2010). Family ownership and acquisition behavior in publicly-traded companies. *Strategic Management Journal*, 31, 201–223. <https://doi.org/10.1002/smj.802>
- Miller, D., Le Breton-Miller, I., & Scholnick, B. (2008). Stewardship vs. stagnation: An empirical comparison of small family and non-family businesses. *Journal of Management Studies*, 45(1), 51–78. <https://doi.org/10.1111/j.1467-6486.2007.00718.x>
- Morck, R., & Yeung, B. (2014). Family control and the rent-seeking society. *Entrepreneurship Theory and Practice*, 38(4), 391–409. <https://doi.org/10.1111/j.1540-6520.2004.00053.x>
- Neckebrouck, J., Schulze, W., & Zellweger, T. (2018). Are family firms good employers? *Academy of Management Journal*, 61(2), 553–585. <https://doi.org/10.5465/amj.2016.0765>
- Nixon, R. D., Hitt, M. A., Lee, H., & Jeong, E. (2004). Market reactions to announcements of corporate downsizing actions and implementation strategies. *Strategic Management Journal*, 25(11), 1121–1129. <https://doi.org/10.1002/smj.423>
- Norman, P. M., Butler, F. C., & Ranft, A. L. (2013). Resources matter: Examining the effects of resources on the state of firms following downsizing. *Journal of Management*, 39(7), 2009–2038. <https://doi.org/10.1177/0149206312443560>
- Ofek, E. (1993). Capital structure and firm response to poor performance: An empirical analysis. *Journal of Financial Economics*, 34(1), 3–30. Retrieved from <https://www.sciencedirect.com/science/article/pii/0304405X9390038D> [https://doi.org/10.1016/0304-405X\(93\)90038-D](https://doi.org/10.1016/0304-405X(93)90038-D)
- Orth, U. R., & Green, M. T. (2009). Consumer loyalty to family versus non-family business: The roles of store image, trust and satisfaction. *Journal of Retailing and Consumer Services*, 16(4), 248–259. <https://doi.org/10.1016/j.jretconser.2008.12.002>
- Papplan, G., & Teese, M. (1997). *Survivors – How to keep your best people on board after downsizing*. Palo Alto, CA: Davies-Black Publishing.

- Patel, P. C., Criaco, G., & Naldi, L. (2018). Geographic diversification and the survival of born-globals. *Journal of Management*, 44(5), 2008–2036. <https://doi.org/10.1177/0149206316635251>
- Peters, B. (2004). Employment effects of different innovation activities: Microeconomic evidence. ZEW Discussion Paper, 04–73. <https://doi.org/10.2139/ssrn.604481>
- Pianta, M. (2005). Innovation and employment. In J. Fagerberg, D. Mowery, & R. Nelson (Eds.), *The Oxford handbook of innovation* (pp. 568–598). Oxford: Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199286805.001.0001>
- Pittino, D., Visintin, F., Lenger, T., & Sternad, D. (2016). Are high-performance work practices really necessary in family SMEs? An analysis of the impact on employee retention. *Journal of Family Business Strategy*, 7(2), 75–89. <https://doi.org/10.1016/j.jfbs.2016.04.002>
- Piva, M., & Vivarelli, M. (2005). Innovation and employment: Evidence from Italian microdata. *Journal of Economics*, 86(1), 65–83. <https://doi.org/10.1007/s00712-005-0140-z>
- Rees, W., & Rodionova, T. (2015). The influence of family ownership on Corporate Social Responsibility: An international analysis of publicly listed companies. *Corporate Governance: An International Review*, 23(3), 184–202. <https://doi.org/10.1111/corg.12086>
- Samara, G., & Arenas, D. (2017). Practicing fairness in the family business workplace. *Business Horizons*, 60(5), 647–655. <https://doi.org/10.1016/j.bushor.2017.05.008>
- Samara, G., Jamali, D., Sierra, V., & Parada, M. (2018). Who are the best performers? The environmental social performance of family firms. *Journal of Family Business Strategy*, 9(1), 33–43. <https://doi.org/10.1016/j.jfbs.2017.11.004>
- Samara, G., & Paul, K. (2018). Justice versus fairness in the family business workplace: A socioemotional wealth approach. *Business Ethics: A European Review*, 28(2), 175–184. <https://doi.org/10.1111/beer.12209>
- Schenkel, A., & Teigland, R. (2017). Why doesn't downsizing deliver? A multi-level model integrating downsizing, social capital, dynamic capabilities, and firm performance. *The International Journal of Human Resource Management*, 28(7), 1065–1107. <https://doi.org/10.1080/09585192.2015.1130734>
- Schulze, W. S., Lubatkin, M. H., & Dino, R. N. (2003). Exploring the agency consequences of ownership dispersion among the directors of private family firms. *Academy of Management Journal*, 46, 179–194. <https://doi.org/10.5465/30040613>
- Sciascia, S., Nordqvist, M., Mazzola, P., & De Massis, A. (2014). Family ownership and R&D intensity in small- and medium-sized firms. *Journal of Product Innovation Management*, 32(3), 349–360. <https://doi.org/10.1111/jpim.12204>
- Sirmon, D. G., & Hitt, M. A. (2003). Managing resources: Linking unique resources, management, and wealth creation in family firms. *Entrepreneurship Theory and Practice*, 27(4), 339–358. <https://doi.org/10.1111/1540-8520.t01-1-00013>
- Souder, D., Zaheer, A., Sapienza, H., & Ranucci, R. (2017). How family influence, socioemotional wealth, and competitive conditions shape new technology adoption. *Strategic Management Journal*, 38(9), 1774–1790. <https://doi.org/10.1002/smj.2614>
- Spanish Institute of Family Businesses, the Spanish Network of Chairs of Family Businesses. (2018). *Factores de competitividad y análisis financiero en la empresa familiar*. Spanish Institute of Family Businesses. Spanish Network of Chairs of Family Businesses.
- Stavrou, E., Kassinis, G., & Filotheou, A. (2007). Downsizing and stakeholder orientation among the Fortune 500: Does family ownership matter? *Journal of Business Ethics*, 72(2), 149–162. <https://doi.org/10.1007/s10551-006-9162-x>
- Strike, V. M., Berrone, P., Sapp, S. G., & Congiu, L. (2015). A socioemotional wealth approach to CEO career horizons in family firms. *Journal of Management Studies*, 52(4), 555–583. <https://doi.org/10.1111/joms.12123>
- Strike, V. M., Gao, J., & Bansal, P. (2006). Being good while being bad: Social responsibility and the international diversification of US firms. *Journal of International Business Studies*, 37(6), 850–862. <https://doi.org/10.1057/palgrave.jibs.8400226>
- Tsao, S. M., Chang, Y. W., & Koh, K. (2019). Founding family ownership and myopic R&D investment behaviour. *Journal of Accounting, Auditing & Finance*, 34(3), 361–384.
- Van Gils, A., Dibrell, C., Neubaum, D. O., & Craig, J. B. (2014). Social issues in the family enterprise. *Family Business Review*, 27(3), 193–205. <https://doi.org/10.1177/0894486514542398>
- Van Buren, H. J. (2000). The bindingness of social and psychological contracts: Toward a theory of social responsibility in downsizing. *Journal of Business Ethics*, 25(3), 205–219. <https://doi.org/10.1023/A:1006158022338>
- Vashchenko, M. (2017). An external perspective on CSR: What matters and what does not? *Business Ethics: A European Review*, 26(4), 396–421. <https://doi.org/10.1111/beer.12162>
- Verbeke, A., & Kano, L. (2012). The transaction cost economics theory of the family firm: Family-based human asset specificity and the bifurcation bias. *Entrepreneurship Theory and Practice*, 36(6), 1183–1205. <https://doi.org/10.1111/j.1540-6520.2012.00545.x>
- Vicente-Lorente, J. D., & Suarez-Gonzalez, I. (2007). Ownership traits and downsizing behaviour: Evidence for the largest Spanish firms, 1990–1998. *Organization Studies*, 28(11), 1613–1638. <https://doi.org/10.1177/0170840607076591>
- Vicente-Lorente, J. D., & Zuñiga-Vicente, J. A. (2012). Effects of process and product-oriented innovations on employee downsizing. *International Journal of Manpower*, 33(4), 383–403. <https://doi.org/10.1108/01437721211243750>
- Vicente-Lorente, J. D., & Zuñiga-Vicente, J. A. (2018). The U-shaped effect of R&D intensity on employee downsizing: Evidence from Spanish manufacturing firms (1994–2010). *The International Journal of Human Resource Management*, 29(15), 2330–2351. <https://doi.org/10.1080/09585192.2016.1239212>
- Vivarelli, M. (2014). Innovation, employment and skills in advanced and developing countries: A survey of economic literature. *Journal of Economic Issues*, 48(1), 123–154. <https://doi.org/10.1080/09585192.2016.1239212>
- Voegtlin, C., & Greenwood, M. (2016). Corporate social responsibility and human resource management: A systematic review and conceptual analysis. *Human Resource Management Review*, 26(3), 181–197. <https://doi.org/10.1016/j.hrmr.2015.12.003>
- Williams, R., Pieper, T., Kellermanns, F., & Astrachan, J. (2018). Family firm goals and their effects on strategy, family and organization behavior: A review and research agenda. *International Journal of Management Reviews*, 20(S1), S63–S82. <https://doi.org/10.1111/ijmr.12167>
- Yeh-Yun Lin, C., & Yi-Ching Chen, M. (2007). Does innovation lead to performance? An empirical study of SMEs in Taiwan. *Management Research News*, 30(2), 115–132. <https://doi.org/10.1108/01409170710722955>
- Zellweger, T. (2017). *Managing the family business. Theory and practice*. Cheltenham, UK: Edward Elgar.
- Zientara, P. (2017). Socioemotional wealth and corporate social responsibility: A critical analysis. *Journal of Business Ethics*, 144(1), 185–199. <https://doi.org/10.1007/s10551-015-2848-1>
- Zorn, M. L., Norman, P. M., Butler, F. C., & Bhussar, M. S. (2017). Cure or curse: Does downsizing increase the likelihood of bankruptcy? *Journal of Business Research*, 76, 24–33. <https://doi.org/10.1007/s10551-015-2848-1>

AUTHOR BIOGRAPHIES

Maria J Sanchez-Bueno is an associate professor of management at Universidad Carlos III de Madrid (Madrid, Spain). Her research focuses on diversification and internationalization strategies, family firms, entrepreneurship, innovation and downsizing, and it has been published in journals such as *Entrepreneurship & Regional Development*, *Entrepreneurship Theory and Practice*, *Family Business Review*, *Group & Organization Management*, *Human Resource Management Journal*, *Journal of Business Research*, *Journal of Family Business Strategy*, *Journal of World Business*, *Organization Studies*, *Strategic Management Journal*, among others. She is member of the research team "Iberoamerican Project of Management and Corporate Social Responsibility" (Universidad de Salamanca/Santander Bank) and member of the GUESS Project. She has authored two books on Business Administration (Thomson Reuters, Civitas).

Fernando Muñoz-Bullón holds a PhD in Economics and Business (Universitat Pompeu Fabra, Barcelona, Spain). He is an associate professor of Management at Universidad Carlos III de Madrid (Madrid, Spain) and is accredited as a full professor by the Spanish National Agency of Quality and Accreditation (ANECA). His research (mainly on family firms, entrepreneurship, innovation, downsizing, and labour relations) has been published in journals such as *British Journal of Industrial Relations*, *Entrepreneurship & Regional*

Development, Entrepreneurship Theory and Practice, *Family Business Review*, *Group & Organization Management*, *Human Resource Management Journal*, *Industrial Relations*, *Journal of World Business*, among others. He is member of the research team "Iberoamerican Project of Management and Corporate Social Responsibility" (Universidad de Salamanca/Santander Bank) and member of the GUESS Project. He has authored two books on Business Administration (Thomson Reuters, Civitas).

Jose I. Galan is a full professor of strategy and organization at Universidad de Salamanca (Salamanca, Spain), is a director of the Iberoamerican Chair in Management and CSR/Santander Bank, and is a director of the Master in Business Analytics and Data Science at Universidad de Salamanca. He has published in journals such as *Journal of Business Ethics*, *Journal of International Business Studies*, *Journal of Management Studies*, *Journal of World Business*, *Long Range Planning*, *Organization Studies*, *Strategic Management Journal*, among others. He has authored several books on organizational design and corporate social responsibility.

How to cite this article: Sanchez-Bueno MJ, Muñoz-Bullón F, Galan JI. Socially responsible downsizing: Comparing family and non-family firms. *Business Ethics: A Eur Rev*. 2020;29:35–55. <https://doi.org/10.1111/beer.12244>

APPENDIX

TABLE A1 Definitions of variables

<i>Variable</i>	<i>Definition</i>
<i>Panel A: Dependent variable</i>	
Downsizing	1 if there is a reduction of more than 5% in the headcount between year t and year t over total headcount in $t-1$; otherwise 0
<i>Panel B: Independent variable</i>	
R&D activity	1 if the firm engages in R&D activities (i.e., the company carried out or contracted R&D activities); otherwise 0.
<i>Panel C: Moderating variable</i>	
Family firm	1 for family firms; otherwise 0. A company is classified as a family firm if one or more members of the owner-family occupy managerial positions
<i>Panel C: Control variables</i>	
Foreign ownership	Percentage of equity capital in non-domestic hands
Number of competitors:	
10 or fewer competitors	1 if the firm has fewer than 10 competitors; otherwise 0
From 11 to 25 competitors	1 if the firm has between 11 and 25 competitors; otherwise 0
More than 25 competitors	1 if the firm has more than 25 competitors; otherwise 0
Atomized market	1 if the market addressed by the firm is atomized; otherwise 0
Age	Number of years since the company was incorporated
Temporality rate	Proportion of temporary workers
ROS	Return on sales
Market size—growing	1 if the market share in the main market has grown; otherwise 0
Market size—constant or shrinking	1 if the market share in the main market is constant or has shrunk; otherwise 0
Avg. degree of capacity utilization	Average degree of capacity utilization
Product innovations	Number of product innovations introduced to the market in the year
Leverage	Debt to total assets ratio
Current ratio	Current assets to current liabilities ratio
Size	Total sales (billion euros)
Industry	Dummy variables of the industry of the firm's core activity at the two-digit level (Meat products, Tobacco and food, Beverages, Textile products, Leather and shoes, Wood products, Paper products, Publishing and graphic arts, Chemical products, Plastic materials and rubber, Non-metallic minerals, Metallurgy, Metallic products, Machinery and mechanical equipment, Office machinery and computers, Electric machinery and equipment, Motor vehicles, Other transportation equipment, Furniture, Other manufacturing industries)
Year	Year dummies
<i>Panel C: Robustness tests variables</i>	
Continuous R&D activities	Categorical variable collecting the accumulation of engagement in R&D activities for the years t , $t-1$, and $t-2$. It varies between 0 and 3, with higher values indicating greater involvement in R&D activities
R&D intensity	Ratio of investment in R&D activities to total sales
Innovation performance	Dummy variable that equals 1 if the firm engages in internal R&D activities, sources innovation via contracting mechanisms, or both

TABLE A2 Loss of observations from initial data set

Initial sample size (number of companies)	63,801 (5,304)
Observations deleted due to missing values used in the empirical analysis:	
Downsizing	27,612
Family firm	0
R&D activity	0
Foreign ownership	32
Number of competitors	3,172
Age	8
Temporality rate	1
ROS	175
Market size	26
Avg. degree of capacity utilization	527
Number of product innovations	437
Leverage	1,215
Current ratio	411
Size	11
Industry	0
Year	0
Final sample used in the empirical analysis (number of companies)	30,174 (4,223)