BOARD COMPOSITION IN FAMILY AND NON-FAMILY INNOVATIVE BUSINESSES

Juan Pablo Gonzales-Bustos [*], Ana Beatriz Hernández-Lara [**], Xiaoni Li [*]

* Department of Business Management, Rovira i Virgili University, Spain
** *Corresponding author*, Department of Business Management, Rovira i Virgili University, Spain
Contact details: Av. Universitat, 1 (43204) Reus, Spain

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Abstract

This paper aims to contribute to the literature on corporate governance and innovation, providing empirical evidence with respect to the evolution of board composition and innovation over time, comparing between family and non-family businesses. Data were collected from 86 Spanish companies belonging to innovative sectors during the period 2003 to 2014. The results show a significant difference between family and non-family firms in terms of their board composition, indicating bigger boards and a higher proportion of independent directors in the case of non-family businesses. With regards to external directors, the results also show that their proportion has been increasing in the last years especially in family companies, reaching similar levels to non-family ones. Finally, in terms of gender, its diversity has been also increasing in both types of companies, but more in family businesses, equalling or even overcoming gender diversity in non-family businesses. Non-significant differences were detected in the composition of the boards over time, with the only exception of gender diversity, which shows a significant growth. This descriptive study contributes to the inconclusive research on how is the composition and structure of the board in innovative companies, highlighting the differences between family and non-family business.

Keywords: Board of Directors, Innovation, Family Businesses, Gender, Independent Directors

1. INTRODUCTION

In the current turbulent context, innovation and change are crucial tools for the creation and improvement of firm's competitive advantages in the long term (Becheikh *et al.,* 2006; Brauns, 2015); There are many factors that influence and explain the innovation strategy of companies, both internally and externally (Cassiman and Veugelers, 2006). At an internal level, literature assumes that firms differ in the structure and organization of their main governing bodies, like boards of directors, and that these differences may influence the innovative behavior adopted by them (Barker and Mueller, 2002). However, the majority of studies focused on boards have been interested in analyzing their effects on firm performance, neglecting their effects in terms of strategies or decisions (Gonzales-Bustos and Hernández-Lara, 2014).

On the other hand, the relevance of family firms all over the world has effectively caught the attention of academia due to their relevance and the wealth they represent in the global economy that justifies the interest of academic research in their study (Kalyanaraman, 2015; Marín-Anglada *et al.,* 2014). Family firms constitute a specific category of companies in terms of their ownership structure (Marín *et al.,* 2017), whose influence on some business strategies like internationalization and innovation, are considered as emerging topics in management research (Chrisman *et al.,* 2015). Family businesses are considered different due to the involvement of owners in the enterprise's management, which can exert some influences on the composition and structure of their governing bodies, like their boards of directors.

The main objective of this paper is to contribute in a way as determining how certain characteristics of the structure and composition of the board of directors, in terms of their size, gender diversity, and directors' type, evolve over time, comparing family and non-family businesses. By this descriptive study, it aims to contribute to the inconclusive research on how is the board with the aforementioned factors in innovative companies, highlighting the differences between family and non-

family companies.

The rest of the paper is organized as follows. Section 2 provides a review of relevant literature on the relationships between boards' composition and innovation, specifying the contributions of previous research with regards to family firms. Section 3 discusses the method, and Section 4 presents the results. Section 5 discusses the main results, and finally, Section 6 concludes the paper, identifying its contribution and future ideas of further research.

2. BOARD OF DIRECTORS AND INNOVATION

The relevance of boards of directors lies in its configuration as the apex of the internal control system of firms (Jensen, 1993), and derives from its responsibilities for supervising and validating strategic decisions, and its control over managerial behavior (Fama, 1980). The board has powers to limit management discretion and provides security to the shareholders of the organizations (Baysinger and Hoskisson, 1990).

Moreover, it should be considered that the characteristics of the boards are not the same for all types of companies. Family firms use different governance structures compared to non-family ones, and these differences can lead to different results on innovation as well (De Massis *et al.,* 2012).

The problems associated with the separation of ownership and management have been analyzed from diverse theoretical perspectives. Among these theories, the Agency Theory stands out (Kalyanaraman, 2015). This theory emphasizes some assumptions as the opportunistic behavior of individuals, concerned about satisfying their own interests (Eisenhardt, 1989). However, Agency Theory is not the only applicable perspective. Thus, there are works that complement Agency Theory with other theoretical approaches, such as the Stewardship Theory (Ashwin *et al.,* 2015, Blanco *et al.,* 2016), whose assumptions consider the reliable behavior of individuals and the trust that all agents will try to ensure the improvement of the situation of the company, since this situation may end up benefiting all, despite their divergent functions and objectives (Davis *et al.,* 1997).

The inconclusive results on how are the composition and structure of boards in innovative companies (Al-Mannaei and Hamdan, 2016), especially when comparing organizations with different capital ownership, suggest the need to offer more empirical evidence on this matter (Hernández *et al.,* 2010; 2014). In the following sections, some of the most relevant characteristics of board composition are presented, as well as their relationships with innovation.

2.1. Board size

Board size can influence the number of perspectives and points of view of this government body, which affect the formulation of the organization's strategy (Pearce and Zahra, 1992).

Some authors suggest that companies with big boards are more innovative (Ashwin *et al.,* 2016; Kwon and Shin, 2007; Mezghanni, 2008; Zona *et al.,* 2008), emphasizing the board's strategic and advisory role. As the Agency Theory establishes small boards would not have the necessary experience and skills for the effective control and evaluation of the initiatives, mainly those related to innovation (Zahra *et al.,* 2000).

Some other studies have suggested that an excessive size of the board could lead to a diffusion of responsibilities of the board members (Golden and Zajac, 2001), affecting negatively the effectiveness of their strategic functions (Eisenberg *et al.,* 1998). These arguments highlight the doubts on how is the trend in terms of board size of innovative companies.

In the context of the family business, thanks to the alignment of objectives between firm owners and managers, their boards focus less on control and more on advisory and strategic activities (Brunninge *et al.,* 2007). This scenario is consistent with the assumptions of the Stewardship Theory (Davis *et al.,* 1997), which provides advice on a relatively small board size (Gubitta and Gianecchini, 2002).

2.2. Female directors

Despite the arguments in favor of a larger number of women board members in most companies (Modiba and Ngwakwe, 2017), their presence is still purely symbolic (Daily and Dalton, 2003; Jonty and Mokoteli, 2015; Terjesen *et al.,* 2009).

Some authors suggest that companies with high gender diversity in their boards are more innovative (Østergaard *et al.,* 2011), because, as the Agency Theory establishes, women on board bring new perspectives, different experiences, knowledge and useful skills that positively influence innovation (Galia and Zenou, 2012).

Other authors, on the other hand, have suggested that gender diversity may increase the likelihood of intra-group conflict in the board (Treichler, 1995), delaying the decision-making process (Goodstein *et al.,* 1994). They have also suggested greater risk aversion by women in decision-making (Barsky *et al.,* 1997), provoking less innovation in their companies.

In the case of the family business, few studies on gender diversity in family firms have argued that the appointment of women to the board is strongly influenced by family ties (Loukil and Yousfi, 2016, Nekhili and Gatfaoui, 2013), mainly due to the low number of women appointed to the boards also in this kind of companies (Giovinco, 2014). However, this scarce proportion of women belong frequently to the family, and they are normally able to agree to the dominant vision and approach of their family male counterparts (Casey *et al.,* 2011). This suggests that these women on board would not make any significant change in innovation strategies, in comparison with other boards without this female representation.

2.3. Independent directors

There are studies that support independent/external directors since they offer an exchange of knowledge within the board that can influence the ability of a company to innovate. External and independent directors contribute to the freedom of thoughts and they are a source of cognitive diversity for decision-making (Forbes and Milliken, 1999), which encourages more innovative actions (Van Essen *et al.,* 2012), as established by the Agency Theory.

Other studies, while recognizing the benefits that the cognitive heterogeneity contributes to the board, highlight a probable increase in dysfunctional

rivalries among board members in the case of heterogeneity of their members, which may result in a reduction of knowledge flows (Michie et al. (2006), with negative effects for innovation, as the Stewardship Theory points out.

In the case of the family business, the influence of independent/external directors is likely to be greater, since this type of board members has the virtue of moderating divergence of interests (Miller *et al.,* 2005), as well as reducing agency costs related to family altruism (Schulze at al., 2002), which are characteristic of family business.

3. METHODOLOGY

3.1. Sample collection and sources of information

This article collected data of companies that belong to innovative economic sectors. In order to consider an economic sector as innovative, this sector should accomplish at least one of the following innovation indicators: the percentage of innovative firms in the sector should be higher than 30%, the R&D intensity should be above 1.5%, and the percentage of income generated by new or improved products in the sector should be above 10%. Finally, five economic sectors extracted from the sections of the Spanish National Classification of Economic Activity (INE 2007) were chosen: energy and water supply, extractives, construction, industry, and services.

The final sample was an imbalanced panel data composed of 86 Spanish-listed companies during the period 2003 to 2014 (both years included).

The collection of data was based on different sources of information. In order to obtain the information on the structure and composition of the board of directors, the information provided by the CNMV (National Stock Market Commission) was used.

3.2. Measurement of the variables

The variables related to the composition and structure of the board were measured as follows:

Board size (BSIZE). The size of the board is measured by the total number of board members (Pearce and Zahra, 1992).

Gender Diversity (GEN). Gender diversity is measured as the Blau Heterogeneity Index (Blau, 1977).

Percentage of total external directors, including affiliated and independent (OUT1). The percentage of total external directors has been estimated by dividing the total number of affiliated, independent and other external directors by the total number of directors (Conthe Code, 2006).

Percentage of independent directors (OUT2). The percentage of independent directors is determined by dividing the total number of independent and external directors by the total number of directors (Baysinger *et al.,* 1991).

Family firm (FAM). Family property is measured as a dichotomous variable that took the value of "1" in case the company was a family business, and "0" otherwise. In order for a company to be considered as a family business, two requirements were taken into account. First, the family had to own directly or indirectly a percentage of participation in the company equal or superior to 5% (Villalonga and Amit, 2006). Second, it was required that family members should have control of the company and/or the board of directors, as chairman and/or CEO; or that at least two different members of the family form part of the board of directors (García and García, 2011).

4. RESULTS

Statistical analyses of this study were carried out applying R, version 3.4.0. (R Core Team, 2017).

Table 1 shows the descriptive statistics of the main characteristics of the structure and composition of the board of directors in terms of size, gender, and type of directors.

Table 1. Descriptive statistics

Variables	*N*	*Mean*	*St. Dev.*	*Min*	*Max*
BSIZE	887	10.37	4.06	1	24
GEN	893	0.13	0.15	0.00	0.50
OUT1	887	0.80	0.16	0.00	1.01
OUT2	887	0.35	0.21	0.00	1.00

Table 1 indicates that the average values of the board's characteristics show that the boards of directors of Spanish companies in the innovative sectors have around 10 members. Gender diversity is low, as confirmed by the low level of the Blau index (0.13), which is related to the preponderance of the male gender over the female in the board. Regarding the type of directors, if we consider the total number of affiliated, independent and external directors (OUT1), they represent on average about 80% of the total of the board. If we only consider the total number of independent and external directors (OUT2), they represent 35% of the total on average. With regard to family property, this represents 41.98% of the companies in the sample, compared to 58.02% of the non-family business.

It has also been explored, as the main goal of this study, whether there are significant differences between the mean values of the study variables when considering family and non-family firms, as well as over time. The findings are shown in the next figures and tables.

Figure 1. Evolution of board size

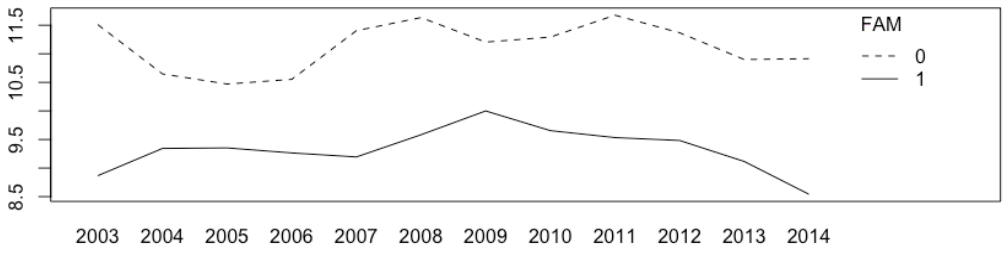

Table 2. Evolution of board size

BSize	*Mean*												*ANOVA F test*
	2003	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	
Non- Fam	11.51	10.64	10.47	10.55	11.40	11.63	11.20	11.29	11.67	11.36	10.90	10.91	41.93***
Fam	8.86	9.34	9.35	9.26	9.19	9.58	10.00	9.65	9.53	9.48	9.11	8.54	
ANOVA F test	0.476												

Figure 1 and Table 2 show that board size of the family business was lower than board size of non-family business, which shows a significant difference between them. The evolution over time was quite similar in both types of firms and non-significant in both cases.

Figure 2. Evolution of OUT1

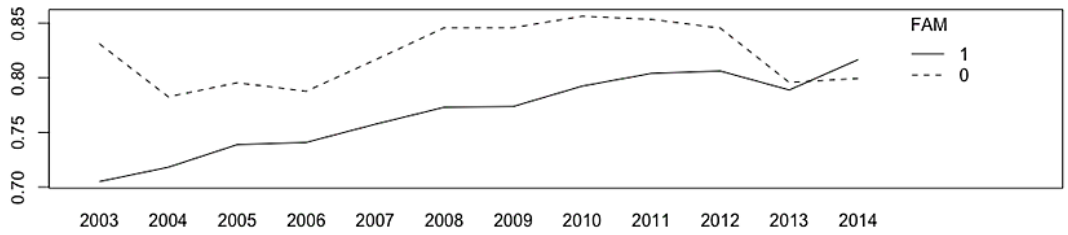

Table 3. Evolution of OUT1

OUT1	*Mean*												*ANOVA F test*
	2003	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	
Non-Fam	0.83	0.78	0.79	0.78	0.81	0.84	0.84	0.85	0.85	0.84	0.79	0.79	24.50***
Fam	0.70	0.71	0.73	0.74	0.75	0.77	0.77	0.79	0.80	0.80	0.78	0.81	
ANOVA F test	2.058												

Figure 2 and Table 3 exhibit that the proportion of independent and external directors in the family business was lower than non-family business, with the detection of a significant difference between them. Although at the end of the period, this proportion was similar in both kind of companies, and it is even bigger for family companies

Figure 3. Evolution of OUT2

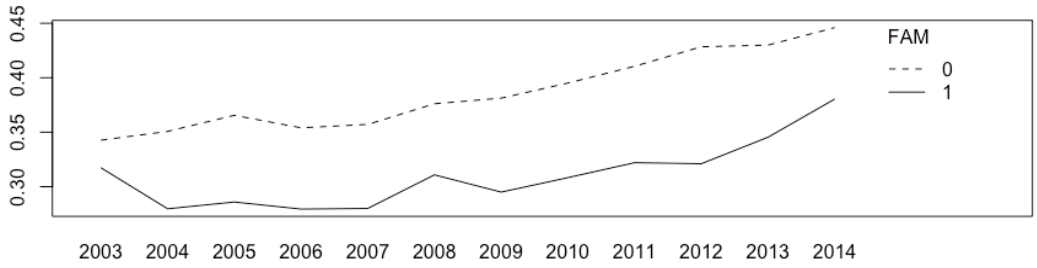

Table 4. Evolution of OUT2

OUT2	*Mean*												*ANOVA F test*
	2003	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	
Non- Fam	0.34	0.35	0.36	0.35	0.35	0.37	0.38	0.39	0.41	0.42	0.43	0.44	28.27***
Fam	0.31	0.27	0.28	0.27	0.28	0.31	0.29	0.30	0.32	0.32	0.34	0.38	
ANOVA F test	1.607												

When only independent directors were considered (excluding the affiliated ones), as Figure 3 and Table 4 show, their proportion on boards was higher for non-family firms. The evolution over time was quite similar in both types of firms and again, non-significant.

Figure 4. Evolution of gender diversity

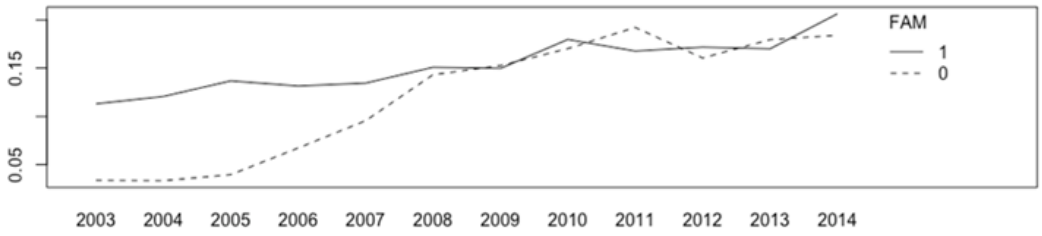

Table 5. Evolution of gender diversity

GEN	*Mean*												*ANOVA F test*
	2003	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	
Non-Fam	0.03	0.03	0.03	0.06	0.09	0.14	0.15	0.17	0.19	0.16	0.17	0.18	15.552***
Fam	0.11	0.12	0.13	0.13	0.13	0.15	0.14	0.17	0.16	0.17	0.17	0.20	
ANOVA F test	8.656***												

In terms of gender diversity, Figure 4 and Table 5 show that at the beginning family business had more women on board, but this situation changes over time, which the growth of women on boards of non-family business is detected to be very significant, and almost equal to the gender diversity of family business.

The results show that there are significant differences for all variables of the study when comparing between family and non-family business; however, these differences are not statistically significant when analysing their evolution during the study period. The only variable in the study whose growth over time has been significant was gender diversity, indicating that the presence of women of boards is more evident, in both types of companies.

5. DISCUSSION

The main findings of this research show that the boards of Spanish innovative listed companies were about 10 members, with a majority of affiliated directors and mostly men.

Regarding board size, previous research mostly echoed with similar results. For example, previous studies on the United Kingdom established boards size between 3 and 24 members (Peasnell *et al.,* 2005), with an average of 8 (Osma, 2008; Peasnell *et al.,* 2005); in the United States, the board size was proved between 4 and 26 (Cheng, 2008), with an average of 7 (Linck *et al.,* 2008). In Australian and Norwegian companies, medium boards have between 7 and 8 members (Kang *et al.,* 2007, Torchia *et al.,* 2011), while in France, the medium number of directors goes between 11 and 15 (Galia and Zenou, 2012; Godard and Schatt, 2005). The results of this study indicate an average number of 10, which establishes no difference between innovative companies and other kind of firms. The evolution over time does not reflect significant changes. However, the results also detect some significant differences between the board size of family and non-family business, indicating bigger boards in the case of non-family ones.

Regarding the directors' typology, considering all external directors (affiliated, independent and other external directors), they represent almost 80% of boards in innovative companies in Spain, and this percentage is growing over time. Considering only the independent and external directors, their percentage was about 35%, which is again, growing over time. In both cases, the percentage was bigger for non-family companies, although the similarity was higher when comparing family and non-family businesses for the percentage of all external directors. Other studies show similar figures, for example, Peasnell et al. (2005) found a percentage of 43% of external directors in companies of United Kingdom; Aguilera (2005) made a comparative analysis and found that the proportion of external directors was higher to 50% in all the countries of the study (Canada, USA, Italy, the Netherlands and United Kingdom). Only in Spain and South Africa, this proportion was below 50%, although considering only independents directors and not all the external directors. There are also studies confirming that it is about 80% the proportion of external directors in the main companies of the USA (Coles *et al.,* 2008). The findings in this study reveal that the proportion of external directors is frequently higher in non-family business. This is clearly the case when only independent directors are considered. On the contrary, when all the external directors are taken into account, it can be observed that in the last years, their proportion is increasing in family companies, reaching and overcoming the levels of non-family ones in innovative sectors.

With regard to gender diversity, Spanish boards, also in innovative companies, are mostly composed of men (Giovinco, 2014). It is a quite frequent characteristic around the world. For example, Carter et al. (2010) found a proportion of 1% of women on boards of the main companies in the USA. This percentage arrives at 6% in French companies (Galia and Zenou, 2012), 7% in Norwegian firms (Torchia *et al.,* 2011), and 10% in Australian companies (Kang *et al.,* 2007). The findings of this study point out a gender diversity of 0.13, which is a quite low index although it is significantly growing over time. This growth has been more pronounced in the family business, which in the last years have almost shown the same or even above the levels of gender diversity in non-family business, which traditionally have had more women on their boards.

6. CONCLUSIONS

This descriptive study contributes to the inconclusive research on how is the board in innovative companies, and has also underlined the differences between family and non-family companies in terms of size, directors' typology and gender diversity, although in general, the main features of boards are quite similar between innovative and non-innovative companies.

The nature of this research is only descriptive, which represents a relevant limitation as far as no relationship could be inferred between board composition and innovation indicators. It is also referred to a particular country, Spain, and has only considered innovative companies. However, it is a relevant step for contributing on how is the board in this type of companies; and even more, in terms of ownership structure, comparing family and non-family businesses.

In the future, it would be interesting to expand the focus and search for cause-effect relationships between board composition, structure, and innovation indicators, widening the sample of companies for including several countries, so as to improve the generalization of results for cross-national studies. This approach may explore more in-depth the influences of boards of directors on organizational strategies, as the case of innovation.

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