Empirical research on Innovation in Family Business: literature review and proposal of an integrative framework

Antonio Padilla-Meléndez
Associate Business Administration Professor. Universidad de Málaga (Spain).

Julio Dieguez-Soto
Associate Finance and Accounting Professor. Universidad de Málaga (Spain)

Aurora Garrido-Moreno
Associate Business Administration Professor. Universidad de Málaga (Spain)

ABSTRACT
Objective – The objective of this paper is to present the results of a systematic literature review concerning empirical research about innovation in the Family Business (FB).

Design/methodology/approach – A comprehensive literature review based on an in-depth analysis of 59 empirical studies was carried out.

Findings – The revision presents an integrative framework, identifying main determinants and dimensions of innovation; and summarizes main research avenues and existing gaps, in order to guide future research.

Practical implications – The paper summarizes main research progress concerning innovation in the Family Business worldwide. Consequently, it allows for better decisions by the managers of these firms.

Originality/value – The study of innovation in the Family Business has emerged as a prolific research field over recent years, but current knowledge of how these firms innovate is as yet fragmented and incomplete. Consequently, there has been demand for further research concerning this field.

Keywords – Family business; innovation; ownership structure; family involvement.
1 INTRODUCTION

Family Business or Family Firm (FB) is an important business form in all countries (Chang, Wu, & Wong, 2010), representing the predominant form of business organization around the world (Sharma, Chrisman, & Gersick, 2012). The study of FB has been considered a differentiated field within management (González-Ferrero, Guzmán-Vásquez, Pombo-Vejarano, & Trujillo-Dávila, 2011). Consequently, FB research has been growing over the last decade, according to several recent studies (e.g. Benavides-Velasco, Quintana-García, & Guzmán-Parra, 2013; Kraus, Harms, & Fink, 2011; Litz, Pearson, & Litchfield, 2012; Siebels & Zu Knyphausen-Aufseß, 2012). Likewise, over the last few years, practitioners and researchers have realized the importance of innovation, as an essential source of competitive advantage (Dess & Picken, 2000). Based on Crossan and Apaydin (2010), we consider innovation as including both technological and non-technological (commercial, administrative…) innovation, allowing us to follow a comprehensive focus when conducting our research.

There is enough theoretical evidence to state that innovation could be different in FBs and non FBs, such as, for example, the FBs’ unique and distinctive behavior, the exceptional bundle of resources and capabilities that FBs hold or the very involvement of the family.

Firstly, FBs have a unique and distinctive behavior, which the scientific community usually attributes to its essence, a vision developed by a dominant controlled coalition that is sustainable across generations (Chua, Chrisman, & Sharma, 1999).

Secondly, family-influenced firms are different because they own a unique bundle of resources and capabilities resulting from interactions between the family unit, the business entity, and the individual family members, and they are also particularly distinct because they share socio-emotional wealth (Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson, & Moyano-Fuentes, 2007). For instance, FBs are usually long-term oriented (Muñoz-Bullón & Sánchez-Bueno, 2012), which encourages them to engage in innovative investments and promotes willingness to take risks (Chen & Hsu, 2009). However, protecting family welfare, ensuring firm longevity or maintaining control (Chen & Hsu, 2009) may also provoke a risk of adverse behavior among FBs (Martí, Menéndez-Requejo, & Rottke, 2013).

Thirdly, family involvement is very likely to affect innovation, highlighting the relevance of investigating innovation among FBs. For example, when family members are heavily involved, non-family qualified employees may be put aside in key decisions or simply won’t be hired, depriving the business of rich sources of ideas for innovation (Zahra, 2005).

The main research question in our paper refers to a fact: it is widely known that innovation is a crucial element in every company – but is innovation different for FBs and non-family businesses (NFBs)? According to literature, we would answer “yes, they are distinct.” However, and surprisingly, there is no comprehensive research of the determinants, dimensions, processes, and types of innovation, in sum, covering the whole spectrum of innovation in a FB context. Most of the papers have focused exclusively on specific facets or determinants of innovation, but academic research on the topic remains disconnected. This fragmentation prevents us from seeing the whole picture of the phenomenon and impedes consolidation of the field.

Besides, the published literature reviews on this topic are scarce. Recently, De Massis, Frattini, and Lichtenthaler (2013) reviewed and systematized the extant literature, but focusing exclusively on the analysis of technological innovation in FBs, without considering other types of innovation. In addition, they developed a framework for organizing existing research on the topic, including three major steps in the innovation process (inputs-activities-outputs), but they did not go deeper as to the different nature of the inputs and activities involved in this process.
Consequently, little is known about the consequences of family involvement in the determinants and dimensions of innovation and their relations. Despite the great relevance of the topic, the practice of innovating in a FB context remains as yet largely unknown to practitioners and scholars. This research gap has been recognized by previous studies (i.e., Casillas & Acedo, 2007; Wright & Kellermanns, 2011) and, therefore, more research in the field has been mentioned as necessary.

The specific goal of this study, referring to the mentioned research question, is to analyze in depth, and from a general and broad perspective, the state of the art of empirical research about innovation in FBs, following a comprehensive focus. In our opinion, if FB researchers want to have a general picture of what we already know and what is missing in our understanding of innovation in FBs, they need an integrative multidimensional framework capable of capturing each aspect of innovation in FBs, in a broader and more exhaustive way. This study offers two relevant contributions. First, it provides an integrative vision of the state of the research of innovation in a FB context. To organize the existing literature, we develop an integrative conceptual framework including both determinants and dimensions of innovation, based on a highly cited work in the field (Crossan & Apaydin, 2010). Second, by summarizing existing research, we identify and describe the main research avenues in the field, highlighting the most addressed topics in previous studies and the emergent research lines, and proposing research gaps based on them. This is particularly useful to guide future studies on the topic, which may contribute substantially to the development of the field, especially in geographical areas such as Latin America, where there is a lack of studies on innovation in FBs. The structure of the paper is as follows. We begin by summarizing the main theoretical foundation of the research (concepts of innovation and FBS, the most recent research of innovation on FBs and the Brazilian literature on this topic). Next, we describe the method and main results (analyzing determinants and dimensions of innovations). We then detail the observed and proposed research lines, along with detected research gaps for every research line. Finally, we close the paper with conclusions and limitations.

2 THEORETICAL FOUNDATIONS

2.1 Innovation

Over the last few years, practitioners and researchers have realized the importance of innovation, as an essential source of competitive advantage (Dess & Picken, 2000); this has been revealed by business practices and several academic papers (for a review, see Crossan & Apaydin, 2010). Innovation is an idea, a practice or an object that is perceived as new by an individual or unit of adoption (Rogers 1983), developed as a way of responding to a change in the environment or a way of influencing it (Nohria & Gulati 1996). It constitutes a way to change the organization (Damanpour, 1991), it can have as output either new ways of doing things or new products, services, or techniques (Porter, 1990) and it has been considered an important factor for entrepreneurship (Schumpeter, 1934). In literature, a number of dimensions for analyzing innovation have emerged, such as the types of innovation, the stages that organizations follow to adopt innovations, and the factors that affect or may affect innovation in a specific organization (Rogers, 1983). According to Crossan and Apaydin (2010), innovation can be defined as production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome (p. 1155).
2.2 Family business definition

Previous literature has attempted to identify the intrinsic qualities and fundamental nature of FBs and capture them through theoretical definitions. Thus, the essence of a FB is a vision developed by a dominant coalition controlled by members of the same family or a small number of families, and that sustainable across generations of the family or families (Chua et al., 1999). Family-influenced firms differ from other firms in that they own a unique bundle of resources and capabilities resulting from interactions between the family unit, the business entity and the individual family members, which is known as “familiness” (Habbershon & Williams, 1999; Habbershon, Williams, & Macmillan, 2003). Furthermore, FBs are also distinct because they share socio-emotional wealth (Gomez-Mejia et al., 2007).

Prior research has also transformed these theoretical definitions into operational definitions to conduct empirical studies. Some authors have based their definitions on objective criteria, such as the percentage of family ownership or the number of family members occupying management or board positions (Dyer, 2006), while others have defined a firm as an FB based on subjective aspects, such as whether a respondent believes the firm is an FB (Smith, 2007). Moreover, some scholars believe that an FB is defined by its inter-generational ownership dispersion (Kellermanns, Eddleston, Sarathy, & Murphy, 2012), while others have used intention to transfer ownership to the next generation as a definition criterion (Litz, 1995). Finally, authors have also employed family involvement to define FB, a broad term that includes family ownership, management, governance and trans-generational continuity of succession (Handler, 1989), since the existence of components makes the essence possible (Chua et al., 1999).

2.3 Innovation and FB

The concept of FB innovation has been defined as the intentional generation or introduction of novel processes, and/or products resulting from the autonomous and interactive efforts of members of an FB. However, the reunion of FB and innovation has not been such a well-researched topic, since each one individually and a comprehensive outlook for the repercussion of family influence on dimensions and determinants of innovation and their connections are lacking.

Nevertheless, and before starting to describe the method carried out to attain in-depth knowledge of the state of the research on innovation in a FB context by 2012, we will review the most significant articles on this topic, published more recently in international references sources, and will also examine Brazilian literature on the topic.

2.3.1 Latest literature on innovation in FB

As mentioned, our revision analyzes in detail articles published by December 2012; in this section, we study the evolution of research in this specific topic, from this first date to the present, in order to capture the latest trend. Although we will follow an extensive multidimensional framework to classify and synthesize the main research lines in the subject (Crossan & Apaydin, 2010), in order to be concise, in this epigraph we propose a more general framework to identify two major currents within innovation research, distinguishing innovation inputs and innovation outputs and research innovations in family and non-family versus innovations among family firms.

A first recurrent topic in literature on innovation in family firms is the influence of family involvement in R&D investments. Although studies are largely consistent pointing out a negative relationship between family involvement and expenses in R&D, literature has continued to add further theoretical and empirical evidence. For instance, Schmid, Achleitner, Ampenberger, and Kaserer (2014) found that R&D intensity is higher in firms that are actively managed by the family, while the impact of family control (via voting rights) is negative, but mostly not significant. A novel contribution to this
debate is offered by Kotlar, Fang, De Massis, and Frattini (2014), who showed that the importance of profitability and control goals follows a sequential logic in family firms, so much so that family firms react more strongly to increasing supplier bargaining power when their profitability reference marks have been reached.

A second recurrent topic is whether family involvement has an impact on innovation outputs. Previous studies continue finding mixed empirical evidence regarding the effect of family influence on innovation output (Classen, Carree, Gils, Peters, 2014; De Massis, Frattini, Pizzurno, & Cassia, 2015; Matzler, Veider, Hautz, & Stadler, 2015) and different related aspects are under study. For example, Block, Miller, Jaskiewicz, and Spiegel (2013) analyzed the effect of family firm density on regional innovation output. Meanwhile, Kraiczy, Hack, and Kellermanns (2014) explored how the organizational context (i.e., ownership by top management team [TMT] family members and generation in charge of the family firm) of family firms interacts with CEO risk-taking propensity in affecting new product portfolio innovativeness, showing that CEO risk-taking propensity has a positive effect on new product portfolio innovativeness. Likewise, Clausen and Pohjola (2013) have examined whether and to what extent breakthrough and incremental product innovation is persistent at the firm level, and Shan and Jolly (2013) showed that different technological innovation capabilities have a positive impact on product innovation, beginning with the linkage capability, moving to the production capability, and ending with the investment capability.

Lastly, other authors found that family participation in management and governance has a negative impact on innovation input and a positive influence on innovation output, suggesting that family members are risk averse and reluctant to invest in innovation, but at the same time do so more effectively (Matzler et al., 2015).

Besides the former recurrent research stream, there is another one distinguishing innovations in family and non-family versus innovations among family firms. In this regard, Classen et al. (2014) provided an exploratory analysis of differences between family and non-family firms in innovation investment, product and process innovation outcomes, and labor productivity. Price, Stoica, and Boncella (2013) examined the relationship between innovation and knowledge in family versus non-family businesses with regard to performance. Furthermore, Chrisman, Chua, De Massis, Frattini, and Wright (2014a) presented a framework of how family involvement influences innovation management based on ability (discretion to act) and willingness (disposition to act), two drivers that distinguish family firms from non-family firms and lead to heterogeneity among family firms. Finally, Chrisman, Fang, Kotlar, and De Massis (2014b) explained how heterogeneity in the family referring to emphasis on command, continuity, community, and connections requires that the multifaceted and potentially nonlinear nature of family influence be considered when analyzing strategic decisions concerning family firm innovation.

### 2.3.2 Brazilian literature on innovation and FB

FBs are an important source of economic development and growth in Brazil. Some authors highlight how approximately 75% of companies are managed by families in this country (Lara de Oliveira, Albuquerque, & Pereira, 2012). Therefore, they are recognized as relevant economic agents, since FB, in Brazil, are responsible for almost 50% of gross domestic product and 60% of jobs (Nóbrega & Hoffmann, 2014).

Going deeper into the current situation of Brazilian FB, they have to face certain challenges, nowadays, that result from globalization. Given the extremely competitive environment they are facing, innovation emerges as a basic condition for long term success, and the development of new products and services for the market becomes an strategic imperative (Gonçalves, 2000). In order to survive in the current competitive
environment, FBs need to be more flexible and adaptable to environmental demands, as well as to develop entrepreneurial characteristics (Nóbrega & Hoffmann, 2014). However, despite the strategic relevance of innovation activities in FB in Brazil, research on the topic remains scarce. We have identified recent studies that analyze the phenomenon of innovation in Brazilian companies, focusing on aspects such as innovation management, innovative practices or innovation in services (Biancolino, Maccari, & Pereira, 2013; Nagano, Stefanovitz, & Vick, 2014; Resende & Guimarães, 2012). Nevertheless, none of them examined those concepts specifically in a FB context.

In order to identify the level of progress of research on FB in Brazil, we have analyzed several literature reviews published on the subject. Moraes, Barone, and Pinto (2011) carried out analysis of scientific production on the subject, covering all articles published in journals between 1961 and 2009. They conclude that it is a young field of research (most of the articles were published from 2008 on), with great potential for development. However, regarding the topics most discussed in literature, innovation is not even mentioned in this review. Likewise, Borges, Lescura, and Oliveira (2012) analyzed Brazilian scientific production on FB, assessing articles published between 1997 and 2009, in order to examine the current status of the field. Results indicate that FB is an emerging field in the Brazilian academic scenario, progressing over recent years, particularly in terms of an increase in published papers. In this literature review, Borges et al. (2012) highlighted the analysis of innovation and entrepreneurship in a FB context as a relevant research topic that needs to be addressed in the near future, in a Brazilian context.

Consequently, we can state that research on innovation in FB is still beginning in Brazil (Nóbrega & Hoffmann, 2014). In fact, we identified one single recently published article (Borges et al., 2014) that empirically analyzes the phenomenon. The purpose of this paper is to understand how innovative practices are established within family businesses, and they carried out a case study in a family firm from the cachaça industry in the Brazilian state of Minas Gerais. Results demonstrated how the company developed innovative practices, maintaining a balance between disruptive innovations, such as the creation of new products, new productive methods, exploration of new business opportunities, and incremental innovations in existing firm activities. They conclude that innovation, as an entrepreneurial action, allows innovative family businesses to be established, which is a potential theoretical category to be explored in the field of FB research (Borges, Lima, & Andrade, 2014). Therefore, research on innovation in the context of FB is appearing as an emerging line of research which should be developed in the future, given the strategic importance of the sector in Brazil.

3 METHODS

In order to produce a reliable knowledge inventory (Tranfield, Denyer, & Smart, 2003), we followed a systematic review approach. We divided the review process into three parts (Crossan & Apaydin, 2010; Keupp, Palmié, & Gassmann, 2012): data collection, data analysis and synthesis.

Regarding data collection, we collected the information using the following databases: ISI Web of Knowledge, Emerald, Ebsco, Proquest (ABI), Science Direct, Scopus and Wiley. We ran several searches in the abstracts and citations of the papers, looking for refereed papers published by December 2012. We limited the search to peer-reviewed journal articles, omitting books, book chapters and other non-refereed publications, because articles in academic journals can be regarded as validated knowledge and likely to have a major impact on the field (Ordanini, Rubera, & Defilippi, 2008). We used as search terms several items referring to FB (i.e., ownership structure, family firm, family business) and firm innovation (i.e., innovation, innovativeness).
Next, we looked for different combinations of both types of items in the entire content of the papers. Subsequently, to avoid leaving important papers out of the analysis and to minimize bias against relevant articles published recently, and although they should have already been included, we browsed the tables of contents of the most relevant journals referring to research in FB (thirteen journals, from a bibliographic list from a recent comprehensive literature review on FB research carried out by Benavides-Velasco et al. (2013). In addition, in order to be more rigorous in the searches, we also browsed the contents of some relevant FBs specialized refereed journals, which had already been included in previous searches: *Family Business Review, Journal of Family Business Strategy* and *Journal of Family Business Management*. An initial sample of 335 papers was identified. Firstly, based on the abstracts and keyword analysis, we performed an initial filter. We observed that 215 papers did not really address the topic of innovation in FB, since they did not include the already mentioned terms, neither in the title nor in the abstract. Subsequently, we analyzed a refined sample of 120 papers that was also depurated following an additional filter. In this filtering phase, we eliminated several papers because they were non-empirical (i.e. Carney & Gedajlovic, 2003) or because their central topic or focus was not the analysis of the phenomena of innovation in a family business context. We analyzed in-depth the final selected papers and agreed (after a war room exercise, including full cross-reading of the papers and agreement by at least two of the three authors), that only 58 of them specifically dealt with innovation in FB. Additionally, a forthcoming paper available online (De Massis, Frattini, Pizzurno, & Cassia, 2015) was also included because of its relevance to research. Finally, we also checked that all studies analyzed in a recent literature review about technological innovation (De Massis et al., 2013) were included in our work. Accordingly, 59 papers made up the final sample used for the study.

*Data analysis*: This depurated sample included 59 empirical studies analyzing the topic of innovation in FB. Similar to Bird, Welsch, Astrachan, and Pistrui (2002), we read all the papers in order to determine the main topics, research questions, methods used, sample, used variables and key results. As a result, Table 1 was built.
TABLE 1 – Method used, industry studied and country of origin in analyzed papers

<table>
<thead>
<tr>
<th>Method</th>
<th>Type</th>
<th>Number</th>
<th>Papers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative</td>
<td>Primary Data</td>
<td>31</td>
<td>52.54%</td>
</tr>
<tr>
<td></td>
<td>Secondary Data</td>
<td>15</td>
<td>25.42%</td>
</tr>
<tr>
<td>Qualitative</td>
<td></td>
<td>13</td>
<td>22.03%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>59</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number</th>
<th>Papers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-industry</td>
<td>32</td>
<td>54.24%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>11</td>
<td>18.64%</td>
</tr>
<tr>
<td>High-tech industries</td>
<td>5</td>
<td>8.47%</td>
</tr>
<tr>
<td>Food and/or beverage</td>
<td>3</td>
<td>5.08%</td>
</tr>
<tr>
<td>Electronic</td>
<td>2</td>
<td>3.39%</td>
</tr>
<tr>
<td>Not available</td>
<td>6</td>
<td>10.17%</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Countries</th>
<th>Number</th>
<th>Papers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>14</td>
<td>17.72%</td>
</tr>
<tr>
<td>Spain</td>
<td>9</td>
<td>11.39%</td>
</tr>
<tr>
<td>Italy</td>
<td>8</td>
<td>10.13%</td>
</tr>
<tr>
<td>Germany</td>
<td>7</td>
<td>8.86%</td>
</tr>
<tr>
<td>Taiwan</td>
<td>5</td>
<td>6.33%</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>5</td>
<td>6.33%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>5</td>
<td>6.33%</td>
</tr>
<tr>
<td>Belgium</td>
<td>4</td>
<td>5.06%</td>
</tr>
<tr>
<td>Sweden</td>
<td>3</td>
<td>3.80%</td>
</tr>
<tr>
<td>France</td>
<td>3</td>
<td>3.80%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>3</td>
<td>3.80%</td>
</tr>
<tr>
<td>Australia</td>
<td>2</td>
<td>2.50%</td>
</tr>
<tr>
<td>Austria</td>
<td>2</td>
<td>2.53%</td>
</tr>
<tr>
<td>Denmark</td>
<td>2</td>
<td>2.53%</td>
</tr>
<tr>
<td>Finland</td>
<td>2</td>
<td>2.53%</td>
</tr>
<tr>
<td>Korea</td>
<td>2</td>
<td>2.53%</td>
</tr>
<tr>
<td>Canada</td>
<td>1</td>
<td>1.27%</td>
</tr>
<tr>
<td>Greece</td>
<td>1</td>
<td>1.27%</td>
</tr>
<tr>
<td>Norway</td>
<td>1</td>
<td>1.27%</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>100.00%</td>
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</tbody>
</table>

(Eight papers included a multi-country sample).

Data synthesis: This part of the analysis is the primary value-added product of a review, since it produces new knowledge based on thorough data collection and careful analysis. As mentioned, in order to classify and synthesize the main research lines in the subject, we followed the multidimensional framework of innovation proposed by Crossan and Apaydin (2010). Similar to Stewart (2008) and Benavides-Velasco et al. (2013), we followed a variant of co-word analysis, as qualitative method. Using content analysis, three researchers read each of the 59 papers and identified the main research lines.
papers, and independently classified them in the main categories of determinants and dimensions of innovation. We built a spreadsheet with all the codes. Next, the individual assessments were compared and synthesized, and in case of disagreement, the issue was discussed and resolved with the agreement of at least two of the three researchers. As a result, all 59 papers were sorted depending on what particular determinants and/or dimensions addressed.

4 RESULTS: ANALYSIS OF DETERMINANTS AND DIMENSIONS OF INNOVATION

Most of the papers used quantitative methodologies, more than half of the papers included a multi-industry sample, manufacturing was the most studied industry, and their geographical focus was mainly the US, followed by Spain and Italy. Concerning the journals where the papers were published (see Table 2), the analyzed papers were published in 34 different journals. There has been a growing interest in the topic, with an increasing number of papers since 2009, possibly comparing it with the (high) growth of FB articles in general (Benavides-Velasco et al., 2013). We observed that relatively little attention has been devoted to industries considered individually, except manufacturing or high-technology industries, where technological innovation studies predominate (De Massis et al., 2013). Moreover, a relative lack of qualitative studies on innovation in FBs is revealed, and analysis of this topic has not been addressed in regions such as Africa, America – except the US and Canada –, Eastern Europe and Asia – except Taiwan and Korea.

<table>
<thead>
<tr>
<th>Journal name</th>
<th>Number of papers</th>
<th>%</th>
<th>% Accumulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Business Review</td>
<td>10</td>
<td>16.95%</td>
<td>16.95%</td>
</tr>
<tr>
<td>Journal of Family Business Strategy</td>
<td>4</td>
<td>6.78%</td>
<td>23.73%</td>
</tr>
<tr>
<td>Small Business Economics</td>
<td>4</td>
<td>6.78%</td>
<td>30.51%</td>
</tr>
<tr>
<td>Journal of Small Business Management</td>
<td>3</td>
<td>5.08%</td>
<td>35.59%</td>
</tr>
<tr>
<td>Academy of Management Journal</td>
<td>2</td>
<td>3.39%</td>
<td>38.98%</td>
</tr>
<tr>
<td>Corporate Governance: An International Review</td>
<td>2</td>
<td>3.39%</td>
<td>42.37%</td>
</tr>
<tr>
<td>Entrepreneurship &amp; Regional Development</td>
<td>2</td>
<td>3.39%</td>
<td>45.76%</td>
</tr>
<tr>
<td>Entrepreneurship Theory and Practice</td>
<td>2</td>
<td>3.39%</td>
<td>49.15%</td>
</tr>
<tr>
<td>International Journal of Entrepreneurial Behaviour &amp; Research</td>
<td>2</td>
<td>3.39%</td>
<td>52.54%</td>
</tr>
<tr>
<td>International Journal of Entrepreneurship and Innovation Management</td>
<td>2</td>
<td>3.39%</td>
<td>55.93%</td>
</tr>
<tr>
<td>Journal of Business Ethics</td>
<td>2</td>
<td>3.39%</td>
<td>59.32%</td>
</tr>
<tr>
<td>Research Policy</td>
<td>2</td>
<td>3.39%</td>
<td>62.71%</td>
</tr>
<tr>
<td>22 Journals with one 1 paper (*)</td>
<td>22</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

Note: (*) See the References section, where the analyzed papers are marked with an asterisk (*).

In order to organize existing research on the topic, we developed a conceptual framework based on Crossan and Apaydin (2010), and initially considered the following as main determinants of innovation: leadership, managerial levers, and business processes. Then, we added additional variables in order to adapt this framework to a FBs context, including environment as determinant (Keupp et al., 2012), ownership (Anderson, Duru, & Reeb, 2012), and generation (Kellermanns
Empirical research on Innovation in Family Business: literature review and proposal of an integrative framework

et al., 2012) as leadership subcategories. As dimensions, we considered innovation as a process and innovation as an outcome. We used this framework for carrying out the co-word analysis (See Figure 1 and Table 3).

![Figure 1 - Framework used for studying innovation research in FB](image)

*New categories added by the authors

Source: Adapted from Crossan and Apaydin (2010).

Most of the papers included aspects referring to leadership and managerial levers, while environment and specially business processes have been hardly studied (see Table 3). Regarding the dimensions, most of the papers considered innovation as an outcome, being the sub dimensions more considered the following ones: form (product), type (technical) and referent (firm) (see Figure 2). Innovation as a process appears as a less addressed topic. Only 16.6% of the analyzed papers followed a process perspective; direction, source, and driver were the least studied subdimensions. Therefore, we can state that this field has not been well addressed in FB literature. This is coherent with the findings of Keupp et al. (2012) that found, after a systematic review, that performance implications of innovations, not the process itself, have received most of the research attention. Similarly, it has coincidences with De Massis et al. (2013) in that, in their recent literature review on technological innovation in FB, they observed that studies specifically addressing innovation processes were scarce.
**TABLE 3 – Multi-dimensional framework of analyzed papers (co-word analysis)**

<table>
<thead>
<tr>
<th>Determinants</th>
<th>Determinants</th>
<th>Percentage</th>
<th>Percentage</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td><strong>Leadership</strong></td>
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<tr>
<td>CEO</td>
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</tr>
<tr>
<td>TMT</td>
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<tr>
<td>Board</td>
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<tr>
<td>Ownership</td>
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</tr>
<tr>
<td>Generation</td>
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<td>103</td>
<td>190</td>
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<tr>
<td><strong>Managerial levers</strong></td>
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<tr>
<td>Mission, goals and strategy</td>
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<td>Resource allocation</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Structure and Systems</td>
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</tr>
<tr>
<td>Organizational learning and Knowledge Management</td>
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<td><strong>Business processes</strong></td>
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<td>Initiation and decision making</td>
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</tr>
<tr>
<td>Development and implementation</td>
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</tr>
<tr>
<td>Individual</td>
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<td></td>
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</tr>
<tr>
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<tr>
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<tr>
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<td>Invention</td>
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<tr>
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<tr>
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<td>301</td>
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<tr>
<td><strong>Dimensions</strong></td>
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<tr>
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<td>Industry</td>
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<td>Tacit</td>
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<tr>
<td>Explicit</td>
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<td>251</td>
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<td>83.39%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>491</td>
<td>491</td>
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</tbody>
</table>

*Note: The total in this table reflects the number of times that the dimensions and categories were studied by the whole sample of papers.*
Determinants of innovation: main categories

**Figure 2** – Classification of papers by category

Following Figure 2, we will explain in this section how different determinants and dimensions have been studied in literature, offering a summary of the main factors considered in these categories that can be useful to researchers in the topic. Firstly, the influence of family involvement on leadership, and, as a result, on innovation has been identified as a significant research avenue. In Figure 3, we offer a comprehensive summary of the main factors addressed in previous studies, organized in the four former components. Secondly, regarding managerial levers, they include organizational and contextual factors, connecting leadership intentions and organizational results, are vital to enable innovation, since the organization’s propensity to innovate is a sort of dynamic capability that resides in managerial levers. In this line of research, the following different categories were found (see Figure 4 and 5): mission, goals and strategy, resource allocation, structure and systems, organizational learning and knowledge management tools, and culture. Thirdly, business processes refer broadly to how organizations turn inputs into outputs (Crossan & Apaydin, 2010). According to our analysis, this meta-construct is arguably the least addressed in innovation research in FB. Only two studies (Grundström, Öberg, & Rönnbäck, 2012; Pittino & Visintin 2009) were identified focusing partially on these categories.

Fourth, FB scholars have analyzed how firm innovation is affected by the features of the sector/industry (environment) in which the firm is located, such as tangibility of the sector, industry concentration or industry growth (see Figure 6).

Fifth, regarding dimensions of innovation, as was previously mentioned, studies addressing innovation as a process were scarce; its outcome dimension is the most studied field. Papers considering innovation as a process answer the question “how” innovation is deployed or implemented (for instance, Dibrell & Moeller, 2011). By contrast, papers regarding innovation as an outcome answer the question “what” and “what kind of outputs” do innovation generate (for instance, Beck, Janssens, Debruyne, & Lommelen, 2011). It includes different subcategories; level and locus are the most studied by literature (see Table 3). Based on the described existing evidence, we will explain below the main research lines on the topic that has been identified and proposed.
Figure 3 – Leadership

Management Level (CEO)
- Age and gender (Cruz & Nordquist, 2010)
- Chairperson (Block, 2012)
- Descendant (Anderson et al., 2012)
- Education/Experience (Classen, Van Gils, Bammens, & Carree, 2012; Hausman, 2005)
- Family member (Cassia, 2011; Cassia, De Massis, & Pizzurno, 2011; Cassia, De Massis, & Pizzurno, 2012; Cassillas, 2010; Cassillas, Moreno, & Barbero, 2011; Chen & Hsu, 2009; Chen, Chen, Kleiman, & Lee, 2009; Chrisman & Patel, 2012; Classen et al., 2012; Gurrieri, 2008; Kellermanns et al., 2012; Lichtenthaler & Muethel, 2012; Short et al., 2009; Uhlman et al., 2012)
- Foreign CEO (Battisti & Iona, 2009)
- Innovation attitude (Donckels & Fröhlich, 1991)
- Demographic characteristics (Yildirim & Saygin, 2011)
- Age and gender (Cruz & Nordquist, 2010)
- Spousal CEO (Niehm, Tyner, Fitzgerald, & Shelley, 2010)
- Tenure (Block, 2012; Zahra, 2005)

Management Level (TMT)
- Education/Experience (Classen et al., 2012; Hausman, 2005)
- Family member (Casillas & Moreno, 2010; Cassia et al., 2012; Chrisman & Patel, 2012; Classen et al., 2012; De Massis et al., 2015; Gurrieri, 2008; Huang, Ding, & Kao, 2009; Kellermanns et al., 2012; Lichtenthaler & Muethel, 2012; Short et al., 2009; Uhlman et al., 2012)
- Foreign managers (Battisti & Iona, 2009)
- Innovation attitude (Donckels & Fröhlich, 1991)
- Manage Conflict (Hausman, 2005)
- Non-family member (Casillas et al., 2011)
- Share Control (Hausman, 2005)
- Specialization (Pittino & Visintin, 2009)
- Spousal manager (Niehm et al., 2010)

Governance Level (Board)
- CEO chairperson (Block, 2012)
- Family directors of Board (Casillas & Moreno, 2010; Chang et al., 2010; Chen et al., 2009; Chrisman & Patel, 2012; McAdam et al., 2010; Muñoz-Bullón & Sánchez-Bueno, 2011; Short et al., 2009)
- Family president (Chin et al., 2009)
- Inside-outside directors (Baysinger, Kosnik, & Turk, 1991; Chen & Hsu, 2009; De Cleyn & Braet, 2012; Gurrieri, 2008; Uhlman et al., 2012)
- Size of the board of directors (De Cleyn & Braet, 2012)
- Spousal director (Niehm et al., 2010)

Other:
- Concentrated-dispersed ownership (Baysinger et al., 1991; Cassia et al., 2011; Choi et al., 2012; Cranzritzi & Kraft, 2004)
- Spousal ownership (Niehm et al., 2010)
- Involvement of the family’s next generation Casillas et al., 2011)
- Number of generations involved in the business (Hsu & Chang, 2011; Kellermanns et al., 2012; Pittino & Visintin, 2009; Uhlman et al., 2012; Weismeier-Sammer, 2011; Zahra, 2005)
- Succession to family members or to external parties (Grundström et al., 2012)

Generation
- Generation in control (Beck et al., 2011)
- Generational stage (Casillas et al., 2011; Cruz & Nordquist, 2010; Galve-Górriz & Salas-Fumás, 2011; Pittino & Visintin, 2009; Zellweger et al., 2012)
- Involvement of the family’s next generation Casillas et al., 2011)
- Number of generations involved in the business (Hsu & Chang, 2011; Kellermanns et al., 2012; Pittino & Visintin, 2009; Uhlman et al., 2012; Weismeier-Sammer, 2011; Zahra, 2005)
- Succession to family members or to external parties (Grundström et al., 2012)

Ownership Component
Individual related:
- Entrepreneur characteristics (sex age qualifications) (Gurrieri, 2008; Pittino & Visintin, 2009)
- Family Ownership (Anderson et al., 2012; Battisti & Iona, 2009; Bergfeld & Weber, 2011; Block, 2012; Cassia et al., 2012; Chen & Hsu, 2009; Chrisman & Patel, 2012; Classen et al., 2012; De Cleyn & Braet, 2012; De Massis et al., 2012b; Dibrell & Moeller, 2011; Gudmundsson, Tower, & Hartman, 2005; Hsu & Chang, 2011; Kraus, Pohjola, & Koponen, 2012; Llach & Nordquist, 2010; Llach, Marqués, Bikkafvi, & Simon, 2012; McAdam, Reid, & Mitchell, 2010; Munari, Onani, & Soberro, 2010; Muñoz-Bullón & Sánchez-Bueno, 2011; Pittino & Visintin, 2009; Sirmon et al., 2008; Short et al., 2009; Uhlman et al., 2012; Zahra, 2005; Zellweger, Nason, & Nordqvist, 2012)
- Individual ownership (Tribo, Barrone, Surroca, 2007)
- Insider-Outside ownership (Choi, Park, & Hong, 2012; Pittino & Visintin, 2009)
- Leadership style (Yildirim & Saygin, 2011)
- Lone Founder Ownership (Block, 2012; Zahra, 2005)
- Own-led firms (Cranzritzi & Kraft, 2004)
- Spousal ownership (Niehm et al., 2010)
- Generational stage (Casillas et al., 2011)
- Number of generations involved in the business (Hsu & Chang, 2011; Kellermanns et al., 2012; Pittino & Visintin, 2009; Uhlman et al., 2012; Weismeier-Sammer, 2011; Zahra, 2005)
- Succession to family members or to external parties (Grundström et al., 2012)
Figure 4 – Managerial levers (I)

Organizational learning and KM
- Behavioural strategic controls (Hsu & Chang, 2011)
- Conflict management (Cassia et al., 2011)
- Critical incidents (expansion succession...) (McAdam et al., 2010)
- Cross-functional team vs. functional organization (De Massis et al., in press)
- Customer support (Westhead, 1997)
- Degree of “progression” of human resources issues and appropriateness of staffing (Cassia et al., 2012)
- Group dynamics conflicts and economic rationality of decision-making processes (Cassia et al., 2012)
- High level of communication and sharing of information among family members (Cassia et al., 2011)
- Importance of external technological partnerships (Pittino & Visentin, 2009)
- Inclination to be visible among key stakeholders and the community (Cassia et al., 2012)
- Level of monitoring efforts and agency costs (Cassia et al., 2012)
- Motivation cohesiveness and commitment of workforce (Cassia et al., 2012)
- Network effects (Hausman, 2005)
- New organization of work (Kraus et al., 2012)
- “Openness” to social capital/networks and external environment (Cassia et al., 2012)
- Professionalization and objectivity (Cassia et al., 2011)
- Relations with external partners (Kraus et al., 2012)
- Scope of information and timeliness of information (Craig & Moores, 2006)
- Social capital (Chamber of Commerce registration/relations with local banks...) (Gurrieri, 2008)
- Socio-economic network (cooperation/subcontracting/collaboration) (Donckels & Fröhlich, 1991)
- Specifications of responsibilities the content of commands and of information flows (Kraus et al., 2012)
- Strategic planning (Weismeier-Sammer, 2011)
- Transformative leadership (Yıldırım & Saygin, 2011)

Resource allocation
- Debt in R&D financing (Czarnitzki & Kraft, 2009)
- External financing for long-term financial orientation (Westhead, 1997)
- Financial slack (Grundström et al., 2012; Kim et al., 2008)
- Graduates dedicated full time to R&D (Galve-Górriz & Salas-Fumás, 2011)
- Growth intentions (Grundström et al., 2012)
- Innovation outcome (incremental focus in new frames...) (Grundström et al., 2012)
- Number of persons dedicated full time to R&D (Galve-Górriz & Salas-Fumás, 2011)
- Performance aspiration gaps (gaps between aspirations and performance) (Chisman & Patel, 2012)
- Persons with Vocational Training/Training dedicated full time to R&D (Galve-Górriz & Salas-Fumás, 2011)
- R&D activities (Czarnitzki & Kraft, 2004)
- R&D investment (Simon et al., 2008)
- Radical vs. incremental Open vs. closed approach (De Massis et al., in press)

Mission goals and strategy
- Defender Innovator/Prospect/Analyzer
- Reactor strategy (McCann, Leon-Guerrero, & Haley, 2001)
- Entrepreneurial orientation (Cassia & Moreno, 2010; Chirico & Nordqvist, 2010; Naldi, Nordqvist, Sjöberg, & Wiklund, 2007; Short et al., 2009; Zellweger & Sieger, 2010; Zellweger et al., 2012)
- Innovation goals match strategic objectives: conservative attitude (Cassia et al., 2012; Donckels & Fröhlich, 1991), survival or long-term (Cassia et al., 2012; Cassia et al., 2011; Cassia et al., 2012, Westhead, 1997), reputation (Westhead, 1997), transgenerational value (Cassia et al., 2011; Chirico & Nordqvist, 2010; Zellweger et al., 2012), paternalism (Chirico & Nordqvist, 2010), corporate social responsibility (Wagner, 2010), willingness to change (Zellweger et al., 2009; Weismeier-Sammer, 2011)
- Service-dominant focus (Dibrell & Moeller, 2011)
- Stewardship culture (Dibrell & Moeller, 2011)

Figure 5 – Managerial levers (II)

Organizational culture
- Absorptive capacity/entrepreneurial capacity (Guirrieri, 2008)
- Adhocracy culture (Duráñez et al., 2011)
- Autonomy (Casillas & Moreno, 2010; De Massis et al., in press; Short et al., 2009; Zellweger et al., 2012)
- “Closure” attitude towards the external environment (Cassia et al., 2011)
- Competitive aggressiveness (Casillas & Moreno, 2010; Short et al., 2009; Zellweger & Sieger, 2012)
- Corporate Social Performance (Wagner, 2010)
- Dynamic capabilities (Chirico & Nordqvist, 2010)
- Family experience and culture (Uhlaner et al., 2012)
- Formality of strategizing (Zellweger et al., 2012)
- Hierarchical culture innovative culture (Duráñez et al., 2011)
- Innovativeness (Casillas & Moreno, 2010; Cassia et al., 2012; Duráñez et al., 2011; Naldi et al., 2007; Short et al., 2009; Zellweger & Sieger, 2012; Zellweger et al., 2012)
- Long-term corporate orientation (Bengfeld & Weber, 2011; Cassia et al., 2011)
- Market culture (Duráñez et al., 2011)
- Morale and motivation: job satisfaction (Donckels & Fröhlich, 1991) and employee empowerment (Gudmundson et al., 2003)
- Organizational climate: technology concerns (Westhead, 1997); organizational support (Gudmundson et al., 2003)
- Proactiveness (Casillas & Moreno, 2010; Cassia et al., 2012; Grundström et al., 2012; Kellermanns et al., 2012; Naldi et al., 2007; Short et al., 2009; Uhlaner et al., 2012; Zellweger & Sieger, 2012; Zellweger et al., 2012)
- Resource focus (Zellweger et al., 2012)
- Risk-taking culture (Casillas & Moreno, 2010; Cassia et al., 2012; De Massis et al., in press); Donckels & Fröhlich, 1991; Short et al., 2009; Zellweger & Sieger, 2012; Zellweger et al., 2012)
- Service-dominant focus (Dibrell & Moeller, 2011)
- Shared family values and high motivation cohesiveness and commitment of the employees (Cassia et al., 2011)
- Stability versus growth (Zellweger et al., 2012)
- Stewardship culture (Dibrell & Moeller, 2011)
- Time orientation (short or long term) (Cassia et al., 2012)
- To expand the “entrepreneurial dream” over generations (Cassia et al., 2011)
5 EXISTING AND EMERGENT RESEARCH LINES AND GAPS

Based on the analysis carried out, several research lines arose when examining in-depth how family involvement affected determinants and dimensions of innovations, and/or their relations (see Figure 7). In this line of thought, seven existing and emergent main research lines were identified: direct effect of family involvement on managerial levers (Research Line 1, RL1), direct effect of family involvement on business processes (RL2), direct influence of family involvement on both dimensions of innovation: innovation as an outcome (RL3) and innovation as a process (RL4), and, finally, moderating effect of family involvement on the relations between determinants (RL5), between determinants and dimensions (RL6), and between dimensions of innovation (RL7).
Based on the analysis carried out, we identified several research gaps that arise from controversial previous results or topics where empirical research is lacking. Nevertheless, these research gaps do not intend to be exhaustive, but to serve as specific illustrations embedded in our proposed framework.

Regarding the direct effect of Family Involvement on Managerial Levers (RL1), family involvement may affect directly the way managerial levers are carried out, and the long-term perspectives of FBs may be one of the main causes. On one hand, FBs are usually long-term oriented, because their main aims are keeping heritage and transferring the firm to next generations (Muñoz-Bullón & Sánchez-Bueno, 2011). Long-term perspective encourages FB to engage in innovative investments, preventing an underinvestment problem with R&D (Chen & Hsu, 2009). This specific feature makes families strive to secure their long-term wealth by applying radical and progressive innovation, in order to diversify the orientation of their holdings (Bergfel & Weber, 2011). However, risk adverse behavior blocks costly activities such as R&D investments. The rationale behind this is that protecting family welfare, ensuring firm longevity or maintaining control (Chen & Hsu, 2009) provokes a risk adverse behavior among FBs. On the other hand, in literature, there is as yet no agreement as to the entrepreneurial tendencies of FBs, one of the possible aspects taken into account at firm managerial levers. Thus, for example, understanding whether and how long term perspective makes FBs firm different from NFBs regarding different aspects of entrepreneurial orientation might be an interesting avenue for future research: Research Gap 1 (RG1): How does long-term orientation influence FBs’ risk adverse behavior (entrepreneurial orientation) as a determinant of innovation?

About the direct effect of Family Involvement on Business Processes (RL2), family involvement may directly influence the way business processes are conducted, and the resource-based view can shed light on this. Unique types of human, social, marketing, physical and financial capital help FBs better identify and understand the challenges and opportunities that the company faces. FBs usually promote relations with employees, competitors, suppliers, customers, and/or research centers (social capital), looking for complementary resources in knowledge, technology or people, in order to increase their competitiveness through higher innovativeness and to settle in new markets (Llach & Nordqvist, 2010). However, when family members are heavily involved, non-family qualified employees may be put aside in key decisions or simply they will not be hired, depriving the business of a rich source of ideas for innovation (Zahra, 2005).

Other studies reveal that FBs tend to be less dependent on environment-culture and socio-economic networks than NFBs (Donckels & Frolich, 1991) and have less propensity to innovation, creativity and change (De Massis et al., 2013). FBs have a portfolio of innovation projects, as do any other type of organization. However, we do not know whether FBs tend to initiate innovation by generation or by adoption, or whether they prefer to develop new products or processes or adopt innovation from the outside. Then, if we adopt a resource-based view perspective, it would be interesting to study: RG2: Do unique characteristics of family involvement affect adoption or generation of innovations?

The direct effect of Family Involvement on Innovation as an Outcome (RL3) means that family involvement may have a direct effect on innovation outcomes, and the number and type of generations engaged can play a pivotal role in it. Zahra (2005) suggests that FBs have a more innovation-oriented culture when later generations are involved in the management of the firm. In later generations, more family members tend to participate in decision-making and professionalism is enhanced, which is beneficial for a firm’s innovation (Beck et al., 2011). Zellweger & Sieger (2012) proposed that generational changes can increase the level of internal and external innovativeness in FBs, and
their interviews detected high levels of internal and “invisible” innovations such as exploiting existing solutions and the improvement of management systems and governance structures. On the other hand, generational ownership dispersion does not favor innovative attitude because family conflicts arise. It means that as the family becomes larger and the ownership is more dispersed among multiple generations, family conflicts can arise easily (Block, 2012; Kellermanns et al., 2012). This atmosphere does not promote an innovative attitude. Consequently, based on these contradictory results, it would be interesting to provide some evidence about the real effect of the generation in charge on the magnitude of the innovation outcomes of the firm. (RG3): How can family generational aspects determine the incremental or radical character of innovation?

Concerning the direct effect of Family Involvement on Innovation as a Process (RL4), family involvement might affect directly the innovation process. FBs’ unique characteristics such as altruism, loyalty and trust, can foster family bond (Chang et al., 2010), promote a willingness to take risks (Chen & Hsu, 2009) and provide the flexible support necessary to exploit a firm’s innovativeness successfully (Kellermanns et al., 2012). However, some of these values might have the opposite effect, for instance, altruism may constrain the firm capability of selecting and evaluating valuable innovation projects (Chang et al., 2010). In fact, altruism can provoke problems of self-control (Block, 2012), assigning strategic roles to family members rather than to the most capable manager (Morck & Yeung, 2003). Likewise, FB members have to decide how the innovation process starts and develops.

Family members communicate more efficiently and share more information (Tagiuri & Davis, 1996), which ease the participation of the whole organization in the generation of innovation, supporting a bottom-up process. However, the concentration of ownership, control, and management that usually characterizes FBs and the typical lack of access to skilled human resources could concentrate decisions in few people, opting for a top-down process. Considering that no serious effort has been done to clarify this question, it would be an interesting research topic to examine if altruism or nepotism plays an important role to explain the direction of innovation. RG4: How and to what extent do altruism and nepotism influence the direction of innovation processes (top-down, bottom-up)?

About the moderating effect of family involvement on the relations between determinants (RL5) and on the relations between determinants and dimensions (RL6), family involvement may exert also a moderating role in the relations between determinants and between determinants and innovations, and agency theory can help to explain these influences.

From an agency perspective, we could argue that dominant family shareholders may expropriate minority non-family ones for their own interest (Block, 2012; Chang et al., 2010). Family members may take assets out of the businesses they own, and are reluctant to turn great portions of financial slack into R&D investments (Kim, Kim, & Lee, 2008). That situation may cause, for instance, favoring high dividends over R&D investments (Muñoz-Bullón & Sánchez-Bueno, 2011). In this line, there is little doubt that family members might pursue their own private interests, and conflicts of interest between the family and the business may appear. However, when family members serve as firms’ senior managers, asymmetric information and moral hazard situations can be avoided.

Neither manager has better information about innovation policy than owners do (asymmetric information), nor managers are only interested in short-term performance (moral hazard). This characteristic aligns preferences for a growth and risk-taking strategy between the family and the firm. Some researchers have stated that CEOs’ decisions about environment might be decisive in the entrepreneurial orientation of the firm, based on the premise that the environment has an important influence on a firm’s entrepreneurial orientation (Dess, Lumpkin, & Covin, 1997).
Consequently, it could be useful to examine if the effect of the environment (determinant) on certain aspects of the organizational culture (determinant) could be influenced by the organizational authority exerted by the family in control: RG5: How and to what extent do different degrees of family involvement influence the relationship between environment and organizational culture (risk taking culture, etc.)? Another interesting topic is the existing relationship between company’s resource allocation (considered as a managerial lever, determinant, in our framework) and effective innovation. Jensen (1986) suggested that free cash-flow allows firms to invest in dubious projects, so too much financial slack may make them more complacent and less forced to engage in innovation projects. Consequently, considering agency costs, it seems necessary to further explore this: RG6: How and to what extent do different degrees of family involvement influence the relationship between lack of resources and products, services and processes innovation?

Finally, about the moderating effect of family involvement on the relationship between dimensions, family involvement may also have a moderating role in the relations between dimensions of innovation. Behavioral theory may clarify this effect. According to this theory, family members prioritize decisions in order to protect socio-emotional wealth, although they can be not suitable from an economic point of view (Chrisman & Patel, 2012). Therefore, it is no clear what the expected behavior of FBs will be when they face risky decisions, such as those ones referring to the desired magnitude of innovations or the direction of the innovation processes. On one hand, risky investments with long-term payoffs may threat the current socio-emotional wealth, although this might increase risk aversion of family members, promoting top-down and incremental innovations. On the other hand, risky decisions may increase or preserve socio-emotional wealth, and consequently, bottom-up and radical innovations may be seen as necessary by family members (Chrisman & Patel, 2012).

Consequently, it would be interesting to study: RG7: How does socio-emotional wealth impact the relationship between direction of innovation (top-down/bottom-up) and magnitude of innovation process (incremental/radical)?

6 CONCLUSIONS

FBs represent a significant social and economic institution at a worldwide level, and research on the field has recently undergone a period of rapid development (Gedajlovic, Carney, Chrisman, & Kellermanns, 2012). However, despite the growing maturity of FB research, the field is fragmented and there is no clear evidence about the consequences of family involvement in terms of innovation. By conducting this study, we have consolidated extant empirical research on innovation in FBs, by proposing an integrative framework reflecting connections between determinants and dimensions. Based on it, we have identified the main research avenues on the field and the current and emergent research lines and gaps. The present study advances knowledge about innovation in a FB context, and offers two relevant contributions.

Firstly, this paper provides an integrative vision of the state of the research on the field. We conducted a systematic review of all empirical studies about the topic published in refereed journals, following three phases: data collection, data analysis and synthesis. The depurated sample included 59 empirical studies analyzing the topic of innovation in FBs from 37 different journals. This detailed analysis of the extant literature has revealed that there has been a growing interest in the field in recent years. Next, inspired by the work of Crossan and Apaydin (2010), which was widely cited in the literature, we developed an integrative framework (determinants-dimensions) for organizing research on innovation in FBs. This framework includes two dimensions of innovation, as an outcome and as a process, and integrates diverse determinants that may enable innovation within these companies.
(leadership/family involvement, managerial level, business processes, and environment). It also incorporates the connection between dimensions and determinants. Based on this integrative framework, we classified and synthesized empirical research in the subject conducting a co-word analysis of the papers. We observed that past research has mainly addressed the study of innovation in FBs quantitatively, and most of the studies focused on manufacturing industries and examined the topic mainly in the US and European countries. Regarding the determinants of innovation, we observed that business processes and environment were the less analyzed ones in previous studies. The same holds for the study of innovation as a process, as this dimension of innovation has received little attention in the prior literature.

Secondly, based on the detailed framework and relating determinants and dimensions, we identified the main existing and emergent research avenues on innovation in FBs. This analysis allows us to map existing knowledge exhaustively, following a more comprehensive perspective and offering the academic community a general vision of this particular field. Tacking stock of this specific literature, we summarize some of the most relevant findings of the analyzed studies and point out the most addressed fields and identified topics where there is still no clear evidence, because empirical research is lacking. We identified seven research lines: direct effect of family involvement on managerial levers (RL1), direct effect of family involvement on business processes (RL2), direct influence of family involvement in both dimensions of innovation: innovation as an outcome (RL3) and innovation as a process (RL4), moderating effect of family involvement on the relations between determinants (RL5), between determinants and dimensions (RL6), and between dimensions of innovation (RL7). In addition, several research gaps emerged from controversial previous research results or not addressed topics. They can be useful to guide future studies on the field and conform a future research agenda. The conducted analysis may contribute substantially to the development of the field, since it would be a valuable tool for researchers. By highlighting existing knowledge gaps, this study may help to solve inconsistencies and give academic community a general vision of this particular field. Until now, published papers had a narrow focus as they focused on specific angles of innovation. This study contributes to the literature by organizing existing literature and clarifying what are the research needs on innovation in FBs. Moreover, it has a comprehensive focus, offering additional evidence to previous published literature reviews, which focus exclusively on one aspect of innovation, as the one mentioned of De Massis et al. (2013).

7 MANAGERIAL RELEVANCE

This paper will have an important impact on the practice of management, particularly of FBs. Overall, this study contributes to practice by showing where there are empirical proofs about the positive and negative impact of family influence regarding innovation. By doing this, it helps practitioners by offering them a more holistic perspective on the process of managing innovation. The results of the identified seven research lines have clear consequences on the management processes of FBs that could be summarized in two main ideas for managers. Firstly, managing innovation differs between FBs and NFBs. There has been made clear in the literature the direct effect of family involvement on managerial levers, on business processes, and on both dimensions of innovation: innovation as an outcome and innovation as a process. Secondly, the innovation itself is affected by the fact of managing it in FBs, and there is a moderating effect of family involvement on the relations between determinants and dimensions. In sum, this study leads to a clearer picture of the phenomenon of innovation in a FBs context, and contributes to the academia and industry by identifying relevant research lines on the topic and providing an agenda for future research.
Furthermore, by synthesizing relevant conclusions about innovation in FBs, this study helps FBs’ managers and practitioners in their decision-taking processes.

Finally, at least two limitations could be mentioned as main limitations of the study. Firstly, since the research process finished in December 2012, some relevant papers published recently may exist and have not been included in the analysis. However, the most representative studies referring to innovation in FBs are included, since the main research databases were searched extensively by this date and the most relevant journals on the topic were also browsed. Secondly, we based our analysis on a conceptual framework regarding innovation that is biased toward the firm level, so the individual and industry-level were less considered. This perspective should be analyzed in more detail by future studies. Lastly, given that past and current research has been exceedingly focused on Western developed countries, future studies should conduct investigations in different social and geographic contexts, so as to increase the validity of the past findings and to find dissimilarities among different regions.

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