



Innovation in Family Business and Cooperation: a literature review

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Abstract In this paper, after some clarifications about the definition and characteristics of Family Business (FB), a literature review on innovation and cooperation in FB has been conducted. As a consequence, a research gap regarding how FB develops innovation when cooperating with external factors has been identified. In particular, specific characteristics of FB have been analysed regarding innovation and cooperation, such as longer-term vision, risk aversion, and relatively lack of professionalism of FB workers.

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Innovación y cooperación en la Empresa Familiar: una revisión de la literatura.

Resumen En este artículo, después de exponer algunas aclaraciones sobre la definición y las características de las Empresas Familiares (FB), se realiza una revisión de literatura sobre innovación y cooperación en las FBs. Como consecuencia de esta revisión, se ha detectado un gap de investigación sobre cómo las FBs desarrollan la innovación cuando se realiza en cooperación con factores externos. Se han analizado, de forma específica, algunas características de FBs con respecto a la innovación y la cooperación, en concreto, la visión más a largo plazo, la aversión al riesgo y la falta de profesionalización de los trabajadores de las FB.

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Introduction

According to the Family Business Institute of Spain (2015), Family Businesses (FBs) represent 17 million companies in Europe, with a job creation of 100 million people.

Outside the European region, in the United States, the first world economy, family businesses are 80% of the businesses and generate 50% of employment in that country, according to this study. In Latin America, 85% of the businesses are FBs and they employ 30% of the population (Ernst & Young, 2016).

In Spain, in accordance with one pilot study on family businesses of the Statistic National Institute, conducted in 2015, FBs companies accounted for 82.8% of all companies in Spain, occupying 49.9% of the working population and 38.0% of turnover.

In view of the economic importance of the FBs, in Spain and at worldwide level, their characteristics and composition should be studied, as knowing them in an exhaustive way would mean knowing a good part of the economy, being able to predict more adequately their behaviour. However, there is no unanimity in the literature on the features that will make up the boundaries of what is meant by FBs (Chua, Chrisman, Steier & Rau, 2012). There is a tendency to minimize the heterogeneity of definitions of the FBs (Nordqvist, Sharma & Chirico, 2014), creating a basic framework to establish some basic difference between the FBs and noFBs (Chrisman, Chua, Pearson & Barnett, 2012), opening a field devoted to investigate and compare the behaviour and results of both types of business (Astrachan, Klein & Smyrniotis, 2002; Dyer, 2006; Hernández-Linares, Sarkar & López-Fernández, 2017; Massis, Kotlar, Chua & Chrisman, 2014; Shanker & Astrachan, 1996; Westhead & Howorth, 2007).

Despite this heterogeneity in the definitions that try to limit the perimeter of what is considered a FB, there is a list of factors that can be used to define what a FB is, especially related to the degree of control of the activity and participation in the ownership of these companies (Choi, Zahra, Yoshikawa & Han, 2015; Rojo, Diéguez & López, 2011).

Firstly, FBs can be defined as those companies whose decisions are influenced by a family (Astrachan & Shanker 2003; Green & Pryde 1990; Litz 1995), with ownership or administration composed by family members, varying degrees of family involvement, and the potential for generational transfer. Secondly, FBs vary in the nature and extent of family participation, there is a general agreement that they have a structural difference with noFBs due to the vision of family members participating in the organization and control (Chrisman, Chua & Litz,

2003; Habbershon, Williams & MacMillan, 2003; Niehm, Tyner, Shelley & Fitzgerald, 2010).

On the basis of these two variables, numerous theories that define the FBs are developed, based on two types of data. On the one hand, quantitative data related to participation percentages, number of positions and executives within the company that belong to the same family, etc. On the other hand, qualitative data, which is more difficult to detect, such as the real influence on business decisions of family nuclei, without necessarily being part of their executive bodies (Astrachan & Shanker, 2003; Chrisman et al., 2003; Chrisman, Chua & Sharma, 2005).

The European Union institutions have also focused on achieving a homogeneous and consensus definition of what a FB should be considered. Thus, in a Report approved on September 8, 2015 (European Parliament, 2015), it is indicated that “a common European definition of ‘family business’ is necessary not only to improve the quality of statistical data collection on the sector’s performance, but also as a means for policy-makers to better address the needs of family businesses and society”.

Consequently, it is clear that, in order to carry out an investigation on a specific subject, in this case, a review of the literature on FBs, it is essential to limit the boundaries of what exactly the companies under study will be, as indicated in this document of the European Parliament.

In this sense, the European Family Businesses (2019), European federation of national associations, established in 1997, defines the FB with the following characteristics:

- The majority of decision-making rights are in the possession of the natural person(s) who established the firm, or in the possession of the natural person(s) who has/have acquired the share capital of the firm, or in the possession of their spouses, parents, child or children's direct heirs.

- The majority of decision-making rights are indirect or direct.

- At least one representative of the family or kin is formally involved in the governance of the firm.

- Listed companies meet the definition of family enterprise if the person who established or acquired the firm (share capital) or their families or descendants possess 25% of the decision-making rights mandated by their share capital.

For this research, the FBs are defined as those that belong and/or are administered by one or more families, understanding these as a group related by blood, marriage or adoption, which shares a common dwelling (Hollander & Elman 1988, Winter et al. 1998).

As methods of this paper, in order to conduct the literature review, a systematic search has been followed. First, the terms Innovation, Family

Business and Cooperation have been search in different academic databases, such as Web of Knowledge, ProQuest, and Google Scholar. Second, from the results obtained and their extracts, the papers that were considered most relevant were selected, due to their research-related theme. Third, following this selection, new searches of cited articles were made to know a first-hand of the citations included therein, in addition to finding information on the context in which the cited conclusions were found. Fourth, the obtained paper were analysed. The main findings arising from the analysis of the papers are summarised next.

Innovation and its delimitation

An important stream of research on innovation, from the point of view of the benefits it entails for the operation of Small to Medium sized enterprises (SMEs), can be found in the literature (Rosenbusch, Brinckmann & Bausch, 2011).

There is a general agreement that innovation is a fundamental element of entrepreneurship (Davidsson, 2016; Lumpkin & Dess, 1996; Schumpeter, 1982). This is even more true for SMEs, which can benefit from adapting to their environment better than large ones, with much faster decision making (Nootboom, 1994; Vossen, 1998). Therefore, it is clear that the innovation factor is essential to understand the survival of companies, especially these SMEs, which is justified, in part, by the need to adapt to the changing environments in which they operate.

Even in the simplest form of innovation, which can be an investment in technology, it is generally assumed that it will result in productivity and efficiency gains for most companies (Gordon, 2000; Jorgenson & Stiroh, 2000; Oliner & Sichel, 2000; Niehm et al., 2010). However, it should not be forgotten that not all literature is in a clear position to praise the advantages of innovation. It is found that, to develop a change in business structures, resources are needed, and small businesses do not always have this resources. Furthermore, in case of having such resources, innovation may pose a greater risk for SMEs, since they have fewer resources to support a failure (Acs & Audretsch, 1988, Eisenhardt & Martin, 2000; Nootboom, 1994; Van de Ven, 1986; Vossen, 1998). Besides this, some literature has been found that indicates that innovation does not always improve the performance of organizations (Birley & Westhead, 1990; Heunks, 1998) or even that they perceive negative influences on them (McGee, Dowling & Megginson, 1995; Vermeulen, De Jong & O'Shaughnessy, 2005).

After reviewing all these advantages and disadvantages of innovation, it is found that,

even considering the existence of disadvantages, there is a general consensus of the benefits and the need for innovation to, at least, maintain income, benefits and market relevance for companies.

Once the importance of innovation is highlighted, it is also necessary to define what can be considered an innovation, in order to establish the framework of the research.

Starting from a general definition, according to Schumpeter (1982), innovation is considered when the company introduces a new good, which the public does not know; when a new form of production is carried out in the industrial sector in which the company has its market; when the expansion to a new country is achieved by opening new markets; when new resources are acquired for the manufacture or production of the company; or when changes are made in the market structure.

In addition to the literature that is dedicated to making a delimitation on what is considered an innovation, there are also extensions on the types of innovation, such as that an innovation can be considered radical, when there is a substantial change in technology or over a new technology and also provides a significant improvement for the client (Chandy & Tellis, 1998; Dewar & Dutton, 1986); or according to these same authors, an incremental innovation, when only one of the above conditions occurs.

Similarly, it is also interesting to look at the literature on innovation that treats, in a differentiated way, the innovation in services versus that of products. In this case, innovation in a service is defined when there is a change in some characteristics of the service or in the number of operations carried out in the service (Gallouj & Savona, 2011; Gallouj & Weinstein, 1997).

Another parameter found in the literature, regarding innovation, is speed. From an economic point of view, the speed of innovation refers to how long it takes to feel, in different organizations, sectors or countries, the patterns of that innovation, its effects, etc. (Dosi, 1988; Nelson & Winter, 1982; Rogers, 1983).

From a managerial point of view, this speed refers to how long it takes to obtain benefits from the investment of innovation, whether due to changes in the organizational structure, processes or competition (Eisenhardt, 1989; Kessler & Chakrabarti, 1996; Lawless & Anderson, 1996; Stalk & Hout, 1990).

Family Businesses and Innovation

According to the literature review, there is still a long way to go to complete the gap between management research and the practical reality of FBs (Ghoshal, 2005; Hambrick, 1994; Rynes, Bartunek, & Daft, 2001; Sharma, 2010; Vermeulen, 2007), what supposes an opportunity of investigation in many fields of the management in the familiar companies. As Holt, Pearson, Payne and Sharma (2018) indicated: "[there are] opportunities for family business research that crosses boundaries and contributes to the broader field of management (and beyond). To fulfil this promise, however, the prevailing mind-set that family business is a niche context to study management issues must change to reflect the reality that any management theory is incomplete if its assumptions and boundaries have not been tested in family firms."

Similarly, Decker and Günther (2017) stated that there is no clear evidence that FBs are more or less innovative than other companies, indicating that a key factor, to make a model on innovation in FBs, should be to consider the integration of family members in the management of the company, as a way of knowing differentiating character with respect to noFBs.

In addition, they suggest that the number of family generations of the company or how professionalized the decision making process is, should be taken into account in that model.

Moreover, when innovation in these types of companies has been studied, these have mostly been young companies focused on scientific innovations (Miller, Le Breton-Miller & Lester, 2010 & 2011), leaving out of the focus of research other types of companies with which to make the comparison.

Following the characteristics of the FBs that would make innovation in this type of company different from the rest, it is highlighted in the literature that the conjunction between family systems, businesses and other non-family members participating in it, makes them a genuine system and different from the rest (Chua, Chrisman & Sharma, 1999; Donckels & Fröhlich, 1991; Dunn, 1996; Hayward, S. 1989, 1990 & 1992; Olson, Zuiker, Danes, Stafford, Heck & Duncan, 2003; Welsch, 1991; Zahra, Hayton & Salvato, 2004).

In addition, the literature has highlighted that in the FBs special characteristics are given that filter from the family philosophy itself (Dyer, 1986; Fukuyama, 1995; Tagiuri & Davis, 1992), such as the interest in caring for the members of the family unit, seeking their development or serving as an affective, as opposed to noFBs, which focus more on obtaining benefits, efficiency and other economic objectives.

This fact makes, according to part of the literature, that the FBs start with a competitive advantage in terms of the resources and behaviour of the organization, both at the individual and organizational level, which must be taken into account when studying the management of this type of companies (Barney, 1991; Dyer, 2003; Habbershon et al., 2003; Habbershon & Williams, 1999; Prahalad & Hamel, 1990; Sirmon & Hitt, 2003)

Of all the possible variables that can influence the innovation of FBs, special attention will be given to the environment in which these types of companies move (Padilla-Meléndez, Dieguez-Soto & Garrido-Moreno, 2015). In a first review of the literature, it is needed to go deeper in this field of study, for two main reasons. First, in order to know if family-type businesses depend more or less on the environment than other companies (Donckels & Fröhlich, 1991). Second, to know if the environment is a determining variable for the decisions taken by the company's executives (Dess, Lumpkin & Covin, 1997).

According to this research, the intersection between the concepts of FB and Innovation is not sufficiently studied and developed and new knowledge can be drawn on how the characteristics of a FB influence the possibilities and attitudes towards innovation; or if there are differences or not in the way of innovating.

Among the literature found in this regard, it is suggested that FBs are less innovative, prone to creativity and change than noFBs (De Massis, Frattini & Lichtenthaler, 2013).

As reported by the literature, there is a research gap in relation to verifying the existence of a difference in environmental dependence between family or non-family businesses (Donckels & Fröhlich, 1991). Moreover, regarding what environmental variables can be decisive for the decisions taken by company executives (Dess, Lumpkin & Covin, 1997), being in family businesses the identification between executives and owners a factor of difference in their decision making.

Specifically, among the variables that influence innovation the following ones can be identified: concentration and density of the same type of companies in geographic area (Hausman, 2005); technological opportunities (Cruz & Nordqvist, 2012; Weismeier-Sammer, 2011); competition pressure (Battisti & Iona, 2009; Craig & Moores, 2006; Czarnitzki & Kraft, 2004); and existence of cooperation with environmental agents, such as customers, suppliers, competitors or universities (Ankrah & Al-Tabbaa, 2015; Bruneel, D'Este & Salter, 2010; Cruz & Nordqvist, 2012; George, Zahra & Wood, 2002; Gustafsson, Kristensson, & Witell, 2012; Markman, Gianiodis, Phan & Balkin, 2005; Pittino & Visintin, 2009; Teece, Pisano &

Shuen, 1997; Westhead, 1997; Wuyts, Dutta & Stremersch, 2004).

The environmental variables that influence innovation

With all the above, it was proposed, as the objective of this work, to analyse the variables of the environment, in which FB move, which are decisive for them to carry out innovation projects; and also to know how these innovations or their absence have influenced their results.

Consequently, the aim of this review is to collect the cooperation variables that have different influence on the FBs, due to the differential characteristics with the noFBs, which affect innovation.

The result of the research would help diagnose favourable and unfavourable environment variables and, as a consequence, there will be a tool to moderate, in part, the uncertainty that an innovation process implies for this type of companies, mainly in SMEs.

The scientific contribution intends to lay the foundations, through an exhaustive review of the literature, of possible future research, which has been pointed out, and that represent an opportunity for research, through qualitative and quantitative studies in knowing the influence of cooperation with the environment in the innovation of the FBs.

Undoubtedly, one of the most widespread theories and that shows how important the environment for business development is, is the theory of the five competitive forces of Porter. According to Porter (1982) "The essence of formulating competitive strategy is relating a company to its environment. Although the relevant environment is very broad, encompassing social as well as economic forces, the key aspect of the company's environment is the industry or industries in which it competes. Industry structure has a strong influence in defining the rules of the competitive game as well as the strategies potentially available to the company"

In the literature, the benefits that entail, for any type of innovation, when there is an entry of knowledge from outside the company and that partnerships with other external agents are promoted, are described, since these broaden the perspectives and knowledge of the company own organization (Cohen & Levinthal, 1990; Dewar & Dutton, 1986; Fichman & Kemerer, 1997). In addition, cooperation between companies and knowledge sharing for the creation of new products has become an important source of innovation (Rindfleisch & Moorman, 2001; Sivadas & Dwyer 2000).

To explain the innovation with cooperation, the literature has focused on why organizations choose to carry out an innovation with internal

R&D activities or look for these resources outside, often opposing the alternatives between "Making an innovation" or "Buying an innovation" (D'Aspremont & Jacquemin, 1988; Petit & Sanna-Randaccio, 2000; Sanna-Randaccio & Veugelers, 2003; Veugelers, 1997; Veugelers & Cassiman, 1999). However, the complementary and more frequent alternative is to combine the internal capabilities of the organization, with the use of external research and development resources. (Chesbrough, 2006; Cohen & Levinthal, 1990; Kamien & Zang, 2000; Mowery & Rosenberg, 1989; Radnor, 1991; Veugelers & Cassiman, 1999).

It has been indicated that frequent collaboration with the same partner can lead to the creation of unique positions in terms of new opportunities, which can result in the identification of innovation opportunities (Gulati, 1999). This is because innovations and discoveries have an unwritten component, a knowledge beyond what can be described (Iansiti & West 1997; Zucker, Darby & Armstrong 2002) and when the collaboration with the same partner is repeated, this type of knowledge begins to emerge and be shared and unwritten mental schemes and the assimilation of more complex knowledge are shared, making in the end the collaboration more fruitful (Hansen 1999; Madhavan & Grover, 1998; Polanyi, 1966; Uzzi, 1997).

Following this line, it was found in the literature the description of how to take advantage of cooperation to reduce or harness the strength of competition, through cooperation with the company's own competitors, through game theory (Brandenburger & Nalebuff, 1996). It would be, through cooperation, to eliminate the risks of mutual destruction and change the rules of the game, associated, above all, with the risk of competition.

With this strategy, it is possible to find new opportunities for both competitors, to implement innovations with less risk of destruction by the competition, among others. Consequently, it has been shown that cooperation with competition has a positive impact on innovation capacity, positioning this strategy as appropriate (Quintana-García & Benavides-Velasco, 2004).

From the economic-financial perspective of the company, the influence of its environment is relevant for decision-making, starting with its stakeholders, having pointed out the need to incorporate their perspective when studying the business management of the FBs (Manzanaque, López & Santos, 2018). This paper indicates the need to continue investigating these influences to know the relevance of these external agents in the different types of companies and in the contexts that can be established.

Although R&D continue to be carried out, mostly within the companies themselves (Cantwell & Moleró, 2003; Narula, 2003), looking at market data, cooperation innovation has stood out as one of the fastest growing companies and has multiplied in the last half century (Hagedoorn, 2001). There are varied forms of cooperation that have been found, from agreements to enter the capital of companies to simpler agreements that are limited to individual transactions (Narula, 2003).

At European level, according to the Community Innovation Survey 2016 (Eurostat, 2016), 32.5% of the companies surveyed made an innovation in a process or product through cooperation with a partner, which shows the importance of studying this type of innovations.

One of the advantages described in the innovation by cooperation is the possibility of sharing the necessary investments to carry them out, allowing lower costs of the R&D activities for each cooperation and, in addition, expand the capacities of the organization itself (Feranita, Kotlar & De Massis, 2017; Hagedoorn, 2001; Narula, 2003; Veugelers, 1997).

Focusing the review on cooperation and how it influences the results of innovation, the literature describes that these results will depend on the characteristics of the companies and the type of cooperation and partner with which the cooperation has been carried out (Jaklič, Damijan, Rojec & Kunčič, 2014). Although there is no specific study on this subject, the literature suggests some clues to explain how it works (Jaklič et al, 2014).

This literature can be summarised in some main ideas. First, cooperation with suppliers and customers is more beneficial than cooperation with competitors (Arranz & Arroyabe, 2008; Fitjar & Rodríguez-Pose, 2011; Janz, Lööf, & Peters, 2003; Miotti & Sachwald, 2003). Second, cooperation with research institutions, such as universities, may be more beneficial than cooperation with other companies (Arvanitis & Bolli, 2009; Ayari, 2010; Belderbos, Carree, Diesderen, Lokshin & Veugelers, 2004; Bercovitz & Feldman, 2007; Blanco, 2014; Fabrizio, 2009; Fitjar & Rodríguez-Pose, 2011; Hernández, 2014). Third, cooperation is more effective when the geographical distance between the two is smaller, although at this point there is no clear position of the literature, and contrary findings have been described (Arvanitis & Bolli, 2009; Cantwell & Moleró, 2003; Miotti & Sachwald, 2003; Fitjar & Rodríguez-Pose, 2011; Lööf, 2009).

Cooperation, innovation and Family Business

For the aim of this research, it is interesting the intersection between the most common characteristics described in the literature on FBs and how those characteristics will influence

companies to be more prone to innovation in collaboration with the environment. For this, it is interesting the description made by Cassia, De Massis and Pizzurno (2012) of the more frequent characteristics found in the literature on FBs. In this section, the links between these characteristics and innovation in cooperation with the environment, are analysed.

According to the literature, the FBs have a longer-term vision than the rest, with a hope of less immediate results than the rest. (Dunn, 1996; Hayward, 1992 & 1993; Stein, 1989 & 1988). In terms of innovation, this may mean that FBs may be more patient when it comes to visualizing a return on the necessary investment in innovation and, therefore, not fearing innovation when its benefits will be obtained in the medium-long term. Regarding the impact on cooperation, this also represents a positive influence characteristic for innovation, since the visualization of the results of a cooperation can take some time to obtain and without a long-term vision, as in this case, they can assume a failure for cooperation that need maturation and adaptation time.

Another characteristic described on FBs is risk aversion, being described as the main distinguishing characteristic with the rest of companies by (Donckels & Frolich, 1991) and being one of the most prominent in literature (Dunn, 1996; Hayward, 1993). This could mean that it would affect the innovative attitude of these companies, making them less prone to innovation. However, it could be a greater advantage in innovation with cooperation for the FBs, since carrying out the innovation at the hands of an external agent could dispel doubts and dampen the sense of risk compared to doing so independently. Therefore, this characteristic can have a positive influence on innovation with cooperation compared to other companies.

In relation to FB workers, it is found that, in general, they may be less professionalized and with clear risks of inefficiency in the tasks entrusted (Donckels & Frolich, 1991; Dunn, 1996). In contrast, FBs workers tend to be more satisfied and better paid, in addition to aligning their objectives with those of the company itself (Donckels & Frolich, 1991; Dunn, 1996; Hayward, 1989; Fukuyama, 1995; Lyman, 1991). This can influence innovation in a contrasting way, since a little professionalization of workers can make it unfeasible to start an innovation due to the lack of intellectual resources. However, the lack of professionalization itself makes change and innovation more necessary, for example, in the company's internal processes. As for cooperation, it would be an appropriate way to carry out the innovations, to replace the lack of professionalization from the outside.

Conclusions

After reviewing the literature, firstly, a definition of FB was proposed. Although there is no consensus on what the exact definition of a FB should be, it can be established, at least, a relationship between ownership, management and the real decision-making, which falls mostly on a group of people among whom there is a family relationship.

In terms of innovation, the review has highlighted the importance of focusing on this concept as a column for the survival of companies in competitive environments.

In addition, it has been found evidence that innovation through collaboration has a special impact on how companies can carry out their innovation processes and how these relationships with the environment can be a determining factor in the success of business innovations.

Given all of the above, there is an opportunity to continue researching and developing further into this area, since, although there are already publications that have tried to explain the differentiating characteristics of the process between some companies and others, there is still a long way to go to know it in depth.

In addition, a new and unexplored research opportunity opens up in the incidence of cooperation in the innovation of FBs, because although innovation is described generically in FBs, it has not yet been investigated in other aspects of innovation that they could be even more differentiated according to the type of companies, such as those already mentioned for cooperation with customers, suppliers, competitors or institutions.

As limitations of this paper, the typical own characteristics of being a literature review and not including empiric data, should be pointed out. In addition, a deeper analysis of the found papers, for example, with a co-word analysis would help to better understand the relationships between the different findings.

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