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## Bibliometric Review on Management of Innovation and Family Enterprise

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**Abstract:** In order to carry out this study, a bibliometric review was carried out on the management of innovation, innovation capacities and the family enterprise which allowed to establish the state of the art and the most relevant research carried out on this area of study in recent years, This investigation allowed to recognize that the year in which more studies have been carried out regarding this area is 2014 and that the most cited and referenced authors are De Masissis A. and Frattini F. It was also possible to identify that the country with the most publications related Has had been Together with this investigation we performed an analysis of the most used words and most cited authors by means of the visual bibliometric analyzer Vosviewer in which it was shown again that the most cited authors are De Masissis A. and Frattini F and that the most used words are Effect, sample, resource, purpose and organization.

**Keyword:** Family business, non-family business, innovation management, bibliometric review.

### 1. INTRODUCTION

Innovation in any organization is vital to achieving successful performance and long-term survival ([1]). The positive relationship between the company's capacity for innovation and results is well established and applies equally to all companies, including family firms ([2], [3], [4]). This type of organization is of great importance for the economic development of the Society, since, according to a study carried out by the Center for Family Business of the University of St. Gallen-Switzerland (2014), family firms Constitute between 80% and 90% of companies worldwide ([5]).

### 2. METHODOLOGY

This study was based on the results obtained after a bibliometric review which allowed to delimit the studies, scope and research that have had more relevance in the last years on the area of innovation management, innovation capacities and family business. This bibliometric review was performed in the Scopus Dialnet database, ScienceDirect, Redalyc, and was guided under the following path:

“(TITLE-ABS-KEY ((family firm OR family business)) OR TITLE-ABS-KEY (“innovation management”) OR TITLE-ABS-KEY (“capability innovation”)) AND PUBYEAR > 2009 AND PUBYEAR < 2017 AND (EXCLUDE (SUBJAREA, “MEDI”) OR EXCLUDE (SUBJAREA, “BIOC”) OR EXCLUDE (SUBJAREA, “COMP”) OR EXCLUDE (SUBJAREA, “IMMU”) OR EXCLUDE (SUBJAREA, “NEUR”) OR EXCLUDE (SUBJAREA, “PHYS”) OR EXCLUDE (SUBJAREA, “PHAR”) OR EXCLUDE (SUBJAREA, “CHEM”) OR EXCLUDE (SUBJAREA, “CENG”) OR EXCLUDE (SUBJAREA, “MATE”) OR EXCLUDE (SUBJAREA, “NURS”) OR EXCLUDE (SUBJAREA, “EART”) OR EXCLUDE (SUBJAREA, “ENER”) OR EXCLUDE (SUBJAREA, “VETE”) OR EXCLUDE (SUBJAREA, “DENT”)) AND (EXCLUDE (SUBJAREA, “AGRI”)) AND (EXCLUDE (SUBJAREA, “HEAL”)) AND (EXCLUDE (SUBJAREA, “ENVI”)) AND (EXCLUDE (SUBJAREA, “Undefined”)) AND (EXCLUDE (SUBJAREA, “MULT”)) AND (EXCLUDE (PUBYEAR, 2011) OR EXCLUDE (PUBYEAR, 2010)) AND (EXCLUDE (SUBJAREA, “PSYC”)) AND (EXCLUDE (DOCTYPE, “er”) OR EXCLUDE (DOCTYPE, “no”) OR EXCLUDE (DOCTYPE, “cr”))”.

This allowed to delimit the search according to the identification of the field of study among which were: international business, political sciences, economic sciences, economics, business administration, technology, business management among others, also delimited the period to be analyzed between 2012 and 2016 since this period of time allows to know the most recent studies. This also allowed to select the sources of information and thus to establish the search criteria that after a debug of results yielded 3143 articles.

On the other hand, a study of authors and key words was carried out by the bibliometric analysis database Vosviewer, which allows to make a study with visual results on the main articles and investigations found, throwing maps of networks which allow visualizing the content of the analysis carried out in a practical and effective way.

### 3. RESULTS

A study of authors and key words was done through Vosviewer which is a tool for the construction and visualization of bibliometric networks that can include all kinds of bases of analysis of relationship between authors and keywords, which allows to know and understand the networks which have been identified in the study area. To understand the images it is necessary to understand that the importance or relevance goes from greater to lesser of the tones warmer to the colder ones, being the red one that more importance has culminating with the blue one of the less relevance, it is also important to understand that The lines between the thicker means a larger network of information and finally, the greater the circumference of the word or the author the greater the preeminence. This software yielded the following results (see Figure 1):

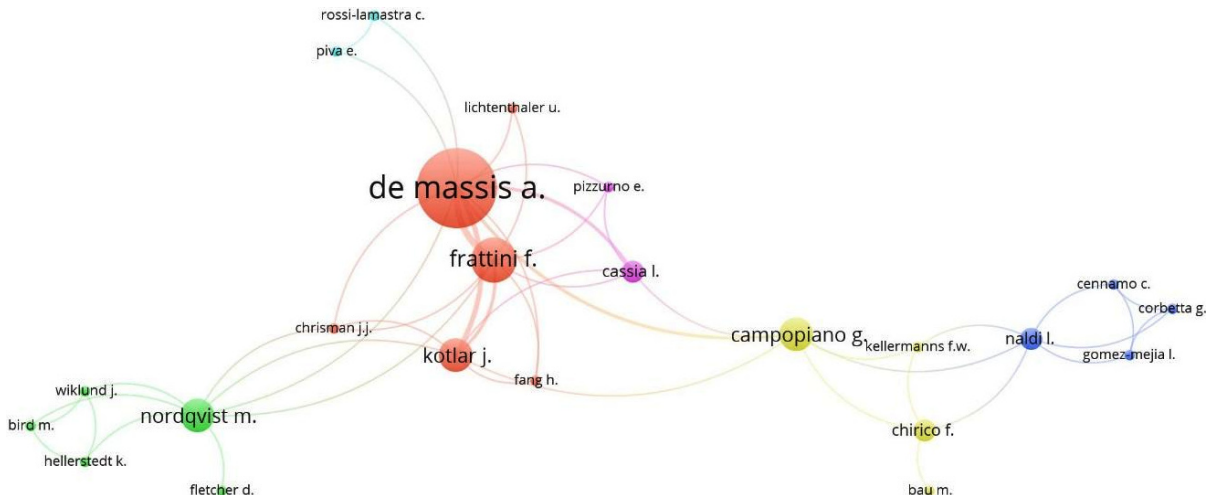
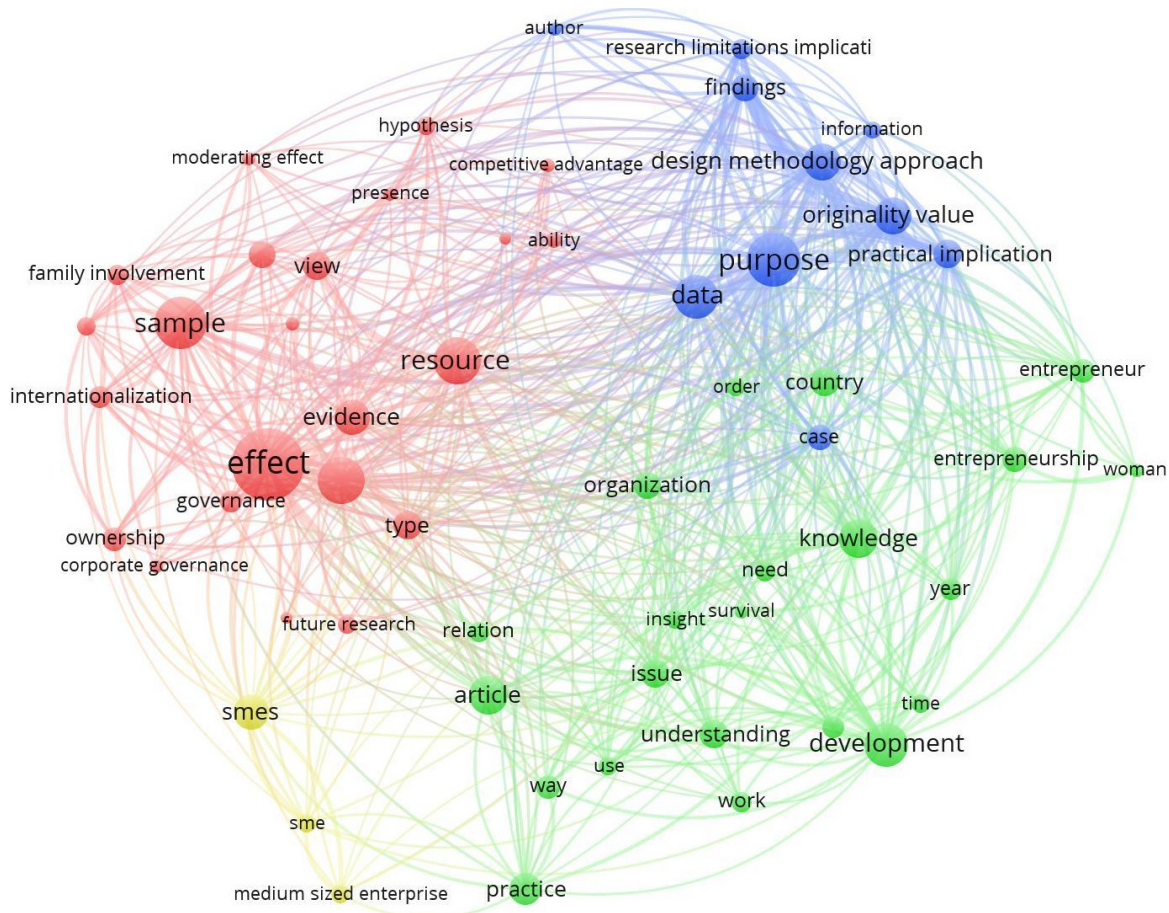


Figure 1: Authors who have written and conducted research in the last four years on family and innovation enterprises

Figure 1 represents the authors who have written and conducted research in the last four years on family and innovation enterprises, it is evident that De Massis ([6][7][8]). is the author more references and this in turn has relation with authors such as Frattinni F and Kotlar J ([9][10][11]), however the authors who are yellow, violet and green have performed studies related to the area but to a lesser extent. It is also important to denote the networks that exist between the authors since this allows to visualize who are the cited authors, with more years of experience in related research and that have had relevant studies in conjunction with other authors.

In this case, authors such as De Massis A. and Frattini F, lead an important research network because of the location they occupy and the color they have are authors constantly cited and who have worked together on innovation capacities, family business and Innovation management.



**Figure 2: Most used keywords in abstract**

Figure 2 shows the most used words in Abstract of the consulted documents, among which are networks of communication between three large groups of words. The first group to be found in red is the most used words: effect, sample, resource, internationalization, governance, family participation and corporate governance, which refer to the state of the family enterprise versus the capabilities of Innovation and innovation management. Second is the group of blue concepts in which words such as: purpose, data, practices, involvement, value of originality and recommendations can be identified which are associated with competencies and Management of family businesses and finally the third group which refers to words related to innovation in companies with innovation management, in this group we find words such as: understanding, development, need, problem, time, knowing, Businessman, among others.

Table 1 shows the most representative authors and that are in the first 10 places in the research field on family business. Compared with the bibliometric analyzes carried out by Casilla and Acedo ([12]), and Benavides, Guzmán and Quintana ([13]; [14]), two authors, first, Alfredo De Massis, who has 2013 to present a total of 32 articles, an average of 8 publications per year. Second, Mattias Nordqvist who has published a total of 33 articles written from the year 2010.

**Table 1**  
**The top ten authors of the Family Business (1957 - 2016)**

<i>Author</i>	<i># Published articles</i>
Chrisman, J.J.	64
Kellermanns, F.W.	59
Chua, J.H.	46
Sharma, P.	41
Miller, D.	38
Danes, S.M.	37
Eddleston, K.A.	35
Nordqvist, M.	33
Astrachan, J.H.	32
De Massis, A.	32
Zellweger, T.M.	30

Most of these authors and articles come from the United States, with 1276 publications, followed by the United Kingdom with 386, Spain with 315, Italy with 309, and Canada with 293, for a total of 59% of 4,324 publications made between 1957 and December 2016.

On the other hand, in the literature on this topic there is a concentration of productivity in a number of major institutions, however, in the period described there have been changes in contributions. According to Benavides, Gúzman, & Quintana ([12];[13]) from the period 2003 to 2008, Mississippi State University was observed among the main authors and from 2007 as the most productive institution, followed by the University of Alberta, University Of Calgary and Kennesaw State University. In the bibliometric analysis carried out in this research, it was found that the University of Alberta currently ranks first with 114 publications, followed by Mississippi State University with 105, Jonkoping International Business School with 98, Universita Bocconi with 75, Lancaster University with 58 and finally, University of Calgary with 57 articles.

Among the most representative journals during the period 1960 - 2016 are the Family Business Review with 566 publications, the Journal of Family Business Strategy and the Entrepreneurship Theory and Practice, with 161 and 148 publications respectively.

Finally, at the international level, thematic axes revolve around corporate governance with 219 publications, succession with 123, entrepreneurship with 110, and with regard to the central themes of this study, innovation and performance, appear in the fourth and fifth, with 107 and 88 documents respectively. These studies in innovation “analyze different countries and make comparisons between family and non-family companies, are usually related to several topics such as risk adoption, organizational culture and strategy” ([13], p. 87)

This led to a little more research on the progress of the issue directly in Colombia, which appears in the twenty-nine position in 2015 and advanced to the 25th position in 2016 of a total of one hundred two countries that have investigated the family business. Colombia only has 28 articles on which the topics reflected in figure

3 are answered, which by their incipient development do not project a clear trend of investigation, since the first article was published in 2004 and on average only 2 documents have been generated per year, except in 2010 that 4 were published in total and in 2015 a total of 7.

In addition, there is a lack of interest in the topic of innovation in the family business, although in the face of their performance, two studies have been carried out with an emphasis on financial performance, which support the results of the present study in the Section of Financial Analysis in the Family Business.

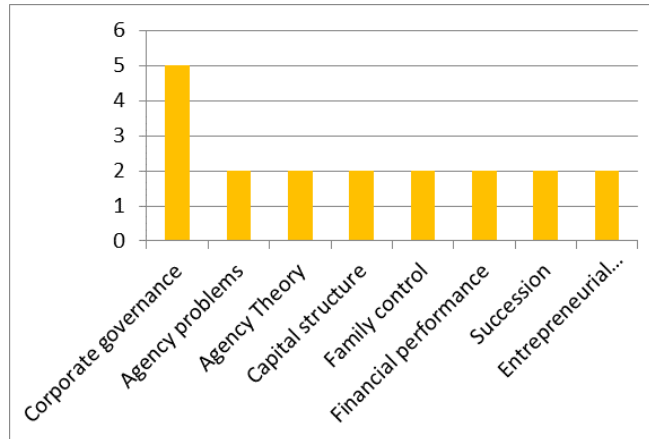


Figure 3: Subjects treated in the literature on Family Business in Colombia (2004 - 2016)

Next, in Figure 4, the most representative authors of Colombia and their institutional affiliations are shown.

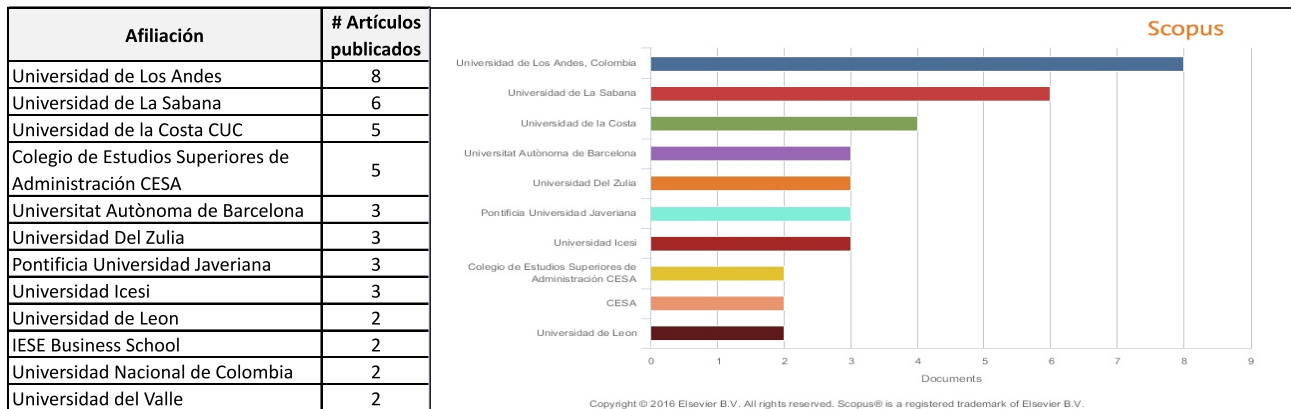


Figure 4: Affiliation and most representative authors of the Family Business in Colombia (2004 - 2016)

Regarding the topic of innovation in Family Business, in the bibliometric analysis carried out, it is relevant to mention that of the 4,324 published articles of Family Business between 1957 and 2016, only 5% correspond to the topic of innovation in family businesses. In addition, the first paper entitled “Manufacturing in Kitchener-Waterloo: A Long-term Perspective” (Canada) was a publication series at the University of Waterloo in 1987 by author Walker DF in which he provided an overview of long evolution. In the period between 1993 and 2001, only 7 articles on this topic were published, and it was until 2010 that a greater growth was generated in the interest of different authors to investigate, with an average of 28 articles per year and a peak of publications in 2016 with a total of 46 articles [14].

Among the most representative authors on the subject of innovation are the following (see Table 2), among them Alfredo De Massis as one of the precursors in the study of innovation in family business.

**Table 2**  
**Main authors of Innovation in Family Business**

<i>Author</i>	<i># Published articles</i>
De Massis, A.	9
Frattini, F.	7
Craig, J.B.L.	6
Kraus, S.	5
Iturralde, T.	4
Kotlar, J.	4
Maseda, A.	4
Moore, K.	4
Pizzurno, E.	4
Sanchez-Famoso, V.	4

#### 4. CONCLUSIONES

One of the conclusions derived from the analysis of the bibliometric review is that the production carried out in the countries of Latin America is very small compared to countries in Europe or North America, which shows the need to carry out research in countries such as Colombia where the reference industry To family businesses is ample.

Within the results of the bibliometric review it is possible to identify that the information networks established between the authors focus mainly on the network established by De Massis A, Frattini F and Kotlar J that have been the center of the network since they are constantly cited And maintain communication with other authors.

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