A comparative study of the innovation strategies of family and non-family firms in Italy

Elisa Giacosa, Laura Broccardo, Elisa Truant


Abstract

Innovation strategy represents one of the most important research topics concerning the family business phenomenon. The purpose of the research is to investigate the relevance of innovation strategy comparing family firms (FFs) and non-family firms (NFFs), with a particular reference to technological innovation. It has been achieved by taking into consideration the relevance of R&D investments in innovation, and the different innovation configurations chosen by FFs and NFFs.

Referring to De Massis, Frattini and Lichtenthaler (2013) and Gudmundson, Hartman and Tower (1999), the approach used is both qualitative and quantitative, as it is based on empirical evidences and information measuring as well.

According to several scholars, FFs find innovative strategies more appealing as opposed to NFFs. FFs are more likely to set out longer term plans for their investments than NFFs. Finally, most of the FFs investigated in the study have chosen a combination of internal and external innovation via strong networks of third parties in R&D.

The implications arising from this research are both theoretical and practical, as this matter is pertinent for both scholars and practitioners. The limitations instead could be overcome by using relevant econometric models to replicate the effect of a series of external and internal variables on the innovative policy.

Keywords: Innovation; family business phenomenon; Management Control System.
1. Introduction

Family firms (FFs) are a worldwide phenomenon (Acquaah, 2013; Contò et al., 2014), and they are considered to be a driving force for the economic fabric of several countries (Culasso et al., 2012 and 2013; IFERA, 2013). For this reason, FFs have attracted attention of many researchers (Astrachan and Shanker, 2003; Claessens et al., 2000; Colli, 2013; Faccio and Lang, 2002; La Porta et al., 1999; Morck and Yeung, 2004; García-Ramos and García-Olalla, 2011).

In Italy, as well as in Europe, the economic environment is characterized by presence of numerous family businesses (Mediobanca, 2013), what have a positive impact on regional competitiveness and its drivers (Viassone, 2009; Vrontis and Viassone, 2013).

In recent years, the competitive context has been affected by structural change mostly due to two forces: globalization and technology (Bresciani et al., 2013a and 2013b). Therefore, the presence of family businesses (AIDAF, 2011; Bresciani and Ferraris, 2012; Ferraris and Grieco, 2014; Mediobanca, 2013) represents a distinctive factor for operating in the international scenario and for innovation strategy.

Innovation strategy represents one of the most important research topics considering the family business phenomenon, as it is one of the means to achieve a company’s growth (Bresciani, 2009 and 2010; Cafferata, 1995). Indeed, innovation allows businesses to develop competitive advantages in a long-term period (Cafferata, 2009; Greve, 2009; Porter, 1985; Webb, Ketchen Jr. and Duane Ireland, 2010), supporting survival of a company (Brown and Eisenhardt, 1995; Greenwood and Miller, 2010; Greve, 2007; Thompson, 1965; Carrasco-Hernandez and Jimenez-Jimenez, 2012). This topic is very relevant, as innovation can turn a change into opportunity (Bresciani, Vrontis and Thrassou, 2013a; Drucker, 1985), especially in a globalized context in which the competitiveness of an expanded business environment means that companies offer to clients increasingly differentiated and innovative products.

Current research fits into this topic. Focusing on technological innovation in family businesses (Block, 2009; De Massis, Frattini and Lichtenthaler, 2013; Hoy and Sharma, 2010; Miller and Le Breton-Miller, 2005), the purpose of the research is to investigate the relevance of innovation strategy comparing family firms (FFs) and non-family firms (NFFs). In particular, the above mentioned comparison has been made taking into consideration the relevance of R&D investments with regard to innovation, and the different innovation configurations chosen by FFs and NFFs.

Referring to De Massis, Frattini and Lichtenthaler (2013) and Gudmundson, Hartman and Tower (1999), the approach used is both qualitative, by analyzing the empirical evidence, and quantitative, thanks to the information measuring. In particular, we collected a relevant amount of data, which permit to conduct a statistical analysis and drawing up generalizations (Zimmerman, 2001).

The motivation of the research is coherent in the current context of the reference, which is characterized by economic crisis: indeed, the innovation
strategy could favour an increase in the company’s competitiveness, despite the drop in consumption.

Our study contributes to the literature, as it permits to highlight the impact of a series of companies variables on the innovation strategy in FFs and NFFs, operating in some representative industries for Italian economy. In addition, this observation in the last year permits to verify effects of the financial crisis on the innovation strategy, that can be considered to be a mean for increasing the company’s competitive advantages.

The research is structured as follows. The second section focuses on the analysis of the literature, with particular reference to different elements of observation and the tendency of family businesses to innovate. The research method is outlined in the third section. The description of the results is presented in the fourth section which is followed by discussion of the results in the fifth section. Finally, the conclusions and implications of the study are set out, along with the limitations of the research.

2. Theoretical background

A majority of literature is focused on innovation strategy in family businesses. In the context of our research, review of literature has been made taking into consideration the relevance of R&D investments with regard to innovation, and the different innovation configurations chosen by FFs and NFFs. Before comparing FFs and NFFs, it was useful to make a general distinction between different innovation configurations, as this distinction has been then used by comparing FF tendency in terms of innovation strategy.

Our literature review has permitted to identify some relevant studies for our investigation, which favour and direct the empirical analysis. Then we referred to De Massis, Frattini and Lichtenthaler (2013) and Gudmundson, Hartman and Tower (1999), as they provide a deep comparison of FFs with NFFs in terms of their innovation strategy, by considering different elements of comparison useful for our research goal.

2.1 Innovation configurations

The literature identifies different types of innovation (Blundell, Griffiths and Van Reenen, 1999; Cerruti, 2008; Cerruti and Apolloni, 2012; Covin and Miles, 1999; Fray et al., 2012; Giacosa, 2011; Giacosa et al., 2015; Tidd and Bessant, 2009) and these configurations are useful to contextualize the context in which our research was conducted:
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- a strategic innovation: it reinvents the company's position, increases the gap between costs incurred and benefits to customers, and creates new formulas for competition in terms of customers to be approached, and/or products to offer, and/or the way in which these products have to be offered;
- an administrative and organizational innovation: it seeks new opportunities for improvement, turning changes into real ideas and generating benefits from it. Impacting on all functional areas of a company, it offers an opportunity to optimise effectiveness and efficiency of activities, also in terms of the organizational structure and especially in terms of managerial, organizational, administrative and human resources;
- technological innovation: it creates, designs, produces and introduces new product, technology, system or technique (Cafferata, 1998; De Massis, Frattini and Lichtenthaler, 2013; Freeman, 1976), new processes or modifies existing products or processes, with the aim of increasing the company's performance (Blundell, Griffiths and Van Reenen, 1999; Crossan and Apaydin, 2010; Geroski, Machin and Van Reenen, 1993; Hult, Hurley and Knight, 2004; Porter, 1990), also thanks to the contribution of intangible resources (Ferrando, 1998a, 1998b and 2009; Marchiori, 2009) and IT contributions (Spinelli, 2009; Spinelli et al., 2013).

Current research focuses on the technological innovation. Many scholars have focused on various ways in which innovation strategy is defined:

a) firstly, the distinction between internal and external innovation: the innovative strategy may be conducted internally, externally, or in a mixed solution (Chesbrough, 2003; Giacosa et al., 2015; Pistrui, 2002; Re et al., 2014; Schilling, 2009):
  - internal innovation: the innovation has been developed within the company by some members of the family or by trusted managers and staff. The role played by the innovation impacts on innovation management: innovation might relate to Research & Development (which is focused only on R&D investments) or to other functions, such as Manufacturing or Marketing (when innovation investments do not have a relevant role);
  - external innovation: the company uses external resources, such as experts within the sector in which the firm operates. They have to consider the particular features of the company: indeed, the innovation's essence must be fully assimilated by the firm in order for it to be successful (Cohen and Levinthal, 1990), identifying its strengths and weaknesses and educating customers to appreciate more innovative products;
  - a mixed solution: innovation might be managed both internally and externally. This combination may combine the benefits of external suggestions by the external experts (Pistrui, 2002) with the knowledge of the company’s managers;

b) secondly, many scholars have focused on the company's tendency to innovate, according to different elements, usually defined as products and processes. Even if the distinction between products and processes is not always clear-cut, it has important theoretical and practical implications for innovation strategy. For this reason, it's useful to analyse the various ways in
which innovation strategy has been defined by the literature. Innovation has been distinguished between products and processes, focusing on different strengths and weaknesses. Product innovation permits a creation of new products and/or an improvement of the intrinsic qualities of existing products. The same reasoning applies to process innovation: introducing a new operating method, or improving an existing method in the production, commercial, administrative and managerial area, or generating a new way of using a production factor in order to increase production efficiency in terms of cost, quality and service (Re et al., 2014).

2.2 Innovation tendency of family firms

Many scholars have focused on the tendency of family businesses to innovate. We can divide the researchers into two categories (Craig and Moores, 2006; Culasso et al., 2013; Ducassy and Prevot, 2010; Gudmundson, Hartman and Tower, 1999), even if this topic could not be assessed in general, but it requires an in-depth analysis for a company analyzed (Hülsbeck et al., 2012; Kraus, Pohjola and Koponen, 2012; Uhlaner, Wright and Huse, 2007):

- researchers who stated that family businesses are less attracted by innovative strategies than non-family businesses;
- researchers who claim that family businesses are more attracted by innovative strategies than non-family businesses.

According to the first group of researchers, family businesses are less attracted by innovative strategies than non-family businesses. This is due to risk aversion (Block, 2012; Chen and Hsu, 2009; Naldi et al., 2007) caused by several reasons, such as: different long-term vision (Broekaert, Andries and Debackere, 2014; Chen and Hsu, 2009; Chrisman and Patel, 2012; Miller, Le Breton-Miller and Lester, 2011; Munari, Orien and Sobrero, 2010; Naldi et al., 2007); concentration of the ownership in a few people (family members or family members and managers) (Romano, Tanewski and Smyrnios, 2000; Schulze et al., 2001); investment of the family assets in the business as major stakeholder (Anderson and Reeb, 2003 and 2004; Rusconi, 2006 and 2009); intention of maintaining control after the generational handover and avoiding debt financing (Le Breton-Miller and Miller, 2006). These factors cause conservative behaviour in regards to innovation, even if it means that the business becomes less inclined to pursue new opportunities as a part of a long-term vision (Kellermanns et al., 2012).

A conservative innovation strategy permits the retention of socio-emotional wealth (Chrisman and Patel, 2012; Cyert and March, 1963; Goel et al., 2012; Stockmans, Lybaert and Voordeckers, 2010): preserving family identity and benevolence, combined with a will to perpetuate family participation in the company, and hampers innovation (Ducassy and Prevot, 2010). As a result family
businesses prefer to invest in physical assets rather than in riskier R&D projects (Anderson, Duru and Reeb, 2012).

Regarding the results, some scholars have stated that family businesses are not behind an innovative output, even if they invest less in R&D than non-family businesses. This level of output obtained may be due to long experience in their sector and the organizational flexibility which is vital for innovation, compensating lower level of investment (Ambrosini and Bowman, 2009; Bonti and Cori, 2006; Broekaert, Andries and Debackere, 2014; Cori, 2013; Craig and Dibrell, 2006; Craig and Moores, 2006; Giorgetti, 2013; Gudmundson, Tower and Hartman, 2003).

Concluding, it emerges that not all family businesses are highly entrepreneurial: when they are focused on non-economic benefits for the family (Astrachan and Jaskiewicz, 2008; Gomez-Mejia et al., 2007; Zellweger and Astrachan, 2008), they tend to preserve family balance rather concentrating on benefit to the company; nepotism may be a weakness (Bertrand et al., 2008; Perez-Gonzalez, 2006), if it promotes non-capable family members.

According to the second group of researchers, innovation strategy has been considered as a critical leadership imperative (Dana and Smyrnios, 2010; Poza, 2007), which could future-proof family businesses (Bergfeld and Weber, 2011), develop and integrate new knowledge and skills of the human capital (Caselli, 1990; Sbrana and Torre, 1996; Torre, 2005), and increase performance level (Allison, McKenny and Short, 2014; Cantino, 2007; Cantino et al., 2015; Habbershon and Williams, 1999; Levinthal and March, 1981; Levinthal and March, 1993; Miller and Le-Breton Miller, 2006; Sirmon and Hitt, 2003; Spriggs et al., 2013; Uotila et al., 2009; Veider, 2014). A vision for a long-term period (Cassia, De Massis and Pizzurno, 2012; Chua, Chrisman and Bergiel, 2009; Sirmon and Hitt, 2003; Uotila et al., 2009; Zellweger, 2007; Zellweger, Nason and Nordqvist, 2012) influences the innovation strategy, as technological innovation favours the achievement or maintenance of the competitive advantage (Bertoli, 2004; Donna, 1992; Galunic and Rodan, 1998; Geroski, Machin and Van Reenen, 1993; Menguc and Auh, 2006) and growth in a long period (Astrachan, 2010; Cefis and Marsili, 2005; Zahra, Hayton and Salvato, 2004; Zahra, 2005; Zahra et al., 2008). Therefore, innovation is considered as a mean to ensure trans-generational control (Chrisman and Patel, 2012; Gomez-Mejia et al., 2007).

This propensity to innovate is also influenced by a series of variables, such as a stronger commitment by the family members to the company business, a flexible organizational structure and decision-making process (Aldrich and Cliff, 2003; Aronoff, 1998; Caselli, 1966; Craig and Moores, 2006) and the familiness factor (Arregle et al., 2007; Carnes and Ireland, 2013; Dyer Jr., 2006; Ferrando, 1981; Llach and Nordqvist, 2010; Nordqvist and Merlin, 2010). These typical qualities for a family business increase the willingness to innovate when compared to non-family businesses (Habbershon and Williams, 1999; Gudmundson, Tower and Hartman, 2003; Westhead, 1997). Another study (De Massis et al., 2015) confirms the influence of family variable on innovation underlining that family businesses differ from non-family ones as it regards product innovation strategies and organization of the innovation process.
In addition, we analysed the connections between research and development (R&D) activities and innovativeness in family businesses. In these terms, the literature considered R&D activities as a primary source of innovation, due to their relevance in creating new products and processes or in improving existing ones (Ahuja and Lampert, 2001; Bresciani, Vrontis and Thrassou, 2015; Bresciani and Ferraris, 2014; Hargadon and Sutton, 1997; Re et al., 2014). When family firms choose R&D investments, they obtain several benefits in the long term (Zahra, Hayton and Salvato, 2004), even if their effects require time to occur:

- in terms of internal innovative strategy, they strongly contribute to technological innovation and, consequently, to producing better conditions for good performance (Block, 2012; Bresciani, Vrontis and Thrassou, 2014 and 2015; Enkel, Gassmann and Chesbrough, 2009; Giacosa, 2011). Indeed, thanks to the constant generation of new ideas in terms of both products and processes, the company benefits from a continuous stream of new features;

- also with regards to external innovative strategy, these investments are relevant, as the inputs from external parties permit the new ideas and new collections to be introduced, increasing customer loyalty and attracting new consumers (Broekaert, Andries and Debackere, 2014; Pakes and Griliches, 1980; Rosenberg, 1990; Rothaermel and Hess, 2007; Spithoven, Frantzen and Clarysse, 2010).

Lastly, we analyzed the impact of networks between the company and external parties on the R&D investments. It emerges that the creation of networks between the company and external parties, such as clients, suppliers, other companies, and universities and research centres could increase the innovation benefits (Ahuja and Lampert, 2001; Hargadon and Sutton, 1997). These networks amplify innovation benefits, as tacit or formal collaboration with external parties permits the exchange and comparison of information, resources, attitudes and capabilities beyond the company’s boundaries (Ghoshal and Bartlett, 1990; Garzella, 2000; Lorange and Roos, 1993). Consequently, creating networks may be considered as a source of development and competitiveness for the company, thanks to combination of different resources, skills and attitudes (Colombo et al., 2012; Flatten, Greve and Brettel, 2011; Gulati and Martin, 1999; Human and Provan, 1997; Gulati, Nitin and Akbar, 2000; Giacosa, 2012; Nieto and Santamaria, 2010; Walker, Kogut and Shan, 1997). These networks favour higher benefits from innovation investments, such as increasing of a brand perception (Appel, 2001; Bertoli, 2002 and 2007; Keller, 2003; Thrassou and Vrontis, 2008, 2009, 2010; Vrontis, 1998; Vrontis and Paliwoda, 2008; Vrontis and Papasolomou, 2007; Vrontis and Thrassou, 2007, 2011; Vrontis, Thrassou and Czinkota, 2011; Vrontis, Thrassou and Pavlides, 2011; Westling, 2001).

An interesting research (Poskela, Martinsuno, 2009) develops a framework for management control in the front end of innovation and tests hypotheses on the relationship between them. This study underlines the role of technology and market uncertainty as potential moderators of this relationship. In particular it reports a correlation between technology uncertainty and the relationship between process and outcome-based control and strategic renewal.
In addition, a study conducted by Bisbe and Otley (2004) showed that the impact of innovation on performance is moderated by the style of use of Management Control System, indicating that the explanatory power of a model that regresses performance on innovation is significantly enhanced by the inclusion of this moderating effect.

3. Methodology

3.1 Sample

The original sample was composed of 3,900 companies, from different economic sectors in the Piedmont region of north-western Italy. The companies considered belong to different economic sectors, such as agriculture and farm animals, craftsmanship, manufacturing, services and trading. The size of the sample was achieved thanks to the collaboration of the Turin Chamber of Commerce (2014).

The companies had to be active (they were not in closure or in settlement procedures), and have their legal head office in Piedmont (North-West of Italy), with revenues between 2 and 250 million. Classifying the companies as SMEs, we decided to adopt the criterion of the revenues as the most relevant one, because it has been verified the reliability of data provided by respondents on a sample basis, considering both AIDA database and Chamber of Commerce of Turin database. Other standards suggested by European classification were not verifiable with available tools.

Starting from the original sample, 1,800 companies have been successively chosen by using a random and casual process applied by the software. A questionnaire has been sent to that companies. It took about three months to compile the results. Using the same software, 18% (309) of the companies returned the completed questionnaire, making our final sample.

The final sample is characterized by the following characteristics.

Firstly, we asked the companies to indicate if they belong to the FFs group rather than to NFFs one. For this reason, we used a mix criterion (Chua, Chrisman and Sharma, 1999) - explicated in the guide of the questionnaire – which permits to achieve the benefits of a mixed classification. In particular, the mix criterion takes into consideration:

- a control participation in the capital by the family/families;
- the presence in the Board of at least one family member;
- the CEO perception about the business.

In particular, a company is classified as a FF if: i) the family owns at least 50% of the shares, and the company is family-run; or ii) the family owns at least 50% of the shares, the company is not family-run, but nevertheless the CEO perceives
it as a family firm; or iii) the family owns less than 50% of the shares and the others are owned by a venture capital or investment company. The company is family-run and the CEO perceives it as a family firm.

Only 276 companies answered to that question, indicating their belonging to the FFs/NFFs group. Therefore, our analysis of findings has been carried out only on these 276 firms. Subsequently, we focused on the FFs group compared to NFFs with the purpose of our investigation.

From 276 companies that responded to the question, 132 (47.8%) declared to be a FF, while 144 (52.2%) declared to be a NFF (Table 1).

**Table 1 - The final sample: FFs versus NFFs**

<table>
<thead>
<tr>
<th>FFs versus NFFs</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF</td>
<td>47.8%</td>
<td>132</td>
</tr>
<tr>
<td>NFF</td>
<td>52.2%</td>
<td>144</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>276</td>
</tr>
</tbody>
</table>

*Source: personal elaboration*

Looking at revenues, the sampling frame results as follow (Table 2).

**Table 2 - Class of revenues**

<table>
<thead>
<tr>
<th>Class of Revenues</th>
<th>Total sample</th>
<th>FFs</th>
<th>NFFs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-5 mln €</td>
<td>6.3%</td>
<td>4.5%</td>
<td>8.2%</td>
</tr>
<tr>
<td>5-10 mln €</td>
<td>36.8%</td>
<td>42.9%</td>
<td>32.8%</td>
</tr>
<tr>
<td>10-20 mln €</td>
<td>29.6%</td>
<td>23.2%</td>
<td>35.2%</td>
</tr>
<tr>
<td>20-50 mln €</td>
<td>19.0%</td>
<td>21.4%</td>
<td>15.6%</td>
</tr>
<tr>
<td>50-100 mln €</td>
<td>5.1%</td>
<td>5.4%</td>
<td>4.9%</td>
</tr>
<tr>
<td>100-&lt;or=250 mln €</td>
<td>3.2%</td>
<td>2.7%</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

*Source: personal elaboration*

The highest percentage of frequency per class of revenues (2013 fiscal year) is between 5 and 10 mln € (66.4%). Above 20 mln €, percentages gradually decrease, and just 3% of companies exceed 100 mln €. Considering FFs, the highest percentage of frequency per class of revenues is between 5 and 10 mln € (42.9%), while the class of 10-20 mln € is more relevant for NFFs (35.2%).

Regarding employees, the sampling frame presents as follow (Table 3).
Table 3 - The number of employees

<table>
<thead>
<tr>
<th>Number of employees</th>
<th>Total sample</th>
<th>Response % in FFs</th>
<th>Response % in NFFs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10</td>
<td>8.8%</td>
<td>9.3%</td>
<td>8.5%</td>
</tr>
<tr>
<td>10-49</td>
<td>48.5%</td>
<td>48.0%</td>
<td>49.0%</td>
</tr>
<tr>
<td>50-249</td>
<td>34.6%</td>
<td>35.7%</td>
<td>33.5%</td>
</tr>
<tr>
<td>More than 249</td>
<td>8.1%</td>
<td>7.0%</td>
<td>9.0%</td>
</tr>
</tbody>
</table>

Source: personal elaboration

Half of the companies taken into consideration employ between 10 and 49 people (48.5%). This tendency is also valid for both FFs (48.0%) and for NFFs (49.0%). Over a third of companies (34.6%) have between 50 and 249 employees. Just 8.1% of respondent companies have more than 249 employees.

1.2 Research method

We said that the purpose of our research is to investigate the relevance of innovation strategy, comparing family firms (FFs) and non-family firms (NFFs). In particular, the above comparison has been made taking into consideration the relevance of R&D investments with regard to innovation, and different innovation configurations chosen by FFs and NFFs.

In line with our research goal, the following question has been developed:

RQ: What are the main differences between the FFs and NFFs innovation strategy?

In the context of a deductive and inductive approach (mixed approach), we combined the insights of the literature review and the findings observed with a survey made by questionnaire. In particular, the research methodology has been structured in two phases:

- in the first phase, our literature review was focused on the relevance of innovation strategy comparing family firms (FFs) and non-family firms (NFFs). According to our research goal, we took into consideration the relevance of R&D investments with regard to innovation, and different innovation configurations chosen by FFs and NFFs. Before comparing FFs and NFFs, it was useful to make a general distinction between different innovation configurations, as this distinction has been then used by comparing family firms tendency in terms of innovation strategy. Our literature review permitted to identify some relevant studies for our investigation; subsequently, we have specifically referred to De Massis, Frattini and Lichtenthaler (2013) and
Gudmundson, Hartman and Tower (1999), as they compare in depth FFs with NFFs in terms of their innovation strategy, by considering different elements of comparison so useful for our research goal;

- in the second phase, an empirical analysis has been carried out. As the family businesses phenomenon is widespread in Italy, as well as in Europe, to create our sample the Italian context has been considered. The data, both quantitative and qualitative, were collected thanks to an on-line questionnaire, handled by a particular software called Survey Monkey and analyzed using statistical tools (mean, standard deviation and Pearson correlation ratio). We first distributed questionnaires to randomly selected companies in Piedmont, in north-western Italy. The questionnaire has been created in June 2014 and has been sent to the companies in the months of July, August and September 2014. The approach used is both qualitative, by analyzing the empirical evidence, and quantitative, thanks to the information measuring. In this way, a significant amount of data was collected, permitting statistical analysis and drawing up generalizations (Zimmerman, 2001). The questionnaire was composed of quantitative and qualitative data; in particular, it was divided in two parts:
  o the first part was focused on general companies information (corporate name, number of employees, revenue, economic sector, legal form, year of foundation, and the distinction between FFs and NFFs);
  o the second part was focused on research and development investments (% in R&D investments, employees involved in R&D projects, aims and scope of R&D projects). Thanks to the questionnaire, companies have been classified into different sectors and between FF group or the NFF group. It allowed us to focus on the FF and NFF groups in order to analyse their R&D activities.

During our analysis the following elements have been considered:
- Investments in R&D over the last 5 years;
- What percentage of the income was spent on R&D;
- The relationships between the company and external research institutions and/or universities;
- Who performs the R&D activities in the company;
- The reasons for internal R&D activity;
- Who handles internal innovation;
- The reasons for external R&D activity;
- The adoption of Management Control System.

Questionnaires have been analysed autonomously by three authors and then results have been compared (Atkins and Shaffir, 1998; Jönssön and Lukka, 2005). An empirical analysis was carried out using the data arising from the questionnaire. In particular, some simple statistical formula (mean and standard deviation) and a Pearson correlation were used. According to the Pearson correlation, we first investigated the presence of a relevant differences between FFs and NFFs, calculating the correlation between the R&D investments and the
total revenue. In particular, the total revenue represented our independent variable, while the propensity to invest in R&D was our dependent variable.

Secondly, we investigated if adoption of Management Control System could impact on the propensity to invest in R&D; in accordance to our investigation purpose, the adoption of Management Control System represents our independent variable, while the propensity to invest in R&D is our dependent variable. In addition, in order to assess the differences between FFs and NFFs, we correlated R&D investments and the recourse of external research institutions; in accordance to our investigation purpose, the recourse of external research institutions represents our independent variable, while the propensity to invest in R&D is our dependent variable. Considering the Pearson ratio ($p$), it’s important to underline that:
- if $p > 0$ there is a direct correlation;
- if $p = 0$ there is no correlation;
- if $p < 0$ there is an indirect correlation;
- if $0 < p < 0,3$ the correlation is weak;
- if $0,3 < p < 0,7$ the correlation is moderate;
- if $p > 0,7$ the correlation is strong.

Furthermore, the t-statistic and p-value were used to determine whether or not the correlation is significant. We stated that if the p-value is higher than 5% (1% or 10%), the correlation between the variables is not significant to a level of 5% (1% or 10%) and vice versa.

4. Findings

First, we compared the relevance of R&D investments with regard to innovation. Second, we compared different configurations of innovation.

4.1 FFs and NFFs by comparing the relevance of R&D investments with regard to innovation

We verified the relevance of R&D investments with regard to innovation in our sample, comparing FFs to NFFs. First, the FFs and NFFs have been compared in terms of their R&D activities in the last 5 years (Table 4).
The survey conducted shows that FFs are more likely to invest in R&D: 66% of them has made R&D investments during the last 5 years, in comparison to 56.6% of NFFs.

Secondly, we compared the percentage of the R&D investments on the total revenue, comparing FFs and NFFs (Table 5).

From the table presented above it emerges that NFFs are less likely to adopt innovative strategies than FFs: 32.4% of FFs have invested in R&D at the level of 2–5% of total revenue, in comparison to 28.6% of NFFs. 18.3% of FFs invested 5–10% of the total revenue, while for NFFs this percentage was equal to 14.3%. Finally, 1.4% of FFs invested 20–50% of the total revenue, against 1.3% of NFFs.

To better investigate the presence of significant differences between FFs and NFFs, the correlation between the R&D investments and the total revenue was calculated (Table 6).
Table 6 - Correlation between the R&D investments and the total revenue

<table>
<thead>
<tr>
<th></th>
<th>Total sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pearson – Correlation</strong></td>
<td>0.09048312</td>
</tr>
<tr>
<td>between (i) the R&amp;D</td>
<td></td>
</tr>
<tr>
<td>investment and (ii) the total</td>
<td></td>
</tr>
<tr>
<td>revenue</td>
<td></td>
</tr>
<tr>
<td><strong>Test t on correlation</strong></td>
<td>1.35372e</td>
</tr>
<tr>
<td><strong>P-value</strong></td>
<td>0.1772</td>
</tr>
</tbody>
</table>

Source: personal elaboration

The correlation coefficient is equal to 0.09048312 (p-value = 0.1772): it means that there are no strong differences between FFs and NFFs when considering the investment in R&D on revenues.

Subsequently, it was interesting to analyse the propensity to invest in R&D, if the company adopts a Management Control System. Consequently, we correlated the presence of Management Control System and R&D investment, obtaining the following results (Table 7).

Table 7 - Correlation between the presence of Management Control System and R&D investment

<table>
<thead>
<tr>
<th></th>
<th>Total sample</th>
<th>FFs</th>
<th>NFFs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pearson – Correlation</strong></td>
<td></td>
<td>0.26920922</td>
<td>0.17535038</td>
</tr>
<tr>
<td>between (i) the presence of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management Control System</td>
<td>0.20962289</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and (ii) R&amp;D investment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Test t on correlation</strong></td>
<td>3.09934</td>
<td>2.73881</td>
<td>1.87651</td>
</tr>
<tr>
<td><strong>P-value</strong></td>
<td>0.0022</td>
<td>0.0074</td>
<td>0.0632</td>
</tr>
</tbody>
</table>

Source: personal elaboration

Firstly, without distinguishing FFs and NFFs, the research shows a direct correlation between the presence of Management Control System and R&D investment. It is a weak correlation, but it demonstrates that, if a Management Control System is implemented, the companies are more inclined to invest in R&D. The correlation is significant to a level of 1% as the p-value is lower than 1%.

Distinguishing the companies using the family variable, it emerges a direct correlation between the presence of Management Control System and R&D investment, in both FFs and NFFs. The correlation is significant for NFFs at a significant level of 10%, while the correlation is relevant for FFs at a significant level of 1%.
The difference between these two groups is that in NFFs the correlation is weak, while in FFs the correlation between the presence of Management Control System and R&D investment is moderate.

### 4.2 Different configurations of innovation comparing FFs to NFFs

Different configurations of innovation have been observed according to a widespread distinction in the literature in terms of internal, external and mixed solution innovation. These different compositions have been analysed in our sample.

<table>
<thead>
<tr>
<th></th>
<th>FFs</th>
<th>NFFs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response %</td>
<td>Response Count</td>
</tr>
<tr>
<td><strong>Internal innovation</strong></td>
<td>40.6%</td>
<td>26</td>
</tr>
<tr>
<td><strong>External innovation</strong></td>
<td>7.8%</td>
<td>5</td>
</tr>
<tr>
<td><strong>Both</strong></td>
<td>51.6%</td>
<td>33</td>
</tr>
<tr>
<td><strong>Answered questions</strong></td>
<td>64</td>
<td></td>
</tr>
<tr>
<td><strong>Skipped questions</strong></td>
<td>68</td>
<td></td>
</tr>
</tbody>
</table>

*Source: personal elaboration*

Our survey shows that FFs tend to prefer a mixed solution (51.6%). Internal innovation is preferred by 40.6% companies while external innovation by only 7.8%. Internal innovation is preferred also by NFFs - 61.6% of the respondents have chosen this option; external innovation has been chosen by 5.5% and the mixed solution is preferred 32.9% of the companies.

Referring to RQ, then we have examined why companies choose different configurations of innovation strategy, that is internal configuration or external configuration.

The reasons for internal innovation strategy are presented below (Table 9).
In particular, FFs choose internal innovation for a number of reasons. Firstly, innovative actions need high levels of competence (50%), effectiveness (13.6%) and reliability (9.1%): a great deal of control with regard to the process of product development, and a perception of actions and results. Generally, FFs display great organizational flexibility and it makes them more inclined to innovate, in turn generating more chances for internal innovation and more opportunities to make use of the decision-making strategy (Damanpour, 1991; Mintzberg, 1979; Wolfe, 1994). Strategic reasons are also cited as a reason for companies to prefer internal innovation (22.7%). Finally, a small-sized family firm may prefer internal innovation for cost-saving reasons, for example if a company belongs to a particular economic sector, using external consultants may be considered too expensive.

The following step was to verify who handles internal innovation (Table 10).

Table 9 - The internal innovation strategy's reasons

<table>
<thead>
<tr>
<th></th>
<th>FFs</th>
<th></th>
<th>NFFs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response %</td>
<td>Response Count</td>
<td>Response %</td>
<td>Response Count</td>
</tr>
<tr>
<td>High competences</td>
<td>50.0%</td>
<td>11</td>
<td>56.7%</td>
<td>17</td>
</tr>
<tr>
<td>High effectiveness</td>
<td>13.6%</td>
<td>3</td>
<td>20.0%</td>
<td>6</td>
</tr>
<tr>
<td>High reliability</td>
<td>9.1%</td>
<td>2</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Strategic reason</td>
<td>22.7%</td>
<td>5</td>
<td>13.3%</td>
<td>4</td>
</tr>
<tr>
<td>Small dimension</td>
<td>4.5%</td>
<td>1</td>
<td>10.0%</td>
<td>3</td>
</tr>
<tr>
<td>Answered questions</td>
<td>22</td>
<td></td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Skipped questions</td>
<td>110</td>
<td></td>
<td>114</td>
<td></td>
</tr>
</tbody>
</table>

Source: personal elaboration

Table 10 - Who handles the internal innovation

<table>
<thead>
<tr>
<th></th>
<th>FFs</th>
<th></th>
<th>NFFs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response %</td>
<td>Response Count</td>
<td>Response %</td>
<td>Response Count</td>
</tr>
<tr>
<td>Entrepreneur</td>
<td>50.0%</td>
<td>30</td>
<td>28.1%</td>
<td>18</td>
</tr>
<tr>
<td>R&amp;D area</td>
<td>61.7%</td>
<td>37</td>
<td>62.5%</td>
<td>40</td>
</tr>
<tr>
<td>Marketing area</td>
<td>10.0%</td>
<td>6</td>
<td>9.4%</td>
<td>6</td>
</tr>
<tr>
<td>Management control area</td>
<td>3.3%</td>
<td>2</td>
<td>7.8%</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>16.7%</td>
<td>10</td>
<td>15.6%</td>
<td>10</td>
</tr>
<tr>
<td>Answered questions</td>
<td>60</td>
<td></td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>Skipped questions</td>
<td>72</td>
<td></td>
<td>80</td>
<td></td>
</tr>
</tbody>
</table>

Source: personal elaboration
With reference to FFs, it emerges that the R&D area is responsible for internal innovation activity (61.7%), but also that the entrepreneur has an active role (50%). The marketing area handles this activity in fewer cases (10%), followed by the management control area (3.3%). Other entities are responsible for the R&D activity in 16.7% of the cases.

At the same time, in NFFs the R&D area handles internal innovation activity in the majority of the cases (62.5%), while the entrepreneur is responsible only in 28.1% of the cases. The marketing area handles this activity in fewer cases (9.4%), followed by the management control area (7.8%). Other functions of the company are responsible for the R&D activity in 15.6% of the cases.

Consequently, the reasons for choosing external innovation were analysed and they are presented in the table below (Table 11).

### Table 11 - The reasons for an external R&D activity

<table>
<thead>
<tr>
<th>Reason</th>
<th>FFs</th>
<th>NFFs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response %</td>
<td>Response Count</td>
</tr>
<tr>
<td>High competences</td>
<td>71.4%</td>
<td>5</td>
</tr>
<tr>
<td>Introduction of new competences</td>
<td>14.3%</td>
<td>1</td>
</tr>
<tr>
<td>A continuous investment is not possible</td>
<td>14.3%</td>
<td>1</td>
</tr>
<tr>
<td>A specific company of the group is dedicated</td>
<td>0.0%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>0.0%</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

**Source:** personal elaboration

From analysis conducted it emerges that companies often choose external innovation because of the higher competences of the external parties (71.4%). It is also because of introducing new competencies (14.3%). The use of external solutions is preferred also when it is not possible to continue to invest internally.

In developing the external innovation strategy, were then considered the relationships between external parties which are not companies, such as research institutions and/or universities (Table 12).
Table 12 - The relationships between the typologies of company (FFs and NFFs) and external research institutions and/or universities

<table>
<thead>
<tr>
<th></th>
<th>FFs</th>
<th>NFFs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Response %</td>
<td>Response Count</td>
</tr>
<tr>
<td>Yes</td>
<td>37.4%</td>
<td>34</td>
</tr>
<tr>
<td>No</td>
<td>62.6%</td>
<td>57</td>
</tr>
<tr>
<td>Answered questions</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Skipped questions</td>
<td>41</td>
<td></td>
</tr>
</tbody>
</table>

Source: personal elaboration

From the table it emerges a difference between FFs and NFFs, as FFs present a higher recourse to external research institutions and/or universities than NFFs.

Therefore, we correlated the R&D investments and the recourse to external research institutions and/or universities.

Table 13 - The correlation between the R&D investment and external research institutions and/or universities

<table>
<thead>
<tr>
<th></th>
<th>Total sample</th>
<th>FFs</th>
<th>NFFs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson – Correlation between (i) university and (ii) R&amp;D investment</td>
<td>0.41551863</td>
<td>0.51981593</td>
<td>0.32069668</td>
</tr>
<tr>
<td>Test t on correlation</td>
<td>6.46044</td>
<td>5.83639</td>
<td>3.48589</td>
</tr>
<tr>
<td>P-value</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0007</td>
</tr>
</tbody>
</table>

Source: personal elaboration

It emerges a strong correlation between R&D investments and the recourse to Universities, which is stronger for FFs than for NFFs.

5. Discussion

A discussion of the above findings has been made according to the order proposed.

As the literature stated the relevance of R&D investments with regard to innovation, we verified this assumption in our sample, by comparison FFs with NFFs. Innovation is vital for FFs (Dana and Smyrnios, 2010; Poza, 2007), as it is essentially working towards minimizing the effects of potentially negative future
events by favouring new knowledge and competency development (Allison, McKenny and Short, 2014; Bergfeld and Weber, 2011; Habbershon and Williams, 1999; Levinthal and March, 1981; Levinthal and March, 1993; Miller and Le-Breton Miller, 2006).

Secondly, we made a comparison of FFs and NFFs in terms of the percentage of the R&D investments on the total revenue. From analysis conducted it emerges that FFs show long-term vision in their investment strategy (Cassia, De Massis and Pizzurno, 2012; Chua, Chrisman and Bergiel, 2009; Sirmon and Hitt, 2003; Uotila et al., 2009; Zellweger, 2007; Zellweger, Nason and Nordqvist, 2012), as one key way to achieve or maintain a competitive edge in the long-term is through technological innovation (Astrachan, 2010; Zahra, Hayton and Salvato, 2004; Zahra, 2005; Zahra et al., 2008).

Thirdly, it was interesting to analyse the propensity to invest in R&D, if the company adopts a Management Control System. This evidence underlines how the propensity to invest in R&D correlates to the presence of a Management Control System, which increases in family companies. This propensity is justified by the fact that the companies, being more aware of the effectiveness of their investment, try to invest in profitable activities. This finding is also supported by Bisbe and Otley (2004). Using a correlation, they were able to affirm that it is plausible that an interactive use of control systems may favour innovation in low innovating firms through the provision of guidance for search, triggering and stimulus of initiatives, and provision of legitimacy to autonomous initiatives. The findings are supported by the Pearson correlation that has been calculated between the propensity to invest in R&D and the presence of a Management Control System: there is a moderate correlation between these variables for FFs at a significant level of 1%, while the correlation is weak for NFFs at a level of 10%.

As the literature stated different configurations of innovation, we compared FFs with NFFs by distinguishing internal, external innovation and a mixed solution of innovation (Chesbrough, 2003; Pistrui, 2002; Re et al., 2014; Schilling, 2009). In particular, and referring to the research question, it is important to observe why companies choose different innovation strategy configurations in terms of:

- internal configuration;
- external configuration;
- mixed configuration.

About internal configuration, it emerges that opting for internal innovation highlights the importance of gaining involvement from employees across many departments within a business and stimulating them: each member of staff is included and engaged in the innovation strategy, resulting in products of an extensive and varied creativity (Bresciani, Vrontis and Thrassou, 2012). This approach also complements the handover between generations, thanks to the way the brand value is viewed by members of the family (Abdellatif, Amann and Jaussaud, 2010; Webb, Ketchen and Ireland, 2010), due to the customer perception of that brand (Appel, 2001; Keller, 2003; Thrassou and Vrontis, 2008; Thrassou and Vrontis, 2009; Thrassou and Vrontis, 2010; Vrontis and Thrassou, 2007; Vrontis and Thrassou, 2011; Westling, 2001).
When observing who handles internal innovation, and focusing on the FFs, the role of the founder or of a family member is paramount: acting as a captain of the company, he generally has a great influence on the innovation management, greater than in case of non-family members. In small family firms, the innovation activity may start from the founder’s ideas or from his close collaborators, as they know the features and competitive advantages of the company: therefore, the creativity comes from a group in which the family members have an important role, and from which the innovation can be partly delegated (Cabrera-Suárez, De Saá-Pérez and García-Almeida, 2001; Sirmon and Hitt, 2003).

About external configuration, it emerges that FFs in the sample do not prefer external solutions. Indeed, family firms want to retain ownership and control of the business and its innovation strategy, and to evade any conflicts of interest (Gomez-Mejia, Makri and Larraza-Kintana, 2010; Kim and Lee, 2008). Even when parties outside the firm are experts in the core workings of the business (Birkinshaw, Hamel and Mol, 2008; Chesbrough, 2003; Cohen and Levinthal, 1990; Hagedoorn and Duysters, 2002; Huston and Sakkab, 2006), FFs prefer not to go down this route. Reasons for this include: safeguarding the brand, avoiding the possibility that the external parties’ values and characteristics may not be aligned with those of the company; and avoiding the risk that they may not be easily integrated within the firm’s organizational structure (Teece, Pisano and Shuen, 1997). This is a good solution only if the external parties can help the company to reinvent products and processes well (Salvato, Chirico and Sharma, 2010), stimulating new innovation elements and increasing the company’s competitive advantage. By observing the correlation between the company’s typology (FFs or NFFs) and external research institutions and/or universities the correlation is strong for both FFs and NFFs (stronger for FFs than for NFFs).

About a mixed configuration between internal and external innovation, the majority of FFs prefer this solution. In our sample, the majority of FFs prefer a mix of internal and external innovation. The mixed approach enables the business to utilise internal resources and attitudes with the help of external experts. In doing so, family values and traditions are upheld, while the addition of the external experts’ input can increase the possibility of greater innovation. The involvement of the family members maintains the traditional values without continuous innovation that could reduce the value of the brand.

Successful affiliations between firms and third party research facilities and/or universities can help in the mixed solution approach, and are more common among FFs than among NFFs. Through these strong relationships, FFs aim to gain advantage from consulting the third parties. New concepts and new or adapted products and processes can result from these relationships, increasing loyalty from existing customers and attracting new ones (Broekhaert, Andries and Debackere, 2014; Rothaermel and Hess, 2007; Spithoven, Frantzen and Clarysse, 2010).

Using a combination of different resources, skills and attitudes, one avenue the company could pursue to source development ideas and gain a competitive edge is through the formation of networks between the firm and third parties (e.g. research facilities and further education institutions) (Colombo et al., 2012;
Networks encourage and augment innovation in FFs, resulting in a broadening of opportunities for the firm, in terms of brand appeal, corporate brand identity and competitive advantage.

6. Conclusions, implications and limitations

Innovation has an impact on know-how and resources available to a family firm and has a positive effect on the success of innovation efforts. For these reasons, innovation is a key way of obtaining and increasing a company's competitive advantage.

FFs’ innovation tendencies have been analyzed by many scholars, with the aim of linking an inclination to be entrepreneurial with innovativeness. In one group of studies, it was stated that innovation strategies are less appealing to FFs than in case of NFFs. The studies said that, given how investment in innovation is more risky and unpredictable, FFs are less likely to consider it as they tend to be more risk averse. In a second group of studies, it was stated that FFs are more likely to pursue innovation than NFFs, as they have a stronger long-term view.

For small FFs with limited resources, a combination of internal and external innovation may generate stronger, more profitable relationships and improve the sharing of knowledge, company values and innovative concepts between company personnel and third parties.

Consequently, there are several sources of innovation: firstly, the entrepreneur, the other family members and each employee. It means that the human capital in FFs – that is a major positive or negative factor of family firm because of the involvement of the family members in the company activity – is a relevant factor that impacts also on the innovation benefits. In particular, the knowledge, skills and abilities of family members improve the entrepreneurship of the company. The force of the human capital could combine with the potential of external parties, increasing flexibility in daily assignments and sharing information and knowledge.

If the FF is able to adapt to external change, or to anticipate it, it may obtain advantage from an innovation strategy. However, a passive approach towards external change may negatively impact on the competitive advantage, causing the loss of brand allure.

Only an innovative approach can respond to internal and external stimuli, creating new opportunities in new products and processes.

In this paper, we have shown that FFs find innovative strategies more appealing than NFFs, as several scholars have stated. One notable difference between FFs and NFFs is their appetite and enthusiasm for innovation strategy and this is due to a combination of factors, such as their line of business and
level of organizational adaptability, especially if the FF is a small or medium-sized enterprise. Where family members are involved this has an effect on the firm’s innovativeness, and impacts on the decision-making process, both in terms of the company’s management and creativity.

FFs are more likely to have set out longer term plans for their investments than NFFs, so, for them, innovation is a key component in their competition strategy as a way of ensuring their brand’s resilience and value in the future. Because FFs are often specialists, the firm needs a strong approach and skills, especially with regard to innovation, without which it will not improve or grow.

Finally, most of the FFs in the study choose a combination of internal and external innovation via strong networks of third parties in R&D. It allows FFs to blend company resources and attitudes with the help of external experts: it allows them to retain an attachment to family values and traditions, while still benefitting from the skills of third parties, and increases the chances of a greater amount of innovation. If the relationship between the FF and third parties is based on trust, it allows the firm access to invaluable resources owned by those parties, which boosts the chances of the company’s survival.

This study shows a direct correlation between the presence of Management Control System and R&D investment, that creates innovation, both in FFs and NFFs, also if in FFs is moderate at a significant level of 1%, while it is weak for NFFs at a level of 10%. In line with the findings of Bisbe and Otley (2004), an interactive use of control systems may favor innovation in low innovating firms. On the contrary, an interactive use of control systems appears to reduce innovation in high-innovating firms, plausibly through the filtering out of initiatives, that results from the sharing and exposure of ideas. This is an interesting aspect that could be investigated in the next researches. In addition, this study shows a direct correlation also between R&D investment and external research institutions and/or universities which is stronger for FFs.

The implications arising from this study are both theoretical and practical, as it indicates a possible perspective of innovation to manage competitiveness. This is particularly true during a period that has been defined by economic crisis, as it identifies innovation strategy as being imperative to FFs’ successful competitiveness:

- the theoretical implications of our study are tied to the applicability of innovation investments for FFs versus NFFs: the paper can be considered as a development in research studies about the innovation strategy of FFs and NFFs, also contributing to extend the literature concerning the drivers of the innovation strategy. Considering some representative industries for Italian economy, this paper confirms what several scholars have stated, which is that FFs find innovative strategy more appealing than NFFs. In particular, it contributes to the literature discussing the part innovation plays in FFs business strategy. In addition, this observation in the last year permits to verify the effects of the financial crisis on the innovation strategy, which could been considered a means for increasing the company’s competitive advantages;
• the practical implications are applicable to FFs’ activities. The study confirms that innovation efforts are relevant to a company’s products and processes along the production and distribution chain, which could affect the firm’s competitive edge. It is useful for the family, company management and external consultants, in order to grasp the impact on investment in innovation. It will also help them in their decision-making process, and in adapting theoretical best practice in the field of innovation management to the family firm’s unique circumstances.

With a view to identifying the limitations of the research, it can be stated as follows:

• with reference to the sample: one limitation of the paper is represented by the presence of companies belonging to different sectors and to different generational stages. It could be useful to distinguish among them, to individualize typical trends that could impact on the meaningfulness of the findings. In addition, of particular interest would be to further divide the sample by company size, examining small-sized and medium-sized FFs and NFFs as separate categories. Future researches could analyze this distinction;

• with reference to the method used: first, the limitations of this study are linked to the way of statistical data classification. This limitation could be overcome by using relevant econometric models to replicate the effect of a series of external and internal variables on the innovative strategy. In future researches, we could identify proper statistical tests for supporting the relevance of the sample and the robustness of the conclusions. Second, the model used does not include qualitative variables, which could help to explain in better way the analyzed phenomenon. For instance, we could consider the level of satisfaction of customers into the product range realized thanks to R&D activities, as well as the uniqueness of the product range and a degree of its personalization. Third, the findings may have been influenced by the collection data method, even if the questionnaire had annexes to provide explanations about the terminology and the contents of our investigation. Some respondents could have chosen to not answer as they did not understand the questions. By this way, the sample could evidence a lack in meaningfulness. Forth, it might also be of interest to distinguish between product and process innovation, as these activities display different features and problems.
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