Centenarian family and non-family companies. An exploratory analysis

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Abstract

Few companies are able to reach 100 years of existence, and even fewer do so without losing ownership control to the founders' families. Perhaps due to its scarcity, few quantitative data are available on this type of company. This paper analyzes, based on a sample of 120 Spanish centenary companies, the differences between family and non-family centenary companies, from a quantitative and exploratory perspective. Likewise, a comparison is made with a control sample of another 120 non-centenarian companies in order to draw conclusions. The analysis shows that there are more non-family centenary companies than family companies, although the latter obtain higher returns and have a more robust financial structure (less indebtedness and more liquidity) than the rest of the companies. Despite the limitations derived from the data used, the work contributes to the literature on business demography and on the longevity of family businesses.

Key words: Centenarian firms, family business, longevity

Sommario

Poche aziende sono in grado di raggiungere i 100 anni di esistenza, e ancora meno lo fanno senza perdere il controllo della proprietà a favore delle famiglie dei fondatori. Forse a causa della sua scarsità, sono disponibili pochi dati quantitativi

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su questo tipo di società. Questo documento analizza, sulla base di un campione di 120 aziende centenarie spagnole, le differenze tra aziende centenarie familiari e non familiari, da una prospettiva quantitativa ed esplorativa. Allo stesso modo, per trarre conclusioni, viene effettuato un confronto con un campione di controllo di altre 120 aziende non centenarie. L'analisi mostra che ci sono più società centenarie non familiari rispetto a quelle familiari, sebbene queste ultime ottengano rendimenti più elevati e abbiano una struttura finanziaria più solida (meno indebitamento e più liquidità) rispetto al resto delle società. Nonostante i limiti derivati dai dati utilizzati, il lavoro contribuisce alla letteratura sulla demografia delle imprese e sulla longevità delle imprese familiari.

Parole chiave: Imprese centenarie; impresa familiare, longevità

1. Introduction

The last decade is bringing to the fore the magnitude of the uncertainty faced by companies and their managers (financial crisis of 2008, Covid-19 pandemic, War in Ukraine, etc.). However, these types of situations are not new when viewed from a historical perspective (Foss, 2020). Although it is true that the second half of the 20th century has been a period of relative certainty, beyond the progressive globalization of markets and the exponential advance of technology, the first half of the same century saw two world wars and periods of crisis equal or more intense than the current ones. This makes it interesting to observe how certain companies that were already present at that time managed to reach our days, drawing attention to century-old companies.

Centenarian companies have already experienced periods of great uncertainty in the past. Founded before the 1920s of the 20th century, they have been able to survive numerous economic, social, and political situations, etc (Stafford *et al.*, 2013) and crisis (Kinias, 2022; Hemmington, and Neill, 2022). Resilience, a currently fashionable concept, is not a capability that is emerging now (Calabro *et al.*, 2021), but has already been demonstrated in the past by numerous organizations and companies (Esposito & Mirone, 2019). But what do we really know about these types of companies? How many hundred-year-old companies exist and above all, what are they like and how are they different from the rest? At an academic level, it must be recognized that interest in this type of company emerges from the perspective of family businesses and this is because these companies seek to maintain themselves in the long term and, consequently, become centenarians, bi-centenarians, etc. (Riviezzo *et al.*, 2015). But in reality, every company pursues survival, whether it is family-owned or not. The difference is that family businesses seek to keep control of the company in the hands of the family founder or owner, while non-family businesses can survive through changes in the ownership structure (Van Gils *et al.*, 2004).

For this reason, it is necessary to better understand century-old family businesses and compare them with other companies. In this paper we seek to compare centenarian family businesses with non-family centenarian businesses, as well as with non-centenarian businesses (family and non-family). Centenarian family businesses must have been able to develop their own resources and capabilities that have allowed them not only to achieve high longevity (Zellweger *et al.*, 2012), but to do so throughout this long period of time, without losing control of the company property, in the hands of the family. Our work will adopt an exploratory approach based on the identification of 120 centenarian Spanish companies and their comparison with another 120 companies as a control sample, with similar income and activity sectors. Based on this information, we will analyze the percentage of family businesses in each of the two samples (centenarians and non-centenarians) and compare some of their characteristics. Specifically, our analysis will focus on profitability, financial structure and number of employees.

The results will allow us, even considering the limitations of the work, to identify a series of distinguishing characteristics between the centenary family businesses and the rest of the subsets of companies. Our findings will allow us to shed some light, from a quantitative perspective, on the reality of centenarian companies, not only family ones, and on the differences between family and non-family centenarian companies. The structure of the work begins with a review of the theoretical background, to move later, in section 3, to the description of the methodology used. In section 4, the results will be summarized and finally, the article will end with the discussion and some brief conclusions.

2. Theoretical background

2.1. Longevity of companies

It sounds out of context to talk about century-old companies, when the current environment is dominated by increasingly rapid change and uncertainty (quotes). It is difficult to predict what is going to happen in the coming months and years, and management is subjected to the need to look at the short term (the need to maintain the price of listed companies, to survive the increasingly present crises, to be up to date on new technological disruptions, being present in emerging and relevant markets, etc.). How is it possible that there are organizations that are capable of lasting over time? And even more, how is it possible that they can remain in the hands of the same family?

Theoretically, our paper will be based on the long-term orientation approach of family business (Lumpkin *et al.*, 2010; Lumpkin & Brigham, 2011). Long-term Orientation (LTO) is viewed as an idiosyncratic property of family firms, in comparison with non-family business, that has a direct influence on which goals they pursue (e.g. longevity), and how family business take decisions, especially in time of crisis (Le-Bretton Miller and Miller, 2022; Moreno-Menéndez and Casillas, 2021). This theoretical lens explicitly considers the role of time in companies' evolution and allow to explain phenomena as long-term investments, longevity, transgenerational management, legacy, and so on.

Companies are born as companies that, legally, transcend their founders, which is precisely why they can change owners in general and pass from generation to generation in the case of family businesses (Lorenzo, 2020). They are institutions that, in principle, were born with the spirit of surviving over time, without a predetermined date of completion and whose survival depends on a multitude of external and internal factors, as evidenced by the extensive existing literature in relation to business survival (citations on survival). However, and although it may seem the same, there is less literature on longevity (Riviezzo *et al.*, 2015), such as the ability of firms to remain active and competitive over time (Stamm & Lubinski, 2011).

One of the areas in which business longevity has begun to be studied with more interest is that of the family business (Ahmad *et al.*, 2021). This is due to the assumption that this type of company has as one of its purposes to transcend generation after generation (Aronof, 2004; Tapies & Fernández-Moya, 2012) and, consequently, has a long-term orientation (Lumpkin *et al.,* 2010; Lumpkin & Brigham, 2011). The long-term orientation of family businesses has been studied in relation to different types of decisions (Le-Breton Miller & Miller, 2006; Brigham *et al.*, 2014; Metsola & Kuivalainen, 2021), most of them related to business development (growth, diversification, innovation, etc), and its relationship with long-term performance (Gentry *et al.,* 2016; Hoffmann *et al.*, 2016).

Centenarian companies have attracted the attention of researchers and society in general precisely because of their ability to transcend not only the founding generation of the company but also the next, since it is practically impossible for a company to remain in the hands of the same generation for more than three decades. The companies that achieve this challenge also often take the opportunity to celebrate it and strengthen their position in society while internally strengthening their own identity as an institution. Being a century-old company is a scarce, valuable "resource", difficult to imitate and difficult to replace (Barney, 1991; Wernerfelt, 1984; Peteraf, 1993). For this reason, in certain countries, some associations of centuries-old companies have been created, such as in Italy –"I Centenari", which integrates 28 hundred-year-old family companies from the Campania region or "Les Henokiens", which brings together 51 companies from different countries older than 200 years–.

These figures show that century-old companies are few, they are a very small minority within the business demography of any country. For this reason, in his study, the qualitative methodology has predominated, which also allows us to delve into the historical processes of companies over time, adopting a longitudinal perspective. This approach, based on individual or multiple case studies of a longitudinal and historical type, is really very valuable when it comes to developing new theories on business longevity. However, the exclusive use of this approach can lead to incurring certain biases derived from the difficulties of generalizing the findings to different contexts. For this reason, we understand that it is necessary to complement this type of work with quantitative research, either of an exploratory nature –aimed at better understanding the phenomenon of century-old companies– or confirmatory –in order to be able to draw conclusions that allow higher levels of generalization–.

Table 1 summarizes some data of the centenary family businesses. Two data sources have been used: The World's Top 750 Family Businesses Ranking, prepared and published by Family Capital, and the 2021 EY and University of St. Gallen Family Business Index, which includes 500 family businesses from around the world. In order to compare both sources of information, we have used only the first 500 companies of the first ranking.

The data shows that the vast majority of century-old family businesses were founded in the second half of the 19th century. Thus, less than 15% of centenarian companies were born before 1950, regardless of the data source used, approximately half were born between 1851 and 1900 and the remaining 35% correspond to companies created in the first two decades of the 20th century. In terms of geographical distribution, the predominance of Europe and the United States over the total should be highlighted (they together account for approximately 80% of all century-old family businesses, depending on the ranking used). Within Europe, Germany concentrates the majority of century-old companies (approximately 40% of European century-old companies). Finally, more than two thirds of the companies are dedicated to the production of manufactured and consumer-oriented products.

Table 1 - Centenarians Family Companies among 500 Larger Family Firms

	FC[1]	EY-SG[2]	FC[1]	EY-SG[2]
Centenarians	144	162	28,8%	32,4%
Non Centenarians	356	338	71,2%	67,6%
Total	**500**	**500**	**100,0%**	**100,0%**
Year of Foundation				
Prior-1700	4	2	2,8%	1,2%
1701-1800	6	4	4,2%	2,5%
1801-1850	13	17	9,0%	10,5%
1851-1900	69	81	47,9%	50,0%
1901-1920	52	58	36,1%	35,8%
Total	**144**	**162**	**100,0%**	**100,0%**
Geographical distribution				
Asia-Pacific	21	18	14,6%	11,1%
Europe	73	93	50,7%	57,4%
Latin America	9	9	6,3%	5,6%
North America	39	42	27,1%	25,9%
Middle East	2	0	1,4%	0,0%
Total	**144**	**162**	**100,0%**	**100,0%**
Industry distribution				
Advanced Manufacturing & Mobility	55	40	38,2%	24,7%
Consumer	56	69	38,9%	42,6%
Energy	9	15	6,3%	9,3%
Financial Services	9	9	6,3%	5,6%
Government & Infrastructure	3	12	2,1%	7,4%
Health Sciences & Wellness	6	7	4,2%	4,3%
Telecom, Media, and Technology	6	10	4,2%	6,2%
Total	**144**	**162**	**100,0%**	**100,0%**

1. Family Capital Ranking. https://familybusinessindex.com
2. EY-Saint Gallen University Ranking. https://www.famcap.com/the-worlds-750-biggest-family-businesses

2.2. Longevity factors in family businesses

As previously mentioned, family businesses are associated with the search for longevity, which transcends the generation present in their government. There are many studies that have analyzed the factors that provide greater longevity in this type of company (Gallo and Amat, 2003; Jones *et al.*, 2013; Jaskiewicz *et al.*, 2015). In general, these works assume that long-lived family businesses are capable of transmitting their values generation after generation and it is this "legacy" that keeps them young, enterprising, dynamic and, therefore, competitive (Aronof & Ward, 2011; Astrachan, 2010; Combs *et al.*, 2021). For example, Esposito and Mirone (2019) argue that the longevity of hundred-year-old family businesses derives precisely from the maintenance throughout different generations of family values, their long-term vision and their social responsibility. Similarly, Tapies and Fernandez-Moya (2012) establish that the longevity of family businesses depends on the process of value transmission. And more recently, Löhde *et al.* (2020) underline the role of learning in the longevity of older family firms.

However, there are also barriers to the durability of family businesses that hinder long-term survival and longevity. In fact, we defend that longevity is more difficult in family businesses than in other companies. In fact, that is the main challenge for family businesses, achieving long-term longevity, but in family hands (Lumpkin and Brigham, 2011). Family businesses also pursue longevity, but they remove a filter from the equation, family ownership and control. But many do (Handler, 1994; Sharma, 2004; Revilla *et al.,* 2016). These companies have been able to overcome certain challenges and have special characteristics that non-family, century-old companies do not enjoy (Tapies & Fernandez-Moya, 2012; Löhde *et al.*, 2020; Salvato *et al.*, 2020).

In general, family businesses have greater difficulties in remaining long-term while maintaining their same family status. To the usual reasons that explain the closure of any company, family businesses must add the difficulties of keeping the succession – in ownership and management – in the hands of members of the same family (Ahmad *et al.*, 2021). In fact, many family businesses, faced with the difficulties of succession, prefer to close or simply sell the business to new owners. This alienation of the family business not only occurs due to difficulties in the succession process, but also due to offers from other companies, normally of a larger size. In short, over time, companies go through benevolent moments and other periods of crisis (Kinias, 2022; Salvato *et al.*, 2020. Many of these crises do not put the survival of the company as such at risk, but they do promote its sale to new partners (De la Garza *et al.*, 2022), investors or more competitive companies. Therefore, we propose a first hypothesis:

Hypothesis 1: The family nature of a company reduces the probability of becoming a centenarian company.

However, there are numerous cases of family businesses that are capable of meeting the challenge of being less than a hundred years old and, without a doubt, they demonstrate considerable strength, not only in competitive, economic and financial terms, but also a strong consensus among family owners in relation to their identification with the business and their desire to keep the business in family hands. These companies have a specific resource that Habbershon and Williams (1999) called "familiness". This resource, properly used, provides commitment, identity (Gómez-Mejía *et al.*, 2007; Berrone *et al.*, 2012), which would allow higher yields to be obtained (Debicki *et al*., 2017). Therefore, we propose the following hypotheses:

Hypothesis 2a: Centenarian family businesses have a higher economic return than non-family centenarian companies than non-centenarian family companies.
Hypothesis 2b: Centenarian family businesses have a higher financial return than non-family centenarian companies than non-centenarian family companies.

One of the most intense debates in the literature on family business is the one that refers to the risk aversion of this type of company and its relationship with longevity (Anderson & Reeb, 2003; Kempers *et al*., 2018). Thus, many authors argue that family businesses could be more risk averse than non-family businesses in order to avoid financial failure and protect their long-term legacy (Lim *et al*., 2010). However, other researchers argue that family businesses can take more risks than non-family businesses due to their long-term orientation and their independence from financial markets (Bauguess & Stegemoller, 2008; Muñoz-Bullon & Sanchez-Bueno, 2011; Zahra, 2005). In part, both arguments share a common point related to the financing model of family businesses, more inclined to self-financing and maintaining high financial independence, with low levels of indebtedness. For this reason, we propose that it is precisely this low indebtedness and low financial risk that allows it to navigate over time in a more resilient way in relation to the inevitable ups and downs that a long history implies (Ventura *et al*., 2018). Therefore, we propose the following hypotheses:

Hypothesis 3a: Centenarian family businesses will have a lower debt ratio than non-family centenarian companies than non-centenarian family companies.
Hypothesis 3b: Centenarian family businesses will have a higher liquidity ratio than non-family centenarian companies than non-centenarian family companies.

Finally, family businesses manage their human resources differently from non-family businesses (Jeong *et al.* 2021), being especially employment-intensive (Amato *et al*., 2021). Different works show the involvement of family businesses with their own employees, as part of their socio-emotional wealth (Gómez-Mejía *et al.*, 2007; Berrone *et al.*, 2012). Extant research has shown that family firms show higher stock of human capital (Mazzola *et al.* 2018), founding that family firms used to grow in terms of employment more than non-family counterparts (Becchetti and Trovato 2002) and downsize less during economic crises (Amato *et al.*, 2020). Therefore, in the case of century-old companies, we propose the following and last hypothesis:

Hypothesis 4: Centenarian family businesses will have a labor intensity higher (a) than non-family centenarian firms and lower (b) than non-centenarian family firms.

3. Methodology

3.1. Sample selection

The objective of this paper focuses on the analysis of centenarian family companies and their comparison with non-family centenarian companies, as well as with companies that are not centenarians, whether they are family-owned or not. For this analysis, we have used the Sabi-inform database, which contains the annual accounts of all Spanish companies that have the form of a company.

For the selection of centenary companies, those companies whose founding date was less than or equal to 1920 were selected (the data in Sabi is practically complete until 2020, since the closing of the annual accounts is carried out in Spain in the first semester of 2022 and therefore, they are not yet integrated into the database at the date of the investigation, in February 2022). We are aware that the use of the date of foundation of the company that appears in this database is extremely limiting, since any formal change in the corporate structure of a company that implies the preparation of new statutes (not their modification) implies a new date. That is, it is very likely that many companies are much older than the one that appears in Sabi, however, we are sure that all those that are centenarians according to Sabi are really so to the point that they maintain the statutes of a few years ago. more than a century and its initial creation record; that is, they are not all that are but they are all that are. Likewise, we understand that the possible bias that may exist will affect family and non-family businesses equally, so it should not alter the results of the study. In order to have a consistent sample, we excluded micro-enterprises (those with less than 10 workers in any of the last three years – 2020, 2019 and 2018 –and those companies that were not independent, that is, whose ownership was controlled by some other company At the end, we found 120 century-old companies that met the aforementioned characteristics.

Once we had a sample of century-old companies, we constructed a control sample of non-centenarian companies. To do this, we segmented the sample of 120 hundred-year-old companies based on two variables: (1) their activity sector (2-digit Cnae) and (2) the size of the company through various strata of the sales revenue variable (sales were chosen over employees, since one of the questions to investigate was precisely the degree of intensity in employment). Based on this segmentation, we selected a total of 120 non-centenarian companies that had the same sector and income distribution: This process was carried out company by company, that is, a company that was the same in terms of sector and size was sought. When there were several possible companies to choose from, the choice was made randomly.

With this second control sample, we were able to count on a total of 240 companies, 120 centenarians and another 120 non-centenarians. Finally, we proceeded to classify all these companies between family and non-family. For this, two criteria were used. On the one hand, to be considered a family business, at least 25% of the property had to be in the hands of a single natural person or a family and, as a second criterion, a member of the family had to be involved in the governing bodies. This threshold has been accepted by professional institutions as European Family Business (EFB) and the Family Business Network (FBN). However, ownership is not enough, so we also establish a governance requirement to consider a company as family firm. We require some family governance of the company, either as CEO, as a member of the board of directors or as a member of the management team (Diéguez *et al.*, 2015).

3.2. Variables

We have analyzed a set of variables in order to describe and explore the double sample of companies (main sample and control sample). These variables are the following:

Performance. We have considered two profitability variables: (a) economic profitability (ROA), measured as the ratio between operating profit and company assets, as an indicator of the company's operating profitability. And (b) financial profitability, measured as the ratio between net profit and equity, as an indicator of the profitability obtained by shareholders or owners of the company. In order to avoid temporary effects derived from the economic cycle and the effect of a specific year, we have calculated, for both variables, the average value of the last decade (2011-2020).

Financial structure. We have used two indicators or measures related to the financial structure of the company. The first indicator is the indebtedness ratio measured as the ratio between foreign capital and the total financial structure. The second consists of the liquidity ratio, measured as the ratio between the liquid items of current assets (treasury) and the total financial structure of the company. As in all the previous measurements, the average value of the 2011-2020 period has been used.

Firm size. To measure the size, we have taken the number of company employees (remember that sales revenue in non-centenarian companies has been a criterion used for their selection, which invalidates it as a comparison criterion). As in the previous case, we have taken the average value of the number of employees of the companies in the decade 2011-2020.

3.3. Analysis

For the contrasting of the hypotheses, we have used simple analysis techniques, such as the test of differences of means (Chi-square) for two or more samples, in accordance with the analysis objectives set out in the different hypotheses, and in accordance with the essentially exploratory nature of this research.

4. Results

Before moving on to the testing of the hypotheses, we must begin with a description of the companies that make up our double-sample. In the first place, and considering the criteria described in the previous section for a company to be considered as a family company, only 59 companies in the database (24.5%) were family-owned, 23 of them centenarians (39%) and 36 non-centenarians (61%), compared to 181 non-family companies (75.4 %), of which 97 (53.6%) are centenarians and 84 (46.4%) are not. In Table 2, we summarize some of the main characteristics of the companies that make up the sample.

Table 2. Frequency distribution of the Sample (Hypothesis 1)

Frequency	Family Firms	Non-family Firms	Total Sample
Centenarians	23	97	120
Non-Centenarians	36	84	120
Total	**59**	**181**	**240**
Chi-square analysis	p-value: 0.0513		

The first hypothesis proposes that the family nature of a company reduces the probability of becoming a centenarian company. The results show that the number of centenarian family businesses is lower than that of non-family centenarian businesses. However, this also happens in the case of non-centenarian companies. Therefore, it is necessary to carry out a statistical analysis to identify whether the differences are significant. The results (Table 2) show that the degree of significance of the difference of means test using the chi-square test is not significant, although it is right at the 5% limit (p-value = 0.0513). This result prevents us from accepting hypothesis 1, albeit with caution. Therefore, although it is not possible to state it categorically, there seems to be a greater propensity for century-old companies not to be exactly family businesses. However, what is very clear in our results is that the hundred-year-old companies are not mostly family-owned.

The second hypothesis (double) proposes that century-old family businesses will be more profitable than non-family businesses, both from the point of view of economic profitability (profitability of the company) and financial (profitability for the owners). Table 3 (a) summarizes the results. It is noteworthy that the two most economically profitable groups of companies are precisely that of century-old family companies, followed by non-family and non-centenarian companies, the same ones that show higher financial returns, although in a different order. Likewise, non-family centenary companies are the ones that show lower levels in the two analyzed returns. These differences, however, are only significant, according to the corresponding mean difference test, in the case of financial profitability, but not in the analysis of economic profitability. Therefore, only hypothesis 2a can be confirmed, but not Hypotesis 2b.

Beyond the degree of significance of the differences in means between the four groups of companies analyzed, these results show, first, that family businesses that are capable of overcoming the challenge of surviving several succession processes have higher returns than those that, despite being as long-lived as them, have not restricted their ownership to members. of the same family, but, on the contrary, they can accommodate very different types of shareholders (other companies, investment funds, etc.). Second, the data suggest that centenarian family firms are also more profitable than non-centenarian family firms, which supports the thesis that longevity correlates, at least in family firms, with profitability. However, a third reading of the results shows us that in the case of family businesses, it is precisely the less long-lived ones that achieve better results, that is, non-family businesses reduce their economic and financial returns when they last a long time.

The third pair of hypotheses refers to the financial structure of companies, and proposes that family businesses, whether they are centenarians or not, will have a lower level of indebtedness and higher liquidity, in accordance with the line of work that defends a greater risk aversion of this type of company (eg Zahra, 2005). The results are shown in Table 3(b).

Table 3. Results (Hypotheses 2-4)

Economic Profitability	*Family Firms*	*Non-family Firms*	*Total*
Centenarians	4,86%	1,99%	2,48%
Non-Centenarians	3,77%	4,16%	3,79%
Total	3,89%	2,87%	3,69%
Chi-square analysis	*p-value: 0.1172*		
Financial Profitability	*Family Firms*	*Non-family Firms*	*Total*
Centenarians	8,82%	5,58%	5,99%
Non-Centenarians	7,63%	9,78%	8,54%
Total	**7,66%**	**7,18%**	**7,95%**
Chi-square analysis	*p-value: 0.0000*		
Debt-ratio	*Family Firms*	*Non-family Firms*	*Total*
Centenarias	34,8%	55,2%	51,8%
No centenarias	56,6%	50,5%	53,3%
Total	**50,2%**	**54%**	**49,27%**
Chi-square analysis	*p-value: 0.0067*		
Liquidity-ratio	*Family Firms*	*Non-family Firms*	*Total*
Centenarias	1,99%	1,19%	1,27%
No centenarias	1,43%	1,52%	1,49%
Total	**1,53%**	**1,31%**	**1,53%**
Chi-square analysis	*p-value: 0.4924*		
Employees	*Family Firms*	*Non-family Firms*	*Total*
Centenarias	512	1045	938
No centenarias	125	432	334
Total	**280**	**780**	**528,5**
Chi-square analysis	*p-value: 0.0000*		

Regarding debt, the Chi-square analysis shows that there are significant differences between the four groups of companies in relation to their debt ratio (p-value = 0.0067). Specifically, if the values of said ratio are observed, for each of the groups, it stands out that the lowest value is precisely that of the companies that are centenarians and family-owned, with a value of 34.8% compared to the rest of the companies that exceed in all cases the threshold of 50%. In this sense, the results confirm the hypothesis 3a. On the contrary, in relation to the liquidity ratio, the results do not show statistically significant differences between the hundred-year-old family businesses and the rest of the companies analyzed (p-value = 0.1172). However, even though the difference in means is not significant, the results show a tendency for century-old family businesses to offer a higher liquidity ratio than the rest, bordering on the 2% threshold, compared to the rest of the subgroups of companies (non-family and /or non-centenarians) whose liquidity ratio ranges between 1 and 1.5 percent.

Finally, the last hypothesis refers to the intensity of the workforce, that is, the degree to which century-old family businesses are capable of generating employment. We have analyzed this dimension by comparing the number of workers in the different subgroups of companies throughout the decade under study (2011-2020). The results, represented in Table 3(c), show that there are significant differences in the number of workers in the four groups of companies (p-value = 0.000). We must remember that, given the high dispersion of the values between some companies and others, we have carried out the analyzes through the median instead of the mean. However, as a robustness test, we were able to verify that the significance is maintained when the arithmetic mean of the number of workers is used.

However, if we compare the number of workers for the different subgroups of companies in our sample, we can see that centenarian companies are larger in terms of employment than non-centenarians, according to the relationship between company age and size. However, among the centenarians, the family ones are clearly smaller than the non-family ones with approximately half as many workers (515 employees of the family ones versus 1,045 of the non-family ones). Consequently, we can reject hypothesis 4. On the contrary, among companies that have not yet reached one hundred years of age, the differential is not only lower, but, in addition, family companies are capable of generating more employment than non-family companies. not relatives. Centenarian family companies (434 employees of family companies compared to 334 of non-family companies).

5. Discussion and conclusion

Centenarian companies have been little investigated despite constituting a sample of companies that have been able to demonstrate longevity well above average. Attention to this type of company has emerged from the family business literature, an area in which longevity (Löhde *et al.*, 2020; Tapies and Mota-Fernández, 2012) and long-term orientation (Lumpkin & Brigham, 2011) are underlined as an eigenvalue. Family businesses, beyond being long-lived or not, claim to be and that desire forms part of their own definition (Astrachan *et al.*, 2002; Lansberg *et al.*, 1988; Gallo and

Sveen, 1991; Ward, 1987). Therefore, the first objective of this work was to verify to what extent the longevity of century-old companies is something exclusive or specific to family businesses (Suddaby and Jaskiewicz, 2020; Ge *et al*., 2021). The results show that this is not the case, that is, that family businesses are not the majority among century-old firms.

But beyond their identification, we tried to identify differences between family and non-family centenary companies – and in parallel, between centenary and non-centenary – in relation to their profitability, their financing and their size. The results show that century-old family businesses constitute the group of companies with the highest profitability, which shows their ability to generate long-term value and justifies their longevity. This greater longevity is also justified by its financial structure, so that centenary family businesses maintain a more solid structure, with less debt and greater liquidity than other companies. Our results suggest that these (centenarian family-owned) firms show less risky behavior, which also translates into lower growth, with fewer workers compared to non-family-based centenarian firms.

The present work also offers implications for management. Thus, in the first place, it shows that longevity is a relevant business objective for some companies, regardless of their ownership structure. Likewise, we identified some factors associated with the achievement of said objective, related to the financial structure, especially with lower indebtedness and the development of a more conservative strategy in relation to aspects such as growth, diversification, and other corporate operations. Longevity as a business objective constitutes a source of differentiation and allows it to be linked in the long term with a sustainability strategy.

These results need new research due to the limitations of our research. We are aware that the selection of the sample may have a bias derived from possible changes in the "official" date of foundation with respect to the real date, due to possible changes in statutes that have led to changes in the legal form and that update the date of constitution of the company. Likewise, our work does not delve into the reasons for the longevity of century-old companies, but rather their effects, and it is relevant to address how changes in the ownership structure and in governance have occurred between family and non-family centenarian companies. Finally, our work has a clear exploratory focus, although several hypotheses are proposed and tested. Future work should offer more robust and complex methodologies that allow more detailed relationships and differences to be identified, not only from a cross-sectional perspective, but also longitudinally.

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