The relationship between family-ownership and firm performance

Master thesis

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Abstract

This research discusses the relationship between family-firms and firm performance. 200 European firms are used in the sample. European firms are selected since prior family-business literature is mostly focused on firm outside of Europe. The goal of this study is to examine whether family-ownership has an influence on firm performance. Firm performance will be measured via *Tobin's Q* and *Return on Assets (ROA).* The regression results show a statistical relationship for both dependent variables. The results of this research therefore indicate that family-ownership is positively related to firm performance.

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1. Introduction

According to Elstrodt & Poulet (2014), family businesses are accounting for a share of the GDP which ranges between 70 and 90 percent. Therefore, it is not striking to notice that family firms are researched intensively. Consequently, this raises questions about the difference in performance between family-owned businesses and non-family owned businesses.

Several studies have done research on family-owned businesses, however there is no consensus about the influence of family ownership on firm value (Villalonga & Amit, 2006; Hedge et al.,2020). Furthermore, family-owned firms are defined differently in prior literature which led to an interesting study performed by Harms (2014).

Prior literature suggests that family-firms tend to exploit business opportunities, have a better alignment of interests with the shareholders of the firm, and it is stated that family-firms can borrow on a more favourable term (Hedge et al., 2020).

However, Anderson & Reeb (2013) state that considerable family interference would lead to a focus on the interest of the family instead of a focus on the best outcome for the firm. Moreover, according to Anderson & Reeb (2013), family ownership negatively impacts the probability of a bidding by other agents.

Since there is no consensus on the influence of family ownership on firm performance, this research will focus on the possible relationship.

The research question that the researcher will address is:

"*Does family ownership influences the performance of family and non-family firms?"*

Prior literature is mostly focused on firms in the USA (Anderson & Reeb 2003; Fahlenbrach 2009; Jaskiewicz et al., 2017 Le Breton-miller & Miller, 2009; Villalonga & Amit 2006; Villalonga & Amit 2008) or East Asia (Chen et al., 2005; Claessens et al., 2000; Hedge et al., 2020; Jiang et al., 2018). This research however, will focus on European countries. Despite the substantial amount of family-owned businesses in Europe, empirical evidence is still scarce on the performance of family-owned businesses in Europe (Barontini & Caprio, 2005; Maury, 2006).

Yet, prior literature suggests a difference of the influence of family-ownership on firm performance due to the country-specific characterises such as legalisation and culture (Anderson & Reeb, 2003; Faccio et al., 2000; Maury, 2006). Faccio et al (2001) proposes that, in East Asia, family-ownership culminates in struggles which consequently disturbs the performance of the firm. These struggles derive from the low-level of protection that minority shareholders incur and the limited disclosure of information and transparency of the company (Faccio et al, 2001). This effect is enhanced due to the fact that wealth, for the greater part of developing countries in East Asia, is concentrated by a limited amount of families (Claessens et al., 2000). Moreover, wealth concentration does not stimulate the development of corporate governance, but simply be a obstacle to a reorganization (Claessens et al., 2000).

Yet, in Europe and the USA, these issues are less inclined to take place due to the better regulation of corporate governance (Faccio et al., 2001; Maury, 2006). Therefore, the influence of family-ownership can have a positive impact on firm performance. These findings are confirmed by Anderson & Reeb (2003), who proposed that, if corporate governance is of a substantial level, family-ownership can increase the level of decision-making efficiency and reduce the agency problem. Maury (2006) complements these findings

and proposes that, in well-regulated countries, minority shareholders can benefit from family-ownership.

So, this research will focus on the gap in existing literature by studying European countries. Moreover, since this research is not focused on a single country, which has been done in prior literature, this study researches the influences in a more global context. Country specific characteristics will therefore not bias our result. Furthermore, prior studies are, to a large amount, not recently performed. The study of Hedge et al., (2020) can be seen as an exception. However, the sample used in this research stems from 2001 till 2010, so is not recent as well.

Also unique is the fact that this research will shed insights into the four main theories discussed in the family-business literature. Prior literature is mostly focused on one or two theories, while this Thesis focuses on the four most present ones according to Pindado & Requejo (2014). Therefore, this research will offer a unique opportunity to look at the family-business theories incorporating the four main theories. The theories are afterwards put into a framework.

This thesis will start with the literature review which will discuss and compare current theories. Based on the theoretical framework, the hypothesis will be presented. The theoretical framework and hypothesis will be the basis for our research methodology which will be discussed next. Afterwards, the results of our research will be presented and analysed. Next, the conclusion of the research is presented. At last, the limitations of the research will be presented followed by providing directions for future research.

2. Literature review

The literature review will focus on laying the foundation of our research. The researcher will start by discussing various definitions of the concept family-business. To be as specific as possible, the researcher will end by concluding the definition of family-business used in this research.

After setting our definition of family-businesses, several corporate governance theories will be discussed. More specifically, the effects of family-ownership, based on several corporate governance theories, will be discussed.

After setting our perimeters, we will end the literature review with a framework which gives an oversight of the several theories and their implications.

2.1 Defining family-businesses

To start our research, we will first define the concept family-business. In existing literature, there is no consensus on the definition of a family-business which led to an interesting study performed by Harms (2014). Harms (2014) systematically reviewed 267 articles in an attempt to define family-businesses. Harms (2014) evidently showed that some studies classify 15% of all businesses as family businesses, whereas others classified 79% of all companies as family-businesses. Moreover, the study by Harms (2014) showed that over thirty definitions were found when diving into prior literature. Amit & Villalonga (2013) confirm these findings. They find nine different definitions of family firm's. The proportion of family firms in the sample and the difference in Tobin's Q consequently differs per paper.

A widely accepted definition is indispensable when comparisons want to be made in a reliable and valid way (Harms, 2014). The definition of Chua et al., (1999) is the most widely used definition (Harms, 2014; Hedge et al., 2020) and is therefore used in this research.

"The family-businesses is a business governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small numbers of families in a manner that is potentially sustainable across generations of the family or families" (Chua et al., 1999).

When looking at the definition, key characteristics can be found. This is confirmed by Villalonga & Amit (2006) who state that, when looking at the definition of family-businesses, three fundamental elements have to be recognized. These concepts are: (1) ownership, (2) control, and (3) management. So, family-control can take place in an active way or in a passive way. According to Anderson & Reeb (2003), active family-control is present if the family member is the firm's CEO or fills another role in the top management.

Concludingly, in this research, our definition focuses on two aspects of family businesses.

(1) The portion of equity that the family owns
(2) Presence of family members on the board

In the methodology chapter, the researcher will dive more deeply into this and consequently specify the terms used.

2.2 Corporate governance

Following Villalonga & Amit (2009), existing theories of family control can be classified into two broad categories. The first category focuses on the proposed "competitive advantage", while the second category focuses on "private benefits of control" (Villalonga & Amit, 2009). These two categories can also be found in the hypotheses used by Villalonga & Amit (2009). Hypothesis 1, focusing on the competitive advantage, states that *value is maximized for both family and non-family shareholders* (Villalonga & Amit, 2009). Hypothesis 2, focusing on the private benefits of control, states that *value is maximized only for the family, who expropriates non-family investors* (Villalonga & Amit, 2009). Both hypotheses are not mutually exclusive and could even differ per industry (Villalonga & Amit, 2009).

According to Pindado & Requejo (2014), since the start of the 21st century, there has been an increasing trend to study corporate governance in the family-business field. Pindado & Requejo (2014) studied 348 articles regarding corporate governance in the family-business field. Pindado & Requejo (2014) not only looked at the finance field, but also looked at the management sector. This confirms the previously stated findings of Villalonga & Amit (2006) about the three elements of family-businesses. The findings of Pindado & Requejo (2014) can be found in Appendix A. Pindado & Requejo (2014) show that the four main corporate governance theories discussed in the family-business field are: (1) agency theory, (2) resource-based view, (3) institutional theory, (4) stewardship theory. Therefore, these theories will be used in this research.

2.2.1 The Agency Theory

The first theory that the researcher will discuss is the agency theory. As can be seen in Appendix A, Pindado & Requejo (2014) found that this is the most common[1] theory discussed in family-firm business research.

The agency theory discusses the relationship between a principal, the agent, and the contract which binds them (Le Breton-Miller & Miller, 2009). The theory especially focuses on the rising conflict between the two partiers which could possibly arise from asymmetric information and/or misalignment of interest (Jensen & Meckling, 1979; Le Breton-Miller & Miller, 2009). However, the principal can lower the misalignment by selecting efficient incentives and by monitoring the agent (Jensen & Meckling, 1979). These costs are called monitoring costs. Moreover, bonding costs can come into play if the principal wants to ensure himself that the agent will perform certain actions (Jensen & Meckling, 1979). If the agent will take the specific action, the principal will receive a compensation. According to Jensen & Meckling (1979), positive monitoring will also take place by stimulating certain behaviour. Since the agent could take decisions focused on his own interests instead of the interests of the principal, there will be a loss in welfare. Combined, Jensen & Meckling (1979) define agency costs as the sum of: (1) monitoring costs for the principal, (2) the bonding costs for the agent, and (3) the loss of welfare due to divergence of interests.

According to Anderson & Reeb (2003), family-ownership can have a positive effect on the principal-agent conflict since the wealth of the family is intimately affiliated with the wealth of the firm. Therefore, the families may have stronger incentives to monitor the managers in place (Anderson & Reeb, 2003; Le Breton-Miller & Miller, 2009; Sacristán-Navarro et al., 2011). Furthermore, family-firms are more focused on the long-term survival and reputation of the company (Sacristán-Navarro, 2011). The long-term focus also addresses long-term relationships with other stakeholders of the firm (Sacristán-Navarro, 2011). However, the long-term relationships also oblige the family-business to a specific set of

[1] As can be seen in Appendix A, Pindado & Requejo (2014) remarked that in 59% of all cases, the agency theory was discussed.

customers, suppliers, and partners whereas new stakeholders could offer better contract details (Le Breton-Miller & Miller, 2009).

It is also found that family-ownership results in less diffused ownership of the firm where the family also performs the monitoring role (Ang et al., 2000). Research showed that in the presence of large shareholders, free-riding is less inclined to happen (Sacristán-Navarro, 2011).

Ang et al., (2000) studied two ways of measuring agency costs. The first method focuses on the expense ratio, while the second method focuses asset utilization. When there is no family or single person owning above 50 percent of the firm's equity, the expense ratio[2] was found to be significantly higher in the study performed by Ang et al., (2000). The second measure of agency costs, as measured in the study by Ang et al., (2000), results from dividing the annual sales by total assets. The asset utilization method is an indicator of how effective the management of the firm has distributed the assets in comparison to the sales.

Yet, there are also studies providing arguments contradicting the positive influence of family-ownership on the agency relationship. The principal-agent issue is not the only issue since there is also the "owner-owner conflict" which is focused on the misalignment of interests between majority and minority shareholders (Le Breton-Miller & Miller, 2009). Sacristán-Navarro et al., (2011) add that minor shareholders do not possess the contractual mechanism or incentives to align the interests of the agent with their own. However, Anderson & Reeb (2003) state that this issue is less likely to occur in economies where shareholders are protected. Moreover Hedge et al., (2020) contradict the findings of Le Breton-Miller & Miller (2009) since they state that due to the alignment of interests of the firm and the family, long-term minority shareholders are better of.

Moreover, families tend to keep control of the company, while an acquisition of company would be the most optimal decision (Sacristán-Navarro, 2011). Due to the fact that investments in business innovations are risky, the risk-aversion of families limit the corporate innovations (Le Breton-Miller & Miller, 2009). A lack of innovation or renewal of the business will have a negative impact on the firm performance (Le-Breton-Miller & Miller, 2009). This is supported Chen & Hsu, (2009) who state that R&D investments are less likely to take place in family firms due to the high risk. Patel and Chrisman (2013) also confirm these findings by stating that family firms focus on R&D investments which reliably increase their sales instead of executing speculative investment decisions which could even lead to a higher amount of sales (Patel & Chrisman, 2013). Yet, R&D investments can be seen as vital in achieving competitive advantages and positive earnings (Chen & Hsu, 2009) This is supported by Block (2012), who found that family ownership has a negative impact on the R&D productivity and the level of R&D intensity.

Patel & Chrisman (2013) focus on the fact why and how the R&D investments differ. Family firms tend to make investments based on protecting socioemotional wealth and the financial prosperity of the family (Patel & Chrisman, 2013). Moreover, there is a significant variance in the amount invested between family firms and non-family firms (Urbinati et al., 2017). Comprehensively, the low-risk strategy, characterized by the assumptions of family businesses, can be seen as an effective and sustainable way (Patel & Chrisman, 2013).

Furthermore, family-firms could have the tendency to elect family-members to executive positions, thus entrenching themselves while neglecting the possible best manager from the outside (Anderson & Reeb, 2003; Sacristán-Navarro, 2011; Le Breton-Miller & Miller, 2009).

[2] The expense ratio is the expense to sales ratio. So, the particular expenses divided by the net sales.

2.2.2 The Resource-based View

The resource-based view (RBV) proposes that companies possess various combinations of levels of assets and capabilities which can ultimately be seen as the proposed resources (Habbershon & Williams, 1999). Resources could be tangible or intangible, individual or organizational, and social (Habbershon & Williams, 1999). Since these resources are bound to a particular firm, the resources are called idiosyncratic and offer the company a possible competitive advantage (Habbershon & Williams, 1999). However, not all resources are offering a competitive advantage. More precisely, Tokarczyk et al., (2007) state that valuable and rare resources offer a superior performance of the firm. This is confirmed by Cabrera-Suárez et al., (2011) who state that a competitive advantage originates from its ability to utilise the resources or capabilities well relative to its competitors. To keep the competitive advantage, firms must ensure that the specific resources are isolated to ensure that other firms cannot take over or imitate the competitive advantage (Habbershon & Williams, 1999; Tokarczyk et al., 2007).

The high degree of family members' commitment and dedication is one strategic resource which could offer a competitive advantage (Cabrera-Suárez et al., 2011). This commitment not only comes from the family, but also from its customers, which can also be seen as a competitive advantage (Cabrera-Suárez et al., 2011). Moreover, family-firms are offered more appealing loans at the bank due to their inside debt (Hedge et al., 2020).

Thus, the bundle idiosyncratic resources and inimitable capacities when looking at family firms, also known as "familiness", could offer a source of competitive advantage when the firms take advantage of this (Cabrera-Suárez et al., 2011; Habbershon & Williams, 1999: Sacristán-Navarro et al., 2011; Tokarczyk et al., 2007).

An important part of the addition to familiness is the tacit knowledge that the family shares (Cabrera-Suárez et al., 2011; Tokarczyk et al., 2007). Tacit knowledge of a firm is difficult to exchange, imitate, it is scarce, and specialized on the specific firm which offers an opportunity to the firm to benefit from these unique possibilities (Cabrera-Suárez et al., 2001). Nevertheless, since the family-member will quit at a certain period of time, it is critical for the company to transfer the knowledge (Cabrera-Suárez et al., 2001). Yet, the knowledge transfer is done more easily in a family-firm than in a non-family firm due to the personal relationship between successor and predecessor (Cabrera-Suárez et al., 2001).

2.2.3 The Institutional Theory

The institutional theory focused on the beliefs, values, practices, assumptions and rules that establish the legitimacy of the firm (Su et al., 2017). Consequently, these set of norms and expectations attempts to avoid undesired behaviour (Zhao et al., 2014).

Yet, institutional expectations conceivably do not match economic rationality (Soleimanof et al., 2017). Moreover, The owners of the family-firm are routinely challenged due to the contrasts between family norms and industry norms (Soleimanof et al., 2017). The aforementioned originates from the focus of family-members on socioemotional wealth (SEW) (Miller et al., 2013). The research of Miller et al., (2013) shows that the intensity of family involvement significantly influences the interest in SEW.

Patel & Chrisman (2013) show that, keeping the level of R&D investment constant, family-firms are more likely, in comparison to non-family firms, to take advantage of investments due to their focus on SEW. Non-family firms tend to focus on exploratory investments which will intensify the variability in performance of the firm (Patel & Chrisman, 2013). The reason behind this is that family-firms are more stringed to historic foundation of the firm and they are therefore less inclined to make experimentative innovations (Patel & Chrisman, 2013). Moreover, socioemotional wealth is increased by innovations in the specific industry that the family-firm is specialized in (Patel & Chrisman, 2013).

Soleimanof et al., (2017) state that family firms differ in their interaction with institutional contexts in comparison to non-family firms. Moreover, family members share a common history which have set a certain set of unique values such as long-term orientation, legacy transmission and loyalty (Parada et al., 2010; Soleimanof et al., 2017). Furthermore, informal family meetings stimulate collaborative conversations between the family members which consequently sets the shared vision of the firm (Soleimanof et al., 2017).

Yet, this can also lead to the issue of nepotism where family institutions profoundly stay present (Soleimanof et al., 2017). Conformity, so behaving in compliance with the standards set by the industry, is also discussed in the literature about family-firms. Miller et al., (2013) show that conformity is correlated with the intensity of family involvement. However, Miller et al., (2013) also found out that conformity is less present when the founder of the family-business is still present. The founder of the family-business can be seen as an entrepreneur and therefore strive for innovativeness and proactiveness instead of conformity (Miller et al., 2013).

Furthermore, research has also shown the benefits of conformity. First of all, the conforming strategy already proves to be valued by the market and therefore makes the business less risky (Miller et al., 2013). Secondly, revenues and costs can be forecasted more accurately due to the known demand (Miller et al., 2013). Thirdly, a conform strategy, in line with the achievement of socioemotional wealth, possibly enhances the respect that the community has for the firm and therefore also for the family (Millet et al., 2013).

2.2.4 The Stewardship Theory

Next, this research will discuss the contrast of agency theory; the stewardship theory. The stewardship implies that individuals are not solely focused on self-interest, but that they are also interested in serving other individuals (Le Breton-Miller & Miller, 2009). Furthermore, it suggests that individuals do not solely focus on the economical aspect, but also focus on higher needs, for example on their self-actualization (Le Breton-Miller & Miller, 2009).

It is proposed that, in family-firms, there is a focus on the long term interest of the firm and all of its stakeholders since the future of the company is all connected to the prospects of the family (i.e. family capital, career opportunities) (Le Breton-Miller & Miller, 2009). Generosity can illustrate why family firm managers increase the firm performance, while the involvement-oriented environments help to reduce relationship conflicts (Eddleston & Kellermanns, 2006).

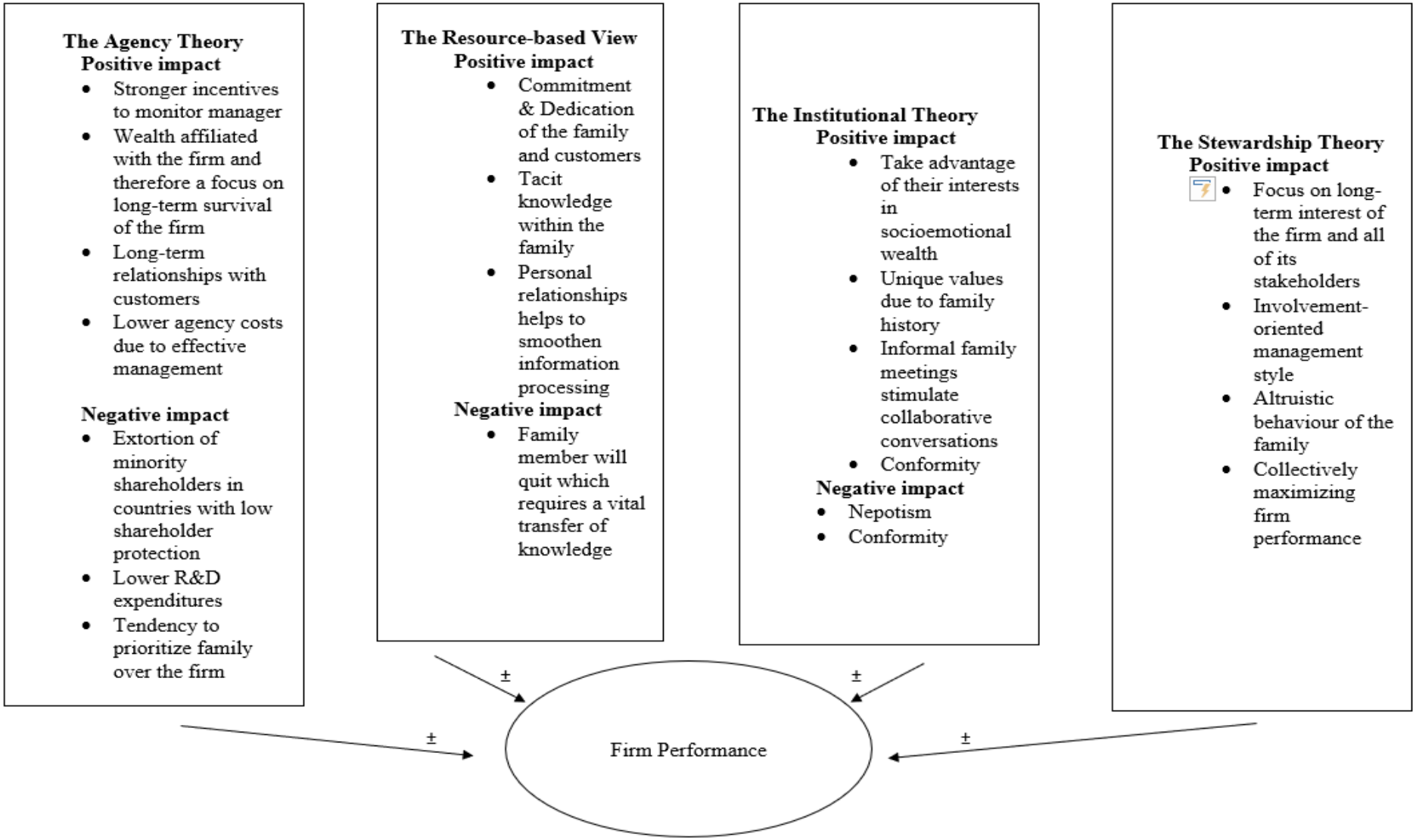
An involvement-oriented management style is based on trust and informal agreements (Corbetta & Salvato, 2004). Eddleston & Kellermans (2006) dive into this by referring to a so-called 'participative strategy process'. This process refers to the involvement of family-members in the operations and strategy of the firm which consequently leads to a better understanding of the goals and the diminishing of individual biases (Eddleston & Kellermans, 2006). In an effective participative strategy process, individuals are also allowed to spread their ideas and give opinions about the current strategy process. This helps to innovate current strategies, which, as stated before, is crucial for the survival of the firm (Eddleston & Kellerman, 2006). Moreover, conflicts are less inclined to occur due to the fact that individuals are allowed to raise their voice (Eddleston & Kellerman, 2006). Furthermore, individuals feel appreciated and responsible for the decision-making process (Eddleston & Kellerman, 2006). It has to be acknowledged that some conflicts can have a positive effect on firm performance, but, most of the time, relationship conflicts are linked with stress and hostile behaviour (Eddleston & Kellerman, 2006).

Conflicts are also less inclined to occur due to the altruistic behaviour of the family (Eddleston & Kellerman, 2006). A high degree of altruism helps to strengthen the family bond and consequently diminishes the need for authority-based decisions (Corbetta & Salvato, 2004). A strong family bond also helps to set shared values and therefore focus on the collective goal instead of the personal goals (Corbetta & Salvato, 2004).

In addition this pro-organizational culture focused on collectively maximizing firm performance, is providing a positive output for the family (Corbetta & Salvato, 2004).

Figure 1 gives an overview of the above-mentioned ways of viewing at the influence of family-ownership.

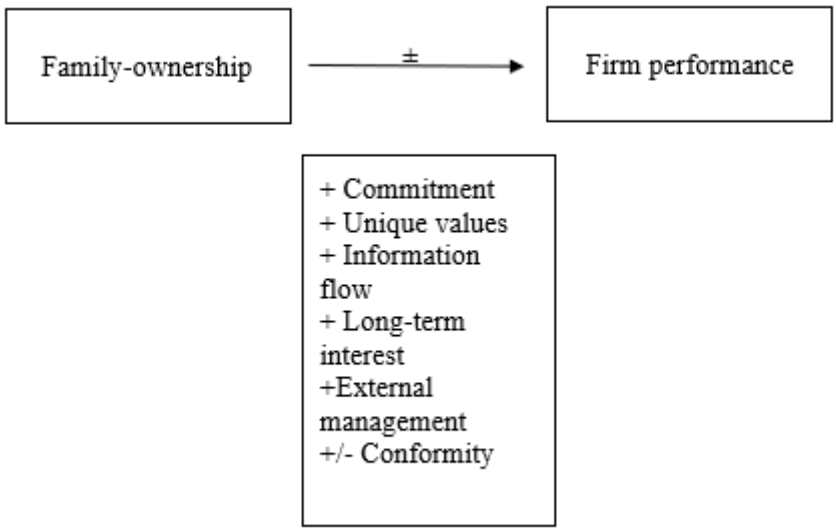
Figure 1: Overview of the theories mentioned and their principles



3. Hypothesis

In the literature review, the researcher discussed the four main corporate governance theories in the family-business literature. The researcher discussed pros and cons found in prior literature. The reasoning of the various theories are summarized in figure 1. Based on this, the researcher proposes the framework which can be found in figure 2.

Figure 2: Framework



In figure 2, shows the expected influence of the specific concept based. For example, a positive impact of commitment within a family-business on firm performance. However, as can be seen in figure 2, the influence of conformity is not evident. Yet, based on the literature review performed and mentioned, the researcher proposes the following hypothesis:

"Family-ownership has a positive influence on firm performance"

4. Methodology

The methodology chapter will discuss the research method that the researcher will make use of. The methodology will be based on research performed by prior researchers in the same topic of interest.

4.1 Sample

As stated before, our sample will be including European firms only. Following Barontini & Caprio (2005), this research will include the investigation of 11 countries in Europe (Belgium,

Denmark, Finland, France, Germany, Italy, The Netherlands, Norway, Spain, Sweden and Switzerland). Ireland and the United Kingdom are not being studied because family-ownership is considered of lesser importance due to their more 'shareholder-value-oriented management style (Barontini & Caprio, 2005).
Moreover, financial corporations are excluded from our sample due to the fact that these are not comparable to non-financial corporation due to their different set of regulations (Anderson & Reeb, 2003; Barontini & Caprio, 2005; Patel & Chrisman 2014).

The main source of data in this research will be ORBIS. ORBIS is a database consisting of a lot of relevant information for this research. Filters will allow the researcher to narrow the bulk of information down to information fitting the needs of the researcher. To complement the ORBIS database, annual reports will also be studied. Moreover, a request is handed in to gain access to the COMPUSTAT database which is in line with Anderson & Reeb (2003). The comprehensive set of data extraction will allow the researcher to gather enough data to gain a representative sample.

Next, the researcher will discuss the regression model used in this research followed by the explanation and measurement of the variables used.

4.2 Regression model

4.2.1 Multivariate analysis

Our main topic of interest will be the possible relationship between family-firms and firm performance. Yet, our analysis will include various variables to measure this relationship as good as possible.
Since our dependent variable will be measured in two ways, as will be discussed in chapter 4.3.1, we will ran several regressions. We will test the possible relationship via two models: (1) Control variables only, and (2) Control variables + independent variable. As stated before, these two models will be shown for both dependent variables. By doing this, the researcher can check a possible significance in each mentioned situation. Moreover, by starting with the control variables, the researcher can set a certain baseline.

The regression model that fits our research is the OLS regression model. Following Barontini & Caprio (2005), our dependent variables will be Tobin's Q and ROA. Our independent variable, family-ownership, is a dummy variable and will be given a 1 if it is a family-firm. In chapter 4.3 we will dive more specifically in all our variables.
The general form of our regression will be as follow:

$$\textit{Firm performance} = \alpha + \beta_1\,(\text{Family-firm}) + \beta_2\,(\text{Industry}) + \beta_3\,(\text{Age}) + \beta_4\,(\text{Size}) + \beta_5\,(\text{Growth\_Sales}) + \beta_6\,(\text{Growth\_Opportunities}) + \beta_7\,(\text{Leverage}) + \beta_8\,(\text{CG\_IndBoard}) + \beta_9\,(\text{CG\_BoardSize})$$

Next, we will discuss the variables more intensively and explain their measurement. At the end of each part, a table with an oversight will be given to create a clear image of the variables.

4.3 Variables

4.3.1 Dependent variables

The dependent variable of interest will be firm performance. Following prior literature (Anderson & Reeb, 2003; Andres 2008; Barontini & Caprio, 2005; Hedge et al., 2020; Jaskiewicz et al., 2017; Maury, 2006; Miller et al., 2003; Villalonga & Amit, 2006), we will use accounting and market measures to measure firm performance. Therefore, we will measure firm performance in two ways.

First we will measure firm performance via Tobin's Q. Tobin's Q is a measure of firm value which is calculated by dividing the ratio of the firm's market value by its assets (Villalonga & Amit, 2006). Barontini & Caprio (2005) dive more deeply into the measurements of the Tobin's Q. It is stated that the market value is calculated by reducing the book value of shareholders' equity from the book value of total assets, and adding up the market value of shareholders' equity. As stated before, this value has to be divided by the book value of total assets. Yet, one has to keep the 'minority interest' in mind at the book value. Therefore, following Barontini & Caprio (2005), the book value is multiplied with the market-to-book multiple of the shareholders' equity.

Moreover, in firms with multiple share classes, the possibility of non-publicly available shares can arise. Following Villalonga & Amit (2006), this research will calculate the market value of common equity by multiplying the total amount of shares outstanding of all the classes with the value of the share price of the tradeable shares.

The second method is focused on firm profitability measured via the return on assets (ROA). Following Hedge et al., (2020), ROA will be measured by dividing the annual earnings before interest, tax, depreciation and amortization (EBITDA) by the total assets. ROA can be seen as the ratio between 'operating profit' and 'total assets' (Barontini & Caprio, 2005).

TABLE 1: DEPENDENT VARIABLES

VARIABLE	***MEASURE***	***SOURCE***
TOBIN'S Q	Market Value / Total Assets	*Barontini & Caprio (2005)* *Villalonga & Amit (2006)*
RETURN ON ASSETS (ROA)	EBITDA / Total Assets	*Anderson & Reeb (2003)* *Barontini & Caprio (2005)* *Hedge et al., (2020)*

4.3.2 Independent Variable

In this research, family-ownership will be used as a dummy variable. Family-ownership will equal a "0" when the firm is a non-family firm and the variable will equal a "1" when the firm is a family-firm. Next, we will discuss how this research will divide this.

As stated before, there is no consensus on the definition of family-firms. Moreover, there is no consensus on the way family-firms are measured. The main difference stems from the thresholds that several researchers use.

Next, we will discuss the various measures that are used in prior literature. First of all, Miller et al. (2013) used a 5 percent threshold or the presence of at least one family member. Secondly, Maury (2006) recognizes a family-firm as a firm where the largest shareholder is identified as a family member and holds at least 10 percent of the voting rights. In comparison, Hedge et al., (2020) define a firm a family firm if it (1) was founded by an individual or a family, (2) the CEO or Chairman is the founder or a founder's family member, and (3) the founder (or founder's family) holds at least 15% of the firm's voting stock.

Striking is the research done by Villalonga & Amit (2006) who ran nine different regression analyses covering nine dissimilar ways of measuring a family-business. The definitions ranged from (1) a family has any shares to (9) a family is the largest shareholder, has a least 20% of the votes and has family directors, and is in second or later generation.

In comparison, researchers in prior literature (Barontini & Caprio, 2005; Claessens et al., 2000; Faccio et al., 2001) do not solely focus on the amount of shares owned by the family, but they also focused on voting rights and cash-flow rights. This methodology starts by checking whether a family owns at least 10 percent of the shares. Secondly, the family needs to possess 51% of the direct voting rights, or possess the bivalent amount of direct voting rights in comparison to the second largest shareholder. Moreover, Kellermans & Eddleston (2006) did not look at the fraction of the shares owned, but they chose to recognize a firm as a family-firm if assets of the firm are possessed by the founding family and at least two family-members are employed in the firm.

So, prior literature is inconsistent in distinguishing a family-firm from a non-family firm. Yet, the threshold is not vital in determining the influence of the firm (Anderson & Reeb, 2003). The difference in power or influence is not wholly determined by its fraction of the shares since it is a measure of control instead of influence (Anderson & Reeb, 2003).

Therefore, in line with prior literature, this research will recognize a firm as a family firm if the founding family holds a fraction of the firm or are present in the board of directors (Anderson & Reeb, 2003; Patel & Chrisman 2013; Villalonga & Amit, 2006).

TABLE 2: INDEPENDENT VARIABLE

VARIABLE	***MEASURE***	***SOURCE***
FAMILY-FIRM	Rated a '1' if the founding family holds a fraction of the firm or are present in the board of directors. Rated a '0'otherwise.	*Anderson & Reeb (2003)* *Patel & Chrisman (2013)* *Villalonga & Amit (2006)*

4.3.3 Control variables

Since firm performance is not influenced by the type of ownership solely, we have to add control variables. Maury (2006) refer to this other factors as industry and firm-specific characteristics. Control variables are added to make sure that we can test the relationship between the independent and dependent variables. The control variables will be measured at the end of 2020 or stated otherwise.

4.3.3.1 Industry variable

The first control variable used in this research is the industry variable. The industry will be measured via the SIC code which is a two-digit standard industry classification code and commonly used in prior family-business research (Anderson & Reeb, 2003; Andres, 2008; Barontini & Caprio 2005; Hedge et al., 2020; Jazkiewicz et al., 2017; Maury, 2006; Miller et al., 2013; Villalonga & Amit, 2006). The industry control variable is added to control for specific industry characteristics which could possibly skew our results.

4.3.3.2 Firm Age

The second control variable used in this research is the age of the firm. The age of the firm is possibly also an influencer of firm performance due to the life cycle effect of the firm (Hedge et al., 2020). It is measured by the difference between the founding year of the firm and the current year[3]. Older firms can have built up goodwill which will influence the performance of the firm (Hedge et al., 2020).

4.3.3.3 Firm Size

The third control variable is focused on the size of the firm. It is measured by calculating the natural log of the book value of total assets. The size of the firm also deals with the life cycle of the firm and therefore can have, as stated before, influences on the firm performance.

4.3.3.4 Growth

Growth will be measured in two ways. The first method focuses on the growth in net sales of the past 3 years which is in line with Maury (2006). When there is no history of the past 3-years, this variable will be based on the available and most recent 3 years (Maury, 2006). Barontini & Caprio (2005) measure the growth in sales by looking at the increase in sales compared to the last year, but due to the COVID-19 situation, these results can be biased.

Secondly, this research will dive into the growth opportunities that the firm offers. This research will follow Anderson & Reeb (2003) and Villalonga & Amit (2006). Therefore the growth opportunities will be measured by dividing the R&D expenses by the total sales.

4.3.3.5 Leverage

A leveraged company deals with more risk, but can ultimately also raise more profits. Yet, we have to control for the amount of debt the company is dealing with. Leverage will be measured by dividing the total book value of debt by the total book value of equity (Anderson & Reeb, 2003; Barontini & Caprio, 2005; Maury, 2006; Villalonga & Amit, 2006).

[3] The current year refers to the moment of performing this research which is 2021

4.3.3.6 Corporate governance

Following Hedge et al. (2020) and Anderson & Reeb (2003), this research will also control for corporate governance characteristics since better corporate governance can be associated with increased performance. Corporate governance will be measured in two ways.

The first measure is focused on the independent directors present on the board. Independent directors could contribute to the reduction of family opportunism (Maury, 2006). The proportion of indirect directors will be measured by dividing the number of independent directors by the total board size (Anderson & Reeb, 2003).

The second measure is focused on the size of the board. The board size is measured by looking at the total amount of directors present in the company. This measure takes both executive and non-executive directors into account (Hedge et al., 2020).

TABLE 3: CONTROL VARIABLES

VARIABLE	***MEASURE***	***SOURCE***
INDUSTRY	Two-digit SIC code	*Anderson & Reeb (2003)* *Barontini & Caprio (2005)* *Hedge et al., (2020)* *Maury (2006)* *Villalonga & Amit (2006)*
COMPANY AGE	Difference between the founding year and the current year[4]	*Anderson & Reeb (2003)* *Barontini & Caprio (2005)* *Hedge et al., (2020)* *Villalonga & Amit (2006)*
COMPANY SIZE	Natural log of the book value of total assets	*Anderson & Reeb (2003)* *Barontini & Caprio (2006)* *Hedge et al., (2020)* *Maury (2006)* *Villalonga & Amit (2006)*
SALES GROWTH	Average of growth in net sales over the past 3-years	*Maury (2006)*
GROWTH OPPORTUNITIES	Total R&D expenses / Total Sales	*Anderson & Reeb (2003)* *Villalonga & Amit (2006)*
LEVERAGE	Total book value of Debt / Total book value of Equity	*Anderson & Reeb (2003)* *Barontini & Caprio (2005)* *Villalonga & Amit (2006)*
IND_BOARD	Amount of Independent Directors / Total Board Size	*Hedge et al., (2020)*
BOARD SIZE	Total amount of Directors	*Hedge et al., (2020)*

[4] As stated before, The current year refers to the moment of performing this research which is 2021

5. Data

As stated before, our dataset consists of hand-collected data collected from "Orbis". Data used is secondary data and of quantitative character. The initial data set consisted of 200 companies, however these have to be checked for outliers. After controlling for extreme values, companies 68, 150 and 172 had to be removed from the sample. Therefore, the sample used in this research will be 197 companies.

Table 4 shows the countries and their respectable percentage of their presence in the sample. As can be seen, French and Swedish countries are the most present in our sample. Namely 18.8 and 19.8 percent of the companies are French or Swedish. Spanish companies are the least present in our sample, namely for only 4.1 percent.

Furthermore, in Appendix B, the division of our sample across the two-digit SIC codes can be found. It can be seen that there are several industries where the family-firms are 100 or 0 percent present, however it has to be noted that, in most cases, the total amount of firms is very low. Yet, it can be seen that for SIC-codes 34 (Fabricated Metal Products, 35 (Industrial Machinery and Equipment), 36 (Electronic and other Electric Equipment), 50 (Wholesale Trade-Nondurable Goods), 73 (Business Services), and 87 (Engineering and Management Services), the fraction of family-firms is relatively high.

5.1 Descriptive Statistics

Table 4
Descriptive statistics per country

	Frequency	Percentage
Belgium	7	3.6
Denmark	12	6.1
Finland	12	6.1
France	37	18.8
Germany	10	5.0
Italy	20	10.1
The Netherlands	11	5.6
Norway	14	7.1
Spain	8	4.1
Sweden	39	19.8
Switzerland	27	13.7
Total	197	100

Next, this researcher shows the descriptive statistics for the whole sample. In table 5A, there is no separation made between family- and non-family firms. In table 5B, the researcher did divide between family- and non-family firms. As stated before, a firm is seen as a family-firm if a family member of the founding family is present on the board of directors or if the founding family still holds part of the shares.

When looking at the differences in Table 5B between family- and non-family firms, it can be seen that family-firms, in our sample, have a higher mean of *Tobin's Q* in comparison to non-family firms. Family-firms have a mean *Tobin's Q* of 2.25, while non-family firms have a mean *Tobin's Q* of 1.58. Moreover, when looking at the *ROA*, family-firms score a mean of 14.1, while non-family firms score a mean of 11.0. Furthermore, when diving into the median, it can be seen that family-firms also rate higher for *Tobin's Q* and *ROA* in

comparison to non-family firms. Family-firms namely rate a median value for *Tobin's Q* of 1.67 and media value of 13.9. Non-family firms respectably have a median value for T*obin's Q* of 1.0 and a median value for *ROA* of 10.5.
Comparing the results of our dependent variables with prior literature shows equivalences. The mean amount of Tobin's Q for the full sample is slightly higher than research performed by Maury (2006) and Anderson & Reeb (2003) namely respectively 1.53 and 1.41. However, it is line with Barontini and Caprio (2005) and Villalonga & Amit (2006) who respectively found a mean Tobin's Q for the full sample of 2.06 and 2.03. Our other dependent variable, the ROA, is in line with Anderson & Reeb (2003) and Villalonga & Amit (2006), namely 15.05 and 11.01. In comparison, Barontini & Caprio (2005) and Maury (2006) found a relatively lower ROA in their sample, namely 6.8 and 5.86. What is striking is the fact that the last two mentioned papers both used European firms in their sample and Anderson & Reeb (2003) and Villalonga & Amit (2006) did not use European firms. Based on these results, it can be stated that our sample scores a relatively high ROA for European firms in comparison to Barontini & Caprio (2005) and Maury (2006).

Also remarkable is the fact that for the whole sample and for the divided sample, the median of *Growth Opportunities* and *Ind_Board* are 0. This shows that, in our sample, a vast amount of companies does not invest in R&D and does not involve independent directors in their board of directors. In comparison to Hedge et al. (2020), our mean value of Ind_Board is lower. Hedge et al. (2020) found a mean value of Ind_Board of 0.28 for family-firms and 0.26 for non-family firms, while our sample presents a respectable score of 0.09 for family-firms and 0.10 for non-family firms.

Table 5A
Descriptive statistics (N=197)

	Mean	Median	S.E.	Min.	Max.
Tobin's Q	1.96	1.35	1.72	0.00	8.92
ROA (%)	12.8	12.5	5.7	-6.1	31.0
Company Age	57.7	41.0	46.1	3	225
Company Size	6.38	6.31	0.6	5.33	8.15
Sales Growth	1.15	1.11	0.23	1.0	3.99
Growth Opportunities	0.02	0.0	0.55	0.0	0.47
Leverage	0.58	0.58	0.26	0.08	3.29
Board Size	10.25	10.0	5.15	1.0	31.0
Ind_Board	0.10	0.0	0.18	0.0	0.80

This table provides a summary of the statistics for the data used in this sample. The data set consists of 197 public firms in Europe observed for the period of 2019 to 2021. The following European countries are used in this sample: Belgium, Denmark, Finland, France, Germany, Italy, The Netherlands, Norway, Spain, Sweden and Switzerland. This table does not differ between family- and non-family firms. *Tobin's Q* is measured as the market value divided by the total assets of the specific firm. *Return on Assets (ROA)* is measured by dividing the EBITDA by the total assets of the firm. *Company Age* is measured as the difference between the founding year and the current year (2021). *Company Size* is measured as the natural log of the book value of total assets. *Sales Growth* is measured as the average growth in net sales of the past 3-years. *Growth Opportunities* is measured by dividing the total research and development expenses by the total amount of sales. *Leverage* is measured by dividing the total book value of debt by total book value of equity. *Board Size* is measured by looking at the total amount of directors present in the board of directors. *Ind-_Board* is measured by dividing the amount of independent directors present in the board of directors by the total amount of directors present in the board of directors.
For the descriptive statistics, the mean, median, standard deviation, minimum and maximum are shown.

Table 5B

Descriptive statistics of family- and non-family businesses (N=197)

	Family firms					Non-family firms					
	Mean	Median	S.E.	Min.	Max.	Mean	Median	S.E.	Min.	Max.	T-Statistics
Tobin's Q	2.25	1.67	1.89	0.26	8.92	1.58	1.0	1.39	0.0	7.39	.005***
ROA (%)	14.1	13.9	5.5	-6.1	31.0	11.0	10.5	5.4	1.9	31.1	.000***
Company Age	55.78	43.0	41.84	6.0	190.0	60.42	38.5	51.37	3.0	225.0	.498
Company Size	6.23	6.16	0.53	5.33	7.99	6.57	6.57	0.63	5.37	8.15	.000***
Sales Growth	1.13	1.11	0.11	1.02	1.74	1.17	1.11	0.33	1.0	3.97	.218
Growth Opportunities	0.02	0.0	0.05	0.0	0.31	0.02	0.0	0.05	0.0	0.47	.906
Leverage	0.57	0.54	0.31	0.08	3.29	0.60	0.63	0.17	0.16	0.95	.456
Board Size	9.96	9.0	4.72	1.0	26.0	10.6	10.0	5.67	1.0	31.0	.370
Ind_Board	0.09	0.0	0.18	0.0	0.8	0.10	0.0	0.19	0.0	0.7	.770

. Significant at the 0.1 level (2-tailed), **. Significant at the 0.05 level (2-tailed), *. Significant at the 0.01 level (2-tailed)*

This table provides a summary of the statistics for the data used in this sample. The data set consists of 197 public firms in Europe observed for the period of 2019 to 2021. The following European countries are used in this sample: Belgium, Denmark, Finland, France, Germany, Italy, The Netherlands, Norway, Spain, Sweden and Switzerland. This table does not differ between family- and non-family firms. *Tobin's Q* is measured as the market value divided by the total assets of the specific firm. *Return on Assets (ROA)* is measured by dividing the EBITDA by the total assets of the firm. *Company Age* is measured as the difference between the founding year and the current year (2021). *Company Size* is measured as the natural log of the book value of total assets. *Sales Growth* is measured as the average growth in net sales of the past 3-years. *Growth Opportunities* is measured by dividing the total research and development expenses by the total amount of sales. *Leverage* is measured by dividing the total book value of debt by total book value of equity. *Board Size* is measured by looking at the total amount of directors present in the board of directors. *Ind_Board* is measured by dividing the amount of independent directors present in the board of directors by the total amount of directors present in the board of directors. For the descriptive statistics, the mean, median, standard deviation, minimum and maximum are shown.

5.2 Correlation Matrix

After showing the descriptive statistics, the researcher will discuss the correlation matrix which can be found below in table 6.

It can be seen that there is a significant positive correlation found between our dependent and both of our independent variables. So, if *Family Firm* increases, *Tobin's Q* and *ROA* also increase. Moreover, there is a significant negative relation found between *Family Firm* and *Company Size*. This implies that if *Family Firm* increases, *Company Size* decreases. Also interesting for this study is the fact that there is a significant negative relation found between *Family Firm* and *Company Size.* So, when *Family Firms* increases, *Company Size* decreases.

What is also interesting to see is the fact that there is a correlation found between our dependent variables and *Growth Opportunities*. So, there is a correlation between the amount of R&D expenses and the performance of the firm. This is in line with prior suggesting that R&D investments are vital for firm performance and survival of the firm (Patel & Chrisman, 2013).

Furthermore, a positive correlation between *Leverage* and *Board Size.* Suggesting that a more leveraged firm requires a higher amount of board members.

Table 6
Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Family Firm	1									
Tobin's Q	.193**	1								
ROA	.269**	.502**	1							
Company Age	-.050	.020	.154	1						
Company Size	-.284**	-.025	-.235	.100	1					
Sales Growth	-.088	.010	-.158	-.108	.103	1				
Growth Opportunities	.009	.314**	.248**	.022	.202**	.012	1			
Leverage	-0.053	-.241	-.292**	-.061	.135	-.013	-.143*	1		
Board Size	-0.064	-.120	-.045	.064	.386**	-.078	.051	.189**	1	
Ind_Board	-0.21	0.003	-.035	-.035	.125	-.086	.108	.075	.274**	1

**. Significant at the 0.05 level (2-tailed), **. Significant at the 0.01 level (2-tailed)*

5.3 Regression analysis

After discussing the correlation matrix, the researcher will move on with the result of the regression analysis. As stated before, the researcher will use two dependent variables to measure the influence of our independent variable. The first model is including *Tobin's Q* as dependent variable, while the second model includes *ROA* as dependent variable. The first and third column excludes the use of the control variables, while the second and fourth column includes the use of control variables.

Table 7
Regression analysis

Variables	*Tobin's Q*				*ROA*			
	(1)		(2)		(3)		(4)	
	B	SE	B	SE	B	SE	B	SE
Constant	1,577	.185	1.970	1.461	.111	.006	.295	.045
Family Firm	.670**	.244	.665**	.242	.031***	.008	.023***	.008
Company Age			.000	.003			.000*	.000
Company Size			.083	.223			-.022**	.007
Sales Growth			.129	.505			-.023	.016
Growth Opportunities			8.827***	2.154			.258***	.067
Leverage			-1.061*	.458			-.045**	.014
Board Size			-.033	.025			.001	.001
Ind_Board			.109	.651			.013	.020
Industry			Included	Included			Included	Included
Adjusted R-Squared	.032		.145		.068		.240	
Highest VIF	1.000		1.380		1.000		1.380	
Observations	197	197	197	197	197	197	197	197

. Significant at the 0.1 level (2-tailed), **. Significant at the 0.05 level (2-tailed), *. Significant at the 0.01 level (2-tailed)*

This regression table shows the results of the OLS regression of Tobin's Q and ROA (Return on Assets). In columns 1 and 3, the researcher specifically focuses on the influence of family-ownership on the dependent variables. In columns 2 and 4, the researcher has included the control variables. *Family Firm* is rated a '1' if the founding family holds a fraction of the firm or are present in the board of directors and rated a '0' otherwise. *Tobin's Q* is measured as the market value divided by the total assets of the specific firm. *Return on Assets (ROA)* is measured by dividing the EBITDA by the total assets of the firm. *Company Age* is measured as the difference between the founding year and the current year (2021). *Company Size* is measured as the natural log of the book value of total assets. *Sales Growth* is measured as the average growth in net sales of the past 3-years. *Growth Opportunities* is measured by dividing the total research and development expenses by the total amount of sales. *Leverage* is measured by dividing the total book value of debt by total book value of equity. *Board Size* is measured by looking at the total amount of directors present in the board of directors. *Ind_Board* is measured by dividing the amount of independent directors present in the board of directors by the total amount of directors present in the board of directors. The *Industry* variable is a dummy variable created to control for the fixed effects based on the two-digit SIC code of the specific industry.

As stated before, our main variable of interest, *Family Firm* is a dummy variable rated a '1' if a family-member of the founding family holds a fraction of the firm or is present in the board of directors. *Family Firm* is rated a '0' otherwise. At first, the researchers has checked for issues regarding multicollinearity. The researcher concluded that there are no issues regarding collinearity due to the relatively low VIF scores reported in Table 7.

When looking at the results of our regression analysis presented in Table 7, it can be stated that there is a statistical significant relationship found between *Family Firm* and both dependent variables (respectively at 0.05 and 0.01 level). Therefore, if *Family Firm* increases, *ROA* and *Tobin's Q,* and therefore firm performance increases.

So, the results of our analysis show that there is a positive significance found for *Family Firm* in both models which is line with prior literature on firm literature (Anderson & Reeb, 2003; Barontini & Caprio, 2005; Hedge et al., 2020; Villalonga & Amit, 2006). More precisely, in the second column, one unit increase in *Family Firm* results in a 0.665 increase in *Tobin's Q*. In the fourth column *ROA* is increased with 0.023 when *Family Firm* is increased with one unit.

In the second column, there is also a significant relationship found between *Growth Opportunities, Leverage* and *Tobin's Q*. Yet, it important to notice that the statistical relationship between *Tobin's Q* and *Leverage* is of a negative nature. This implies that when *Tobin's Q* increases, *Leverage* decreases. So, when the amount of debt in a company decreases, firm performance will increase. These findings are in line with prior findings (Anderson & Reeb, 2003; Maury, 2006; Villalonga & Amit, 2006) who also found a negative relationship for this specific variables. Furthermore, it can be found that in the second column 14.5 % of the variance of *Tobin's Q* is explained by the independent and control variables. Comparing to prior literature, the *adjusted R-squared* is a bit lower (Anderson & Reeb, 2003; Barontini & Caprio, 2005; Hedge et al., 2020; Villalongo & Amit, 2006).

When looking at the second model, it can be seen that there is a statistically significant relationship found between *Family Firm* and *ROA* in both columns. Moreover, there are statistical relationships found between *Company Age, Company Size, Growth Opportunities, Leverage,* and *ROA*. Again, the statistical relationship between *Leverage* and *Family Firm* is of a negative nature. The relationship found between *ROA* and *Company Size* is also of a negative nature. This would imply that if *ROA* increases, *Company Size* would decrease. Furthermore, the research shows that, in the fourth column, 24% of the variance of *ROA* is explained by the independent and control variables. The adjusted R square is in line with prior literature (Anderson & Reeb, 2003; Barontini & Carpio, 2005).

Based on research performed by Hedge et al., (2020), the researcher expected a significant relationship between *Board Size, Ind_Board* and firm performance. Yet, these findings are not supported based in our sample.

Concludingly, based on Table 7, it can be concluded that our hypothesis is supported. In our sample, family-ownership of a business has a positive effect on firm performance.

5.4 Potential endogeneity

This research has to be aware of the potential danger of endogeneity. Anderson & Reeb (2003) point out that families could potentially preserve their shares due to the excellent performance of the firm. Moreover, the family could potentially benefit from the information that they possess due to their presence at the company (Anderson & Reeb, 2003; Bartoniti & Caprio, 2005; Maury, 2006; Villalonga & Amit, 2006;). The family could make use of their possession of company-specific information and as a result only stick to the company if the prospects are favourable (Anderson & Reeb, 2003; Barontini & Caprio, 2005; Maury, 2006;

Villalonga & Amit, 2006). As a result of the above mentioned, the family could potentially leave the business when the prospects are not favourable (Villalonga & Amit, 2006).
Yet, following prior literature, the results of our regression analysis do not have to be considered as endogenous (Anderson & Reeb, 2003; Barontini & Caprio, 2005). Nevertheless, the possibility of endogeneity cannot be completely ruled out (Anderson & Reeb, 2003).

6. Discussion and conclusion

6.1 Theoretical and empirical contributions

Prior research showed no consensus on the fact whether family-ownership would have a positive or negative effect on firm performance . This research started by discussing whether family-ownership could possibly have an influence on the performance of a firm. Therefore, the research question the researcher proposed was:

"*Does family ownership influences the performance of family and non-family firms?"*

Although family-businesses have a significant impact on the world economy and is therefore also a topic which is studied before, European firms tend to be left out in the current literature. European firms show significant differences in comparison to, for example Asian firms, due to the country-specific characteristics (Faccio et al., 2001; Maury, 2006). The researcher started by discussing the four main theories being discussed in the family-business literature. Pros and cons of family-ownership were discussed. After discussing the prior literature, the researcher came up with a framework. Based on this, the researcher hypothesized the following:

"Family-ownership has a positive influence on firm performance"

To measure firm performance, the researcher used *Tobin's Q* and *Return on Assets (ROA).* Moreover, a vital variable in this research is ultimately the *Family Firm* variable. The definition and measurement was intensively discussed to set the boundaries for this research.

After gathering the sample of 197 European Firms, the researcher performed a regression analysis. The regression results showed that there was a significant relationship found in both models regarding family-ownership and firm performance. So, in both models, firm performance increased when family-ownership increased. Based on this analysis, the researcher concluded that, family-ownership is positively related to firm performance. Therefore, the hypothesis is supported.

Concludingly, in this research, it is shown that family-firms outperform non-family firms. The literature review showed several aspects where family-firms benefit from in comparison to non-family firms. These benefits tend to outperform the negative aspects of family-ownership. Yet, these negative aspects of family-firms have to be kept in mind.

6.2 Limitations and recommendation for future research

The regression analysis performed showed a statistical significance between family-ownership and firm performance. Yet, this outcome is based on the assumptions that we have made. As stated before, there are several definitions of a family business present in the literature. So, when discussing our results, it is important to notice the measurement level that the researcher utilizes. The outcome of the regression analysis could change if the researcher uses the model focused on voting rights and cash-flow rights which is also present in family-business literature (Barontini & Caprio 2005; Claessens et al., 2000; Faccio et al., 2001). Moreover, for example Hedge et al., (2020), defines a firm as a family-firm using 15% of the voting rights as a benchmark. Incorporating this in the analysis could possibly change the results.

Moreover, future research could dive more deeply into the potential effects of endogeneity of our research. As stated before, prior research suggested that this was not an issue in this research, yet the researcher wants to point out that this could possibly have an impact on the research performed.

Besides that, the researcher wants to point out that a potential interaction effect of corporate governance can be studied more intensively. For example, cross-country differences could be studied more intensively. As prior literature suggested, shareholder-oriented countries were excluded in this research. Yet, the potential influence of shareholder-oriented countries could be studied.

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9. Appendices

Appendix A: Corporate governance theories in family business research

Distribution of articles in family business research						
	Finance		***Management***		***Total***	
	No. of articles	% of category	No. of articles	% of category	No. of articles	% of total
Theoretical framework						
Agency theory	108	69.7	87	45.1	195	56
Resource-based view	0	0	23	11.9	23	6.6
Institutional Theory	9	5.8	13	6.7	22	6.3
Stewardship theory	2	1.3	20	10.4	22	6.3
Cultural perspective	3	1.9	18	9.3	21	6.0
Behavioural perspective	1	0.6	4	2.1	5	1.4
Stakeholder Theory	0	0	5	2.6	5	1.4
Resource dependence	0	0	4	2.1	4	1.1
Transaction cost theory	2	1.3	1	0.5	3	0.9
Game theory	0	0.0	2	1.0	2	0.6
Others	30	19.4	16	8.3	46	13.2
Total	155	100.0	193	100.0	348	100.0
Source: Pinado & Requejo., 2014, p. 308.						

Appendix B: Description of firms and their SIC codes

Appendix B: The description of the distribution of firms in the sample. A firm is defined as a family-firm if the founding family holds a fraction of the firm or are present in the board of directors. The sample consists of 200 firms. The firms are distributed according to their specific two-digit SIC code.

SIC Code	*Industry description*	*All firms*	*Family-firms*	*Non-family firms*	*Family firms in Industry (%)*
10	Metal Mining	1	0	1	0
15	General Building Contractors	4	2	2	50
16	Heavy Contractors Except Building	4	2	2	50
20	Food and kindred products	13	9	4	69
22	Textile Mill Products	1	0	1	0
23	Apparel and Other Textile Products	1	1	0	100
25	Furniture and Fixtures	1	0	1	0
26	Paper and Allied Products	2	0	2	0
27	Printing and Publishing	3	0	3	0
28	Chemicals and Allied Products	23	11	12	48
30	Rubber and Misc. Plastic Products	1	1	0	100
32	Stone, Clay, Glass and Concrete Products	4	3	1	75
34	Fabricated Metal Products	7	6	1	86
35	Industrial Machinery and Equipment	16	12	4	75
36	Electronic and other Electric Equipment	13	9	4	69
37	Transportation Equipment	4	1	3	25
38	Instruments and Related Products	6	2	4	33
39	Miscellaneous Manufacturing Industries	1	1	0	100
42	Trucking and Warehousing	1	0	1	0

44	Water Transportation	3	2	1	67

Appendix B continued

45	Transportation by Air	1	0	1	0
47	Transportation Services	3	0	3	0
48	Communications	9	3	6	33
49	Electric, Gas, and Sanitary Services	9	3	6	33
50	Wholesale Trade - Durable Goods	6	5	1	83
51	Wholesale Trade - Nondurable Goods	1	1	0	100
53	General Merchandise Stores	1	0	1	0
54	Food Stores	1	1	0	100
55	Automotive Dealers and Service Stations	1	1	0	100
56	Apparel and Accessory Stores	1	1	0	100
59	Miscellaneous Retail	2	2	0	100
60	Depository Institutions	4	2	2	50
65	Real Estate	4	2	2	50
67	Holding and other Investment Offices	3	0	3	0
70	Hotel and Other Lodging Places	1	1	0	100
73	Business Services	23	14	9	61
78	Motion Pictures	1	1	0	100
79	Amusement and Recreation Services	1	1	0	100
80	Health Services	5	3	2	60
87	Engineering and Management Services	8	6	2	75
89	Services, NEC	1	0	1	0
91	Executive, Legislative and General Government	1	0	1	0
93	Finance, Taxation and Monetary Policy	1	1	0	100
		197	110	87	