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Entrepreneurship Research Institute

How Do Top Management Teams Impact Exploration and Exploitation in Family Firms?

The Role of Family Top Management Team Involvement and Family CEOs' Goals and Motivations.

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List of abbreviations

CEO	Chief executive officer
CFA	Confirmatory factor analysis
CFI	Comparative fit index
e.g.	Exempli gratia (for example)
ERI	Entrepreneurship Research Institute
et al.	Et alii (and others)
FCNE	Family-centered noneconomic (goals)
i.e.	Id est (that is)
OLS	Ordinary least squares
R&D	Research and development
RMSEA	Root mean square error of approximation
S&P 500	Standard & Poor's 500 (stock market index)
s.d.	Standard deviation
SRMR	Standardized root mean square residual
TMT	Top management team
TUM	Technical University of Munich
US	United States
VIF	Variance inflation factor

Abstract

The long-term success of many family firms has long attracted management scholars. Research, however, has only just started to investigate exploration and exploitation as antecedents of sustained performance advantages in family firms. This thesis investigates the influence of family top management team involvement and family CEOs' goals and motivations on exploration and exploitation. Empirical results indicate that faultlines between family and nonfamily managers, triggered by differing underlying aspirations, harm the pursuit of exploration and exploitation. Particularistic motivations of family CEOs' can reinforce differences.This dissertation contributes to research on family firms, upper echelons, and exploration and exploitation.

Keywords: family firms; upper echelons; top management teams; family CEO; exploration and exploitation; family-centered noneconomic goals; prosocial motivation; faultlines; TMT diversity

Zusammenfassung

Der langfristige Erfolg von Familienunternehmen beschäftigt die Managementforschung seit Langem. Allerdings setzt sich die Familienfirmenforschung erst seit Kurzem mit der Rolle von explorativen und exploitativen Tätigkeiten auseinander, die häufig mit höherer wirtschaftlicher Leistung in Verbindung gebracht werden. Die vorliegende Dissertation untersucht den Anteil von Familienmitgliedern in Führungsteams, sowie die Ziele und Beweggründe der familieninternen Geschäftsführer als Einflussfaktoren von explorativen und exploitativen Tätigkeiten. Die empirischen Ergebnisse zeigen, dass unterschiedliche Herangehensweisen zu Differenzen zwischen familieninternen und -externen Führungskräften führen können, die explorative und exploitative Tätigkeiten beeinträchtigen. Familienbezogene Ziele und Beweggründe des familieninternen Geschäftsführers können die Differenzen verstärken. Die Dissertation trägt hauptsächlich zu Forschung im Bereich Familienunternehmen, Führungsteams und Exploration und Exploitation bei.

Schlagwörter: Familienunternehmen; Führungsteams; familieninterner Geschäftsführer; Exploration und Exploitation; familienbezogene nicht-wirtschaftliche Ziele; prosoziale Motivation; Differenzen in Führungsteams; Diversität in Führungsteams

1. Introduction

1.1. Setting out

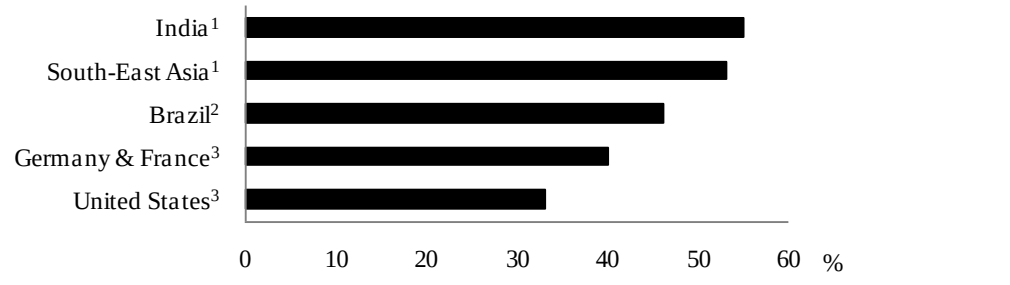
Family firms are a central part of most developed and developing economies in the world and permeate virtually all industries and sectors (La Porta, Lopez-de-Silanes, & Shleifer, 1999; Sharma, Chrisman, & Gersick, 2012). While post-war management research largely perceived the organizational form of family firms as evolving towards the model-like Anglo-American public company (Chandler, 1977), "The Economist" recently said that:

> *[…] family companies are much more than just half-formed public companies. They are a category of companies in their own right. They have unique advantages in the form of long-term thinking and concentrated ownership. They have unique disadvantages in the form of succession problems and family feuds. And they have unique ways of dealing with these problems. Given the sheer number of family companies of all sizes, and their economic importance, they deserve a lot more attention, in particular from three groups of people: business analysts, professional managers and theorists of the firm ("Survival of the fittest", 2015).*

The Economist is not alone with this view. Recognition of family firms as important stand-alone contributors to the world's economy is by now mainstream. Moreover, practitioners and scholars alike increasingly discern the long-term success of many family firms and try to draw lessons from them. A recent study by the Boston Consulting Group, published in Harvard Business Review under the title "What you can learn from family business," analyzes top companies around the world, concluding that depending on the country 30-60% of them are family firms (Kachaner, Stalk, & Bloch, 2012). Results are illustrated in Figure 1.

Figure 1: Family firms as % of top companies

Source: Own illustration according to Kachaner et al. (2012)



1 – Top 200 companies by revenue 2 – Companies with revenues over $500m 3 – Companies with revenues over $1bn

Hence investigating family firm specifics holds promise, as suggested in another article by The Economist:

> *[…] family companies are likely to remain a significant feature of global capitalism for the foreseeable future, thanks to a combination of two factors. Family companies in general are getting better at managing themselves: they are learning how to minimize their weaknesses while capitalizing on their strengths. At the same time the centre of the modern economy is shifting to parts of the world—most notably Asia—where family companies remain dominant.[…] To understand family companies better, business analysts will need to pay more attention to their internal dynamics (Wooldridge, 2015).*

Likewise, management scholars have come a long way from considering family firms as second-class organizational forms, accepting their prevalence in the world's developed and developing economies, and recognizing the value of family firm research as a meaningful contributor to the general field of management (Gedajlovic, Carney, Chrisman, & Kellermanns, 2012a; Sharma et al., 2012). Due to overlapping subsystems of family, business, and ownership, and the distinctive presence of economic as well as noneconomic goals, family firms offer ideal conditions in which to study the effects of human agency and mixed economic and noneconomic goals on firm behavior and ultimately on firm performance (Chrisman, Chua, Pearson, & Barnett, 2012; Gedajlovic et al., 2012a; Tagiuri & Davis, 1996).

1.2. Focus of this thesis and research questions

Scholars are specifically interested in family firms' long-term orientation and respective capabilities which are substantiated by many family firms' ongoing success over generations (Duran, Kammerlander, van Essen, & Zellweger, 2015; Hiebl, Adcroft, & Murphy, 2015; Siebels & zu Knyphausen-Aufseß, 2012). This highlights the importance of understanding the underlying drivers of family firm's long-term performance.

Theoretical and empirical research focusing both on large and small corporations has shown that higher levels of exploration and exploitation are important contributors to sustained performance advantages (Gibson & Birkinshaw, 2004; Lubatkin, 2006; March, 1991). While exploitation entails a focus on quality and efficiency, enabling firms to closely monitor and optimize current business activities, exploration comprises a focus on new opportunities, future products, services, markets and customers that enable firms to achieve long-term compet-

itiveness (March, 1991). Exploration and exploitation hence represent two logically connected constituents of achieving solid current and future firm performance.

As such, exploration and exploitation are part of a firm's basic strategic alignment. The determination and enforcement of strategic goals pertains to a firms' "dominant coalition" – usually the firms' top management team (TMT) (Cyert & March, 1963). According to Hambrick and Mason (1984) and Carpenter et al. (2004), managers' and TMTs' values and characteristics, as well as goals and motivations play a central role in the determination of organizational outcomes, such as strategies, effectiveness and performance. Consequently, the analysis of managerial antecedents of exploration and exploitation is a pivotal area of investigation (Cao, Simsek, & Zhang, 2010; Hiebl et al., 2015; Lavie, Stettner, & Tushman, 2010).

Initial empirical research into family firms has found positive relationships between family firm status and exploration and exploitation (Gedajlovic, Cao, & Zhang, 2012b; Lubatkin, 2006; Stubner, Blarr, Brands, & Wulf, 2012). Still, surprisingly little is known about family firm-specific managerial antecedents of exploration and exploitation (Hiebl et al., 2015). The dominant coalition plays a particularly important role in family firms due to complex and multi-facetted combinations of ownership and management. Family firm TMTs frequently consist of members that are simultaneously members of the owning family (family TMT members) or of a combination of family and nonfamily TMT members. The intertwining of ownership and management increases the level of command of family firm TMTs as well as their complexity (Gedajlovic et al., 2012a; Miller & Le Breton-Miller, 2005; Minichilli, Corbetta, & MacMillan, 2010).

Family TMT involvement is a widely considered parameter for measuring family influence on a family firm's management (e.g., Sciascia & Mazzola, 2008; Zahra, Neubaum, & Larrañeta, 2007), indicating the degree to which family members are involved in day-to-day operations as well as strategic decisions (Sciascia & Mazzola, 2008). Research on the effect of family TMT involvement on firms' behavior has come to contradictory results. Some scholars suggest that higher family TMT involvement is connected with higher levels of risk aversion (and consequently higher levels of exploitation, albeit lower levels of exploration) based on family managers' protective attitude toward their concentrated economic endowment (e.g., Anderson, Duru, & Reeb, 2012; Harris, Martinez, & Ward, 1994; Muñoz-Bullón & Sanchez-Bueno, 2011). Other researchers come to the conclusion that higher family TMT involvement can lead to increased levels of risk taking under conditions where family managers' socioemotional endowment may be at stake (e.g., not being able to pass on the firm to the next generation)

(Gomez-Mejia, Haynes, & Núñez-Nickel, 2007; Patel & Chrisman, 2014; Zellweger, 2007). Other research into family TMT involvement looks at family TMT diversity when the TMT is composed of both family and nonfamily managers. Some scholars suggest that family TMT diversity can positively influence the breadth and quality of firms' strategic decisions, due to the combination of perspectives and knowledge bases, as well as complementary backgrounds and abilities of family and nonfamily managers (Hiebl et al., 2015; Madison, Holt, Kellermanns, & Ranft, 2015; Patel & Cooper, 2014). Yet family TMT diversity might not be consistently beneficial in this regard. Various scholars point out that high levels of diversity can lead to excessive compromise or higher levels of conflict and thus inhibit rather than promote comprehensive strategies (Li & Hambrick, 2005; Miller, Burke, & Glick, 1998; Olson, Parayitam, & Twigg, 2006; Thatcher & Patel, 2012). Such unfavorable effects of diversity could exist in family TMTs consisting of family members as well as nonfamily members (Block, 2011). Accordingly, Minichilli et al. (2010) find that medium levels of family TMT involvement are associated with lower levels of performance than TMTs consisting of concentrated factions of either family or nonfamily managers. Contradicting theoretical and empirical findings on the effects of family TMT involvement highlight the importance of more fine-grained investigations and the consideration of potential contingency factors (O'Boyle, Pollack, & Rutherford, 2012).

In this regard, upper echelon theory suggests that TMT members' characteristics are an important antecedent of firm behavior (Carpenter et al., 2004; Hambrick & Mason, 1984). Characteristics of family chief executive officers (CEOs) play a particularly relevant role in this context because of their formal power as head of the TMT as well as their affiliation with the owning family (Kraiczy, Hack, & Kellermanns, 2015b; Minichilli et al., 2010). The dual role of family CEOs has triggered much research into its effects on firm behavior and performance (Anderson & Reeb, 2003; Bennedsen, Nielsen, Pérez-González, & Wolfenzon, 2006; Kammerlander & Ganter, 2015; Kraiczy et al., 2015b; Minichilli et al., 2010). However, while some researchers find a negative effect of family CEOs on firms' financial performance (e.g., Villalonga & Amit, 2006), others find positive effects (e.g., Minichilli et al., 2010). This highlights the importance of further investigation into specific family CEO characteristics that can increase the understanding of family firm behavior and ultimately performance. Specifically, CEOs' goals and motivations related to the achievement of desired outcomes may play an important role in family firms' exploration and exploitation (Carpenter et al., 2004; Hofer & Schendel, 1978). Such goals and motivations can be economic as well as noneconomic in nature.

Family-centered noneconomic goals and prosocial motivation are two evident factors in family firm research. Particularly, family-centered noneconomic goals are pervasive drivers of firm behavior, strategy and performance. Based on findings by Chrisman et al. (2005b) and Carney (2005), Chrisman et al. (2014b) state that:

> *[…] the pursuit of family-centered, noneconomic goals that flow from family involvement and influence in a firm is a key factor distinguishing family and nonfamily firms […] because such goals tend to lead to strategies and behaviors that are idiosyncratic in nature (p. 1106).*

Hence, noneconomic goals pertaining to the family's "values, attitudes and intentions" (Chrisman et al., 2012, p. 268) have the potential to influence family firm behavior in ways that differentiate them from other family firms and nonfamily firms as "the behavior of family firms is distinctively influenced by the noneconomic 'family goals' held by family owners and managers" (Chrisman & Patel, 2012, p. 976).

Another influence on managers' behavior is their motivation (Pinder, 2014). One motivational factor that has gained increasing scholarly attention in family firm research streams is prosocial motivation (Grant, 2008), playing an important role in research on socioemotional wealth and family firm altruism (e.g., Berrone, Cruz, & Gomez-Mejia, 2012; Gomez-Mejia et al., 2007; Schulze, Lubatkin, & Dino, 2003a). For example, prosocial motivation serves the establishment of binding social ties among family members and their wider communities and aims to secure the long-term well-being of the firms' stakeholders – both central tenets of family firm research (Berrone et al., 2012; Miller & Le Breton-Miller, 2005). Consequently, prosocial motivation has the potential to explain particular family firm behaviors – both positive and negative – that differentiate them from other family firms and nonfamily firms.

Consequently, accounting for the particular role of family CEOs' family-centered noneconomic goals and prosocial motivation can increase the understanding of family firm behavior. In this regard, two potential directions of influence must be considered. First, family CEOs' family-centered noneconomic goals and prosocial motivations can directly affect decisions concerning firm behavior (Carpenter et al., 2004; Hambrick & Mason, 1984). Second, research on TMTs suggests the importance of considering the influence of CEOs' characteristics on TMT dynamics in achieving a comprehensive understanding of firm behavior (Arendt, Priem, & Ndofor, 2005; Peterson, Smith, Martorana, & Owens, 2003). Family CEOs' family-centered noneconomic goals and prosocial motivation hence might also influence family firm TMTs' decisions regarding exploration and exploitation.

In sum, family firms' approach to exploration and exploitation plays an important role in their long-term orientation and long-term performance. Yet in spite of calls for research from practitioners and scholars alike (e.g., Hiebl et al., 2015; Lubatkin, 2006; Wooldridge, 2015), family firm-specific antecedents – particularly managerial antecedents, such as TMT characteristics, goals, and motivations, and their role in firm behavior (Hambrick & Mason, 1984) – are largely neglected in current research. Specifically, the role of family TMT involvement in firm behavior in general and exploration and exploitation in particular remains inconclusive. Moreover, we do not understand enough about the role of family CEOs family-centered noneconomic goals and prosocial motivation in firm behavior and family TMT dynamics, even though those goals and motivations are central factors of family firms and thus have the potential to differentiate family firm behavior distinctively (Chrisman et al., 2012; Gedajlovic et al., 2012a; Patel & Chrisman, 2014). In an attempt to address these research gaps, I raise the following research questions in this thesis:

(1) *To what extent does family TMT involvement impact family firms' exploration and exploitation?*

(2) *To what extent do family CEOs' family-centered noneconomic goals and prosocial motivation influence family firms' exploration and exploitation?*

(3) *To what extent do family CEOs' family-centered noneconomic goals and prosocial motivation affect family firm TMTs regarding exploration and exploitation?*

In investigating these research questions, I take an upper echelon perspective as general theoretical framework, further drawing on agency tenets, and behavioral and group dynamic aspects to investigate exploration and exploitation in the organizational context of family firms. In so doing, I follow proven concepts to address open questions in the field of family firm research by drawing on established theories of the firm (Chrisman, Chua, & Sharma, 2003; Chrisman, Kellermanns, Chan, & Liano, 2010). In addition, I combine different theoretical frameworks to take into consideration family firm facets and complexities, thereby aiming to further integrate family firm research into mainstream organizational sciences (Chrisman et al., 2003; Siebels & zu Knyphausen-Aufseß, 2012).

The objective of this thesis is to enhance knowledge that is relevant for scholars and practitioners alike. I contribute to family firm research by investigating family TMT involvement as a central driver of family influence (Kraiczy et al., 2015b) and the role of family CEOs' goals and motivation (Chrisman et al., 2012) to advance the understanding of exploration and ex-

ploitation as vital contributors to family firm long-term survival and success (Hiebl et al., 2015). In so doing, I further extend upper echelon research to the organizational context of family firms (Patel & Cooper, 2014) and contribute to general upper echelon literature particularly by focusing on the role of CEO-TMT interactions (Arendt et al., 2005; Zhang, Li, Ullrich, & van Dick, 2015). In this context, I also contribute to research on managerial antecedents of exploration and exploitation (Cao et al., 2010; Lavie et al., 2010; O'Reilly & Tushman, 2013) by highlighting the importance of accounting for TMT, CEO, and joint CEO-TMT characteristics. Overall, I investigate areas such as the role of human agency and mixed economic and noneconomic goals that hold promise for other fields of research and serve to ultimately provide meaningful contributions to family firm research and the general field of management (Gedajlovic et al., 2012a).

1.3. Structure of this thesis

Having described the focus and research questions of this thesis, I briefly outline the structure and content of the individual chapters of this thesis. The remainder of this chapter (subchapter 1.4) describes the research project "Innovation in Family Firms," which builds the contextual framework of this thesis.

Chapter 2 provides the theoretical foundation of this thesis. I concentrate first on reviewing the literature on family firms as the organizational context, and exploration and exploitation as the outcome variables, of this thesis. Second I derive my hypotheses on the role of family TMT involvement and family CEOs' goals and motivations on exploration and exploitation. *Chapter* 3 is dedicated to describing the methodology of this thesis. I detail the sampling approach and the characteristics of the sample and measures used. Subsequently, I focus on the methodology applied to test my hypotheses. *Chapter* 4 comprises the results of this thesis. Individual hypotheses are confirmed or rejected and results of various robustness checks, including different measurements, variable combinations and sample compositions are presented. *Chapter* 5 provides interpretations and implications for theory and practice. In addition, I show the limitations of this thesis, highlight avenues for future research and complete the thesis with the conclusion.

1.4. Research project "Innovation in Family Firms"

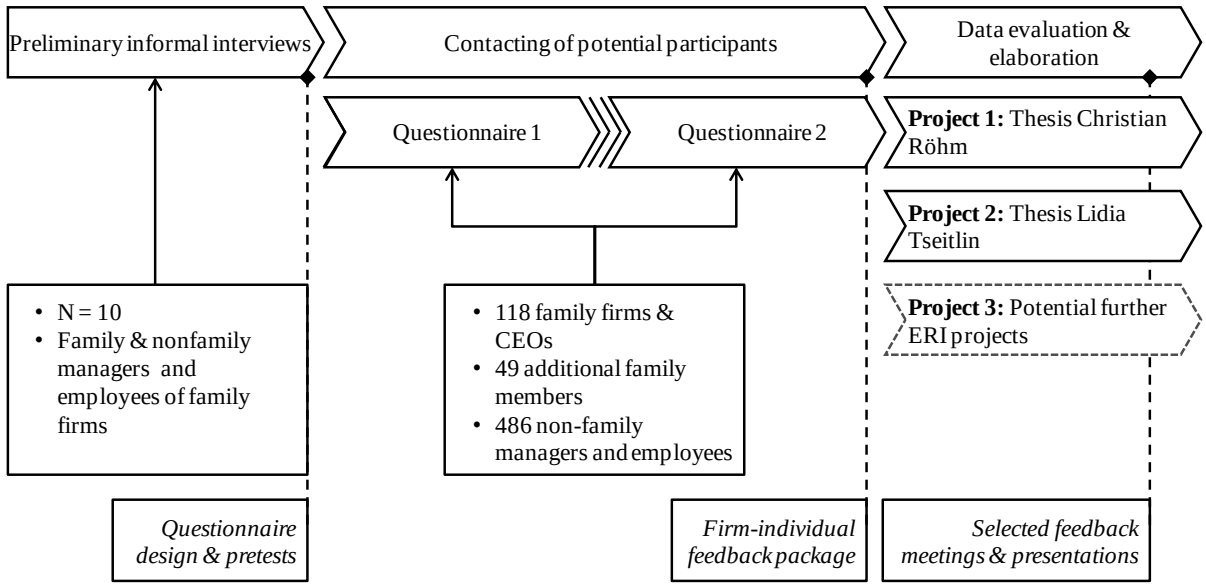
This thesis is part of the research project "Innovation in Family Firms." In the following, I briefly outline the research project's setup and design, introduce the researchers involved and their respective roles, and give an overview of the scholarly output based on this research project.

Research project setup

The research project "Innovation in Family Firms" was set up by the Entrepreneurship Research Institute at the Technical University of Munich (TUM) in August 2013, to investigate important aspects of family firms that hold relevance for innovation. The general setup of the research project is illustrated in Figure 2.

Figure 2: Overview research project "Innovation in Family Firms"

Source: Own illustration



The research team started with general practitioner interviews to clarify areas of relevance for family firms in the context of innovation. For this purpose we approached family firms in the wider network of the project team and held ten informal interviews with family and nonfamily managers as well as nonfamily employees of family firms. The result was a comprehensive mix of topics that managers and employees of family firms consider relevant in the context of innovation. We used the topics identified by practitioners as additional sources of inspiration and validation in designing our questionnaire. Next, we designed three questionnaires: one for family managers, one for family firm employees and one for additional family members em-

ployed at the family firm. The exact procedure of choosing scales and translating items is described in chapter 3. For methodological and time-related reasons, the questionnaires were again divided into two parts each (except for the shorter questionnaire for additional family members employed at the family firm). When the questionnaires were finished, we pretested the individual versions with three family managers, two family firm employees and two additional family members employed at the family firm and made slight wording and ordering adjustments according to their feedback to increase comprehensibility.

Next, we selected a sample of family firms (detailed sampling criteria and database search procedures are described in chapter 3) and approached potential participants via direct contact (trade fairs), phone, mail and email over a period of eight months. Out of 949 potential participants, 118 family firms agreed to participate, including 118 CEOs, 486 non-family managers and employees and 49 additional family members.

Upon completion, firms received feedback packages to compensate them for their time and effort as well as to pass back preliminary insights. Feedback packages were tailored to each firm and were composed of descriptive and comparative benchmarking data spanning the topics of the questionnaire, for which we received positive responses from firms. We also received individual requests for additional feedback meetings and presentations at firms' strategy meetings, which we accepted.

Research project team

The project was led by Prof. Dr. Dr. Holger Patzelt and Dr. Judith Behrens, who also provided ongoing advisory and content-related support. The operative data sampling was conducted jointly by the research associate Lidia Tseitlin and myself. Further, the team received advisory support regarding questionnaire content and setup from Cristina Cruz (Instituto de Empresa, Madrid). In addition, the research team was supported by bachelor and masters students in various phases of the research project. Secondary data research of potential participants was supported by six students in the course of their theses; they included selected parts of secondary data of potential participants in their analyses – namely Fuchs (2014), Jordan (2014), Keller (2014), Kraus (2014), Niemann (2014) and Strassmeier (2014).

Upon completion of the data collection process, data processing and preparation of the feedback packages for the participant firms was supported by five bachelor students in the course

of two project studies[1]: Frederick Meiners, Janis Juppe, Matthias Mittelmeier, Moritz Bayrle, and Valentin Rogg. Four Bachelor and Masters students – Köster (2014), Quecke (2014), Rogg (2015), and Spielmann (2015) – wrote their final theses on topics related to this thesis without directly contributing to the project design or relying on project data.

Scholarly outcomes of the research project

The research project "Innovation in Family Firms" builds the basis for two theses, besides the above described bachelor and master theses and project studies: Tseitlin's thesis (in preparation) and this thesis. In the following, I give a brief overview of the two theses, focusing on their differing data basis and how they are integrated in the research project.

Tseitlin's thesis (in preparation) is an individual level analysis drawing on survey data from 389 nonfamily employees of 82 of the participating firms to investigate the effect of perceived transgenerational intentions on employee commitment in family firms. Drawing on social identity and goal setting theory, the thesis suggests that the perception of transgenerational intentions is associated with higher levels of nonfamily employees' commitment based on shared vision of family and nonfamily employees and higher levels of organizational identification.

This thesis is a firm level investigation of the role of family TMT involvement and family CEOs' goals and motivations on exploration and exploitation. The thesis is based on key informant data from 109 family firm CEOs complemented by secondary data and validated with data from additional family and nonfamily employees. As part of completing my dissertation I collected secondary data (in addition to the joint data collection process with Tseitlin (in preparation)), processed and analyzed data, developed theory and hypotheses and wrote this thesis. Prof. Dr. Dr. Holger Patzelt and Dr. Judith Behrens supervised the dissertation progress and contributed through regular content- and methodology-related discussions and manuscript corrections.

[1] Project studies are a curriculum module offered by the TUM School of Management and consist of research or practical projects carried out by a student team and an academic supervisor in collaboration with a company.

2. Theoretical foundation and development of hypotheses

In the following section I provide a brief literature overview of the research fields and theoretical constructs that are covered in this thesis. I emphasize that this literature overview does not aim to generate new theoretical insights but rather aims to follow and consolidate existing reviews. Thereby, I intend to provide a brief and informative overview of the current state of research, identify gaps and connection points that I address with this thesis, and elaborate on research aspects that are specifically relevant to the derivation of my hypotheses. Hence, the literature overview should be considered as a broad theoretical and content-related context of the empirical investigation. Overall, this section is structured in three main parts.

In chapter 2.1, I concentrate on family firm research, as family firms represent the organizational context of this thesis. I present definitions and fundamental assumptions and give a short summary of the emergence of the field. Subsequently, I outline the landscape of extant family firm research foci and outcomes and briefly present current and upcoming trends.

In chapter 2.2, I introduce exploration and exploitation as the dependent variables of this thesis. After describing definitions and fundamental assumptions, I present antecedents and outcomes of exploration and exploitation that have been analyzed in extant research. Adjacently, I expand on existing research on exploration and exploitation in the specific organizational context of family firms.

In chapter 2.3, I derive my hypotheses, taking an upper echelon perspective and drawing on arguments from agency theory, integrating behavioral and group dynamic aspects. I concentrate first on the influence of family TMT involvement on exploration and exploitation and subsequently on TMT characteristics that are specifically relevant for family firms, namely family CEOs' family-centered noneconomic goals and CEO prosocial motivation.

2.1. Family firm research

2.1.1. Definition and fundamental assumptions

The importance of family firms across all major economies worldwide has long been acknowledged (La Porta et al., 1999) and scholars from management, entrepreneurship, and finance are increasingly engaging in research concerning the specifics of family firms (Gedajlovic et al., 2012a).

Family firm research, however, has long played a subordinate role in management research. Early management research until the middle of the 20th century focused more or less exclusively on larger corporations that separate ownership and management (Sharma, Hoy, Astrachan, & Koiranen, 2007). The first known research on family firms was conducted in 1953 by Grant H. Calder in his doctoral dissertation titled "Some management problems of the small family controlled manufacturing business"[2]. However, the initial impetus to family firm research can be attributed to practitioners, rather than scholars (Porras & Collins, 1997). In 1962, Léon and Katie Danco opened the Center for Family Business in Cleveland, Ohio, to provide research and education as well as a platform for networking and the exchange of experiences for family business owners and their families (Sharma et al., 2007). During the late 1970s, with the establishment of chairs at Loyola and Baylor Universities, family firm research was increasingly integrated in the academic system, and in the 1980s the first journals focusing exclusively on family firm research emerged (Astrachan & Shanker, 2003, Sharma et al., 2012). Since then, the field has grown exponentially “both conceptually and with regard to its application” (Gimeno, Baulenas, & Coma-Cros, 2010, p. 1014).

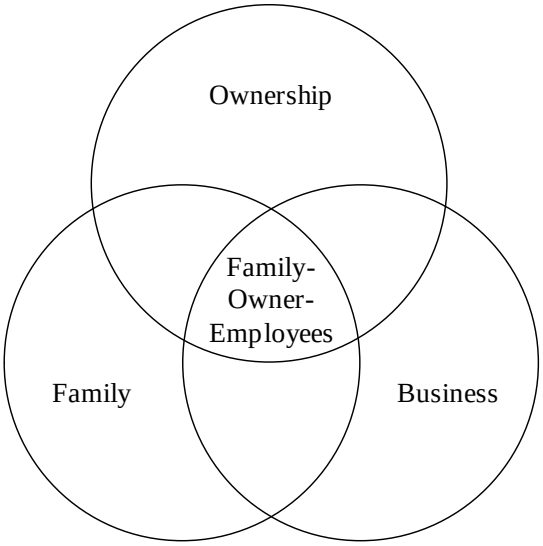
Family firm research is a highly complex and multi-faceted field. Its complexity is well depicted by an early research approach – the "three circle model" proposed by Tagiuri and Davis (1996) and Gersick et al. (1999), referring to the three interconnected and overlapping subsystems of family, business and ownership illustrated in Figure 3.

The various combination possibilities of family, business and ownership illustrate that family firms cannot be seen as isolated organizational entities but have to be viewed in the context of complex system interactions and overlaps. They also imply the diversity of goals and motivations stemming from different systems that build the basis of strategic decisions in family firms. Both issues are key aspects of this thesis.

[2] The dissertation was submitted at Indiana University, School of Business

Figure 3: Three-Circle Model of the Family Business System

Source: Own illustration according to Tagiuri and Davis (1996)



The complexity and diversity of family firms imply one of the pivotal challenges of family firm research: the lack of a fully established definition of what actually constitutes a family firm as compared to a non-family firm (Sharma et al., 2012). Given that the term "family" itself comprises a wide array of definitions – from nuclear family (mother, father and children), to extended family (including aunts, uncles, cousins, etc.) to quasi-family (a group of people sharing common history, experience, emotions and goals) (Karra, Tracey, & Phillips, 2006) – it seems understandable that the definition of family firms is ambiguous (Kraus, Harms, & Fink, 2011). Over the last decades, various definitions have been proposed and numerous thresholds regarding measurable characteristics of family firms such as the level of family ownership and the level of family involvement have been introduced to define the term family firm. Ownership thresholds range from 5% to 100% family ownership and family involvement ranges from at least one family member in the firm to at least two family members on the management board, with one being the CEO (Carney, 2005; Kraus et al., 2011; Sharma et al., 2012). To illustrate the variety of definitions, I invoke two widespread approaches: while La Porta et al. (1999) define a family firm as owned by a family or an individual by at least 20% and having at least one member of the family in the TMT, Colli et al. (2003) require a family member to be CEO, at least two generations of family control and a minimum family ownership of 5% of voting stock.

Although reasonably well-grounded, all of these definitions are somewhat arbitrary, and scholars increasingly advance the view that family firms and non-family firms are "only ex-

ceptionally an either–or matter; rather, the two form a continuum of degrees" (Tsang, 2002, p. 22). In recent years, scholars in the field have converged towards two definitional approaches, namely the components of family involvement approach and the essence approach.

Components of family involvement

The components approach focuses on the nature and degree of family involvement in the firm, postulating that family involvement in itself is sufficient to constitute a family firm (Chrisman, Chua, & Sharma, 2005a; Sharma et al., 2012). Various measurable components have been used in this regard (Carney, van Essen, Gedajlovic, & Heugens, 2015): early family firm research specifically focused on family ownership, measured as the percentage of firm ownership in the hands of an individual or a dominant coalition of family members (e.g., Barry, 1975; Lansberg, Perrow, & Rogolsky, 1988). Focusing on ownership dispersion, Gersick (1997) differentiates three broad models: controlling owner, in which most of the equity is held by an individual; siblings partnership, where several individuals of the same generation hold varying equity shares; and cousins consortium, where ownership is dispersed across generations and various family constellations. Typically, family firms undergo these dispersion stages over the course of time and across generations (Schulze, Lubatkin, & Dino, 2002).

Another frequently considered aspect is family management involvement, measured as the number or proportion of family members in the management team of a firm (e.g., Barnes & Hershon, 1976; Minichilli et al., 2010; Sciascia & Mazzola, 2008; Zahra et al., 2007). In this regard, some studies additionally include whether the CEO is family or nonfamily (e.g., Minichilli et al., 2010) or analyze family involvement on the board of directors (Vandemaele & Vancauteren, 2015). Family management involvement goes beyond family ownership as it involves direct management responsibilities in day-to-day operations and thus constitutes a key driver of actual family influence.

Generational involvement is a much-considered aspect of family firm research. Mainly two aspects of generational involvement have been analyzed in this regard. The first aspect is the generation currently managing the firm, as several studies have found differences regarding management and governance practices as well as performance between first-, second-, and later-generations in family firms (e.g., Dyer, 1988; Ling & Kellermanns, 2010; Vandemaele & Vancauteren, 2015). The second aspect is the number of generations concurrently involved in the firm, which can result both in increased complexity and conflict as well as potential

resource and experience benefits (e.g., Chrisman et al., 2012; Kellermanns & Eddleston, 2006; Kellermanns & Eddleston, 2007; Zahra et al., 2007).

Ownership as well as managerial and generational involvement (even if only planned) are important and constituting elements of family firms. However, critics of the components approach argue that it only describes the potential of the family to have an impact on the firm without reflecting actual family influence (Zellweger, Eddleston, & Kellermanns, 2010).

Essence of family involvement

The essence approach extends the focus on family involvement by including family aspirations (e.g., goals, motivations, vision), arguing that it is the interplay of involvement and aspirations that actually influences firm behavior and performance (Sharma et al., 2012). The two approaches are not antithetical, as family involvement is a precondition for family essence (Chrisman et al., 2012). Without involvement through ownership, management or governance, family aspirations cannot influence the firm. In a study on family-centered noneconomic goals, Chrisman et al. (2012) argue that "family involvement is a necessary condition for the existence of a family firm but is not sufficient to ensure that a family firm will behave in a fashion that differs from that of nonfamily firms" (p. 286). Hence, research focusing on the effects of family essence in family firms usually builds on one or several components of family involvement.

One attempt at combining the components and the essence approach in a joint measure is the F-PEC scale, developed by Astrachan et al. (2002). The F-PEC scale uses family power (percentage of family ownership, number of family members on the management and the supervisory board), experience (number of generations and number of family members actively involved in the business) and culture (overlap of family and business values) to indicate the degree of overall family influence on a firm. With this approach, Astrachan et al. (2002)

> *[…] moved the component-of-involvement approach closer to the essence approach [proposing] that the family character of a family business is determined by how family involvement is used to influence the business. If the component-of involvement approach defines what is ultimately created as a result of using family involvement to influence the business, the gap between the two approaches could narrow considerably, moving the field toward a better understanding of its boundaries of investigation (Chrisman et al., 2003, p. 11).*

The F-PEC scale is designed to combine family components and family essence to measure actual family influence. However, critics argue that the F-PEC scale falls short of measuring

family essence, neglecting various aspects, e.g., succession, goals and motivations and thus also measures only the potential for family influence (Rutherford, Kuratko, & Holt, 2008).

Recently, other measures have been suggested to reflect family essence. Even though succession has been at the heart of family firm research from the very beginning of the field, it has only recently been analyzed as a potential influence on family firm behavior (Sharma et al., 2012). In their study on family firm valuation by family CEOs, Zellweger et al. (2012) show that family firm valuation by the family CEO is positively influenced by intentions for transgenerational control, rather than current control or past duration of control. This finding is particularly insightful, as it demonstrates that the intention to pass on the family firm to the next generation strongly influences value perceptions in family firms and family firm behavior, thus constituting an elementary part of family essence.

Building on transgenerational intent and family commitment, Chrisman et al. (2012) suggest that family-centered noneconomic goals (i.e., goals referring to family harmony, status and identity) also have the potential to influence family firm behavior. In this regard, Kammerlander and Ganter (2015) find that family managers' noneconomic goals can positively influence opportunity recognition because of the desire to increase family power and status and thus manifest a critical determinant of family firm behavior as well as a differentiator regarding nonfamily firms.

Recent family firm research focuses on characterizing family firms as a continuous spectrum rather than applying a strict dichotomy between family firms and nonfamily firms (Chrisman et al., 2010; Kraus et al., 2011). The more flexible approach facilitates and enables a focus on differences among family firms rather than among family and nonfamily firms, thereby offering a practicable work-around to the definition problem and allowing for a deeper focus on the impact of different aspects of family involvement and influence on family firm behavior and performance (Klein, Astrachan, & Smyrnios, 2005). The continuum perspective, however, makes a clear-cut differentiation of the field difficult and complicates the comparison and generalizability of results in the field of family firm research (Zahra & Sharma, 2004). Taking these concerns into account, it is of utmost importance that family firm scholars thoroughly describe the specifics of family involvement and family essence under investigation in order to integrate their findings into the larger research context and ultimately "give back and provide meaningful contributions to the general field of management" (Gedajlovic et al., 2012a, p. 1010).

Within the framework of this thesis, I combine family components, in the form of family TMT involvement, and family essence, in the form of family CEOs' noneconomic goals and prosocial motivation, to thoroughly investigate family firm behavior regarding exploration and exploitation. A detailed description of the constructs under investigation is provided in chapter 2.3 and chapter 3.4.

2.1.2. Landscape of family firm research outcomes

The distinctiveness of family firm research rests on the assumption that family firms differ from other firms because they are in various ways influenced by the owning, managing or governing family. Based on this premise, empirical family firm research is mainly characterized by a distinct and family firm-specific set of (mostly component-related) predictor variables and a wide array of outcome variables, which arguably stands in contrast to other fields in management research, where the focus is more on a wider set of independent variables and a distinct set of outcome variables (e.g., performance in strategic management research or opportunity recognition in entrepreneurship research) (Yu, Lumpkin, Sorenson, & Brigham, 2012). In their meta study of 257 empirical family business studies, Yu et al. (2012) find that:

> *[…] unlike many established business disciplines that tend to investigate how an array of independent variables are related to a few dependent variables, the family business discipline seems to be focused on how a few independent variables are related to many dependent variables (p. 45).*

Moreover, many of the outcome variables considered in family firm research are analyzed as independent or moderator variables in other fields. For example, family firm scholars frequently ask how family firm-unique components, such as family ownership, influence rather general organizational aspects, such as governance. However, this approach is changing and family firm scholars increasingly consider independent and dependent variables from other fields and more complex interconnections between outcome variables (Sharma et al., 2012; Yu et al., 2012).

Yu et al. (2012) cluster the aforementioned 257 family firm studies into seven groups according to the focus of the respective area of investigation, as illustrated in Figure 4. Outcome variables are classified based on a two-dimensional logic, differentiating between business and family outcome dimensions on the X-axis and short-term and long-term outcome dimensions on the Y-axis. Performance, strategy and social and economic impact can be classified as the more business-oriented outcome dimensions, governance is located in the middle of

this categorization, bridging business and family outcomes and succession, family dynamics and family business roles are the more family-oriented outcome dimensions.

The classification by Yu et al. (2012) is somewhat comparable to an earlier categorization of family firm research by Sharma (2004), who differentiates between different levels of analysis in the field. According to Sharma (2004), the first level of family firm research is the individual level that focuses on stakeholders of family firms (e.g., founders, the next generation, and non-family employees). The second level is the interpersonal/group level, describing relationships in family firms (e.g., agreements, conflicts and decision-making processes, and transitions between generations). The third level is the organizational level, focusing on family firm specific resources (e.g., human, social and patient capital[3] and governance structures) and resource allocation. Finally, the fourth level is the societal/environmental level with a research focus on the economic and societal macro-impact of family firms.

Integrating Sharma's (2004) into Yu et al.'s (2012) categorization, the individual and the interpersonal/group level could be classified as family outcome dimensions (succession, family dynamics and family business roles). The organizational level and the societal/environmental level could be classified as business outcome dimensions (performance, strategy and social and economic impact and to some degree governance). Interestingly, Sharma (2004) maintains that the reviewed literature focuses largely on the individual and interpersonal/group level, whereas research on the organizational level is rather superficial and research on the societal/environmental level more or less nonexistent. This is in line with the findings regarding the emergence of family firm research, where early research focused mainly on topics with direct relevance for practitioners, such as succession and family member interactions and relationships (Kraus et al., 2011; Sharma et al., 2012). The more current and more detailed categorization approach by Yu et al. (2012) illustrates how the field of family firm research has developed since the early 2000s both in terms of increased topical granularity and moving more towards general business outcome dimensions. In reviewing family firm research outcomes, I hence follow the categorization by Yu et al. (2012).

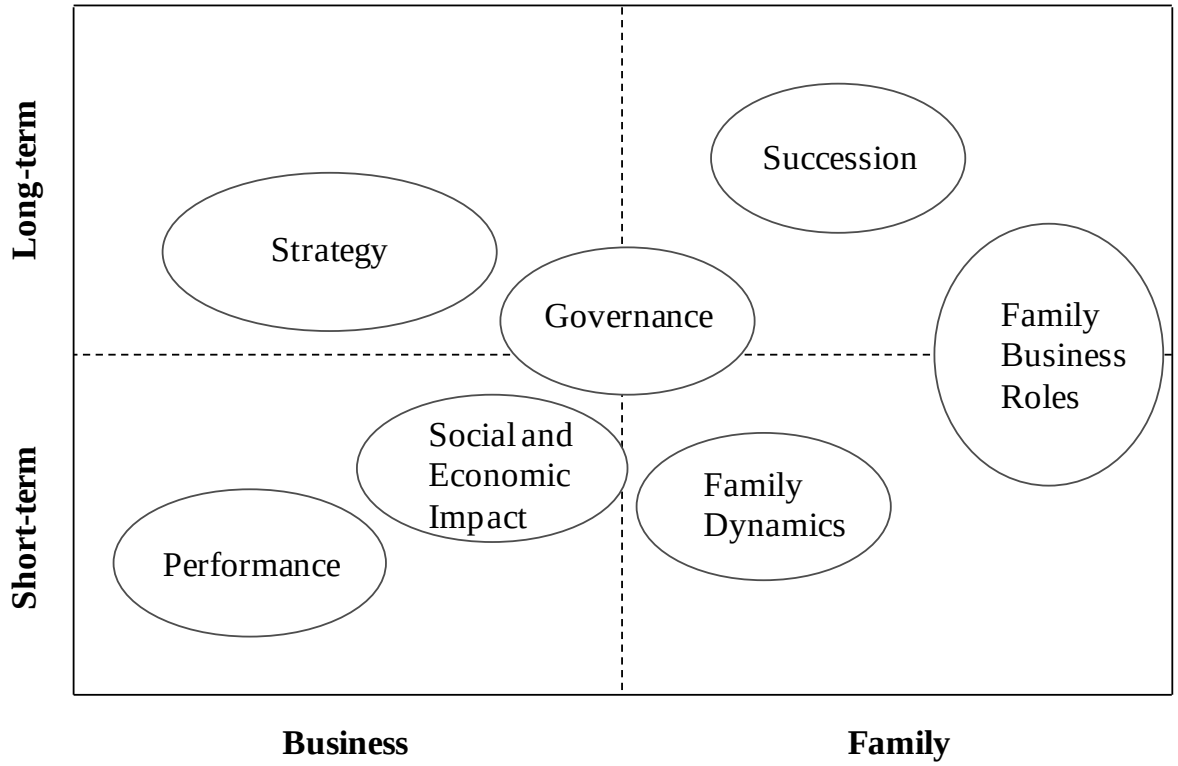
The outcome dimensions defined by Yu et al. (2012) can be understood as topical clusters that originally emerged as family outcome variables and are now for their own part frequently investigated as predictor variables of other family outcome variables. Research can thus focus on performance effects of succession processes (for a detailed review see, e.g., Nordqvist,

[3] Patient capital is defined as "financial capital [that] is invested without threat of liquidation for long periods" (Sirmon & Hitt, 2003, p. 343).

Wennberg, & Hellerstedt, 2013). Nevertheless, this categorization reflects the organic emergence of the research field and is very useful for giving structure to family firm research.

Figure 4: The landscape of family firm research outcomes

Source: Own illustration according to Yu et al. (2012)



Business outcome dimensions

In what follows I elaborate on business outcome dimensions – namely performance, strategy and social and economic impact. Even though governance bridges both business and family outcome dimensions, it is included in this chapter because of its foundation in general management research.

Performance

Financial performance as an outcome variable is at the very heart of management research – specifically strategic management research (Nag, Hambrick, & Chen, 2007). Consequently, performance also plays a significant role in family firm research, which is why I put specific emphasis on reviewing this aspect of the field. Yu et al. (2012) find that research on family firm performance represents the largest cluster of family firm research, even though it represents only about a sixth of overall family firm research, which indicates the diversity of the field. Research on performance outcomes in family firms has focused on factors that deter-

mine performance differences between family firms and nonfamily firms (e.g., Villalonga & Amit, 2006) and factors that determine performance differences in varying types of family firms (e.g., Kim & Gao, 2013). Gedajlovic et al. (2012a) distinguish between two schools of thought regarding research on factors determining performance differences – namely the effort school and the ability school.

The *effort school* focuses on the effects of factors such as corporate governance and formal and informal institutions. The basic premise of this perspective is Jensen and Meckling's (1976) proposition that agency costs stemming from conflicts of interest between owners and managers are diminished when ownership and management are in the same hand. In contrast to public firms, owner managers are fully involved in business operations and hence both motivated and well-positioned to determine and influence short-term and long-term decisions according to their own interests (Anderson & Reeb, 2003). Positive performance can be attributed to two basic notions. The first notion is scrutiny and parsimony. Carney (2005) maintain that owner managers are directly incentivized to focus on efficiency by closely monitoring costs and resource consumption. Also, family firms scrutinize business opportunities more closely and tend to focus on related business areas when it comes to acquisitions (Anderson & Reeb, 2003). Second, commitment to long-term orientation and firm survival can foster investments in innovation in order to develop new capabilities to ensure the firm's future (Le Breton-Miller, Miller, & Lester, 2011). Moreover, long-term orientation entails a focus on strong relationship with stakeholders, including creditors, which can reduce the cost of debt (Anderson, Mansi, & Reeb, 2003). At the same time, the focus on firm survival motivates family members to provide resources and patient capital (Sirmon & Hitt, 2003), thereby increasing the resilience of the firm.

However, the lack of checks and balances between principals and agents can also lead to owner managers withholding effort or directing it towards opportunistic and selfish ends (Schulze, Lubatkin, Dino, & Buchholtz, 2001). Controlling families might use their power to extract private benefits, thereby weakening the firm (Minichilli et al., 2010). Furthermore, family CEOs tend to exhibit higher levels of entrenchment, allowing them to stay in office in spite of incapability or failure (Gomez-Mejia, Nunez-Nickel, & Gutierrez, 2001). Family CEO succession is often based on family ties rather than merit, which can lead to inefficient and incapable CEOs (Bloom & van Reenen, 2006; Handler, 1994; Handler & Kram, 1988; Jaskiewicz, Uhlenbruck, Balkin, & Reay, 2013; Royer, Simons, Boyd, & Rafferty, 2008). Lubatkin et al. (2005) refer to this as the "dark side" of family involvement, which also has a

negative effect on nonfamily employees. The family's strong desire to maintain control over the firm can lead to a reluctance to let employees share the success of the firm with, for example, stock options, which can lead to employees withholding effort and the family firm not being able to recruit talented employees in the first place (McConaughy, 2000). Furthermore, the desire to maintain control and the family's focus on preserving their financial and emotional endowment can also result in risk-averse behavior (Gomez-Mejia, Makri, & Kintana, 2010). Thus, even if the firm disposes of capable nonfamily employees, risk aversion and an inward looking family focus can discourage employees from contributing their external point of view and initiatives that might not be in line with the family's interests (Gedajlovic et al., 2012a).

The *ability school* focuses on the "unique capabilities and value-creation mechanisms that family firms develop" (Gedajlovic et al., 2012a, p. 1012). These capabilities mostly go beyond agency theory related rationales and are more grounded in the resource-based view of the firm. In this regard, scholars identify factors that create value through interaction with the external environment, such as firm reputation, networks and social capital and factors that create value by supporting firm-internal processes such as tacit knowledge (Arregle, Hitt, Sirmon, & Very, 2007; Jaskiewicz et al., 2013). Dyer (2006) postulates that "family branding of the firm or of the firm’s goods and services may generate goodwill and a positive image with stakeholders" (p. 259). The family brand name can provide competitive advantages, especially in cultures where family firms evoke positive associations (Dyer, 2006). An example of this is the German baby food manufacturer "Hipp," famous for family CEO Claus Hipp's slogan "I stake my reputation on the quality of my products." Family firms are frequently part of extensive economic, political and social networks that facilitate business conduct and decrease transaction costs (Gulati, 1995). Steier (2001, p. 354) maintains that for family firms "trust often represents a fundamental basis for cooperation and potentially provides a key source of competitive advantage," that is, owner managers can commit to deals with a single handshake. Fostering these networks can lead to a build-up of social capital – the accumulation of reciprocal assistance and obligations – facilitating access to resources, including debt financing (Arregle et al., 2007; Chua, Chrisman, Kellermanns, & Wu, 2011). Frequently, social networks are based on family ties, strengthening the networks' cohesion and resilience. However, in their recent study, Arregle et al. (2015) find an inverted U-shaped effect of family ties in business advice networks on new venture growth. This indicates that networks consisting exclusively of relatives might provide "a limited set of information that may not match future business needs" (Arregle et al., 2015, p. 318).

Family firm networks frequently have been growing over generations (Anderson, Jack, & Dodd, 2005; Bertrand & Schoar, 2006). In this regard, family firm networks are somewhat comparable to tacit knowledge. Jaskiewicz et al. (2013) refer to tacit knowledge as constituting "a competitive advantage in many firms because it reflects the difficult-to-copy know-how to produce high-quality products or services" (p. 131). Tacit knowledge accumulated by a family CEO is absorbed by other family members and successors, sometimes over a very long period of time (Cabrera-Suárez, De Saa-Perez, & García-Almeida, 2001). This knowledge advantage is hard to match in nonfamily firms.

However, some research also suggests that family firms have disadvantages in developing value-creating abilities (Gedajlovic et al., 2012a). These arguments are mostly related to concerns regarding nepotism and unprofessional management and governance. Thus, postsuccession performance in family firms can deteriorate due to incompetent family successors selected only on the basis of kinship ties (Bloom & van Reenen, 2006; Jaskiewicz et al., 2013) or intrafamily conflict (Kellermanns & Eddleston, 2007). Moreover, family insularity can lead to ignoring outside-in views from external managers and their exclusion from strategic decisions (Lee, Lim, & Lim, 2003). At the same time, the aforementioned parsimony also has its negative effects, as the lack of slack resources can inhibit experimentation and innovation (Gedajlovic et al., 2012a).

Overall, studies reveal differing perspectives on whether family firms have a performance advantage or disadvantage regarding their effort and abilities as compared to other family firms and nonfamily firms (Schulze & Gedajlovic, 2010). The effort school postulates performance advantages based on reduced information asymmetry (Jensen & Meckling, 1976), but simultaneously predicts performance disadvantages due to parental altruism, nepotism and entrenchment (Schulze et al., 2003a). Similarly, the ability school assumes performance advantages based on in-depth tacit knowledge that family firms develop over generations (Jaskiewicz et al., 2013), but concurrently postulate performance disadvantages due to incapable kinship-based successors (Bloom & van Reenen, 2006; Jaskiewicz et al., 2013). Gedajlovic et al. (2012a) suggest that effort and ability are mutually dependent and only family firms exhibiting effort and ability advantages at the same time can achieve positive net performance results.

Various scholars argue that family firm performance might depend on the institutional environment that it operates in (e.g., Bertrand & Schoar, 2006; Gedajlovic et al., 2012a). As family firm research increasingly advances to emerging markets, scholars put forward the notion

that performance effects of distinctive family firm characteristics, capabilities and disabilities depend on the moderating effect of a more or less developed institutional environment (Gedajlovic et al., 2012a). A comprehensive body of research argues that family firms are specifically successful in emerging institutional environments due to their unique organizational set-up (Bertrand & Schoar, 2006). In environments with non-existent or underdeveloped financial institutions family firms have facilitated access to capital from relatives as well as from other creditors who rely on the family's probity (Gilson, 2007). Furthermore, under high levels of market opacity, family firms' social networks can provide timely information on business opportunities (Chung, 2006), while at the same time providing contact with official authorities, thereby facilitating access to licenses and public contracts (La Porta et al., 1999). Conversely, there is some evidence of dysfunctional family firm practices typical of emerging institutional environments. The lack of institutional support for minority shareholders as well as non-existent or marginally enforced fiscal policies can facilitate owner families' engaging in tunneling (i.e., moving profits from partly owned firms to fully owned firms) and propping (i.e., supporting failing firms with profits from successful firms) (Cheung, Rau, & Stouraitis, 2006). Both tunneling and propping can result in inefficient resource allocation which is not motivated by profit maximization rationales and can thus decrease performance.

Weak economic and legal institutions are specifically prone to being leveraged by family firm-specific capabilities, but research also suggests that mature and advanced institutional environments offer conditions for family firms to thrive (Gedajlovic et al., 2012a). Legal and fiscal transparency result in decreasing principal-principal problems (Schulze, Lubatkin, & Dino, 2003b) and thus allow family managers to make full use of their superior commitment (Miller & Le Breton-Miller, 2005). Moreover, mature institutional environments promote the development of specialized firms as opposed to highly diversified conglomerates (Gedajlovic et al., 2012a). An example for this is the German "Mittelstand," consisting of many highly specialized family firms with world-class products. For these specialized family firms, tacit knowledge and social networks are key competitive advantages (Morosini, 2004). Arguments for negative performance effects in advanced institutional environments are mostly based on ideas of family firm risk aversion and focus on control perpetuation (Gedajlovic et al., 2012a). In transparent economic environments, where opportunity recognition does not only depend on family networks and high competitive pressure requires constant innovation, family firms – especially later generation family firms – can be less entrepreneurial and more inert and hence run the risk of losing their competitive advantage (Gedajlovic et al., 2012b; Hiebl et al., 2015).

Overall, theoretical predictions and empirical findings regarding the performance effects of family firm-specific characteristics, capabilities and disabilities are mixed and sometimes conflicting, which can be expected, considering the variety of theoretical, methodological and definitional approaches (Schulze & Gedajlovic, 2010). This should further encourage scholars to be very explicit with regard to the specifics of their respective studies. Moreover, mixed performance findings suggest an augmented focus on "intervening constructs" that can explain performance differences. This thesis takes a step in this direction by focusing on exploration and exploitation as performance-relevant strategies for family firms.

Strategy

Research on family firm strategy – defined as "policies and plans enacted by the family business" (Yu et al., 2012, p. 41) – is closely linked to research on performance. Thus, many of the aforementioned theories are directly or indirectly applicable to this research cluster. Research on family firm strategy includes topics such as "strategy content, investment policies and financial structure and strategy and growth" (Yu et al., 2012, p. 41). Scholars have argued for a long time that strategic planning processes and strategies differ between family and nonfamily firms, because "family firm[s] must incorporate family issues into [their] thinking" (Ward, 1988, p. 190).

Findings about family firms' financial structure are relatively unanimous: firms characterized by high levels of family influence tend to exhibit both lower levels of debt and lower costs of debt (Anderson et al., 2003; Gallo & Vilaseca, 1996; Strebulaev & Yang, 2013). Conversely, findings regarding strategic content are more complex. Harris et al. (1994) maintain that the implicit or explicit firm mission, building the basis for strategy development, can differ significantly between family and nonfamily firms. Early empirical research by, for example, Donckels and Fröhlich (1991) suggest that family firms are generally more risk-averse and conservative when it comes to strategic planning. Even though these first results are criticized as superficial and unsystematic (Gudmundson, Hartman, & Tower, 1999), they indicate that differences between the strategic behavior of family and nonfamily firms can indeed exist. Following the overall development of family firm research, subsequent studies increasingly focus on family components, motivations and goals accounting for differences in strategy rather than differentiating simply between family and nonfamily firms. As a result, the notion that family firms are generally risk averse with regard to strategic decisions is contested in various studies and investigated in a more granular manner (e.g., Gomez-Mejia et al., 2007; Sirmon & Hitt, 2003; Zellweger, 2007). Gomez-Mejia et al. (2007) analyze family-owned

Spanish olive oil mills that had the option of joining a cooperative, thereby reducing their business risk or remaining independent, thereby increasing their business risk. The authors find that family-owned firms are prepared to take increased levels of risk to preserve their level of social and emotional endowment – referred to as "socioemotional wealth" – and conclude that "family firms may be risk willing and risk averse at the same time" (Gomez-Mejia et al., 2007, p. 106). Hence, family firms confronted with a potential loss of socioemotional wealth (e.g., poor reputation, loss of ownership), can be drawn to very risky decisions. Similarly, Zellweger (2007) analyzes the influence of time horizon considerations on generic investment strategies and finds that family firm long-term orientation can lead to riskier strategies focused on long-term results.

Overall, scholars reveal several factors influencing family firms' approach to strategy. While many scholars focus on risk-aversion as a driving factor of family firm strategic decision-making (e.g., Harris et al., 1994; Hiebl, 2012), recent studies by Gomez-Mejia et al. (2007) and Zellweger (2007) provide a more differentiated point of view regarding family firm's attitude towards risk and strategy. Similar to the performance discussion, family firm strategy seems to depend on the composition of family firm components, as well as goals and motivations of its stakeholders (Hiebl, 2012) and hence requires more granular research in this direction. Consequently, I draw on family TMT involvement in combination with family CEOs' goals and motivations in the following to investigate family firm behavior regarding exploration and exploitation

Social and economic impact

Research on family firm social and economic impact focuses on "the reciprocal exchanges between the family business and its business environments" (Yu et al., 2012, p. 41). The economic impact of family firms has been shown in various analyses. La Porta et al. (1999) demonstrate that across 27 wealthy economies, family firms represent a major part of the corporate landscape. Focusing on the United States, Astrachan and Shanker (2003) find that family firms represent a "substantial portion of the U.S. economy and have a massive impact on the economy as a whole" (p. 218). Depending on the exact definition, family firms in the U.S. represent between 29% and 64% of GDP and provide employment for 36 million to 82 million employees. For the German economy, a study by Gottschalk et al. (2014) find that in 2012, 91% of all German firms were family controlled, accounting for 46% of GDP. Family firms provide employment particularly in smaller crafts enterprises, frequently in rural areas

but also through highly innovative so-called "hidden champions" – world market leaders in niche segments as well as DAX 30 companies (Klein, 2000).

These innovative and dynamic family firms serve as an example of the social and economic impact of corporate entrepreneurship of family firms (Zellweger & Sieger, 2012). While some scholars argue that family firms offer particularly beneficial conditions for corporate entrepreneurship (e.g., Zahra, Hayton, & Salvato, 2004), other researchers maintain that family firms engage less frequently in entrepreneurial activities due to their risk aversion (e.g., Allio, 2004). Recently, a number of studies have analyzed family firm-specific factors affecting corporate entrepreneurship. Zahra et al. (2004) find that family firms with strong organizational culture toward decentralization and long-term orientation exhibited higher levels of entrepreneurship than comparable nonfamily firms. Kellermanns and Eddleston (2006) investigate the effect of generational involvement on corporate entrepreneurship. Interestingly, the authors find that family firms get neither more nor less entrepreneurial over time and with increasing generational involvement. However, their findings indicate that "when strategic planning is taken into account, family firms with greater generational involvement appear to experience greater corporate entrepreneurship" (Kellermanns & Eddleston, 2006, p. 822). Sciascia et al. (2013) extend this view, arguing from an upper echelons perspective, that a moderate level of generational involvement in the TMT is positive for entrepreneurship in family firms. Miller et al. (2008) investigate the effects of family firms' stewardship behavior and find that the focus on continuity, community and connections can foster entrepreneurial activities. Even though extant research has increasingly focused on entrepreneurship in family firms, Cruz and Nordqvist (2012) maintain that "current research is characterized by too narrow a focus when investigating the determinants of corporate entrepreneurship […] in family firms" (p. 47). This calls for further inquiry in this area.

Research on the social and ecological impact of family firms is less abundant but initial findings by, among others, Berrone et al. (2010) indicate that family firms tend to have a better ecological performance than nonfamily firms, specifically at the local level. In this regard Cruz et al. (2014) suggest that based on socioemotional wealth considerations, family firms might behave socially responsibly only towards external stakeholders as opposed to internal stakeholders. Similarly, Campopiano et al. (2014) find that family ownership is positively associated with firm philanthropy, though family management involvement has a negative effect. The findings indicate that it can be important for family firms to establish and preserve a close and benevolent relationship with various stakeholders including their local communi-

ty. The positive effect, though, might be restricted to external stakeholders and contingent on the exact form of family involvement.

In sum, family firms' economical and social contribution seems to be substantial and in some contexts – specifically regarding direct economic impact – well researched. However, the factors driving economic impact, such as underlying family firm-specific drivers of entrepreneurship and strategy, remain complex and deserve increased attention from researchers in the field (Cruz & Nordqvist, 2012).

Governance

Family firm governance can be regarded as a construct to align family, ownership and business. Family firm governance, along with family-related goals and resources, is a key distinguishing feature of family firms as an organizational type (Chrisman, Sharma, Steier, & Chua, 2013; Steier, Chrisman, & Chua, 2015) and comprises "the indispensable routines, structures, and mechanisms needed to bridge both family and business outcomes" (Yu et al., 2012, p. 41). Research on family firm governance spans topics from human resource management over governance structure to family ownership and control and family mission and goals.

Research on *human resource management* in family firms focuses particularly on perceived fairness (Barnett & Kellermanns, 2006; Van der Heyden, Blondel, & Carlock, 2005), leadership (Miller, Minichilli, & Corbetta, 2013b) and mentoring and training (Boyd, Upton, & Wircenski, 1999, Kotey & Folker, 2007). Van der Heyden et al. (2005) argue that "lack of clarity on family policies regarding their recruitment is detrimental to all those involved with the family business, including nonfamily members" (p. 16). It is crucial for nonfamily employees to understand that there are fair process practices in place with regard to recruiting and performance evaluation of all employees. Interestingly, a recent study by Block et al. (2015) finds that "family employees derive greater job satisfaction but earn less than regular employees" (p. 197). Contrary to intuitive assumptions, this indicates that salary levels in family firms might be shifted towards benefitting (or compensating) nonfamily employees rather than family employees. Leadership is another aspect under investigation regarding human resource management. Family firms are found to adopt a more transformational leadership style than nonfamily firms (Vallejo, 2009). Transformational leadership in turn might be a supportive factor to establish a family firm culture that represents core family values such as commitment, long-term orientation and strategic flexibility (Eddleston, 2008).

Governance, *ownership* and *control* in family firms are closely interlinked. The stronger the family influence via ownership, control, or managerial roles in the firm, the more likely that family goals, interests and conflicts will shape business governance (Le Breton-Miller et al., 2011). At the same time, the "institutionally contested nature of family governance, and the often more limited access to financial and managerial resources […] can] induce family firms to more avidly pursue legitimacy via strategic conformity" (Miller, Le Breton-Miller, & Lester, 2013a, p. 206). Similarly, Jaskiewicz et al. (2015a) argue that "family owners offer hired CEOs more incentive pay – to attract nonfamily CEOs, signal good governance, and achieve better firm performance" (p. 1). In other words, family firms might be motivated by their very reputation as rather unprofessional firms to professionalize their governance in order to facilitate their access to financial and recruiting markets.

Another research aspect of family firm governance is family firms' *missions and goals* (Yu et al., 2012). Missions and goals are an elementary driver of a firm's behavior and ultimately performance (Astrachan & Jaskiewicz, 2008). It seems reasonable to assume that the family influences the firm's economic and noneconomic mission and goals (Chrisman et al., 2012; Chua, Chrisman, & Sharma, 1999). As a consequence, missions and goals of family firms frequently relate to the owning family's "values, attitudes and intentions" (Chrisman et al., 2012, p. 268). This makes family-related missions and goals an important differentiating factor of family firms (Klein, 2000; Shanker & Astrachan, 1996). Extant empirical findings thus suggest that family firms place particular emphasis on longterm orientation and the prevention of the loss of family ownership and control (Achleitner, Bock, Braun, Schraml, & Welter, 2009; Gomez-Mejia et al., 2007) as well as providing family members with employment and using family talent and resources (McCann III, Leon-Guerrero, & Haley, 2001). As family managers and family employees are both part of the family and the business subsystem, different foci can result in goal inconsistencies and tensions (Achleitner et al., 2009).

Focusing further on the emergence of family-related goals, Chrisman et al. (2012) suggest that both family components (e.g., ownership or management) and family essence (e.g., transgenerational intentions or family commitment) can promote the establishment of family-centered noneconomic goals, which in turn are crucial to understanding family firms' behaviors and performance and particularly how these differ from other family firms and nonfamily firms. The importance of family firms' missions and goals for strategic decisions makes their inclusion in the thesis at hand imperative and I further elaborate on this aspect in chapter 2.3.2.

Research on family firm governance has gained significant momentum in recent years (Sharma et al., 2012), motivated by the sheer complexity of family firm ownership, control and management. As Miller et al. (2013a) state, "one should not generalize about the behavior of family firms without being very specific about the nature of family involvement in governance" (p. 206). While classical family businesses (one owning family, family CEO and family management) remain important, more complex TMT compositions, multifamily businesses and families with multiple businesses offer particularly interesting contexts for advancing governance research (Steier et al., 2015) and hence are considered in this thesis.

Family outcome dimensions

The following outcome dimensions – succession, family dynamics, and family business roles – focus on outcomes that directly affect the family and family members and the way the family interacts. Family outcome dimensions are discussed more briefly than business outcome dimensions as they are less within the scope of this thesis. Nevertheless, family outcome dimensions comprise insightful factors regarding underlying drivers of family firm behavior that illustrate and thus facilitate the understanding of family firm characteristics.

Succession

As early family firm research was largely driven by practitioners, succession was predestined to be a "bellwether" topic, especially in the 1980s and 1990s (Sharma et al., 2012). There is a German saying that "the first generation builds it, the second maintains it, and the third destroys it." Similarly, in the U.S. the saying goes: "from shirt sleeves to shirt sleeves in three generations." These sayings signal the fact that only very few family firms make it beyond the third generation, giving scholars enough reason to investigate the specifics of family firm succession processes (Klein, 2000, Lee et al., 2003). Intrafamily conflict, unprepared management and incompetent successors are found to be specific sources of postsuccession performance deterioration (e.g., Kellermanns & Eddleston, 2007, Jaskiewicz et al., 2013; Sharma, Chrisman, & Chua, 2003b). In this regard, succession research provides much needed theory and empirical evidence for family business practitioners and nowadays, family firms increasingly seek the support of professional succession advisors (Reay, Pearson, & Dyer, 2013).

In recent research, succession remains a key feature of family firm research, even though it no longer holds the dominant position in the field it once had (Yu et al., 2012). Nevertheless, research in this regard is shifting to another related family firm-specific construct: transgenerational intent, i.e., the family's will to deliberately pass on ownership and/or control and/or

management to the next generation (Sharma et al., 2012, Zellweger et al., 2012). This perspective understands succession as an event going beyond pure economic interest. Even in 1976, Barnes and Hershon maintain that:

> *[t]here is something more deeply rooted in transfers of power than impersonal business interests. The human tradition of passing on heritage, possessions, and name from one generation to the next leads both parents and children to seek continuity in the family business (p. 107).*

In this regard, transgenerational intent constitutes part of the family essence in family firms in that it comprises a vision for the future of the firm (Chrisman et al., 2012). Moreover, Zellweger et al. (2012) find that the intention of transgenerational control, as opposed to current control and duration of control, has a "consistently positive impact on the perceived acceptable selling price" (p. 851) of family firms.

Research on succession and transgenerational intent rightly remain key aspects of family firm research (Sharma et al., 2012). At the same time, the focus is shifting from factors influencing successful succession and specifically postsuccession performance to observing the effects of transgenerational intent on family firm behavior (Zellweger et al., 2012).

Family dynamics

Research on family dynamics focuses on outcomes that directly concern family interrelations and self-perceptions, such as family cohesion and conflict (Yu et al., 2012). Shaw (1981) define cohesion as "the degree to which members of a group are attracted to each other" (p. 213). Cohesion is beneficial for a number of reasons. Cohesive teams – especially top management teams – are found to work well together, have faster response times and exhibit higher levels of flexibility, productivity and efficiency (Smith et al., 1994). Ensley and Pearson (2005) argue that family managers' shared history and values, level of understanding, mutual trust and affinity for each other build a solid basis for a higher level of cohesion. The positive effect of family cohesion is confirmed by Zahra (2012), who finds that family cohesion positively moderates the relationship between family ownership and organizational learning. Yet cohesion of family members can also have an excluding effect, accentuating differences between family members and nonfamily members (Chua, Chrisman, Steier, & Rau, 2012; Patel & Cooper, 2014). This indicates the importance of research regarding supportive as well as excluding effects of cohesion and thus overall cooperation mechanisms between family and nonfamily members in family firms.

Another characteristic considered to be influential in family firms is conflict (Ensley & Pearson, 2005). Lee and Rogoff (1996) argue that the close connection between family and business in family firms results in an increased potential for discord as compared to other organizations. Following this argument, Davis and Harveston (2001) find that particularly the presence of the business founder, the number of close family relations, the number of generations and the frequency of social interactions positively influence extent and frequency of conflicts. Conveserely, the number of family members who are not involved in day-to-day management are found to be negatively associated with conflicts, indicating their role as potential "peace keepers" (Davis & Harveston, 2001). Intuitively, conflict implies negative externalities. However, Kellermanns and Eddleston (2004) suggest a more differentiated point of view. The authors argue that conflict in family firms can take on more persistent forms, as family members usually lack professional distance between each other and are frequently "locked" into the firm and cannot or will not leave in spite of conflicts. Gomez-Mejia et al. (2003) refers to this lock-in effect as "family handcuffs." Kellermanns and Eddleston (2004) suggest two perspectives regarding the effect of higher levels of conflict in family firms. While conflict can have the detrimental effect of pulling groups apart and introducing blockades and obstacles, it can also result in active discussions, the prevention of hurried decisions and thus higher commitment to final decisions. Moreover, based on Jehn's (1994) differentiation among task, process and relationship conflict, Kellermanns and Eddleston (2004) argue that performance effects of conflict in family firms depend on the type and degree of conflict. The authors argue that moderate levels of task and process conflict are positive for performance, triggering necessary discussion and an exchange of knowledge between family members, while relationship conflict is negative for performance. The detrimental effect of relationship conflict has been further confirmed by Kidwell et al. (2012), who show that relationship conflict has the potential to undermine positive effects of family harmony norms and fairness perceptions.

Even though initial research focused more on the family components that potentially increase or decrease conflict, the focus has recently shifted more towards the different types of conflict and their effect on other family firm outcomes such as performance and governance (e.g., Kellermanns & Eddleston, 2007; Kidwell et al., 2012). In this regard, "conflict management approaches used to combat relationship conflict deserve further investigation" (Kidwell et al., 2012, p. 513).

Family business roles

Research on family business roles focuses on "roles and attitudes of family business members and nonmembers" (Yu et al., 2012, p. 42). Topics range from the attitudes of family and non-family members towards the family firm to the role of spouses and female successors.

Early research on attitudes of family business members focused on general business and family attitudes, identifying three clusters of owner-managers, namely owner-managers with the intention to include the family, owner-managers with the intention to strike a balance, and owner-managers with the intention to exclude the family (Birley, Ng, & Godfrey, 1999; Birley, 2001). Owner-managers, who wish to include the family or who intend to strike a balance are also likely to consider their firms explicitly as family firms (Birley, 2001). Birley (2002) elaborates on this finding and finds that potential successors who believe that management successors should be chosen from the family also consider the business to be a family firm and show the intent to join the firm and vice versa. These findings indicate a relatively strong consistency between family members' attitudes and actions. In this context, family firms seem to pass on the intention to be independent to family firm offsprings. This finding is supported by Chlosta et al. (2012), who find that offsprings of family entrepreneurs are likely to become self-employed themselves.

Going beyond these initial findings, Lee (2006) finds that relationships within the family – namely family cohesion and adaptability – influence various attitude dimensions of second generation family managers. Interestingly, the authors find no significant results for the influence of family cohesion on family managers' attitudes. Conversely, family adaptability – defined by Olson et al. (2014) as "the capacity for a family to organize itself, especially as the family grows and changes" (p. 115) – is found to positively influence organizational commitment, job satisfaction and life satisfaction, while negatively influencing propensity to leave. The authors argue that family adaptability can act as a mediating function between the family system and the family manager, thereby constantly facilitating the way the two institutions work together (Lee, 2006).

There has been relatively little research on attitudes of nonfamily members in the past. A noticeable exception by Barnett and Kellermanns (2006) proposes that family influence has an impact on the justice perceptions of nonfamily employees via the firms' HR practices. The authors argue that moderate family influence based on balanced and transparent system interactions results in positive justice perceptions among nonfamily employees. Conversely, high

family influence has a negative effect on justice perceptions as excessive levels of family influence become restrictive and exclusive towards nonfamily employees. However, recently research on attitudes of nonfamily members is increasing and Ramos et al. (2014) find that family firms offer beneficial conditions for nonfamily employees' psychological ownership levels resulting in increased work engagement. Still, research on the effects of family influence on psychodynamic processes in family firms remains scarce.

Another research stream focuses on the role of spouses and female successors in family firms. Extant research focuses mostly on traditional family firm configurations: mostly male founders and their mostly male heirs (Dumas, 1998). Focusing on family managers' wives, Marshack (1994) finds that even though wives are rarely visible at leadership levels, they are critical to the everyday running of the business. Rowe and Hong (2000) find that family managers' wives contribute about 30% to their overall household income and frequently "jump in" when the husbands are overstrained or the firm is otherwise in need. Literature increasingly moves toward considering spouses not only as supporters of the business but as copreneurs (Fitzgerald & Muske, 2002). Results so far are mixed. While Dyer et al. (2013) find no positive performance results of spousal influence, Brannon et al. (2013) find that couples outperformed teams with blood relations (e.g., siblings). Positive performance effects might stem from leveraging resources from two families instead of one family and being "better able to flexibly adapt both the family and the entrepreneurial roles" (Brannon et al., 2013, p. 125).

Early research on female successors suggested that daughters face various challenges due to a general incongruence with family hierarchies (Dumas, 1992). Vera and Dean (2005) find that perceived challenges to female successors increases when succeeding their mother as compared to their father. The authors argue that daughters found it particularly difficult to be compared to their mothers' management style. However, recent research suggests that at least in some countries, challenges to female successors seem to decrease. Humphreys (2013) finds that with succession becoming increasingly less about primogeniture and gender and more about skill and commitment, female succession is on the rise. Using qualitative case studies, Otten-Pappas (2013) finds that female successors exhibit less normative commitment (i.e., a feeling of obligation to join the family business) and more affective commitment (i.e., a feeling of desire to join the family business) than their male counterparts. This suggests that female successors join the family business not because they are pressured by social norms and expectations but rather because they are intrinsically motivated to do so. However, solid find-

ings regarding post-succession performance effects and other effects of female versus male succession are still outstanding.

2.1.3. Theoretical perspectives in family firm research

Family firm research topics have been investigated with various theoretical underpinnings. The three predominant theoretical perspectives dealing with the group or organizational level of analysis are agency theory, stewardship theory and the resource-based view (Chrisman et al., 2010; Siebels & zu Knyphausen-Aufseß, 2012). Some additional research in the field focuses more on the individual level, drawing on social network theory (Kelly, Athanassiou, & Crittenden, 2000), social psychology theories (Sharma, Chrisman, & Chua, 2003a), or organizational commitment theory (Sharma & Irving, 2005). As the focus of this thesis is on the group and organizational level, I concentrate on the respective three predominant theories in the following brief overview.

Agency theory describes possible problems arising from conflicts of interest or information asymmetries between two contractual partners (Jensen & Meckling, 1976). In the business context, this usually refers to principals (owners) and agents (managers), assuming in principle an opportunistic basic behavior of people. In family firms, ownership and management are usually held by the same party, which reduces conflicts of interest and information asymmetries (Daily & Dollinger, 1992). However, other types of agency costs might arise due to principal-agent unity, largely based on altruistic behavior and management entrenchment of family managers (Schulze et al., 2001). More recently, the agency perspective in family firms has been extended using behavioral aspects. Findings suggest that family managers might be willing to sacrifice economic performance to preserve the socioemotional wealth that the family derives from owning and or managing the business (Gomez-Mejia et al., 2007). The investigation of family-firm-specific agency advantages and problems has contributed greatly to the understanding of family firm complexities and the difference between family and nonfamily firms (Chrisman et al., 2005a; Chrisman et al., 2005b) and the importance of agency theory in the field has been underlined by a multitude of extant contributions. In their review on 25 influential articles in family firm research, Chrisman et al. (2010) find that 12 of these articles applied an agency perspective. To date, agency theory constitutes a key framework with which to deal with mixed goals and complexities of strategic behavior in family firms (Chrisman et al., 2010; Miller, Le Breton-Miller, Minichilli, Corbetta, & Pittino, 2014).

Hence the agency theory represents a useful framework for the research focus of this thesis. I further elaborate on the agency theory perspective in chapter 2.3.

Stewardship theory adapts basic notions of agency theory and suggests that individuals are also motivated to behave generously and altruistically towards others, thereby relaxing the assumption of opportunism (Davis, Schoorman, & Donaldson, 1997; Dodd & Dyck, 2015; Le Breton-Miller et al., 2011). The stewardship perspective postulates that individuals can gain larger utility from pro-organizational behavior than from self-oriented behavior (Davis et al., 1997). In the organizational context of family firms, this notion can be translated to three basic aspects of stewardship – continuity, community, and connection (Miller et al., 2008). Continuity refers to family firms' long-term orientation, which is intended to benefit various family members (Gomez-Mejia et al., 2007). This aspect implies the second aspect: community, which refers to the importance of creating a collective corporate culture (Miller & Le Breton-Miller, 2006). Finally, connection is related to family firms' focus on building reliable and long-lasting relationships with internal and external stakeholders and hence a network that provides reciprocal assistance in times of hardship (Gomez-Mejia et al., 2001; Miller & Le Breton-Miller, 2006). The stewardship perspective can be intuitively linked to various typical family behaviors and has therefore been applied in a significant number of studies in family firm research, e.g., with regard to governance (Miller & Le Breton-Miller, 2006), leadership (Pearson & Marler, 2010), strategy (Zahra, Hayton, Neubaum, Dibrell, & Craig, 2008), and family relationships (Davis, Allen, & Hayes, 2010; Eddleston & Kellermanns, 2007). Specifically, research suggests that reciprocal altruism has a positive effect on firm behavior and performance (Eddleston & Kellermanns, 2007; Eddleston, Kellermanns, & Sarathy, 2008). Nevertheless, even under the assumption that people are motivated to serve others and engage in reciprocal altruism, agency costs could arise with increasing size, age, and stakeholder complexity (Habbershon, 2006; Karra et al., 2006). Consequently, there is no consensus about whether family managers behave like agents or stewards (Chrisman, Sharma, & Taggar, 2007). Recent research suggests that whether agency or stewardship perspectives are more applicable might depend on factors such as the degree of embeddedness of the firm and its top executives in the family (Le Breton-Miller et al., 2011).

The *resource-based view* assumes that firm behavior and performance is largely attributable to firms' resources. Resources (which can be inter alia financial, physical, human, and organizational in nature) can constitute competitive advantages if they are valuable, rare, imperfectly imitable and nonsubstitutable (Barney, 1991; Teece, 2007). In the context of family firms,

the owning family contributes a unique bundle of resources and capabilities to the firm. This bundle of resources is frequently referred to as "familiness" and can positively impact firm behavior and performance (Habbershon & Williams, 1999; Pearson, Carr, & Shaw, 2008). Sirmon and Hitt (2003) suggest that familiness comprises four discrete resources – namely human capital, patient capital, social capital and survivability capital. However, these resources will unfold their performance-enhancing potential only when managed in a targeted and efficient manner. Overall, the resource-based view offers valuable insights regarding resources that can account for differences in behavior and performance between family firms and nonfamily firms, particularly with regard to resource configurations (Siebels & zu Knyphausen-Aufseß, 2012). However, agency or stewardship perspectives might be more applicable when it comes to explaining family firm governance and strategy.

Recently, additional theories or variations of standard theories have been developed and applied to investigate family firm specifics. Within the framework of stakeholder theory, scholars suggest that the family is a distinct group, comprising a unique set of economic and noneconomic goals (Joo, Jennings, & Briggs, 2014; Zellweger & Nason, 2008). Organizational identity theory can explain why family firms adopt nonfinancial goals (Zellweger, Nason, Nordqvist, & Brush, 2013) and the upper echelon perspective allows for a detailed investigation of managers' and TMTs' influence on firm behavior and performance (Minichilli et al., 2010; Patel & Cooper, 2014).

Overall, scholars have applied multiple theoretical approaches to explaining family firm complexities and have investigated key topics from multiple theoretical perspectives. Mainstream theories of the firm present manifold advantages to deal with conflicting goals, strengths and weaknesses of family firms (Chrisman et al., 2010; Ensley & Pearson, 2005; Gedajlovic et al., 2012a). However, theories to date yield conflicting views and mixed results (e.g., agency advantages regarding lower information asymmetries vs. agency costs regarding managerial entrenchment). Given the complexity of family firms, joint applications of different mainstream theoretical perspectives can contribute to an improved understanding of family firms (Miller et al., 2014; Siebels & zu Knyphausen-Aufseß, 2012). The purposeful combination of mainstream theoretical perspectives in this thesis – namely upper echelon and agency tenets augmented with behavioral and group dynamic aspects, aiming to facilitate insights concerning the effects of family TMT involvement and family CEOs' goals and motivations, is a central objective of this thesis and I elaborate more on this point in chapter 2.3.

2.1.4. Current state and outlook in the field of family firm research

As outlined above in detail, family firm research has gone through a phase of rapid development in recent years, covering a myriad of different topics. While early research focused largely on topics that are rather relevant for practitioners, applying classic management concepts, to a certain extent with a piecemeal approach, family firm research has developed significantly in terms of theoretical and practical relevance, reach and rigor and is now regularly published in top-tier management, finance, economics and entrepreneurship journals (Gedajlovic et al., 2012a; Sharma et al., 2012), while journals concentrating exclusively on the field show equally increasing levels of impact and reputation (Sharma, 2015).

Family firm research with its inherent variety of subsystems, goals and motivations has been an exemplary field for advancing topics that go beyond the assumptions of the homo economicus. The field contributes to the organizational sciences in directing scholarly attention to managerial commitment (Le Breton-Miller & Miller, 2006), organizational identification (Carney, 2005), and intraorganizational conflict (Kellermanns & Eddleston, 2004; Lubatkin, Ling, & Schulze, 2007). Moreover, family firm research adds significantly to broader research in the organizational sciences by extending classical governance conversation, concentrating on a separation of ownership and management towards a focus on owner-managers, thereby initiating the debate around principal-principal agency problems (Gedajlovic et al., 2012a; Schulze et al., 2003a; Schulze et al., 2001). Further, the field contributes to an extension of scholars' concept of executives' risk profiles, by adding a noneconomic, socioemotional perspective to the established economic view (Gedajlovic et al., 2012a; Gomez-Mejia et al., 2007).

While these research areas represent areas of both past and potential future contributions, there are various further promising avenues for family firm research, in areas that are predominantly relevant for family firms or in areas that enrich research in the organizational sciences. With regard to specific family firm topics, socioemotional and transgenerational perspectives constitute opportunities for further investigating family essence and understanding family firm behavior and performance (Gomez-Mejia, Cruz, Berrone, & Castro, 2011; Sharma et al., 2012; Zellweger et al., 2012). Theoretical insights from family sciences might have the potential to enhance the field in the future (James, Jennings, & Breitkreuz, 2012). In this regard, the investigation of more complex family firm constellations will be increasingly important, as diverse TMT compositions, multifamily businesses, nested ownership structures and families

with multiple businesses are more and more common and additionally provide particularly interesting research contexts from multiple perspectives (Steier et al., 2015).

These themes might also facilitate new perspectives regarding research in the organizational sciences, offering opportunities to investigate the effects of human agency (Gedajlovic et al., 2012a). Family firm research has dedicated much work to investigating the dual and sometimes antagonistic motivations referring to business and the family or economic and noneconomic goals. The consideration of mixed motives has been rather neglected in organizational sciences even though it constitutes a profoundly human (and organizational) characteristic (Chrisman et al., 2012). Mixed motives are not confined to family firms; however, family firms offer unique organizational contexts in which to develop and test theories with the ultimate goal of advancing overall organizational inquiries. Approaches could include research on trade-offs between different goals or research on managers' mixed goals and mechanisms and conditions that lead to efficient or inefficient resource allocation, or firm behavior (Gedajlovic et al., 2012a).

In this thesis, I focus on the multiple aspects of family firm research addressed above. I apply a commonly used definition of family firms based on La Porta et al. (1999) as basic threshold. *A family firm is defined as owned by a family or an individual by at least 20% and having at least one member of the family in the TMT.* For the purposes of this thesis, one of the family TMT members also has to be CEO (family CEO) (Colli et al., 2003). Based on the upper echelon perspective combined with agency tenets and complemented by behavioral and group dynamic aspects, I investigate family TMT involvement and family CEOs' goals and motivations and their effect on firm behavior regarding exploration and exploitation. In so doing, I combine mainstream theoretical perspectives with family firm components and family firm essence, thereby creating a comprehensive and realistic characterization of family firms, and acknowledging the importance of a continuum perspective regarding family firms (Chrisman et al., 2010; Siebels & zu Knyphausen-Aufseß, 2012). I concentrate on different levels of family TMT involvement and put specific emphasis on investigating TMTs consisting of both family and nonfamily managers, thereby taking into account calls for research on more complex family firm constellations (Steier et al., 2015). I also investigate the role of family TMT members and particularly family CEOs' goals and motivations, focusing specifically on the varying nature and effect of noneconomic goals and prosocial motivation and potential implications on TMT dynamics and firm behavior. In this regard, I follow calls for research regarding mixed goals and motivations of decision makers in family firms (Gedajlovic et al.,

2012a). Hence, this thesis aims to contribute to extant family firm research with a focus on complex family firm constellations and effects of noneconomic goals and motivations, while at the same time extending mainstream research in the organizational sciences regarding effects of human agency, mixed motives and TMT dynamics.

2.2. Exploration and exploitation

In the following I give an overview of research on exploration and exploitation. First, I present definitions, fundamental assumptions, levels of analysis, and the state of the ongoing conversation about conceptualization and management of exploration and exploitation. Second, I give a brief overview of research on antecedents of exploration and exploitation, focusing particularly on environmental, organizational and managerial antecedents. Third, I present findings regarding outcomes of exploration and exploitation, concentrating on performance outcomes and moderators of the relationship between exploration and exploitation and performance. Fourth and finally, I describe extant research on exploration and exploitation in the specific context of family firms. For the purposes of this thesis, managerial antecedents, performance outcomes and extant findings in the organizational context of family firms are particularly important. Hence, I put special emphasis on these sections of the overview of exploration and exploitation. Nevertheless, the other aspects, such as fundamental assumptions or environmental antecedents contribute to the understanding of exploration and exploitation and therefore enable a holistic picture of these constructs.

2.2.1. Definitions and fundamental assumptions

The number of studies of organizational exploration and exploitation has increased significantly since it emerged as an underlying theme of organizational learning in the seminal work of March (1991). *March (1991) describes exploration as "things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation" (p. 71), while exploitation "includes such things as refinement, choice, production, efficiency, selection, implementation, execution" (p. 71).* Hence, exploration activities focus on the development of new knowledge, products and services for nascent customers and markets, while exploitation activities focus on reducing variance and the extension and improvement of current products and services for current markets (He & Wong, 2004; Jansen, Van Den Bosch, & Volberda, 2006; Lavie et al., 2010; March, 1991; Piao & Zajac, 2015).

There is some fundamental dissent regarding the difference between exploration and exploitation (Raisch & Birkinshaw, 2008). For example, some scholars suggest that only exploration is about learning while exploitation is about reusing existing knowledge (Rosenkopf & Nerkar, 2001; Vassolo, Anand, & Folta, 2004). Drawing on the original definition by March (1991), other researchers suggest that exploration and exploitation differ rather in terms of

type or degree (Gupta, Smith, & Shalley, 2006; He & Wong, 2004). More specifically, exploration and exploitation differ mainly with regard to the degree of certainty, as well as temporal and spatial proximity of their outcomes (He & Wong, 2004; March, 1991). Exploration activities are uncertain, imply longer time horizons, and greater distance to current operations as compared to exploitation activities. In this thesis, I follow the latter understanding of exploration and exploitation, in line with recent research (Gedajlovic et al., 2012b; Jansen et al., 2006; Kammerlander, Burger, Fust, & Fueglistaller, 2015).

Theoretical and empirical research has shown that organizations that engage in both exploration and exploitation can yield positive performance effects (Gibson & Birkinshaw, 2004; He & Wong, 2004; Lubatkin, 2006; March, 1991). Exploitation comprises a focus on optimization and quality, enabling the organization to closely monitor current business activities and immediately counteract potentially occurring inefficiencies (Gedajlovic et al., 2012b). Hence exploitation allows the organization to "harvest short-term efficiency gains" (Kammerlander et al., 2015, p. 585). However, focusing solely on exploitation would diminish the potential to detect and adopt growth opportunities that are necessary for an organization's long-term survival (March, 1991). Conversely, exploration implies future-orientation, a focus on new opportunities and long-term competitiveness by keeping the firm agile for upcoming challenges (Hiebl et al., 2015; Miller & Le Breton-Miller, 2005). Yet, excessive focus on exploration can be detrimental to performance as organizations run the risk of getting stuck in a cycle of unremunerative search and experimentation (Raisch & Birkinshaw, 2008; Volberda & Lewin, 2003; Wiklund & Shepherd, 2011). Exploration and exploitation thus constitute two critical and logically connected organizational activities; organizational survival and performance depend on the organization's ability to "engage in enough exploitation to ensure the organization's current viability and to engage in enough exploration to ensure future viability" (Levinthal & March, 1993, p. 105). The ability of organizations to engage in both activities simultaneously is referred to as organizational ambidexterity (Tushman & O'Reilly, 1996).

Literature streams and levels of analysis

The concepts of exploration and exploitation have been applied to various contexts with various interpretations (Raisch & Birkinshaw, 2008). Many scholars take an *organizational learning* perspective to exploration and exploitation, differentiating between learning gained through local versus distant search, whereat the combination of both learning types can yield benefits (Baum, Li, & Usher, 2000; Gupta et al., 2006; Levinthal & March, 1993). Researchers also take a *technological innovation* perspective, defining radical innovation as explora-

tion and incremental innovation as exploitation (Tushman & Smith, 2002) and stressing the importance for firms' pursuing both types of innovation (Jansen et al., 2006; Tushman & O'Reilly, 1996). *Organizational adaption* literature investigates the oganizational balance between continuity and change (Probst & Raisch, 2005), *strategic management* research distinguishes between strategic processes focusing on reducing variance and strategic processes focusing on increasing variance (Burgelman, 2002), and *organizational design* scholars investigates organizational structures that enable efficiency and flexibility (Gibson & Birkinshaw, 2004; Jansen, Volberda, & Van Den Bosch, 2005). In this thesis, I extend literature on exploration and exploitation mainly with an organizational learning and technological innovation focus by conceptualizing exploration as the development of new product/service-market opportunities and exploitation as the refinement of existing product/service-market opportunities in line with He and Wong (2004), Jansen et al. (2006), Patel and Chrisman (2014), and Piao and Zajac (2015).

Exploration, exploitation and ambidexterity are studied at the organizational level (e.g., Gedajlovic et al., 2012b; He & Wong, 2004; Heavey & Simsek, 2014; Lubatkin, 2006), the business unit or team level (e.g., Gibson & Birkinshaw, 2004; Hill & Birkinshaw, 2014; Jansen et al., 2006) and – less frequently – at the individual level (e.g., Mom, Van Den Bosch, & Volberda, 2007). The focus on the organizational and the business unit level is conceptually similar, investigating when and how exploration and exploitation occur and how the two activities are managed (O'Reilly & Tushman, 2008). Gibson and Birkinshaw (2004) suggest that the appropriate level of analysis might depend on firm size as it can be more insightful to study larger organizations at the business unit level than at the organizational level, which can in turn provide more insights for smaller organizations. Conversely, the individual level focuses on when and how managers themselves engage in exploration and exploitation activities thus looking more closely at individual decision and management routines (Mom et al., 2007). In this thesis, I focus on how family TMT involvement and family CEOs' goals and motivations influence exploration and exploitation activities of rather small family firms. Hence it seems reasonable to adapt the organizational level of analysis, which I do in the following.

Conceptualization of exploration and exploitation

Engaging in exploration and exploitation simultaneously can be a challenging endeavor for organizations, as they represent distinct activities and their respective pursuit requires different skill sets, knowledge and capabilities (March, 1991). Scholarly debate is ongoing regarding the nature of association between exploration and exploitation (Gupta et al., 2006; Lavie

et al., 2010; Raisch, Birkinshaw, Probst, & Tushman, 2009). Some researchers postulate that exploration and exploitation are two ends of a continuum (e.g., Lavie et al., 2010). Other researchers view exploration and exploitation as independent, orthogonal activities (e.g., Gibson & Birkinshaw, 2004). The third perspective, which I apply in this thesis, claims that exploration and exploitation, while being distinct activities that require different skill sets, knowledge and capabilities, can be complementary firm activities (e.g., He & Wong, 2004; Kammerlander et al., 2015; Knott, 2002). In the following section I briefly introduce each perspective and explain the motivation for adopting the complementary view.

From the *continuum perspective* exploration and exploitation are fundamentally incompatible (Lavie et al., 2010). This incompatibility can be exemplified by search distance, where distant search equaling exploration is contrasted with local search equaling exploitation (e.g., Rosenkopf & Nerkar, 2001). A central premise of this viewpoint concerns trade-offs between the two activities, exploration and exploitation (Lavie et al., 2010). Holmqvist (2004) argues that organizations must choose between allocating resources to the extension and improvement of existing products and services on the one hand and the development of new products and services on the other hand, while allocating resources exclusively to either of the two activities can be destructive for organizational survival. In addition to this resource-oriented perspective, Lewin et al. (1999) and Sørensen and Stuart (2000) maintain that while exploration requires organizational flexibility and change, exploitation implies organizational stability and a certain level of inertia. Either of the two organizational "mind-sets" can impede the introduction of the other organizational activity. Exploitative organizations attempting to engage in exploration activities would thus be forced to "trade stability for flexibility" (Lavie et al., 2010, p. 116) and vice versa. The assumption of inherent trade-offs between exploration and exploitation logically implies an inverse relationship between the two activities, i.e., the more an organization engages in exploration, the less it can engage in exploitation (Gupta et al., 2006). Following this notion, proponents of the continuum-perspective put particular research emphasis on how exploration and exploitation are balanced (Raisch et al., 2009).

On the other hand, exploration and exploitation are conceptualized as distinct and independent organizational activities, also called the *orthogonal perspective* (e.g., Auh & Menguc, 2005; He & Wong, 2004; Jansen et al., 2006). This viewpoint argues that organizations can achieve high levels of exploration and exploitation simultaneously (Gupta et al., 2006). For example, Baum et al. (2000) refer to organizational learning from own experience as exploitation and organizational learning from others' experience as exploration. In this context both modes of

learning are unlimited and can hence be treated as distinct and independent from each other. Proponents of this perspective maintain that not only are exploration and exploitation simultaneously achievable, but also are they simultaneously increasable (Gibson & Birkinshaw, 2004). This simultaneous development of exploration and exploitation is desirable because higher levels of both activities can result in positive organizational performance outcomes (March, 1991).

The orthogonal perspective leaves conceptual space for synergies between exploration and exploitation (Cao, Gedajlovic, & Zhang, 2009). Gibson and Birkinshaw (2004) argue that a promising way of dealing with dual and seemingly opposing activities such as alignment and adaptability can be to perceive "opposites as instead complementary and interwoven" (Gibson & Birkinshaw, 2004, p. 212). In this sense, the orthogonal perspective has been extended by a *complementary perspective* (e.g., Knott, 2002). The complementary conceptualization approach assumes that exploration and exploitation are distinct and separate organizational activities, yet at the same time positively correlated. The underlying rationale of this assumption is that exploration and exploitation are not incompatible but in fact mutually reinforcing.

First, synergies between exploration and exploitation can outweigh trade-offs because "the resources, skills and structure to excel at exploitation can also be redirected to promote exploration" (Bierly & Daly, 2007, p. 508) and vice versa. Both exploration and exploitation are fundamentally driven by current and future customer expectations (Voss & Voss, 2013). Continuous product refinement characterized by customer-oriented trial-and-error product exploitation can help the organization adopt thinking patterns that build the basis of customer-oriented exploration routines (Piao & Zajac, 2015). These thinking patterns are fundamental to delivering superior customer benefits which can ultimately result in increased performance (O'Reilly & Tushman, 2008; Voss & Voss, 2013). The synergistic effects of exploration and exploitation might thus outweigh organizational and strategic efforts required to balance the two activities.

Second, exploration and exploitation can be viewed as complementary activities because of their successional and cross-fertilizing nature (Kammerlander et al., 2015). Newly explored skills and capabilities require exploitation, while resources released through refinement and exploitation of skills and capabilities open resources that can be used for further exploration (Brouwer, 2000). Voss and Voss (2013) argue that market opportunities identified by exploration inform and steer incremental product refinements and thus exploitation. Conversely, incremental product improvements facilitate and determine the direction of exploration activi-

ties. Therefore, exploration and exploitation seem to constitute mutually reinforcing organizational activities (Kammerlander et al., 2015).

Third, March (1991) argues that exploitation and exploration are two inseparable aspects of organizational learning. As outlined above, a focus on either activity exclusively is detrimental to organizational success and the development of both exploration and exploitation is thus desirable (March, 1991). To achieve long-term survival, organizations must be both able to continuously adapt to changing competitive, legislative and societal environments and to efficiently manage ongoing operations. In this regard, exploration and exploitation in their very essence manifest two constitutive elements of successful business management.

Concluding, the debate on the association between exploration and exploitation comes down to whether the two activities are conceptualized as aiming to achieve an optimal balance (continuum perspective) or as aiming to achieve high levels of both activities at the same time (orthogonal and complementary perspective) (Junni, Sarala, Taras, & Tarba, 2013). In this regard, it is important to highlight that the complementary view does not negate disparities and contradictions between exploration and exploitation, either at the organizational level or at the individual manager or employee level (Wei, Yi, & Guo, 2014). These differences require management, which I line out in the following.

Based on the reasons above, I assume the complementary perspective in the following as the more contemporary view (Moss, Payne, & Moore, 2014), arguing that it is more closely in step with the business logic and actual practice underlined by extant theorizing (He & Wong, 2004; Kammerlander et al., 2015; Knott, 2002; Piao & Zajac, 2015) as well as a large body of empirical research (Bierly & Daly, 2007; Cegarra-Navarro, Sánchez-Vidal, & Cegarra-Leiva, 2011; Gedajlovic et al., 2012b; He & Wong, 2004; Kammerlander & Ganter, 2015; Moss et al., 2014).

Managing exploration and exploitation

There are several points of view regarding the management of exploration and exploitation (Hill & Birkinshaw, 2014). *Structural separation* is a management approach focusing on advancing exploration and exploitation activities in separate organizational units, while *temporal separation* is characterized by approaching exploration and exploitation sequentially. Finally, c*ontextual ambidexterity* describes exploration and exploitation as simultaneous managerial activities without a strict separation.

Structural separation of exploration and exploitation units within organizations offers a clear-cut and intuitive option that can enable top management to integrate and foster both activities (Benner & Tushman, 2003; Jansen, Tempelaar, Van Den Bosch, & Volberda, 2009a; Tushman & O'Reilly, 1996). Structurally separated exploration and exploitation units offer the benefit of internal consistency and internal task alignment (Lavie et al., 2010). However, cross-unit alignment can be difficult due to inconsistent tasks, culture, and organizational arrangements (Tushman & O'Reilly, 1996). The integration of structurally separated exploration and exploitation units requires a significant amount of structural and managerial resources and is thus difficult to implement effectively in smaller organizations (Lavie et al., 2010; Kammerlander et al., 2015). Closely connected to structural separation is *inter-organizational separation*. Organizations can engage in alliances or joint ventures to complement their one-sided focus on either exploration or exploitation (Lavie & Rosenkopf, 2006).

More recent approaches suggest alternative management options, including *temporal separation* of exploration and exploitation, where organizations switch back and forth between the two activities (Allison, McKenny, & Short, 2014; Siggelkow & Levinthal, 2003). In shifting between exploration and exploitation, organizations can circumvent pressures and constraints arising from pursuing both activities simultaneously (Lavie & Rosenkopf, 2006). At the same time, temporal separation comprises challenges regarding the right timing of switching from one activity to the other and potential delays and efficiency losses caused by interrupting familiar and rehearsed routines (Lavie et al., 2010).

Recent studies frequently focus on another management option, referred to as *contextual ambidexterity* (e.g., Carmeli & Halevi, 2009; Gibson & Birkinshaw, 2004; Hill & Birkinshaw, 2014). Contextual ambidexterity is defined as the ability to simultaneously pursue exploration and exploitation and can be achieved by "building a set of processes or systems that enable and encourage individuals to make their own judgments about how to divide their time between conflicting demands for alignment [exploitation] and adaptability [exploration]" (Gibson & Birkinshaw, 2004, p. 210). The crucial and continuous task of creating a nurturing and supportive relational context based on "stretch, discipline, support and trust" (Gibson & Birkinshaw, 2004, p. 209) devolves to the organization's top management team, which is consequently of particular importance in this approach (Carmeli & Halevi, 2009; Gibson & Birkinshaw, 2004; Hill & Birkinshaw, 2014). In their study of contextual ambidexterity, Gibson and Birkinshaw (2004) do not find any trade-offs between exploration and exploitation but in fact find that organizations with high levels of leadership-based contextual ambi-

dexterity were able to develop high levels of exploration and exploitation at the same time. This finding links contextual ambidexterity closely to the complementary perspective of exploration and exploitation.

All of the above management approaches have their distinct merits and organizations might in fact switch between different management approaches (Hill & Birkinshaw, 2014). Moreover, the management approach might also depend on organizational size. Smaller organizations have fewer resources than larger organizations and frequently have a rather dominant TMT. Hence, such firms might engage more frequently in leadership-based contextual ambidexterity than other forms of organizations (Lubatkin, 2006).

2.2.2. Antecedents of exploration and exploitation

As the research field has grown over the last two decades, multiple studies have focused on what drives and what restricts the emergence of exploration and exploitation. In the following I provide a short overview of the current state of research regarding antecedents of exploration and exploitation. Following the categorization and structure introduced by Lavie et al. (2010), I distinguish between environmental, organizational and managerial antecedents.

Environmental antecedents.

An organization's environment – specifically its environmental dynamism and competitiveness – is likely to influence or moderate its exploration and exploitation activities (Levinthal & March, 1993; Lewin et al., 1999).

Environmental dynamism refers to the change rate and instability degree of an organization's environment, where not only the amount of change is observed but also the level of unpredictability of change (Dess & Beard, 1984). This change has its origins in areas of customer preferences, technological developments or market demand (Lavie et al., 2010). Changing environments have the potential to render existing products and services obsolete (Sørensen & Stuart, 2000). Hence organizations trying to mitigate the risk of obsolescence might strive "to introduce exploratory innovations that depart from existing products, services, and markets" (Jansen et al., 2006, p. 1664). While dynamic environments require a certain level of adaptability, stable environments offer beneficial conditions for exploitation because of the constant refinement of activities that are valued by the environment (Jansen et al., 2006; Lavie et al., 2010; Sørensen & Stuart, 2000). Although dynamic environments favor exploration activities and stable environments favor exploitation activities, very few markets are constant-

ly exclusively dynamic or stable (Knecht, 2013). In reality, markets exhibit dynamic and stable dimensions simultaneously, requiring both explorative adaptability and exploitative alignment at the same time. Environmental shocks are an extreme form of environmental dynamism, defined as "transient perturbations whose occurrences are difficult to foresee and whose impacts on organizations are disruptive and potentially inimical" (Meyer, 1982, p. 515) Environmental shocks can be a catalyst for both exploration and exploitation. In the face of a disruptive environmental change, organizations might increase their exploration activities to adapt to new conditions and their exploitation activities to harvest gains from current operations as long as possible (Lavie et al., 2010).

Environmental competitiveness can be defined as "a situation where competition is fierce due to the number of competitors in the market and the lack of potential opportunities for further growth" (Auh & Menguc, 2005, p. 1654). Competitive environments are characterized by a focus on efficiency and prices (Matusik & Hill, 1998). Under such conditions, exploitation and hence the refinement of products and services and a persistent improvement of catering to existing customer needs is a necessity for organizational success (Jansen et al., 2006). At the same time, competitive pressure might lead organizations to focus on exploration in order to escape intense competition for scarce resources and limited opportunities for further growth (Lavie et al., 2010; Levinthal & March, 1993). Hence, environmental competitiveness potentially drives both exploration and exploitation activities.

Organizational antecedents

Whereas environmental antecedents refer to an entire industry or industrial subsegments, organizational antecedents are rooted directly in an organization's individual "resources, capabilities, structure, culture, age, and size" (Lavie et al., 2010, p. 121). In the following I provide an overview of organizational antecedents that have been studied to date.

Organizational learning and absorptive capacity. The concept of exploration and exploitation was originally developed within the framework of organizational learning (March, 1991). Learning is an essential element of an organization's ability to explore and exploit. Cyert and March (1963) describe organizational learning as an organization's adaptive behavior over time. However, an organization's ambition to develop exploration and exploitation capabilities simultaneously may present a conflict. Exploration of new opportunities can decrease the speed with which existing ones are exploited. Conversely, exploitation of existing opportunities can slow down exploration of new ones (Levitt & March, 1988). Nevertheless, both ex-

plorative and exploitative learning is paramount for the development of new products and services (Atuahene-Gima & Murray, 2007). Hence, it is crucial for organizations to effectively manage emerging contradictions between exploration and exploitation (Tushman & O'Reilly, 1996).

From an organizational learning point of view, one factor is particularly important: an organization's absorptive capacity. Absorptive capacity, defined as the ability to "recognize the value of new, external knowledge, assimilate it, and apply it to commercial ends" (Cohen & Levinthal, 1990, p. 128) enhances an organization's ability to interact with the external environment and enables the organization's learning process (Lane & Lubatkin, 1998; Rosenkopf & Nerkar, 2001). In this regard, absorptive capacity plays a particularly important role regarding exploration, as it facilitates the identification and adoption of emerging opportunities (Cohen & Levinthal, 1990; Lavie & Rosenkopf, 2006). Yet, absorptive capacity is also elementary for managing the exploration-exploitation duality as high levels of absorptive capacity can alleviate contradictions between exploration and exploitation (Rothaermel & Alexandre, 2009). Absorptive capacity can enhance an organization's approach to exploitation, taking it beyond simple fine-tuning to the creation of new capabilities from existing ones, thereby building the basis for exploration. Ideally, exploration and exploitation can thus complement each other by forming a dynamic learning cycle (Katila & Ahuja, 2002).

Slack resources. Slack resources are the excess resources available to an organization during a given planning period (Sharfman, Wolf, Chase, & Tansik, 1988; Voss, Sirdeshmukh, & Voss, 2008). Research to date has opposing views on the connection between slack resources and exploration (Lavie et al., 2010). While slack resources can be a critical requirement enabling an organization to react to internal or external pressure for adoption and develop non-financial capabilities (Bourgeois, 1981; Greve, 2007; Patzelt, Shepherd, Deeds, & Bradley, 2008), slack resources might also increase an organization's inertia because targets can be achieved through the consumption of excess resources instead of through exploration activities (Bourgeois, 1981, Lavie et al., 2010). Other scholars suggest that the effect of slack resources might be contingent on environmental factors. Voss et al. (2008) find that under perceptions of high environmental threat, slack resources are positively associated with exploration activities, while under perceptions of low environmental threat, slack resources are positively associated with exploitation activities. Overall, a certain level of slack resources thus are a necessary but insufficient condition for organizations to engage in exploration (Cyert & March, 1963).

Organizational structure. An organization directs its activities towards achieving organizational goals through an organizational structure that controls the allocation, coordination and supervision of tasks and resources (Pugh & Weber, 1971). Organizational structures are classified as either mechanistic or organic structures (Burns & Stalker, 2000). Mechanistic structures are based on formalization, centralization and standardization, supporting routines and procedures focused on efficiency and refinement and thus exploitation. Conversely, organic structures are less rigid and based on flat hierarchies and higher information exchange frequency, allowing for a higher level of creativity and deviation from standard procedures and thus exploration. In a study of units of a financial services organization, Jansen et al. (2006) find that formalization is positively associated with exploitation while centralization negatively influences exploration. Connectedness within units is positively associated with both exploration and exploitation, indicating that information exchange is an important antecedent for the implementation of both activities (Jansen et al., 2006). Mechanistic and organic organizational structures are the result of managerial decisions. Hence the debate on organizational structure antecedents of exploration and exploitation is closely connected to the conversation about managing exploration and exploitation and varying perspectives regarding structural and temporal separation and contextual ambidexterity as outlined above (Raisch & Birkinshaw, 2008). Scholars have presented ideas that alternate between mechanistic and organic organizational structures (Brown & Eisenhardt, 1997) or combine elements from both organizational structures (Adler & Borys, 1996). However, more research is required regarding the ultimate effects of separating and combining mechanistic and organic organizational structures to foster exploration and exploitation (Gibson & Birkinshaw, 2004; Lavie et al., 2010).

Organizational culture. Organizational culture has been a dominant field of research since the seminal works of Deal and Kennedy (1982) and Peters and Waterman (1982). Since then, organizational culture has been established as a key to organizational innovation capabilities (Büschgens, Bausch, & Balkin, 2013). There are many conceptualizations of organizational culture. While Denison (1990) suggest a model based on four general dimensions – mission, adaptability, involvement and consistency – Quinn and Rohrbaugh (1983) introduce a model known as "competing values framework" based on two pairs of opposing values; flexibility versus control and internal versus external orientation. Independent of the conceptualization, a strong organizational culture affects the attitudes, beliefs and values of individual members of an organization and hence influences their behavior (Alvesson, 2002; Shepherd, Patzelt, & Haynie, 2010). The effect of organizational culture on exploration and exploitation is ambig-

uous. While Andriopoulos and Lewis (2009) find that strong organizational cultures based on a consensus about organizational identity and goals are beneficial for exploitation activities yet impede exploration activities that go beyond consensus, Ravasi and Schultz (2006) argue that including exploration as an element of a strong culture can enhance exploration. As outlined above, current research shows that organizational culture is an important driver of exploration and exploitation. However, the exact direction of the effect on exploration and exploitation might be linked to the specific cultural alignment and definition of the individual organization (Lavie et al., 2010).

Organizational age and size. Organizational age and size represent antecedents of exploration and exploitation that have been examined in many empirical studies in the field (e.g., Bierly & Daly, 2007; Bracker & Pearson, 1986; Sørensen & Stuart, 2000). Current research indicates that older organizations exhibit a propensity to engage in exploitation (Lavie et al., 2010). Older organizations show higher levels of inertia resulting in a path-dependent linearity to pursue "business as usual" (Hannan & Freeman, 1989). At the same time, these organizations become highly efficient at refining their processes, products and services (Sørensen & Stuart, 2000). This results in stakeholder pressure to continue and focus on what the organization does well (Benner, 2007). Yet Sørensen and Stuart (2000) also find that older firms exhibit an increasing innovation rate, indicating that while current operations are being refined, organizations can afford to direct more resources toward innovation. Findings regarding the impact of organizational size on exploration and exploitation are also contradictory. Smaller organizations are frequently able to act flexibly, adapt to changing market conditions and to rapidly realign their entire organization to new goals (Bierly & Daly, 2007). Yet smaller firms also make do with fewer external and internal resources and have less access to networks, external cooperation possibilities and other sources of knowledge and support (Beckman, Haunschild, & Phillips, 2004; Bierly & Daly, 2007). Conversely, larger organizations exhibit higher levels of bureaucracy, formalization and inertia, resulting in resistance to engaging in exploration outside routine trajectories (Hannan & Freeman, 1984). Yet larger organizations have more external and internal resources, networks and alliances and access to various sources of knowledge, which they can leverage to support exploration activities (Beckman et al., 2004). Hence, the association between organizational size and exploration and exploitation remains controversial.

Managerial antecedents

Managerial antecedents of exploration and exploitation focus on decision makers' behavioral capacities and contingencies to engage in the two sets of activities (Lavie et al., 2010). In this regard, managerial antecedents concern individual managers' behavior as well as decisions and actions of all organizational key decision makers – i.e., the organizations' top management teams (Lavie et al., 2010). Exploration and exploitation are subjects of investigation in different research streams; organizational learning, technological innovation, organizational adaptation, strategic management, and organizational design (Raisch & Birkinshaw, 2008). Although different facets are highlighted in each context, managerial characteristics, behaviors, decisions and actions are to a greater or lesser extent always part of these discussions. Hence managerial antecedents play a major role in thoroughly investigating exploration and exploitation and are the focus of many recent studies (e.g., Ferreira, Raisch, & Klarner, 2014; Kammerlander et al., 2015; Halevi, Carmeli, & Brueller, 2015).

Managerial antecedents of exploration and exploitation have been scrutinized at multiple levels and from multiple perspectives. First, the individual manager and his or her personal characteristics, goals and motivations have been examined. In this regard, general traits, such as managers' risk aversion, have been found to be an important antecedent to investigating the organization's focus on exploration and exploitation (Lavie et al., 2010). While higher risk aversion can lead to a propensity for exploitation, more risk-prone managers have a tendency to direct the organization towards engaging in more exploration (March, 1991; March & Shapira, 1992). Choosing to engage in either exploration or exploitation can lead to experience and performance feedback that creates path-dependencies and what Lavie et al. (2010) call the "self-reinforcing nature of learning" (p. 125), whereby managers increasingly focus on either activity, neglecting the other activity. Apart from general traits, several specific characteristics have been found to impact exploration and exploitation. For example, Mom et al. (2009) find that managers' decision-making authority, participation in cross-functional interfaces and level of connectedness with other organizational members have a positive effect on managerial exploration and exploitation[4]. Focusing on innovation managers' characteristics, Klaukien et al. (2013) find that passion for work, nonwork-related excitement and particularly harmonious passion positively influence exploration. Furthermore, Kammerlander et al. (2015) investigate the effect of CEOs' regulatory focus and find that CEOs' promotion fo-

[4] Mom, Van Den Bosch, & Volberda (2009) investigate this relationship using managerial ambidexterity as a dependent variable. Managerial ambidexterity is defined as the product of exploration and exploitation.

cus has a positive effect on exploration and exploitation, specifically under intense competition, while prevention focus has a negative effect solely on exploration.

Second, scholars also focus on characteristics and behaviors of multiple key deciders within an organization, i.e., the TMT. Beckman (2006) finds that TMT composition might be an important antecedent of exploration and exploitation insofar as founding teams consisting of members with common as well as diverse prior company affiliations are particularly proficient in exploration and exploitation. Li (2013) argues that while diversity in TMTs might not be directly linked to exploration and exploitation[5], connectedness, trust and shared vision can positively moderate this relationship. Focusing on TMT behavior, Lubatkin (2006) and Halevi et al. (2015) find that behavioral integration is an important element in attaining exploration and exploitation[6] while this effect is increased in dynamic environments. In addition, Alexiev et al. (2010) find that both internal and external advice-seeking of TMTs has a positive effect on organizational exploration.

Third, some studies focus on the interplay between CEOs and its TMTs. Cao et al. (2010) argue that the network intensiveness of the CEO has a positive effect on exploration and exploitation[7], while this effect is especially salient when the relationship between the CEO and his TMT is characterized by high communication intensity, complementarity and power decentralization. Ferreira et al. (2014) maintain that CEO tenure shows an inversely U-shaped relationship with firm ambidexterity[8], while TMT change negatively affects the relationship at early stages of CEO tenure and positively affects the relationship at later stages of CEO tenure. These findings can be directly linked to Lavie et al.'s (2010) notion of path-dependency, as TMT diversity and fluctuation might constitute ways to redirect the CEO's focus if it overemphasizes either exploration or exploitation.

Fourth, some studies focus on the link between managers and employees, indicating that leadership practices can significantly affect the pursuit of exploration and exploitation (e.g., Alexiev et al., 2010; Carmeli & Halevi, 2009; Jansen, Vera, & Crossan, 2009b; Nemanich & Vera, 2009; O'Reilly & Tushman, 2011). Jansen et al. (2009b) and Nemanich and Vera (2009) find

[5] Li (2013) uses ambidexterity as dependent variable. Ambidexterity is defined as the sum of exploration and exploitation.
[6] Lubatkin (2006) uses ambidexterity as dependent variable. Ambidexterity is defined as the sum of exploration and exploitation.
[7] Cao, Simsek, & Zhang (2010) use ambidexterity as dependent variable. Ambidexterity is defined as the sum of exploration and exploitation.
[8] Ferreira, Raisch, & Klarner (2014) measure ambidexterity as the interaction between exploration and exploitation.

that transformational leadership - characterized by visionary and inspirational leadership behavior – facilitates the adoption of broader thinking patterns and the pursuit of exploration. Transactional leadership – characterized by a clear alignment and attribution of goals and responsibilities – contributes to refining and extending existing capabilities and pursuing exploitation. Nevertheless, leadership styles appropriate to fostering exploration and exploitation might be contingent on timing and environmental conditions (Jansen et al., 2009b) and a misalignment of management systems might have detrimental effects – specifically on the more complex contextual requirements that enable exploration (Burton, O'Reilly, & Bidwell, 2012).

To summarize, CEOs' and TMTs' characteristics and behaviors play a pivotal role regarding exploration and exploitation (Cao et al., 2010). While extant research reveals some interesting insights regarding this relationship, the complex nature of managers and management teams and their critical roles regarding exploration and exploitation demands further inquiry, which constitutes a key motivation of this thesis.

Overall, environmental, organizational and managerial factors affect exploration and exploitation either directly or in the form of mutual interactions (Lavie et al., 2010). However, very few factors have been shown empirically to result in consistent effects on either exploration or exploitation. This might have to do with differing conceptualization approaches and varying methods used in previous studies (Gupta et al., 2006; Lavie et al., 2010). The diverging findings to date necessitate further research regarding the antecedents of exploration and exploitation. In this thesis, I concentrate mainly on managerial antecedents, as CEOs' and TMTs' characteristics and behaviors are key influencers of firms' strategies and hence constitute critical elements for the investigation of exploration and exploitation in family firms (Hambrick & Mason, 1984; Patel & Cooper, 2014).

2.2.3. Outcomes of exploration and exploitation

Research on exploration, exploitation and ambidexterity has so far largely focused on financial performance outcomes. In the following, I elaborate on researchers' findings and additionally make a brief digression into non-performance outcomes.

Performance outcomes. Even though findings about the performance outcomes of exploration and exploitation are mixed with respect to contingencies and magnitude, a number of empirical studies find generally positive performance implications of both exploration and exploita-

tion (e.g., Gibson & Birkinshaw, 2004; Jansen, Simsek, & Cao, 2012; Lubatkin, 2006). The positive association with performance is based on March's (1991) notion that exploitation focusing on reducing variance, increasing efficiency and catering to current market needs yields short-term benefits, while exploration focusing on future market potentials and enhancing the organization's adaptability to next-generation demands yield long-term benefits. Thus – simply put – exploitation contributes to performance through profitability while exploration contributes to performance through growth (Junni et al., 2013). Auh and Menguc (2005) provide empirical support for this assertion, demonstrating that exploitation contributes to short-term profitability, measured by return on assets, while exploration is associated with long-term performance, measured by market-share growth and sales growth.

Beyond this direct link, some studies argue that the association between exploration and exploitation and performance might be subject to environmental contingencies such as environmental dynamism and competitive intensity (e.g., Auh & Menguc, 2005; Jansen et al., 2006). The positive performance effect of exploration is particularly salient when high levels of environmental dynamism require swift adaption capabilities. Conversely, the positive performance effect of exploitation can be diminished under dynamic environmental conditions, but reinforced under high levels of competitive pressure (Jansen et al., 2006). In addition to environmental contingencies, the conversion of exploration and exploitation into performance outcomes can also depend on managerial ability to mitigate path-dependencies and create the organizational context in which to harvest the benefits of both short-term efficiency and long-term growth (Gibson & Birkinshaw, 2004). Notwithstanding the fact that the complex performance implications of exploration and exploitation require additional empirical research, overall, higher levels of exploration and exploitation are found to enhance performance, moderated to a greater or lesser extent by environmental, organizational and managerial factors (Lavie et al., 2010). This positive association is further supported by Junni et al. (2013) who, in a meta analysis of 69 studies on organizational exploration, exploitation and ambidexterity, find that the overall performance effects of exploration and exploitation were both positive, significant and consistent across different measurements of exploration and exploitation as well as across different measurements of performance.

Other outcomes. To date, research on exploration, exploitation and ambidexterity has focused predominantly on the multifaceted forms of performance as outcome variable (Junni et al., 2013). There are some indications that the simultaneous and consequent pursuit of exploration and exploitation can foster employee commitment, collaboration and motivation (Jansen et

al., 2009a). Still, theoretical groundwork and empirical findings are so far virtually non-existent and might represent an avenue for future research.

2.2.4. Research on exploration and exploitation in family firms

Even though the positive effects of exploration and exploitation on sustained long-term firm performance have been repeatedly supported in various empirical contexts, and firm survival and long-term performance are at the heart of family firm research, scholars in the field to date have not yet broadly investigated family firm specifics of exploration and exploitation (Hiebl et al., 2015).

To date, underlying theories offer ambiguous grounds for discussion, specifically regarding family firm engagement in exploration. Long-term orientation – a crucial element associated with family firms (Lumpkin & Brigham, 2011) – can result in an increased entrepreneurial mindset with a tendency to explore new opportunities (Kellermanns & Eddleston, 2006). Moreover, long-term orientation can support comprehensive environmental screening and the exploration of a wide set of new opportunities (König, Kammerlander, & Enders, 2013). König et al. (2013) argue that lower levels of formalization and the lack of constraints imposed by external capital providers – both typical for family firms – enable engagement in exploration activities with unclear, risky and potentially unquantifiable outcomes. Conversely, family firms are frequently associated with higher levels of risk-aversion and a reluctance to change the firm to which the family is financially and emotionally tied (Hiebl, 2012; Hiebl et al., 2015; König et al., 2013). Moreover, Chrisman et al. (2014a) suggest that family control might be detrimental to speed and aggressiveness and hence can impede exploration. Finally, family managers might be emotionally incentivized to avoid failure at all costs and thus to focus on less risky projects (Hiebl et al., 2015).

Theorizing regarding family firms' exploitation activities is less ambiguous. General risk-aversion and centralization of power can result in an increased focus on (cost) efficiency and the full utilization of current resources (Bartholomeusz & Tanewski, 2006; Carney, 2005; Hiebl, 2012). Furthermore, family firms might be specifically prone to mental model rigidity, focusing on current expertise and capabilities, because of their reliance on inside resources, perspectives and opinions (Gomez-Mejia et al., 2010). Nevertheless, lower formalization levels and the resulting lack of routines and standards, along with negative effects of nepotism, might point to negative effects of certain inherent aspects of family firms on exploitation as well (Hiebl et al., 2015; König et al., 2013).

In spite of diverging and ambiguous arguments offered by current theorizing, empirical findings mostly indicate positive associations between family firm status and exploration and exploitation. To the best of the author's knowledge, eight empirical and one conceptual study have directly linked exploration and exploitation (and ambidexterity) to the context of family firms (or owner-managed firms) (Allison et al., 2014; Frank, Güttel, & Weismeier-Sammer, 2010; Gedajlovic et al., 2012b; Hiebl et al., 2015; Kammerlander et al., 2015; Lubatkin, 2006; Moss et al., 2014; Patel & Chrisman, 2014; Stubner et al., 2012).

In his study on ambidexterity in small and medium enterprises, Lubatkin (2006) finds a positive association between the control variable "family ownership" and ambidexterity. This initial finding was succeeded by further research on the effect of family influence on exploration and exploitation. Using a single case study approach, Frank et al. (2010) illustrate how family culture can support exploration activities while the dominant management position of the family can ensure thoroughness and routine-compliance in exploitation activities. Building on these findings, Stubner et al. (2012) find empirical evidence that family influence leads to higher levels of exploration and exploitation and subsequently to increased financial performance. Similarly, Gedajlovic et al. (2012b) find that business founders' share ownership positively influences both exploration and exploitation. Finally, Kammerlander et al. (2015) find that family ownership has a marginally positive effect on exploration and no significant effect on exploitation.

Recently, scholars have also examined details and deeper causal roots of this positive association. Allison et al. (2014) focus on temporal influences on the level of exploration and exploitation in family firms. Based on the idea of long-term orientation, Allison et al. (2014) argue that the level of exploration and exploitation is typically stable but punctuated by abrupt changes. Suggesting a pivotal role and framing impact of culture in family firms, Moss et al. (2014) maintain that the path-dependency of either exploration or exploitation is specifically salient in family firms. Based on the socioemotional wealth perspective, Patel and Chrisman (2014) investigate the contingency role of performance aspirations on family firms' research and development (R&D) investments. The authors find that family firms focus more on exploitative R&D than do nonfamily firms when performance is above historic aspirations. Conversely, when performance is below historic aspirations, family firms focus more on explorative R&D than do nonfamily firms. Finally, Hiebl et al. (2015) conceptually elaborate on the individual elements of family influence; ownership (existence of non-family shareholder versus full family ownership and number of family shareholders) and management (percent-

age of family members in the top management team and number of family generations in the top management team). Hiebl et al. (2015) argue for a thorough consideration of the impact of different family firm elements, pointing out both sources of potential advantages and disadvantages regarding exploration and exploitation in family firms. I illustrate the details of research on family firms and exploration and exploitation following a chronological order in Table 1.

These assertions offer a preliminary overview of the underlying reasons and current empirical findings for the association of family influence and exploration and exploitation. Results suggest that family firms' idiosyncrasies, including noneconomic considerations, indeed play an important role in differentiating family firms' behavior regarding exploration and exploitation from that of nonfamily firms. Moreover, differing findings in the literature highlight the need to take into consideration family firm heterogeneity. Empirical evidence pointing to a positive association between family firms and exploration and exploitation in spite of ambiguous theoretical groundwork might indicate that previous research has not always grasped the innermost workings of this relationship. I elaborate on these points in chapter 2.3.

Table 1: Research on exploration and exploitation in family firms and related areas

Studies / Year	Research Focus	Theoretical lens	Methodology	Key findings
Lubatkin (2006)	Antecedents and performance outcomes of ambidexterity – the role of TMT behavioral integration in achieving ambidexterity in small and medium enterprises	Team process research (leadership theory)	Multisource survey data from 139 small and medium enterprises	TMT behavioral integration is found to facilitate the processing of disparate demands of exploration and exploitation and is hence positively associated with achieving ambidexterity. Family ownership is found to positively affect ambidexterity. Moreover, findings suggest that the simultaneous attainment of high levels of exploration and exploitation positively affects performance.
Frank et al. (2010)	Antecedents of ambidexterity – the role of family culture and hierarchy	Mixed	Single case study of medium-sized family-owned firm	Family culture is found to facilitate exploration in a protected learning environment – referred to as an "innovation incubator." Simultaneously, the dominant position of the owner family within the firm's hierarchy empowers thorough exploitation. Findings also reveal the owner family's ability to deal with and integrate competing frames and knowledge flows. Findings support the view that the top management team takes on a proactive and entrepreneurial role in achieving exploration and exploitation instead of assuming an exclusively administrative role.
Gedajlovic et al. (2012b)	Antecedents of exploration and exploitation – the role of top management ownership	Agency	Multisource survey data from 122 Chinese high-tech small and medium enterprises	Top management share ownership is found to be positively associated with both exploration and exploitation, while government share ownership is associated with neither. The main effects are found to be partially mediated by the degree of comprehensive decision-making process utilization.
Stubner et al. (2012)	Antecedents and performance outcomes of ambidexterity – the role of family influence	Familiness (resource-based view)	Survey data from 104 German family firms	Family influence – measured by means of the F-PEC scale (Astrachan et al., 2002) – is found to positively influence organizational ambidexterity. Specifically, family culture and family power is significantly associated with organizational ambidexterity while no significant association is found for family experience. Furthermore, higher levels of organizational ambidexterity are found to lead to better economic performance among family firms.

Table 1 (continued)

Studies / Year	Research Focus	Theoretical lens	Methodology	Key findings
Allison et al. (2014)	Antecedents of ambidexterity – the role of temporal influences on the level of exploration and exploitation	Organizational adaptation	Archival longitudinal data of 149 family firms over 10 years	The level of exploration and exploitation in family firms is found to be stable over time, interrupted by erratic changes. Furthermore, the level of innovation required to match competition in a given market is found to predict changes in the level of exploration versus exploitation.
Moss et al. (2014)	Management and performance outcomes of exploration and exploitation – strategic consistency of both initiatives	Mixed	Archival longitudinal data from 94 family and 113 non-family firms over 12 years	Strategic consistency – continuity with past exploration and exploitation strategies based on managerial intentionality – is found to be positively associated with higher levels of performance. The relationship is found to be moderated by environmental dynamism, munificence and organizational size. Comparing family firms to non-family firms, the main effect is found to be stronger for family firms.
Patel and Chrisman (2014)	Antecedents of explorative and exploitative R&D investments – the role of performance aspirations and socioemotional wealth	Behavioral agency	Archival longitudinal data from 847 firms over 10 years	Based on socioemotional wealth considerations that comprise maintaining family firm traditions, strengthening family reputation and reluctance to dilute family ownership or take on debt, family firms tend to engage more in exploitative R&D investments than nonfamily firms when performance is above aspirations. Conversely, when performance is below aspirations, family firms tend to shift more towards explorative R&D investments than nonfamily firms to prevent a loss of socioemotional wealth.
Hiebl et al. (2015)	Antecedents of ambidexterity – the role of family involvement	Agency	Conceptual paper	The study makes propositions regarding the relationship of family involvement and ambidexterity. Existence of non-family shareholders is proposed to positively affect exploration, while full family ownership is proposed to be negatively associated with exploration. Ownership fragmentation and increasing percentage of family members and number of generations on TMT are proposed to negatively affect exploration and exploitation.

Table 1 (continued)

Studies / Year	Research Focus	Theoretical lens	Methodology	Key findings
Kammerlander et al. (2015)	Antecedents of exploration and exploitation – the role of CEO's regulatory focus in small and medium enterprises	Regulatory focus	Survey data from 153 small and medium enterprises	CEOs' regulatory focus is found to be a significant antecedent of organizational exploration and exploitation. While CEOs' promotion focus is positively associated with exploration and exploitation, CEOs' prevention focus negatively affects exploration only. The positive effect of CEOs' promotion focus on exploration and exploitation is positively moderated by intense competition. Furthermore, family ownership is found to positively affect exploration.

To summarize, in the sections above I describe definitions and fundamental assumptions of exploration and exploitation as well as the current state of research on antecedents and outcomes. For the specific context of this thesis, I follow current research in assuming that exploration and exploitation are fundamentally desirable organizational activities (He & Wong, 2004; Jansen et al., 2006; March, 1991; Piao & Zajac, 2015).

Also, I assume that exploration and exploitation are distinct and separate organizational activities, yet are positively correlated (e.g., Kammerlander et al., 2015). To achieve long-term survival, organizations must be both able to continuously adapt to changing environments and to efficiently manage ongoing operations. Exploration and exploitation in their very essence are two constitutive elements of successful business management. Nevertheless, exploration and exploitation are disparate activities and require different organizational and managerial capabilities, structures and mindsets (Lavie et al., 2010). Wei et al. (2014) refer to this simultaneous complementarity and disparity of exploration and exploitation as the "paradox view" which describes the multifaceted dimensions of the two constructs. Recognition of these differences is particularly important when investigating the managerial capabilities, goals and motivations that constitute potentially positive or negative antecedents of exploration and exploitation.

This thesis aims to contribute to research on exploration and exploitation by extending research on managerial antecedents. TMT composition and diversity, as well as characteristics and behaviors of top managers, play a pivotal role in exploration and exploitation (Beckman, 2006; Cao et al., 2010). However, the complex nature of managers' goals and motivations and TMT dynamics demands further inquiry (Gedajlovic et al., 2012b; Lubatkin, 2006). Thus I specifically aim to investigate the effects of family TMT involvement and the role of CEOs' goals and motivations. Thereby, I also contribute to the ongoing debate on exploration and exploitation in family firms, which has so far yielded inconsistent results (Hiebl et al., 2015).

2.3. Family firm TMTs and exploration and exploitation

In the sections above, I summarize important tenets of family firm research as well as research on exploration and exploitation. In the following, I connect research on family firms and exploration and exploitation to derive my hypotheses. First, I outline the upper echelons perspective as the theoretical framework on which my hypotheses are built. I then introduce family TMT involvement, CEO family-centered noneconomic goals and CEO prosocial motivation as hypothesized predictors of exploration and exploitation.

Top management teams

TMTs are defined as *top level executives that together form an organization's "dominant coalition," which is responsible for the determination of strategic goals, the creation and enforcement of strategic planning and the design of corporate governance* (Cyert & March, 1963; Hambrick & Mason, 1984). Consequently, the TMT is also largely responsible for an organization's engagement in exploration and exploitation (Lubatkin, 2006). The concentration of power in the TMT has attracted management and organization scholars for decades (Carpenter et al., 2004). Most of the TMT literature relies on the concept of a dominant coalition in the various operational definitions of the TMT (for an overview see Carpenter et al., 2004). West and Anderson (1996) describe the TMT as top managers involved in strategic decision-making as acknowledged by (and including) the CEO, while Tushman and Rosenkopf (1996) focus on the CEO and his or her direct reports and Carpenter and Fredrickson (2001) include the two top management tiers according to their position. Yet, TMT measurement heuristics, such as titles and positions, have been criticized in the past for being mere indicators and not necessarily representative of the dominant coalition involved in strategic decision-making (Carpenter et al., 2004). Hence, recent studies on TMTs mostly use a CEO or general manager as key informant to identify relevant members of the TMT (e.g., Alexiev et al., 2010; Ling & Kellermanns, 2010; Minichilli et al., 2010; Halevi et al., 2015).

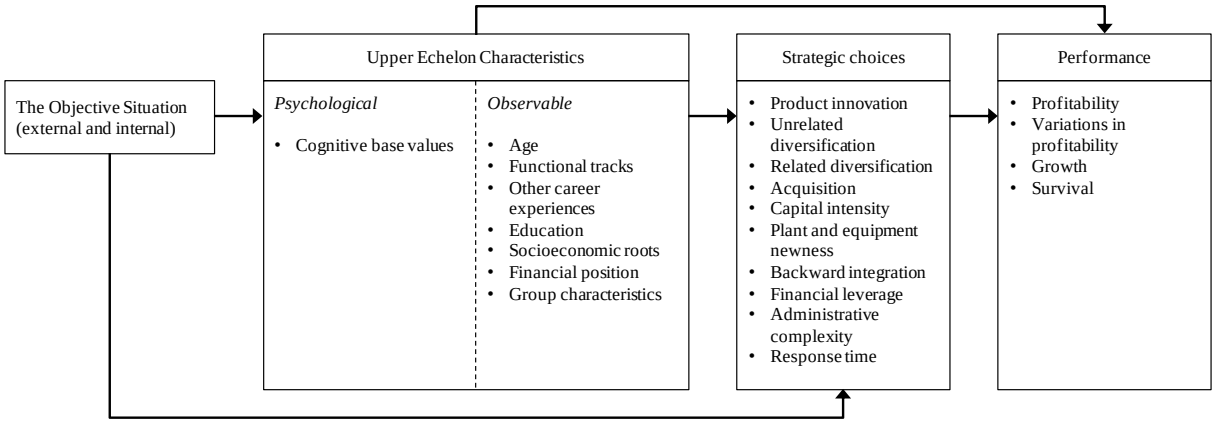
Theoretical framework: upper echelons perspective

To understand TMT behavior and actions, upper echelon theory has been shown to provide useful explanations. In 1984, Hambrick and Mason proposed directing more research to the top management – the *upper echelons* – of organizations, arguing that organizational outcomes such as strategies, effectiveness and performance can be viewed as "reflections of the values and cognitive bases of powerful actors in the organization" (Hambrick & Mason, 1984,

p. 193). The upper echelons perspective is illustrated in Figure 5 and in its original composition postulates a linear structure. Emanating from a given situation (e.g., competitive pressure or the intention to improve performance), strategic choices are made based on upper echelon characteristics, i.e., top executives' values and cognitive bases, which can be described as a function of their observable characteristics such as age, education and group characteristics. Strategic choices in turn result in performance outcomes.

Figure 5: The upper echelons perspective of organizations

Source: Own illustration according to Hambrick and Mason (1984)



In their review of upper echelons research, Carpenter et al. (2004) state the three original tenets of the upper echelon perspective:

> *(1) strategic choices made in firms are reflections of the values and cognitive bases of powerful actors, (2) the values and cognitive bases of such actors are a function of their observable characteristics like education or work experience, and as a result (3) significant organizational outcomes will be associated with the observable characteristics of those actors (p. 752).*

These tenets have since provided researchers with a theoretical basis for studying TMT dynamics and their effects on organizational outcomes.

Within this context, researchers have focused largely on four aspects of the upper echelons. First, research has focused on characteristics of individual members and subgroups of the TMT, e.g., the effect of top managers' science/engineering education and entrepreneurial experience on early stage investment focus in venture capital (Patzelt, zu Knyphausen-Aufseß, & Fischer, 2009). Second, research has focused on the composition of TMTs and their interaction processes, e.g., the positive effect of TMT diversity on the resource-action linkage of resource utilization and the negative effect of TMT faultlines, which can be a result of diversi-

ty (Ndofor, Sirmon, & He, 2015). In this context, Hambrick et al. (2015) suggest that structural interdependence between TMT members is an important moderator between TMT diversity and member departures and also between TMT diversity and firm performance. Third, the dominant position of the CEO as head of the TMT has triggered research on the effects of specific CEO characteristics, e.g., the effect of CEO core self-evaluation on entrepreneurial orientation (Simsek, Heavey, & Veiga, 2010) or the effect of CEO regulatory focus on exploration and exploitation (Kammerlander et al., 2015). Fourth, taking into account the importance of both CEOs and TMTs, some researchers have focused on the interplay between CEOs and their TMTs. In this regard, e.g., Ling et al. (2008) analyze transformational CEOs' influence on TMTs' behavioral integration, risk propensity, decentralization of responsibilities, and long-term compensation which in turn influence corporate entrepreneurship. In a similar vein, Zhang et al. (2015) find that subsidiary CEO transformational leadership increases team effectiveness and firm performance when such leadership is evenly focused on every TMT member while a differentiation between individual TMT members decreases those outcomes.

Recently, scholars have expanded the linear structure of the upper echelons perspective towards a more dynamic point of view. To the extent that managers shape organizational outcomes, organizational outcomes reciprocally play a role in determining the composition of organizations' TMT (Carpenter et al., 2004). Scholars are increasingly considering more complex contingency effects. Patzelt et al. (2008) find that the performance effect of CEOs' industry experience is contingent on the venture's underlying business model. Moreover, there is growing evidence for the assumption that strategic choices by top managers are not only determined by characteristics based on the past or present (e.g., education or group characteristics) but also depend on future-oriented goals and motivations (Carpenter et al., 2004).

Research on family firm TMTs

Family firm TMTs offer especially interesting grounds for research on the upper echelons because common upper echelon characteristics can be accentuated and enriched by family firm-specific features (Chrisman et al., 2012).

Research has focused on *family effects on the TMT level*. Ensley and Pearson (2005) argue that families in TMTs create a specific synergy that differentiates them from other TMTs – this is referred to as "familiness." The authors maintain that familiness results in "higher cohesion, potency, task conflict, and shared strategic consensus" (Ensley & Pearson, 2005,

p. 267). Hence, familiness is proposed to be a unique and value-creating resource of family firm TMTs which nonfamily TMTs find hard to duplicate (Ensley & Pearson, 2005; Nordqvist, 2005). However, recent research indicates that familiness in TMTs might also have a negative side. In their study on privately held Italian family firms, Sciascia and Mazzola (2008) find a negative relationship between family TMT involvement and performance. The authors motivated their findings with disadvantages from nonmonetary goal orientation, costs from conflict resolutions between family managers and resistance to enhance the firm's social and intellectual capital through nonfamily managers. The findings of Ensley and Pearson (2005) and Sciascia and Mazzola (2008) indicate the complexity of familiness in TMTs and the existence of factors beneficial for performance as well as factors detrimental to performance.

In a related direction, research has focused on *family firm TMT diversity* as "the family provides an additional layer of complexity and unique sources of TMT diversity not found in non-family firms" (Ling & Kellermanns, 2010, p. 323). In this regard scholars highlight two main aspects of diversity: diversity between family managers and diversity between family managers and nonfamily managers. In line with the first aspect, Ling and Kellermanns (2010) investigate three sources of family TMT diversity: the generation in charge of the family firm, the number of family managers, and the number of employed generations. The authors find that only the number of employed generations has a significant positive impact on performance. At the same time, all three sources of family TMT diversity are found to have a positive effect on performance when information exchange frequency between family managers is high. This indicates the importance of communication and interaction in leveraging productive diversity potential. The significance of the number of generations employed at the firm is supported by Sciascia et al. (2013), who find that moderate levels of generational involvement are positively related to entrepreneurial orientation. Similarly, Kraiczy et al. (2014) find that the number of generations involved in the TMT positively moderates the relationship between TMT innovation orientation and new product portfolio performance.

In line with the second aspect – diversity stemming from the combination of family and nonfamily managers – nonfamily managers are frequently assumed to offset family-related shortcomings, such as nepotism, risk aversion, or lack of transparency, and thus benefit family firm performance (Hiebl et al., 2015; Jaskiewicz et al., 2013). In this context, Kraiczy et al. (2014) find that a high ratio of family TMT involvement negatively moderates the relationship between TMT innovation orientation and new product portfolio performance. Patel and Cooper

(2014) argue that a mix of family and nonfamily TMT members yields positive performance effects, particularly when structural power between the two TMT subgroups is balanced. Still, there is no consensus regarding the positive effects of TMT diversity. In fact, a balance of family and nonfamily managers might also lead to schisms and disruptions within family firm TMTs that are detrimental to performance (Minichilli et al., 2010). The contrasting findings illustrate that more research is required regarding both sources and effects of family firm TMT diversity.

Research has focused on *family CEOs' dual role* as family members and particularly powerful firm leaders (Minichilli et al., 2010). The logical consequence of this perspective is the investigation of performance effects stemming from CEOs' family attributes. Many findings support the idea that the presence of a family CEO is positively associated with financial performance (e.g., Anderson & Reeb, 2003; Minichilli et al., 2010). This effect might have several causes. As ownership and management are held by the same party, it seems reasonable to assume that information asymmetry is reduced and goal alignment increased (Jensen & Meckling, 1976). Another cause might be cost advantages. McConaughy (2000) finds that family CEOs' salaries were significantly lower than salaries of nonfamily CEOs, indicating that family CEOs may reduce certain costs, thus increasing performance. In a study on S&P 500 companies, Anderson and Reeb (2003) find that in family firms, family CEOs outperform nonfamily CEOs and family firms altogether outperform nonfamily firms regardless of whether their CEO is family or nonfamily. However, there is no consensus about the positive performance effects of family CEOs. Schulze et al. (2003a) argue that family CEOs, based on altruism or nepotism, might be motivated to direct funds to benefit the family, thereby compromising financial performance. Recent research has focused more on underlying drivers of family firm CEOs' performance. For example, Kraiczy et al. (2015b) find that socioemotional wealth considerations impact the relationship between CEO risk-taking propensity and firms' new product portfolio innovativeness: high levels of socioemotional wealth lead to lower levels of product portfolio innovativeness. This finding indicates that even if CEOs' risk-taking propensity is stable, socioemotional wealth has the potential to channel it to noneconomic, more family-oriented priorities. Differing findings regarding the role of family CEOs on firm behavior indicate the need for further and more detailed investigation.

In addition, some research has focused on *CEO-TMT interactions* in family firms. For instance, Cruz et al. (2010) investigate the effect of CEO's perceptions of TMT benevolence on TMT contracts and find that TMT behavioral uncertainty and CEO vulnerability negatively

moderate this relationship. Kraiczy et al. (2015b) explore how CEO risk-taking propensity interacts with family TMT member ownership and generation in charge of the family firm to affect new product portfolio innovativeness. The authors find negative moderation effects of higher family TMT member ownership and positive moderation effects of earlier generation in charge stages, indicating that higher levels of socioemotional wealth in the family TMT affect CEOs' individual dispositions and behaviors. The joint consideration of CEO and TMT characteristics and respective interaction effects offers a more detailed understanding of organizational decisions and hence constitutes an important aspect of upper echelon research (Arendt et al., 2005; Cao et al., 2010), particularly in family firms, where family relations are included in the CEO-TMT interplay (Kraiczy et al., 2015b; Minichilli et al., 2010).

Overall, despite the surge of literature on the upper echelons since Hambrick and Mason's (1984) seminal work, research has only just started to focus on the specificities of family firm upper echelon characteristics (Patel & Cooper, 2014). However, research on the upper echelons in family firms is as important for the advancement of family firm research as it is multifaceted. The upper echelon perspective allows for a highly differentiated examination of family firm decision makers and hence presents a useful theoretical lens for a granular view of family firm TMT dynamics that ultimately result in family firm behavior.

Theoretical model

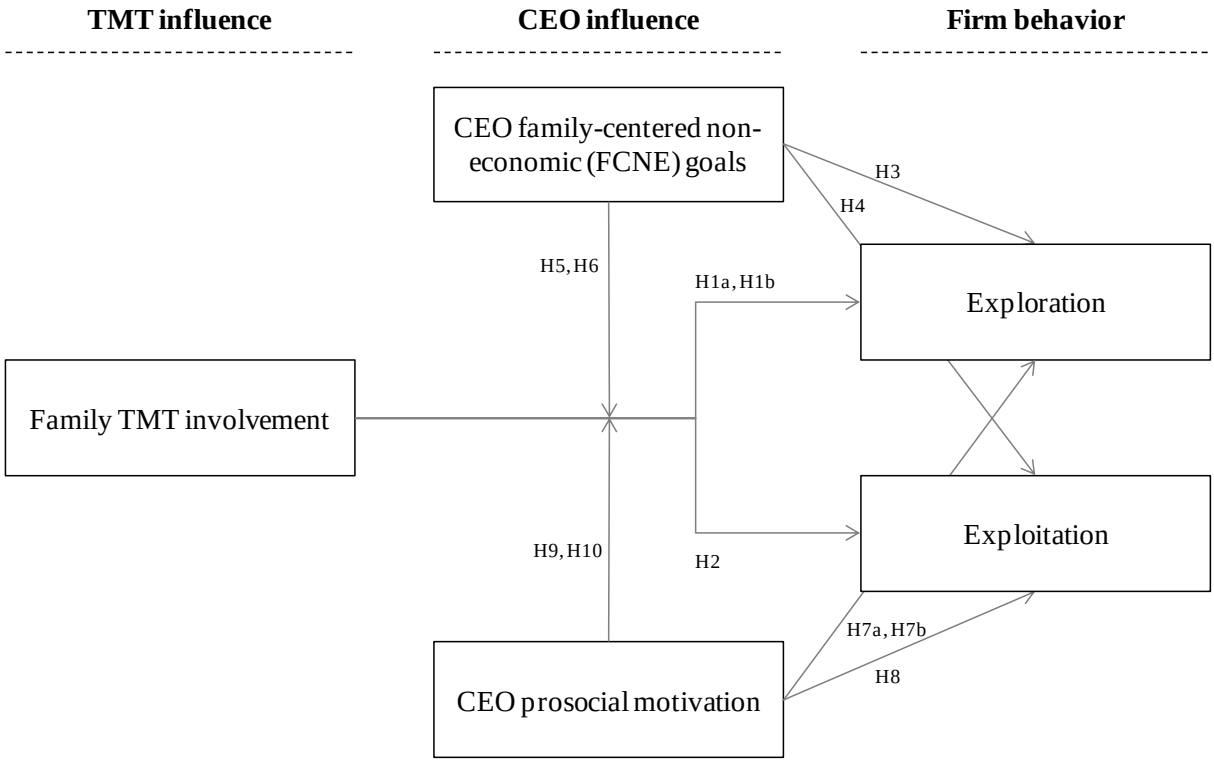
In the sections above, I outlined the specific importance of firm survival and long-term performance for family firms (e.g., Carney, 2005; Gedajlovic et al., 2012a) as well as the empirically supported positive effects of exploration and exploitation in this regard (e.g., He & Wong, 2004; Lubatkin, 2006; Simsek, 2009). Further, I highlight the significance of CEO and TMT characteristics for firm behavior and performance as specified in the upper echelons perspective (Hambrick & Mason, 1984) and the unique role of family firm CEOs and TMTs in this regard (Patel & Cooper, 2014). In the following, I draw the connection and investigate the role of family TMT involvement, family CEO goals and motivations, and respective interaction effects on exploration and exploitation.

The upper echelon perspective builds the theoretical foundation for my model and my reasoning is based on three focal upper echelon aspects, illustrated in Figure 6. First, I focus on family TMT involvement as a key parameter of family influence (hypotheses 1a, 1b, 2) (Sciascia & Mazzola, 2008; Villalonga & Amit, 2006). I draw on central tenets of the agency perspective (Jensen & Meckling, 1976) complemented by behavioral and group dynamic aspects to

explain how dominant factions consisting of either family or nonfamily TMT members influence exploration and exploitation (Gomez-Mejia et al., 2007; Miller et al., 2014; Minichilli et al., 2010). I put particular emphasis on investigating the role of medium family TMT involvement, i.e., family TMT diversity based on family and nonfamily TMT members and resulting TMT dynamics.

Figure 6: Theoretical model and overview of hypotheses

Source: Own illustration



Second, going beyond common demographic upper echelon characteristics, I investigate the role of specific family CEOs' goals and motivations – namely family-centered noneconomic goals and prosocial motivation (hypotheses 3, 4, 7a, 7b, 8). Both of these idiosyncrasies constitute key aspects of family firms in general and family CEOs in particular and hence deserve special attention with regard to their effect on CEOs' strategic decisions (Chrisman et al., 2012; Gedajlovic et al., 2012a; Siebels & zu Knyphausen-Aufseß, 2012).

Third, I investigate the moderating effects of CEOs' goals and motivations on the relationship between family TMT involvement and exploration and exploitation (hypotheses 5, 6, 9, 10). In so doing, I aim to create detailed insights regarding the joint effects of CEOs and TMTs on family firms' behavior in the context of exploration and exploitation (Cao et al., 2010).

2.3.1. The influence of family TMT involvement on exploration and exploitation

In this section, I develop hypotheses 1 and 2, based on previously described key constructs and theories involved in this thesis. First, I theorize on the effects of family TMT involvement on exploration. Second, I elaborate on the effects of family TMT involvement on exploitation. The foundation of my argumentation is the agency perspective[9], which is widely used in the field and offers valuable explanatory approaches (Chrisman et al., 2010; Siebels & zu Knyphausen-Aufseß, 2012), complemented by behavioral and group dynamic aspects (De Massis, Kotlar, Campopiano, & Cassia, 2015b; Miller et al., 2014; Minichilli et al., 2010) .

Generally, agency costs emanate from conflicts of interest and information asymmetries between principals (owners) and agents (managers) in an organization. Conflicts of interest and information asymmetries are less likely to occur when ownership and management of a firm are held by the same party (Jensen & Meckling, 1976). Hence agency costs can be expected to be lower and agency advantages more likely to emerge in family firms where the TMT consists largely of managers who are members of the owning family.

Family TMT members and exploration

Family TMT members may enjoy various agency-based advantages that can be relevant for exploration. Family TMT members frequently act as "unique agent[s] in which both ownership and management are concentrated, determining a personalization of authority that gives family members extremely high power and legitimacy within the organization" (De Massis, Frattini, Pizzurno, & Cassia, 2015a, p. 4). This extraordinarily high level of managerial discretion frequently allows family TMT members to exert largely uncontested control in steering the family firm according to their own interests, without bureaucratic constraints or formalized management practices which could restrict exploration (De Massis et al., 2015a; Hiebl et al., 2015). A priority objective of family TMT members is the family firm's long-term survival and competitiveness (Le Breton-Miller et al., 2011)[10]. According to this notion, family TMT members could be expected to focus on exploration projects in order to provide a basis for future growth. Moreover, family TMT members frequently exhibit significant tenure and close connections within the family firm, its customers, and the market even prior to their employment at the family firm, which can result in profound in-depth knowledge and goal alignment between family TMT members (Kellermanns & Eddleston, 2006). This has the

[9] See chapter 2.1.3.

[10] Some scholars refer to characteristics such as long-term orientation and altruism as behavioral assumptions complementary to agency tenets (e.g., De Massis, Kotlar, Campopiano, & Cassia 2015b).

potential to further mitigate conflicts of interest and can hence facilitate exploration projects. Further, family TMT members' dual role as owners and managers in combination with their long-term focus can free them from constraints imposed by short-term oriented capital providers (König et al., 2013). Family TMT members thus frequently dispose of patient capital which does not restrain but rather fosters long-term investment horizons (Sirmon & Hitt, 2003). Therefore, TMTs consisting largely of family members can be expected to be particularly fit to leverage these agency-based advantages and hence foster exploration in their firms.

The agency perspective offers yet another point of view regarding family TMT involvement: classical agency tenets postulate that owners are less risk-averse than managers because owners usually exhibit a diversified portfolio of investments which makes them seek higher risk-return investment constellations, whereas managers cannot diversify their employment (Jensen & Meckling, 1976). However, families are non-typical owners, since their investment is usually concentrated in the family firm (Chatterjee, Lubatkin, & Schulze, 1999). The family firm frequently not only provides employment for family managers but also represents a significant share of their economic endowment. This constellation naturally results in a higher level of risk-aversion (Sciascia, Nordqvist, Mazzola, & De Massis, 2015). Exploration projects are by nature risky and comprise a high failure rate (March, 1991; Shepherd, Haynie, & Patzelt, 2013a; Shepherd, Patzelt, Williams, & Warnecke, 2014). Even though family TMT members are usually aware of the importance and intend to ensure the long-term competitiveness of the family firm, they can be reluctant to engage in risky exploration projects that potentially endanger the short-term survival of the firm altogether (Bennedsen, Perez-Gonzalez, & Wolfenzon, 2010; Hiebl et al., 2015). Furthermore, family TMT members frequently are not entirely independent owner-managers but may be accountable to other owning family members. This dual role can incentivize family TMT members to avoid failure and hence engage less in risky projects with unpredictable outcomes (De Massis et al., 2015a; König et al., 2013). It seems reasonable to assume that risk aversion increases particularly when the TMT consists largely of family members. Consequently, TMTs with high family involvement could tend to engage in fewer exploration projects and focus more on incremental innovation with lower potential impact than on radical, potentially game-changing innovations that comprise higher upside potentials but also significant downside risks (Block, Miller, Jaskiewicz, & Spiegel, 2013; De Massis et al., 2015a; König et al., 2013).

Further, some scholars propose that family firms could incur agency costs that are not covered in the original argumentation of Jensen and Meckling (1976), such as parental altruism, nepo-

tism and entrenchment (Chrisman, Chua, & Litz, 2004; Schulze et al., 2003b; Schulze et al., 2003a). These factors can emerge particularly when family TMT involvement is high and can, for instance, lead to the appointment of incapable family TMT members, inefficient resource allocation, e.g., for private family benefits, and disregard of external exploration stimuli (e.g., Block et al., 2013; De Massis et al., 2015b; Huybrechts, Voordeckers, & Lybaert, 2013; Jaskiewicz et al., 2013; Schulze et al., 2003a). Additional agency costs may arise from family TMT members' unwillingness to share information with potential external lenders. This opacity can lead to a lack of funding to pursue potentially costly and risky new business opportunities (De Massis et al., 2015a). High family TMT involvement can hence lead to myopic concentration on family-specific topics and opacity. As a result, TMTs with high family involvement might be less able and willing to engage in complex, costly and risky exploration activities (Bertrand & Schoar, 2006; Block et al., 2013; Bloom & van Reenen, 2006).

The above arguments, sustaining the notion that higher family TMT involvement can lead to less engagement in exploration, are supported by a number of empirical studies that show that higher family TMT involvement can be connected with lower levels of R&D investment (e.g., Anderson et al., 2012; De Massis, Frattini, & Lichtenthaler, 2013; Gomez-Mejia et al., 2014; Le Breton-Miller et al., 2011; Muñoz-Bullón & Sanchez-Bueno, 2011). Even though R&D investment is not necessarily tantamount to exploration (Duran et al., 2015), the relatively consistent findings support the notion of risk aversion, agency costs and the resulting negative relationship of higher family TMT involvement and exploration. Hence the aforementioned agency-based advantages might be eclipsed by agency costs.

Nonfamily TMT members and exploration

Even though classical agency tenets propose that managers are generally more risk-averse than owners, there are various agency-based arguments that in the specific context of family firms, nonfamily TMT members are less risk-averse than family TMT members and hence could engage more in exploration projects with rather risky outcomes.

Nonfamily TMT members rarely receive equity stakes in the family firm, as the family is usually reluctant to dilute their controlling share or give up ownership stakes in general (Gomez-Mejia et al., 2007; Lubatkin et al., 2005). TMT members without shareholdings can, however, take part in the upside potentials of risky investments through bonuses and other variable compensations and take only limited part in the downside risks. Thus, nonfamily TMT members have been associated with higher levels of risk-seeking behavior and a higher propensity

to engage in risky projects (Stanley, 2010). Furthermore, nonfamily TMT members tend to search for broader sets of external exploration stimuli and do not refrain from radical renewal (Lazzarotti & Pellegrini, 2015). This effect could be particularly strong when multiple nonfamily TMT members encourage each other to engage in exploration for their mutual benefit.

Furthermore, nonfamily TMT members are frequently under pressure to justify their employment and thus anxious to create visible managerial impact by, for instance, engaging in risky and novel ventures (Casillas, Moreno, & Barbero, 2011). This might be particularly the case when multiple nonfamily managers in the TMT compete for acknowledgement and status, leading to an intensified focus on exploration.

Nonfamily TMT members tend to be less entrenched than family TMT members, frequently have a more diverse professional background, provide an outside-in perspective, and are thus capable of counteracting family specific agency costs stemming from parental altruism, nepotism and entrenchment (De Massis et al., 2015b; Hiebl et al., 2015; Miller et al., 2014). This effect could be more pronounced when the TMT consists largely of nonfamily TMT members, as they can jointly act as effective counterpoints to family specific agency costs and thus facilitate the pursuit of exploration projects beyond day-to-day operations.

Finally, family owners have been found to be motivated and to have the necessary expertise to efficiently monitor nonfamily TMT members (Jensen & Meckling, 1976; Miller et al., 2014; Miller & Le Breton-Miller, 2006). A prerequisite for efficient monitoring is a separation of ownership and management, as constellations of shared administrative and leadership activities between family and nonfamily TMT members can lead to conflict and a negation of the positive influence of nonfamily managers (Miller et al., 2014). Hence, lower family TMT involvement allows family owners to ensure that the firm strategy is aligned with their long-term interests and simultaneously grants nonfamily TMT members leeway to implement an exploration strategy without interference of family TMT members in day-to-business.

Summing up, even though long-term survival is important to family TMT members, their focus on exploration might be thwarted by risk-aversion and family specific agency costs. Conversely, nonfamily TMT members contribute external perspectives and know-how which increases the likelihood of exploration beyond day-to-day business. Furthermore, nonfamily TMT members are incentivized by family firm specific conditions to engage in riskier projects on the basis of economic reasoning. Hence, I hypothesize:

H1a: There is a negative relationship between family TMT involvement and exploration.

Medium family TMT involvement and exploration

While the above points provide a useful line of argumentation with which to understand relationships between the owning family and nonfamily TMT members as well as the behavior of family TMT members who are owners and managers at the same time, day-to-day interactions between family and nonfamily TMT members are largely neglected (Miller et al., 2014). Specifically in the context of TMTs consisting of both family and nonfamily TMT members – i.e., under conditions of medium family TMT involvement – further behavioral and group dynamic considerations can provide additional insights into TMT dynamics and resulting effects on exploration (Lau & Murnighan, 1998; Miller et al., 2014; Ndofor et al., 2015; Pearson, Bergiel, & Barnett, 2014). This is in line with calls for the combination of multiple theoretical perspectives to address and understand the complexities of family firms (Siebels & zu Knyphausen-Aufseß, 2012).

Arguments about the effects of high and low family TMT involvement, as outlined above, refer to the abstract intentions and capabilities of family and nonfamily TMT members to engage in exploration. Medium family TMT involvement implies TMT diversity in the sense of comprising family as well as nonfamily members simultaneously. Hence it is important to take a closer look at group dynamics and specifically at how goals, motivations and resulting approaches to exploration might differ between the two TMT subgroups.

One could assume that TMTs consisting of both family and nonfamily TMT members combine their respective exploration strengths and leverage their respective exploration weaknesses and are thus specifically apt to engage in exploration activities, yet TMT diversity is not found to be consistently beneficial in this regard (Olson et al., 2006). Significant differences between subgroups can result in "faultlines," strong discrepancies within groups, which can have a detrimental effect on group decisions and ultimately performance (Lau & Murnighan, 1998; Thatcher & Patel, 2012). Faultlines – originally derived from social identity and self-categorization theories – can explain team-level outcomes beyond characteristics and capabilities of individual team members and are thus a helpful theoretical construct for analyzing team dynamics (Lau & Murnighan, 2005; Thatcher & Patel, 2012).

Faultlines can be defined as *"hypothetical dividing lines that may split a group into subgroups based on one or more attributes"* (Lau & Murnighan, 1998, p. 328). The concept of group faultlines is adapted from geological faults – fractures in the earth's crust – and is adaptable to groups of individuals based on three key notions (Lau & Murnighan, 1998): first, individual

group members comprise various demographic and nondemographic dimensions that bear a resemblance to geographical layers. Group faultlines can form around demographic characteristics, such as sex, age, race, country of origin, and educational or functional backgrounds (Bezrukova, Jehn, Zanutto, & Thatcher, 2009). They can also form around nondemographic characteristics, such as personality and values (e.g., Gratton, Voigt, & Erickson, 2007) or being a member of the family in family firms (e.g., Minichilli et al., 2010). Faultlines can form around multiple properties simultaneously, e.g., between young liberals and old conservatives – thereby combining demographic (age) and nondemographic (political values) properties (Lau & Murnighan, 1998). Second, faultlines frequently go unnoticed and are likely to surface only in the presence of a trigger (Thatcher & Patel, 2012). According to Chrobot-Mason et al. (2009), triggers can be classified into five categories: differential treatment, different values, assimilation, insult or humiliating action, and simple contact. Within family firm TMTs, a trigger could be the distribution of bonuses, investment decisions or decisions regarding the strategic course of the firm. Third, strong faultlines within groups can lead to unique subgroups within the TMT that tend to identify more with their subgroup than with the TMT as a whole (Brewer, 2001; Thatcher, Jehn, & Zanutto, 2003). Faultline strength increases when salient attributes of team members create few and clearly categorizable subgroups with high "between variance" and low "within variance," such as the aforementioned young liberals and old conservatives (Ndofor et al., 2015).

According to the upper echelon perspective, firm strategy and performance is a reflection of the TMT's characteristics and task performance (Hambrick & Mason, 1984). This gives reason to assume that faultlines within the TMT have a negative impact on the firm's overall ability to create and implement consistent strategies and consequently on the firm's performance (Minichilli et al., 2010). Indeed, the presence of faultlines between subgroups can provoke distrust and conflict and harm group decisions and performance. Li and Hambrick (2005) find that the existence of faultlines within TMTs increases relationship and task conflict and leads to behavioral disintegration of the team, resulting in decreased interaction between subgroups, stressed and biased communication and consequently unwillingness and inability to make joint decisions. As a result, unity of command is impaired, leading to confusion regarding the firm's structure of authority and accountability (Fayol, 1949; Miller et al., 2014; O'Toole, Galbraith, & Lawler, 2002). Similarly, Thatcher and Patel (2011) find that TMT faultlines impair team cohesion, team satisfaction and overall team performance. In this regard, faultlines directly affect TMT decisions and actions. Barkema and Shvyrkov (2007) find that TMT faultlines negatively influence novelty of foreign location investments, because a lack of

communication between subgroups leads to underutilization of top managers' cognitive resources. Arguing from a similar angle, Tuggle et al. (2010) find that faultlines decrease top managers' focus on entrepreneurial issues.

In family firm TMTs, an intuitive and apparent divide is between family and nonfamily TMT members (Minichilli et al., 2010). Family TMT members are welded together by a common history as well as family-centered aspirations (Chrisman et al., 2012). They share a common culture, rituals, norms and values and frequently have comparable educational backgrounds and career paths (Chua, Chrisman, & Sharma, 2003). Moreover, family TMT members often have a stronger emotional attachment to the firm which they frequently perceive as an extension and complement of the family itself (Gomez-Mejia et al., 2007; Sharma & Irving, 2005). Consequently, family TMT members are closely connected both as members of the owning family and through their shared emotional attachment to the family firm. Conversely, nonfamily TMT members are predominantly united in their "non-belonging" to the family and a mainly professional employment relationship with the firm (Minichilli et al., 2010).

I hypothesize that faultlines between family and nonfamily TMT members particularly come to the fore when dealing with exploration, as different underlying goals, motivations, perceptions and resulting concrete approaches can produce relation-oriented differences between the two subgroups and accordingly provoke the aforementioned negative effects (Chrobot-Mason et al., 2009; Kraiczy et al., 2014; Williams & O'Reilly, 1998). Specifically, family TMT members could oppose exploration-focused nonfamily TMT members based on different family-related reasons: as outlined above, family TMT members can be more risk averse than nonfamily TMT members. Hence, family TMT members might altogether engage less frequently and less radically in exploration projects than nonfamily TMT members. Family TMT members rely more on internal sources of financing and scrutinize business opportunities with greater intensity, thereby forgoing "trial balloons" and unrelated diversification (Anderson & Reeb, 2003). Conversely, nonfamily TMT members are more likely to engage in frequent and unrelated diversification (Morck, Shleifer, & Vishny, 1988). In addition, firm performance can provoke different reactions from family and nonfamily TMT members. While family TMT members tend to focus less on exploration when performance is above aspirations to protect their socioemotional endowment, nonfamily TMT members are less driven by such considerations and might be encouraged to engage in further exploration (Patel & Chrisman, 2014). Moreover, family TMT members are more reluctant to engage in projects that they perceive as incompatible with what the family firm stands for or that they perceive as threat-

ening to the family's status (Berrone et al., 2010). Family TMT members' entrenchment can further lead to an exclusion of ideas and neglect of input from nonfamily TMT members (Carnes & Ireland, 2013).

All these points can contribute to widening the gap between family and nonfamily TMT members. Behavioral and emotional discrepancies, strains and tensions between family and nonfamily managers can emerge as a result of these faultlines and lead to the aforementioned negative effects regarding joint decisions, unity of command and strategic alignment (Li & Hambrick, 2005; Thatcher & Patel, 2011).

When the TMT consists largely of family or nonfamily members, the respective majority faction has sufficient managerial discretion to render faultlines inconsequential with regard to their harmful effects, while the minority faction has insufficient power to dispute decisions (Minichilli et al., 2010). However, when the TMT consists of significant factions of family as well as nonfamily members, these factions cannot easily trump or ignore each other. Consequently, conflicts and disruptions in the TMT might increase at medium levels of family TMT involvement and result in blockades, fragmentation of authority, and ultimately less clear-cut strategic decisions. Exploration is a very complex strategy and highly sensitive to managerial misalignment (Alexiev et al., 2010). Faultlines in the TMT thus can be specifically detrimental to exploration. The negative effects of faultlines regarding exploration suggest that medium family TMT involvement (TMTs consisting of approximately balanced factions of family and nonfamily members) can be even less favorable for exploration than high family TMT involvement (TMTs consisting predominantly of risk-averse family members). Consequently, even though low family TMT involvement might still be superior with regard to exploration than high family TMT involvement, medium family TMT involvement could constitute the most adverse TMT configuration for exploration. Hence, I put forward the alternative hypothesis:

H1b: There is a U-shaped relationship between family TMT involvement and exploration.

Family TMT members and exploitation

Arguments drawn from the agency perspective that motivate a lower focus on exploration of family TMT members as compared to nonfamily TMT members can conversely explain the positive influence of higher family TMT involvement on exploitation.

Exploitation activities targeting at the improvement or refinement of existing products or services or the reduction of costs in providing such products and services can sustain the firm's competitiveness while exposing it to a comparably low level of business risk because these activities are usually well understood by the firm (Christensen & Bower, 1996). Engagement in exploitation can thus help family managers to avoid failure and protect their investments (Hiebl et al., 2015; Jaskiewicz et al., 2013). A key goal of many family firms is the transition of the firm to the next generation (Zellweger et al., 2012). A transition to the next generation presupposes the survival of the family firm. Consequently, to ensure a successful transition, family TMT members might act conservatively according to the proverb "a bird in the hand is worth two in the bush" and thus avoid downside risks by focusing rather on exploitation, i.e., refinement of existing opportunities, than on radical exploration, i.e., development of new opportunities. A higher share of family TMT involvement can hence reinforce this focus on exploitation.

Furthermore, a focus on exploitation is intuitive for family TMT members for two key reasons: parsimony and scrutiny (Carney, 2005). Family TMT members are incentivized to focus on efficiency by closely monitoring costs and resource consumption, because they deal with the family's own money (Chrisman et al., 2005b). Hence family TMT members can be expected to behave prudently with available funds (De Massis et al., 2015a). The family firm provides family TMT members with employment but at the same time frequently represents a significant share of their economic endowment. As a result, family TMT members might be particularly incentivized to protect their dual livelihoods by focusing on exploitation strategies. Also, family TMT members scrutinize business opportunities more closely and tend to focus on related business areas when it comes to acquisitions in order to avoid unforeseeable business risks (Anderson & Reeb, 2003). Moreover, family TMT members frequently intend to enhance the reputation of the firm and family by continuing its legacy and hence focus on investing in the firm's core business rather than diversifying into unrelated business areas (Patel & Chrisman, 2014). These motives can be enhanced when a large faction of the TMT consists of family members.

As outlined above, family TMT members have high levels of managerial discretion, because they combine ownership and management. Family managers are not only motivated but are also in a dominant position to monitor operations, costs and resource consumption and take swift action if required (Gedajlovic, Lubatkin, & Schulze, 2004). This is specifically the case

when opposition from nonfamily TMT members to underlying family TMT members' goals and motives that foster exploitation is marginal or nonexistent.

Nonfamily TMT members and exploitation

Similarly, nonfamily TMT members are often incentivized to focus on exploitation. Nonfamily TMT members' role as agents employed by family owners, and their respective incentive schemes, often encourage a short-term focus on financial performance (Dyer, 1989; Hall & Nordqvist, 2008). Nonfamily TMT members' bonuses are frequently tied to target agreements that include year-end business results. In this regard, short-term exploitation measures are more favorable to achieving target results than exploration measures that often yield profits only in the long-term. In addition, nonfamily TMT members strive for strong short-term results to demonstrate their management skills both to their employers and to the outside market (Block, 2011). In this regard, nonfamily TMT members frequently are highly motivated to act rationally and efficiently as they have to gain their status as compared to family TMT members who (more or less) inherit their status (Chandler, 1990; Hall & Nordqvist, 2008). These motives for engaging in exploitation are critical for nonfamily TMT members both to ensure and to justify their employment in the family firm and to protect their "market value" as managers for other potential employers. Contrarily, for family TMT members, these motives hardly play any important role, as their employment rarely depends on short-term results and their interest in external employment is seldom pronounced. Hence, exploitation driven by consideration of year-end results might be especially strong when the TMT consists largely of nonfamily managers.

Nonfamily TMT members are comparatively quick to counteract poor profitability with efficiency measures, such as cost-cutting or restructuring (Block, 2010). Also, nonfamily TMT members are frequently equipped with formal training and management techniques gained from a broad range of external professional experiences (Block, 2011; Dyer, 1989). These skills facilitate nonfamily TMT members' approach to short-term improvement and efficiency measures (also by quickly drawing on outside assistance, e.g., management consultants, or cutting R&D investments that are not vital for current operations) and hence exploitation (Lussier & Sonfield, 2004; Sonfield & Lussier, 2009). Such measures could be easier to develop and enforce in TMTs that consist largely of nonfamily members.

Finally, nonfamily TMT members might prefer to focus on business decisions that yield results within the tenure of their own appointment, as they frequently neither benefit financially

from decisions beyond their own appointment, nor enjoy emotional benefits of watching the firm prosper and grow as a result of their decisions to the extent that family managers do even after retiring from operational business (e.g., Jaskiewicz, Lutz, & Godwin, 2015b). Hence, a higher share of nonfamily TMT members could foster a focus on exploitation measures that yield results within a shorter period of time.

Medium family TMT involvement and exploitation

The arguments above provide reasons that family and nonfamily TMT members both are inclined to engage in exploitation. This could imply that the level of exploitation is stable across varying levels of family TMT involvement. It could also imply that medium family TMT involvement is particularly beneficial for exploitation as family and nonfamily TMT members' focus on exploitation can create synergies which can be leveraged. Again, in this regard, a behavioral and group dynamic perspective can provide additional insights into TMT dynamics, day-to-day interactions between family and nonfamily managers and resulting effects on exploitation.

As outlined above, latent faultlines exist in family TMTs between family and nonfamily managers. I hypothesize that – as with exploration – this faultline becomes a particular problem when the TMT deals with exploitation, but for somewhat different reasons than those related to exploration. When the TMT deals with exploration, the faultline between family and nonfamily TMT members comes to the fore and exerts a negative effect because family and nonfamily TMT members have differing inclinations to engage in exploration and family managers turn down nonfamily managers' exploration projects based on family-related goals, which is opaque and demotivating for nonfamily TMT members. Conversely, when the TMT deals with exploitation, family and nonfamily TMT members frequently both have the inclination to foster exploitation. However, family and nonfamily TMT members can have significantly dissimilar underlying goals for engaging in exploitation and hence tend to follow their own approach with differing concepts regarding implementation, leading to relation-oriented differences. Specifically, family TMT members focus on scrutiny and parsimony and thus closely monitor current operations and ensure cost control, efficiency and frugal resource consumption (Carney, 2005; Kotlar, De Massis, Fang, & Frattini, 2014). Still, in keeping with the firm's long-term orientation, family TMT members refrain from cutting investments focused on ensuring future competitiveness and long-term survival (Block, 2011). Moreover, driven by emotional attachment to existing assets, family TMT members are reluctant to divest core or traditional business units (Miller & Le Breton-Miller, 2005). Also, family TMT members

are reluctant to counteract poor performance with downsizing because of their identification with the firm and its employees and their fear of causing harm to the family's reputation (Block, 2010). Finally, family members' extensive experience with the family firms' operations can lead to obstinacy and neglect with regard to nonfamily TMT members' input: "We've always done it this way – why should we change?"

Nonfamily TMT members, on the other hand, frequently go in other directions regarding exploitation, including downsizing, divesting unprofitable business units regardless of legacy considerations, and cutting investments that are not vital for current operations (Block, 2011; Dyer, 1989; Lussier & Sonfield, 2004; Sonfield & Lussier, 2009). Nonfamily TMT members frequently aim to achieve efficiency gains through acquisitions and diversification, which can have the negative side effect of empire building (Morck et al., 1988). Family TMT members' reluctance to engage in such standard measures of efficiency improvement and their altogether different approach to exploitation, which is based on their underlying family-oriented goals, can be counterintuitive and incomprehensible to nonfamily managers. Thus, conflicting basic ideas between family and nonfamily managers impede a clear strategic approach to exploitation.

All of these points can show differences between the family and nonfamily managers, give rise to faultlines and schisms between the two subgroups, and accordingly provoke the aforementioned negative effects, while eliminating potential synergistic effects regarding exploitation (Chrobot-Mason et al., 2009). Parallel to the argumentation regarding exploration, I argue that faultlines between family and nonfamily TMT members unfold their full damaging potential when the two subgroups are relatively balanced. Efficient exploitation strategies require discipline, clear targets and a transparent alignment of structure, authority and accountability (Lavie et al., 2010). However, different goals and resulting dissimilar approaches of family and nonfamily TMT members regarding exploitation can ignite conflicts and disruptions in the TMT, resulting in blockades, confusion, and fragmentation of authority and accountability. Faultlines at medium levels of family TMT involvement cannot only eliminate synergies between family and nonfamily managers but also diminish the TMTs willingness and ability to engage in exploitation altogether. Consequently, regarding exploitation, medium levels of family TMT involvement can be inferior to lower and higher levels of family TMT involvement. Hence, I hypothesize:

H2: There is a U-shaped relationship between family TMT involvement and exploitation.

2.3.2. The role of CEO family-centered noneconomic (FCNE) goals

Extant applications of agency theory generally concentrate on economic goals driving behaviors and decisions of managers and firms, thereby ignoring potential noneconomic goals (Chrisman et al., 2005a). Noneconomic goals, however, represent a decisive factor when analyzing family firm behavior (Gedajlovic et al., 2012a). Moreover, scholars in the field argue that different agency-based predictions regarding family firms, focusing either on agency advantages based on the notion of owner-manager-unity or on increased agency costs caused by altruism, nepotism and entrenchment call for a more detailed analysis and the inclusion of potential moderators (Kammerlander & Ganter, 2015; O'Boyle et al., 2012). To account for this complexity, I include family-centered noneconomic goals in this thesis.

Generally, managers' goals are a significant driver of firm behavior, strategy and performance (Astrachan & Jaskiewicz, 2008; Cyert & March, 1963; Hofer & Schendel, 1978). These goals can be economic as well as noneconomic in nature (Anderson & Reeb, 2003; Chrisman et al., 2005a; Fama & Jensen, 1983; Gomez-Mejia et al., 2001; Shepherd, Patzelt, & Baron, 2013b). Managers' noneconomic goals are likely to be a product of their "values, attitudes and intentions" (Chrisman et al., 2012, p. 268). The pivotal role of the family in the dominant coalition of family firms (Chua et al., 1999) suggests that the family plays an important role in determining the noneconomic goals of family firms (Chrisman et al., 2012). In this regard, De Massis et al. (2015a) refer to family managers' authority to depart from a focus on efficiency and firm value maximization as "particularism." Scholars in the field have proposed that family firms' focus on noneconomic goals constitutes an important aspect of family firm essence and can be a differentiating factor between family and nonfamily firms and also between different family firms in terms of strength and extent (Chrisman et al., 2012; Chrisman et al., 2005a; Gomez-Mejia et al., 2007; Kammerlander & Ganter, 2015; Sharma, 2004). Family firms' noneconomic goals, such as a focus on socioemotional wealth, have been shown to affect family firm behavior in various dimensions. For example, Berrone et al. (2010) find that socioemotional wealth considerations influence environmental performance of family firms. Kammerlander and Ganter (2015) and König et al. (2013) suggest that noneconomic goals comprise varying effects on family firm behavior, depending on their nature. For example, noneconomic goals focusing on emotions and affect can lead to inertia in family firms. Conversely, Kim and Gao (2013) find that family firms' focus on longevity goals positively moderates the relationship between family management involvement and performance. Furthermore, Chrisman and Patel (2012) and De Massis et al. (2013) show that family firms' focus on

the preservation of socioemotional wealth can lead to risk aversion and decreased focus on R&D spending and innovation. In this regard, Patel and Chrisman (2014) find that when performance is above aspiration levels, family firms focus on exploitative R&D investments, but focus on exploratory R&D investments when performance is below aspiration levels.

Despite the importance of family firms' noneconomic goals apparent in the literature, scholars mostly do not explicitly measure the nature and extent of these goals. Rather, family firms' noneconomic goals are frequently used to explain observed differences in family firm behavior and performance, without actually operationalizing and measuring them, thereby also neglecting differences regarding noneconomic goals between different family firms (Kammerlander & Ganter, 2015). Family firms' noneconomic goals reflect the interests of the owning family and as owning families can be diverse, noneconomic goals can vary in nature as well as in strength (Kammerlander & Ganter, 2015). In this regard, noneconomic goals that are exclusively related to family members in nature and simultaneously pronounced in family managers' decision-making can have a strongly "particularistic" effect (De Massis et al., 2015a). Taking into account research on noneconomic goals in family firms, Chrisman et al. (2012) identify three specific *family-centered noneconomic (FCNE) goals* that have the "potential to differentiate family and nonfamily firms plus explain variations among family firms" (p. 271): *family harmony, family status and family identity*.

Family harmony goals can be described as aiming for harmonious, conflict free and conciliatory relations within and beyond the family (Chrisman et al., 2012). In fact, family managers frequently strive to achieve close and enduring ties within the family and beyond and are reluctant to put them at risk (Miller & Le Breton-Miller, 2005). Consequently, family managers often aim to find the least common denominator with other family members in making strategic decisions or human resource placements (Kellermanns & Eddleston, 2004) and are hesitant to make business decisions that can adversely affect another family member, for instance closing down a business unit that is managed by a family member – sometimes even when this business unit is in deficit. In this way, family harmony goals can stand in direct contrast with economic interests.

Family managers' decisions are also frequently influenced by striving for family status (Chrisman et al., 2012). Control and power over a firm can contribute to family status in various ways – by providing employment, achieving economic success or contributing to the community on the local level and beyond. Maintaining family control and power over the firm and its strategic decisions thus constitutes a key goal of family managers (Carney, 2005). This

also leads to the intention to pass on the family firm to the next generation (Zellweger et al., 2012). Further, the external image of the firm frequently plays an important role, because family managers typically identify with the family firm and feel that the firm's reputation reflects on the family's status (Micelotta & Raynard, 2011). This can lead to an adoption of goals that are not directly related to economic means but can nevertheless lead to a more positive firm image. In this context, Berrone et al. (2010) find that family firms' environmental performance is consistently higher than nonfamily firms' environmental performance.

The term "family firm" already implies a link between the identity of the family and the firm (Chrisman et al., 2012), and family managers frequently aim to maintain this link. The family firm constitutes a common basis for family managers and other family members through its history and its values but also its core business and its products (Astrachan et al., 2002; Tagiuri & Davis, 1996; Zellweger & Astrachan, 2008). Consequently, family managers are reluctant to divest traditional business units or discontinue products that symbolize an aspect of the firm that is close to the family's identity. The identity link is further manifested through an overlap of values between the family and the firm (Astrachan et al., 2002; Carlock & Ward, 2001). In fact, the identity link through value overlap is frequently considered to be a constitutive element of family firms. Lea (1998) states that:

> *[a] business is a family business when it is an enterprise growing out of the family's needs, built on the family's abilities, worked by its hands and minds, and guided by its moral and spiritual values; when it is sustained by the family's commitment, and passed down to its sons and daughters as a legacy as precious as the family's name (p. 1).*

Transgenerational intent thus also entails the perspective that family managers aim to ensure that family values continue to permeate the family firm in the future (Berrone et al., 2012).

Summing up, when family managers' decisions are influenced by FCNE goals – family harmony, family status and family identity – decision outcomes can be distinctly different from decisions made on the basis of pure economic grounds (Gomez-Mejia et al., 2001).

Upper echelons tenets propose that CEO characteristics play an important role in firm behavior in general (Hambrick & Mason, 1984) and in strategic decisions such as exploration and exploitation in particular (e.g., Gerstner, König, Enders, & Hambrick, 2013). The influence of CEOs varies and depends among other factors on authority structures and hierarchy levels (Kammerlander et al., 2015). For example, in small and medium enterprises which are characterized by largely unchallenged CEO authority and low hierarchy levels, the influence of the

CEO can be particularly strong (Lubatkin, 2006). The same is frequently true for family CEOs in family firms, as their power is based both on their formal position as CEO and their family affiliation, which makes their authority especially distinct with regard to nonfamily TMT members (Kraiczy et al., 2015b; Minichilli et al., 2010). This makes family CEO characteristics particularly insightful for upper echelon scholars.

The dual role of family CEOs has triggered research particularly on potential performance differences between family and nonfamily CEOs. However, as outlined above, studies have yielded mixed results (Anderson & Reeb, 2003; Bennedsen et al., 2006; Minichilli et al., 2010; Villalonga & Amit, 2006). Consequently, scholars have increasingly shifted toward a more detailed approach to the drivers of family CEOs' strategic decisions and performance. In this context, upper echelon scholars focus increasingly on underlying goals and motivations instead of demographic characteristics such as age or professional experience (Carpenter et al., 2004). Due to their dual role as family owners and managers, family CEOs' goals and motivations offer particularly interesting grounds for upper echelon scholars trying to discern direct effects on strategic decision-making as well as interaction effects on TMT dynamics (Kraiczy et al., 2015b; Miller et al., 2014; Minichilli et al., 2010).

In the following, I draw the connection between the importance of FCNE goals and the central role of family CEOs and investigate how FCNE goals of family CEOs affect exploration and exploitation and moderate the relationship between family TMT involvement and the two activities.

CEO FCNE goals and exploration

CEO FCNE goals comprise aspects that could potentially benefit and foster exploration in family firms. The main aspect in this regard is long-term orientation and transgenerational intent with the purpose of preserving long-term family ownership and the family's status and identity (Zellweger et al., 2012). By including the next generation, family CEOs can extend the time horizon of their business decisions significantly beyond their own appointment, which would be rather uncommon for nonfamily managers. This intention to maintain family ownership and pass on a legacy can result in a strategic long-term perspective, which enables and requires family CEOs to pursue more innovative and creative strategies in order to focus on new opportunities and long-term competitiveness (Hiebl et al., 2015; Le Breton-Miller et al., 2011). Focus on power and control, which is an elementary aspect of family status, can lead to a timely recognition of market demands which could support exploration activities

(Kammerlander & Ganter, 2015). Moreover, family CEOs who work towards preserving family influence on the firm also tend to provide "patient capital" over long periods of time without the threat of withdrawal in case of short-term deprivation (Sirmon & Hitt, 2003). This can further foster the engagement in long-term exploration projects.

Conversely, FCNE goals may comprise many restrictive aspects regarding exploration. Family CEOs tend to avoid decisions that could potentially harm their family status. Large scale exploration projects might require entering into partnerships, perhaps even as junior partner, in order to tap into new markets or customer segments. This could imply a partial loss of control. At the same time, the risk involved in exploration projects could endanger the (independent) existence of the family firm altogether. Hence family CEOs might be reluctant to engage in such projects that could endanger the family's status as independent business owning family (Gomez-Mejia et al., 2011).

Moreover, the orientation towards status and reputation can imply a certain path-dependence that is reinforced by the success of past generations and results in fear of failure which prevents family CEOs from radical renewal (Hiebl et al., 2015; König et al., 2013). More specifically, family CEOs might be very reluctant to run the risk of destroying capital or other resources that have been accumulated by previous generations and hence prefer to continue business as usual. As a result, family CEOs with strong FCNE goals might refrain from exploration projects that deviate from the beaten path.

Furthermore, CEO FCNE goals imply an emotional attachment to the firm, which family members frequently consider as an proprietary extension of the family and which includes established and traditional business units or products (Gomez-Mejia et al., 2007; Sharma & Irving, 2005; Zellweger & Astrachan, 2008). CEOs might hesitate to engage in explorative projects that threaten the family firm-identity linkage and break with long-standing firm traditions (Berrone et al., 2010).

Finally, preserving family harmony is a central aspect of family CEOs' FCNE goals. Just like family CEOs, other owning family members are frequently characterized by risk aversion and emotional attachment to the family firm. Exploration activities, comprising higher risk levels and potential disconnections from traditional core business, can lead to dissent within the owning family. Family CEOs aim to avoid dissent in favor of maintaining family harmony and thus could refrain from exploration (Colombo, De Massis, Piva, Rossi-Lamastra, & Wright, 2014; Duh, Belak, & Milfelner, 2010; Kidwell et al., 2012).

Overall, I argue that risk aversion and myopic concentration on family harmony, status and identity outweigh potentially positive long-term considerations and result in an aversion to risky and radical new projects and consequently in reluctance and lower resource allocations regarding exploration activities. I hypothesize:

H3: There is a negative relationship between CEO FCNE goals and exploration.

CEO FCNE goals and exploitation

Similarly, some aspects of CEO FCNE goals potentially benefit exploitation. Exploitation activities such as incremental improvements, cost and efficiency controls, and frugal resource consumption correspond to the goal of preserving family status, control and identity (Carney, 2005; Miller & Le Breton-Miller, 2005). Additionally, family CEOs intending to enhance the reputation of the firm and family by continuing the legacy tend to focus on investing in the firm's core business and improving its current operations (Patel & Chrisman, 2014). This is also likely to promote harmony within the owning family.

There are, though, several aspects of CEO FCNE goals that can have detrimental effects on a rigorous exploitation approach. Efficient exploitation strategies require discipline and clear targets (Lavie et al., 2010). Family CEOs might be reluctant to enforce discipline and the achievement of targets against other family members. In particular, family CEOs' intention to preserve family harmony could lead to refraining from reprimanding family members when they fail to adhere to targets. The emphasis on family harmony could thus expose the family firm to additional agency costs in the form of free-riding and shirking of family members (Hiebl et al., 2015; Levie & Lerner, 2009; O'Boyle et al., 2012).

Furthermore, excessive focus on family status and family identity can result in family CEOs' refraining from unpopular but necessary efficiency decisions, such as laying off employees or closing down traditional business units (Block, 2010). In extreme cases, family CEOs might even be afraid that news about organizational efficiency measures could reflect badly on the family firms' reputation as financially sound business and thus impair the family's status as successful family entrepreneurs.

Most importantly, however, CEO FCNE goals can lead to an overall fragmentary approach to exploitation characterized by exceptions and arbitrariness. Family CEOs might exempt products, employees, and entire business units that contribute to family harmony, status or identity from adjustments, improvements, and efficiency measures. For example, family CEOs might

divert resources from more successful business units to support the status quo of underperforming units instead of taking on potentially painful measures to improve products and services and increase provision efficiency (Friedman, Johnson, & Mitton, 2003; Gedajlovic et al., 2012a). The existence of "sacred cows" can be a precedent that leads to arbitrariness and uncertainty. Family CEOs might find it difficult to convince employees of the serious nature of their exploitation measures if their FCNE goals lead them to make exceptions elsewhere.

Overall, I argue that even though CEO FCNE goals might have partially positive effects on exploitation in that they encourage scrutiny and parsimony, the noneconomic nature of CEO FCNE goals leads to an overall inefficient approach to exploitation characterized by imbalance and exceptions, which overshadows positive aspects. Hence, I hypothesize:

H4: There is a negative relationship between CEO FCNE goals and exploitation.

The moderating effect of CEO FCNE goals

As outlined in chapter 2.3.1, family and nonfamily TMT members both have more or less pronounced inclinations to foster exploration and exploitation. I argue that faultlines between family and nonfamily TMT members can have detrimental effects in this regard, and I further suggest that faultlines occur specifically because family TMT members show characteristics that relate to the family, such as myopic risk aversion about exploration and inefficient particularism about exploitation. These family-related goals can lead to relation-oriented disruptions and schisms within the TMT, particularly when the TMT consists of significant factions of family as well as nonfamily members. Consequently, I hypothesize a U-shaped relationship between family TMT involvement and exploration and exploitation.

In the sections above, I further argue that CEO FCNE goals have mostly negative effects on exploration and exploitation because of family CEOs' increased risk aversion as well as a myopic and inefficient emphasis on family harmony, status and identity. Beyond direct effects of CEO and TMT characteristics, the consideration of CEO-TMT interactions can contribute to understanding the behavior of the upper echelons (Arendt et al., 2005; Cao et al., 2010). CEOs' power often goes beyond formal decision power and comprises a great deal of direct and indirect means of influence (Ling et al., 2008). In this context, CEOs can be expected to have a particularly high influence on those with whom they work directly and on a day-to-day basis – usually the members of the TMT (Zaccaro & Klimoski, 2002). Consequently, I focus on the effect of family CEOs' FCNE goals on the relationship between family TMTs and exploration and exploitation in the following. I argue that CEO FCNE goals unfold a particular-

ly detrimental effect on family firm TMTs that consist of family as well as nonfamily members due to FCNE goals' excluding effect on nonfamily TMT members and their particularistic deviation from principles of merit.

First, CEO FCNE goals can lead to widening the gap between family and nonfamily TMT members. Li and Hambrick (2005) define managerial subgroups as "groups in which members are representatives, or delegates, from a small number of (often just two) social entities and are aware of, and find salience in, their delegate status" (p. 794). Family CEOs frequently do not represent a superordinate, neutral institution, balancing family and nonfamily TMT members. Rather, they tend to be (leading) delegates of the family subgroup and behave accordingly (Minichilli et al., 2010), even more, if they consider FCNE goals as important factors in their decisions.

By definition, FCNE goals are confined to family members (Chrisman et al., 2012). Family CEOs with high FCNE goals are likely to aim for harmonious relationships with other family members, especially other family TMT members, whom they work with on a day-to-day basis. In addition, such CEOs tend to prioritize family status and identity linkages between the family and the firm above all. The endorsement of FCNE goals can lead to the constitution of an ingroup of family TMT members that share these goals and thus distance themselves from nonfamily TMT members.

Furthermore, CEO FCNE goals can lead to overreliance on family TMT members (Liu, Eubanks, & Chater, 2015), while simultaneously creating an environment that allows family TMT members to free-ride and shirk (Chrisman et al., 2004; Schulze et al., 2003a; Schulze et al., 2001). Both implications promote inequality in the TMT and frustrate nonfamily TMT members (Chua et al., 2012). Hence CEO FCNE goals can reinforce relation-oriented differences between family and nonfamily TMT members (Chrobot-Mason et al., 2009; Williams & O'Reilly, 1998). FCNE goals are largely emotional and value-based rather than rational and thus often beyond argument. Even if nonfamily managers understand that family CEOs frequently act to preserve and increase family harmony, status and identity, this understanding might not help to align the two subgroups. Challenging FCNE goals might instead lead to widening the gap between family and nonfamily managers, because relation-oriented conflicts can rigidify schisms between the two subgroups (Simons & Peterson, 2000).

Second, CEO FCNE goals can promote behaviors that deviate from principles of merit and favor family TMT members over nonfamily TMT members. Family CEOs could prefer to

support exploration and exploitation projects of family TMT members that are likely to correspond to family CEOs' preferences and consider family-related idiosyncrasies. At the same time, based on family harmony considerations, family CEOs might refrain from calling to account family TMT members with the same consequence as nonfamily TMT members if they fail to comply with the plan.

Moreover, CEOs with strong FCNE goals would usually prefer to promote family members to the TMT because it enhances family status and reinforces the identity link between the family and the firm. Ceding control and decision power to unfavored nonfamily TMT members thus frequently comes along with higher performance expectations for nonfamily TMT members as compared to family TMT members to make up for unfulfilled FCNE goals (Chrisman et al., 2014b). As a result, nonfamily TMT members are likely to fall short of performance expectations which in turn has a frustrating effect on family CEOs and nonfamily TMT members and results in a de facto asymmetric treatment of family and nonfamily TMT members. This can be detrimental to "fostering reliability in family business functioning" (Verbeke & Kano, 2012, p. 1183). Strong FCNE goals can thus lead family CEOs to deviate from principles of merit which can expose family firms to additional agency costs in the form of self-control issues (Schulze et al., 2003a). This can corrupt TMT alignment, mutual trust and joint leadership.

The divisive and damaging effects of CEO FCNE goals can emerge specifically when dealing with exploration and exploitation because these goals can promote an augmented focus on particularistic objectives and inefficient strategic decisions. CEO FCNE goals can highlight differing inclinations of family and nonfamily TMT members regarding exploration and can lead to rejections of nonfamily TMT members' ideas and approaches as described above. It is also CEO FCNE goals that can cause the aforementioned incompatible differences regarding family and nonfamily TMT members' approaches towards exploitation. Hence CEO FCNE goals exemplify the differences between family TMT and nonfamily TMT members. This gives reason to assume that strong CEO FCNE goals reinforce faultlines and cause distortions and schisms between family and nonfamily TMT members. At the same time, faultlines between family and nonfamily TMT members are particularly detrimental to exploration and exploitation as these activities require high levels of managerial alignment, discipline and trust in the TMT (Lavie et al., 2010).

Conversely, when FCNE goals are less pronounced in CEOs' decisions the excluding and differential effect on nonfamily TMT members is reduced, and approaches to exploration and

exploitation as well as TMT dynamics are based on rational economic and competitive grounds and thus more compatible. Consequently, the TMT can act jointly, preserve unity of command and maintain authority and accountability structures resulting in more clear-cut approaches to exploration and exploitation. I thus hypothesize:

H5: The U-shaped relationship between family TMT involvement and exploration diminishes when CEO FCNE goals are weaker.

H6: The U-shaped relationship between family TMT involvement and exploitation diminishes when CEO FCNE goals are weaker.

2.3.3. The role of CEO prosocial motivation

I now shift my focus to the broader concept of CEOs' motivation as a potential influencer of exploration and exploitation and moderator of the relationship between family TMT involvement and exploration and exploitation. The consideration of motivational aspects – and particularly prosocial motivational aspects – represents another complement to my upper echelon and agency-based theoretical approach. I here respond to the call of critics who argue that the economic model of man in family firm research as represented by classical agency tenets fails to comprise the complexity of managers and their decisions and specifically neglects intrinsic motivation, fairness considerations and prosocial intentions (Block, 2011; Corbetta & Salvato, 2004).

Motivation is an abstract concept that has been applied and discussed in various contexts with a multitude of definitions. In this thesis, I refer specifically to work motivation, which Pinder (2014) defines as *"a set of energetic forces that originate both within as well as beyond an individual's being, to initiate work-related behavior, and determine its form, direction, intensity and duration"* (p. 11). As such, work motivation can be subdivided into extrinsic and intrinsic motivational forces – an intuitive distinction that was already applied in early research on motivation (e.g., Herzberg, Mausner, & Snyderman, 1967). Extrinsic motivation can be described as "the motivation to work primarily in response to something apart from the work itself" (Amabile, Hill, Hennessey, & Tighe, 1994, p. 950). This could be financial and non-financial rewards, recognition and praise, or expectations, directions and dictates of other people. Conversely, intrinsic motivation is defined as "the motivation to engage in work primarily for its own sake" (Amabile et al., 1994, p. 950). Intrinsically motivated people work because they enjoy the work itself, find their work engaging or in some other way enjoyable and satisfying (Grant, 2008).

An important motivational aspect of family firm research is prosocial motivation (Berrone et al., 2012; Miller & Le Breton-Miller, 2005). Prosocial motivation can be defined as *"the desire to expend effort based on a concern for helping or contributing to other people"* (Grant & Berry, 2011, p. 77). Prosocial motivation is not stimulated by factors that are work-inherent; hence it constitutes an extrinsic motivational factor. As such, prosocial motivation differs significantly from more self-focused, intrinsic motivation. Grant (2008) lists three distinctive features of prosocial motivation. The first is self-regulation: effort is less driven by interest in the work itself than by a conscious individual decision, self-regulation and self-control (Gagné & Deci, 2005). Whereas intrinsic motivation is fully autonomous, prosocial motivation is targeted at protecting self-esteem and fulfilling other-oriented core values (Grant & Berry, 2011; Ryan & Deci, 2000). The second feature is goal directedness: prosocial motivation aims at outcomes such as meaning and purpose for others, the community, or society as drivers of effort (Grant, 2008; Ryan & Connell, 1989). In this regard, work is not a value in itself but rather a means to a desired end (Grant & Berry, 2011). This is closely connected to the third feature: temporal focus. Prosocial motivation entails future-orientation in the sense that motivation is driven by an eventual meaningful outcome which is a result of current business affairs (Batson & Powell, 2003; Grant & Berry, 2011).

Prosocial motivation is a central element of many family firm related constructs and research streams. Evolutionary theory argues that the "familial advantage" has a prosocial nature that benefitted early hunting and gathering familial communities and is still visible in today's performance-relevant family firm advantages (O'Boyle et al., 2012). An example could be "family social capital" – the accumulation of reciprocal assistance and obligations within and beyond the family (Arregle et al., 2007; Gedajlovic, Honig, Moore, Payne, & Wright, 2013; Salvato & Melin, 2008). Family social capital can facilitate access to resources, know-how and financing and hence benefits strategy implementation and performance (Chua et al., 2011).

Further, socioemotional wealth has been described as a prosocial stimulus (Cruz et al., 2010; Kellermanns, Eddleston, & Zellweger, 2012). Prosocial aspects such as binding social ties with family and nonfamily members and the provision of a long-term perspective as well as securing the long-term well-being of stakeholders play an important role in preserving and enhancing socioemotional wealth in family firms (Berrone et al., 2012).

Finally, and most importantly, prosocial motivation is a central element of family firm research on altruism, a theoretical construct that can explain multiple prosocial behaviors in

family firms and illustrate differences between family and nonfamily firms as well as differences between different types of family firms (e.g., Karra et al., 2006; Schulze et al., 2002; Schulze et al., 2003a; Schulze et al., 2001).

Before giving a short overview of altruism in family firms, a conceptual clarification is necessary to ensure the understanding of the different meanings of prosocial motivation and altruism. Conceptualizations of prosocial motivation and altruism differ among different schools of thought – specifically when comparing the conceptualization of scholars of motivational psychology with the conceptualization of economists.

From a psychological point of view, Grant and Berry (2011) maintain that "prosocial motivation can involve, but should not necessarily be equated with, altruism" (p. 77): This understanding describes prosocial motivation as the concern of individuals for others but not necessarily at the expense of abandoning one's own interests for this purpose (De Dreu, 2006; De Dreu & Nauta, 2009). Hence, altruism, along with egoism, principlism, and collectivism, represents a goal on which prosocial motivation is based (Batson, 1994; Batson, 1995; Batson & Powell, 2003). Grant and Berg (2011) describe the four goals of prosocial motivation in the following way:

> *Prosocial motivation serves altruistic goals when it protects or promotes the well-being of other individuals without the intention of personal benefit. It serves egoistic goals when it increases positive affect, reduces negative affect, boosts self-esteem, provides material rewards, or prevents material punishments. It serves principlistic goals when it advances a moral value or ethical cause. And it serves collectivistic goals when it defends or strengthens one's bond with a group (pp. 33–34).*

Economists generally model altruism as a utility function that positively connects individual welfare with the welfare of others (Bergstrom, 1989). Hence, economists argue that altruism is "powerful and self-reinforcing because efforts to maximize one's own utility allow the individual to simultaneously satisfy both altruistic (other-regarding) and egoistic (self-regarding) preferences" (Schulze et al., 2003a, p. 475). Linking individual welfare with the welfare of others implies multiple potential underlying goals – like the goals described by Grant and Berg (2011). Individuals could, for instance, behave altruistically because they genuinely wish to benefit others, because it increases their own wellbeing or because such behavior corresponds to higher order expectations or standards of themselves or of a group.

Consequently, the economic understanding of altruism is largely congruent with the psychological understanding of prosocial motivation. Family firm research regarding altruism has followed the economic understanding and can hence be put on a level with the psychological understanding of prosocial motivation (Siebels & zu Knyphausen-Aufseß, 2012). However, in family firm research, the concept is frequently confined to "parental altruism," where the parents' welfare is linked to the welfare of their children (Lubatkin et al., 2005; Stark, 1995). Hence, in the following brief overview of research on altruism in family firms, I explicitly use the term "altruism." In the subsequent derivation of the direct and moderating effects of the construct within this specific thesis, I again use the term "prosocial motivation" – as the psychological terminology corresponds to my wider theoretical context of this construct.

In principle, altruism can exist in any organizational form; however, altruism has been found to be higher in family firms than in nonfamily firms (Ling, Lubatkin, & Schulze, 2002; Schulze et al., 2001). In this context, altruism can have a significant effect on family firm behavior and performance (Kellermanns & Eddleston, 2004). Schulze et al. (2003a) propose that "agency relationships in family firms are distinctive because they are embedded in the parent–child relationships found in the household, and so are characterized by altruism" (p. 473).

Altruism has both "bright sides" and "dark sides" (Schulze et al., 2003a). Reciprocal altruism, where the welfare of each family member is connected with the welfare of other family members, can facilitate communication and decision-making (Eddleston & Kellermanns, 2007; Gersick, 1997), loyalty and commitment (Ward, 2011) and mitigate selfishness and self-interest (Kellermanns & Eddleston, 2004). In this regard, altruism can be a source of competitive advantage (Carney, 2005). Conversely, altruism – especially CEO altruism – can lead to decisions based on favoritism as well as free-riding and shirking of other family and nonfamily members (Chua, Chrisman, & Bergiel, 2009; Schulze et al., 2003a). As a result, family firms are exposed to higher levels of agency costs (Schulze et al., 2003a; Schulze et al., 2001). The pessimistic focus on the dark side as proposed by Schulze et al. (2001) and Schulze et al. (2003a) has been criticized as being not nuanced enough to take into consideration the fact that many family firms indeed exhibit successful long-term performance (Siebels & zu Knyphausen-Aufseß, 2012). All of the above point show that different applications of parental altruism (particularly relating to the family CEO) yield mixed results in family firm research.

In general, prosocial motivation has been connected with positive effects on commitment, corporate citizenship, and creativity but also with negative effects such as nepotism towards favorites or an excessive focus on positive affect and maintaining pleasant relationships (Bat-

son, Klein, Highberger, & Shaw, 1995; Grant, 2007; Grant & Berg, 2011). The ambivalent results thus predestine CEO prosocial motivation as a contingency factor of family firms' focus on exploration and exploitation (Schulze et al., 2003a; Siebels & zu Knyphausen-Aufseß, 2012). In the following, I take into consideration both "bright" and "dark" sides (Grant & Berg, 2011; Schulze et al., 2003a) to describe the hypothesized direct effect of CEO prosocial motivation on exploration and exploitation as well as how CEO prosocial motivation influences the relationship between family TMT involvement and exploration and exploitation.

CEO prosocial motivation and exploration

CEO prosocial motivation has various aspects that have the potential to benefit and foster exploration in family firms. The main aspect is its encouraging and motivating effect on managers, employees and organizational culture. Prosocially motivated family CEOs frequently engage in supportive and contributive behavior and place particular emphasis on employees' well-being (Miller & Le Breton-Miller, 2005). This increases citizenship behavior among managers and employees (Harrison, Newman, & Roth, 2006; Powell, Madison, Kellermanns, & Eddleston, 2014) and strengthens a sense of community within the firm (Miller & Le Breton-Miller, 2005), which in turn leads to higher commitment to decisions made at senior management levels (Grant, 2008). Exploration is a highly complex strategy (Alexiev et al., 2010) and requires a supportive frame to both challenge and encourage employees to participate in this task (Halevi et al., 2015; Lavie et al., 2010). In this regard, prosocially motivated CEOs might be likely to create a supportive organizational environment that fosters exploration.

Higher levels of commitment within the firm based on CEOs' prosocial motivation can lead to an increase of creativity (Grant & Berry, 2011). Prosocially motivated CEOs provide employees both with freedom from constraints and with challenges and base their decisions on values of benevolence and benefitting others (Grant, 2008). This can support employees' creativity by encouraging a sense of perspective and fostering the value of the community (De Dreu, Weingart, & Kwon, 2000). Creativity in turn is necessary for thinking beyond day-to-day operations and developing new explorative strategies for the firm.

Finally, prosocially motivated family CEOs tend to refrain from using their ownership stake for their own selfish needs. They tend to provide "patient capital" over long periods of time and are prepared to accept short-term deprivation in order to ensure the long-term wellbeing of the firms' stakeholders – specifically the family and the employees (Sirmon & Hitt, 2003). This can result in taking on opportunities that other firms – and particularly, less prosocially

motivated CEOs – would reject (Liang, Wang, & Cui, 2014; Zahra, 2003). Hence prosocially motivated CEOs might tend to foster long-term exploration projects.

CEO prosocial motivation can also entail some negative aspects regarding exploration. The focus on benefitting others and meeting their expectations, as well as maintaining harmony within the firm and among stakeholders, can lead to less radical strategies and projects (Goncalo & Staw, 2006; Grant & Berg, 2011; Grant & Berry, 2011). In this context, CEO prosocial motivation could lead to overall increased risk aversion. CEOs who intend to increase others' wellbeing might refrain from putting at risk funds and resources that ensure current operations, long-term relationships with suppliers and customers, and the existence of jobs. Hence, CEO prosocial motivation might lead to reluctance to take on risky exploration projects with uncertain outcomes.

Furthermore, prosocially motivated CEOs might put in place an incentive structure that is less based on economic grounds than on prosocial considerations. This could be counterproductive to encouraging and rewarding effort and contributing creative ideas and additionally result in moral hazard problems, inefficient resource allocation, and hence a less thorough focus on exploration (Schulze et al., 2002).

Moreover, prosocial motivation does not necessarily focus on collective wellbeing but can be particularistic, i.e., the focus might be on a specific individual or a group of individuals for whom the CEO feels empathy (Hernandez, 2012). In the case of family CEOs, prosocial motivation could relate particularly to other family members who are connected through kinship ties, common history, culture, values and goals (Chrisman et al., 2012). As outlined above, family goals frequently relate to family harmony, status and identity. A focus on exploration can potentially endanger these goals. Hence, family CEOs might be inclined to comply with generally risk averse family preferences in order to maintain family cohesion and thus refrain from exploration projects in favor of less risky endeavors.

Theory offers both positive and negative arguments regarding the effect of CEO prosocial motivation on exploration. CEO prosocial motivation has the potential to create a supportive organizational environment based on corporate citizenship and sense of community that inspires and encourages exploration. Conversely, CEO prosocial motivation can increase the reluctance to engage in risky exploration projects in order not to jeopardize resources and jobs and to comply with lower risk preferences, which in turn can compromise a supportive organizational environment, fostering exploration. Refraining from risky exploration projects could

be more compatible with CEOs' intentions of ensuring the wellbeing of both the family and other stakeholders and hence might prevent the emergence of an exploration-focused organizational environment to begin with. Taking into account the contradictory positive and negative arguments above, I put forward the following two alternative hypotheses:

H7a: There is a positive relationship between CEO prosocial motivation and exploration.

H7b: There is a negative relationship between CEO prosocial motivation and exploration.

CEO prosocial motivation and exploitation

Family CEO prosocial motivation also has the potential to increase exploitation in family firms. We can look at the CEOs' intent to increase the wellbeing of others on the one hand and the low-risk aspect of exploitation strategies on the other hand (Hiebl, 2012; Miller & Le Breton-Miller, 2005). A CEO intending to benefit others might tend to refrain from risky strategies and projects that could endanger the survival of the firm and hence the wellbeing of its owners, managers and employees. CEO prosocial motivation and family-typical risk aversion could thus be mutually reinforcing and strengthen the firm's exploitation activities.

Further, prosocial motivation among owners can reduce information asymmetries, promote collaboration and consequently diminish family-related agency costs (Karra et al., 2006). In this regard, prosocially motivated family CEOs can facilitate the flow of information across organizational levels, thereby increasing efficiencies and optimizing the exploitation of current resources and capabilities.

Decisions made by prosocially motivated CEOs tend to be interpreted as caring and benefitting overall welfare (Grant, 2008; Grant, Dutton, & Rosso, 2008). Hence, exploitation strategies entailing efficiency and saving measures made by prosocially motivated CEOs could be viewed as necessary, hence making it easier to find the approval and commitment of stakeholders. This increases their likelihood of implementation and success and their acceptance as part of the firm's standard repertoire of strategic measures. Consequently, typical core characteristics of family CEOs, such as parsimony, scrutiny and risk-aversion (Carney, 2005; Hiebl, 2012), are more likely to be absorbed into the firm's culture and hence facilitate exploitation.

Conversely, thorough exploitation strategies can entail structural requirements that tend to be difficult to reconcile with CEO prosocial motivation. Exploitation requires a focus on implementation, productivity and efficiency (Lavie et al., 2010). This is facilitated in centralized and hierarchical organizational structures (Jansen et al., 2006), yet strict hierarchy as well as

harsh efficiency measures can be diametrically opposed to the CEO's intent to increase the wellbeing of others.

As outlined above, prosocial motivation does not necessarily focus on collective wellbeing but can be particularistic, i.e., the CEO might concentrate on benefitting a specific individual or group of individuals for whom he feels empathy (Hernandez, 2012). Even though structural requirements and efficiency measures to increase exploitation (e.g., budget cuts) potentially serve the collective wellfare of the firm's stakeholders, individual wellbeing could be impaired as a result of these measures. This could tempt the CEO to make exceptions, for instance by excepting individuals from saving measures. Hence CEO prosocial motivation could also lead to an overall fragmentary approach to exploitation. The argument assuming a particularistic approach to exploitation can be regarded from a different perspective: it seems reasonable to assume that the group of individuals for whom the CEO feels most empathy is the family (Lubatkin et al., 2005; Schulze et al., 2003a). The family in turn profits from and hence encourages exploitation measures (Carney, 2005), which increases the likelihood of prosocially motivated CEOs to pursue exploitation.

Overall, assuming that prosocially motivated CEOs are able and willing to focus on the collective wellbeing of their stakeholders, exploitation as the least common denominator, comprising incremental improvements, maintaining traditional business units and refraining from radical changes is likely to be a suitable strategy. Hence, I hypothesize:

H8: There is a positive relationship between CEO prosocial motivation and exploitation.

The moderating effect of CEO prosocial motivation

As outlined above, arguments exist both for positive and negative implications of family CEO prosocial motivation regarding exploration and exploitation. In the following, I investigate the effects of family CEO prosocial motivation on family TMTs and their joint approach to exploration and exploitation.

One could assume that prosocially motivated CEOs create a supportive and cooperative atmosphere within the TMT that fosters citizenship behavior and enhances a sense of community among TMT members (particularly among family and nonfamily TMT members) that facilitate their approach to exploration and exploitation (Miller & Le Breton-Miller, 2005; Powell et al., 2014). However, there are several compelling reasons that the opposite might be the case, particularly when prosocial motivation is strongly pronounced.

First, CEOs generally put in place incentive structures that reward TMT members for achieving desired results. Prosocially motivated CEOs might put in place inefficient or undemanding incentive structures in the attempt to increase positive affect and strengthen the bond with the TMT (Grant & Berg, 2011). Moreover, CEOs might refrain from reprimanding TMT members when they fail to deliver according to plan, based on their intention to foster harmonious relationships. Hence, CEO prosocial motivation can expose family firms to additional agency costs in the form of self-control and social control issues (Grant, 2007; Schulze et al., 2003a). Moreover, turning away from principles of merit can cause a perception of arbitrariness and uncertainty among TMT members. This perception could be particularly strong for nonfamily TMT members because their fundamental attitudes are frequently based on principles of merit. This destroys mutual trust between TMT members and thus corrupts the basis of joint management and leadership.

Second, an efficient and thorough approach to exploration and exploitation requires a certain level of TMT task conflict which is generally associated with effective decisions (De Clercq, Menguc, & Auh, 2009; Simons & Peterson, 2000). As head of the TMT, the CEO must cope with and channel this conflict to productive means and particularly must prevent task conflicts from assuming a relation-oriented perspective which can result in poor decisions (Simons & Peterson, 2000). Differences between subgroups can result in higher levels of task conflict (Li & Hambrick, 2005; Thatcher & Patel, 2012), which can yield particularly effective decisions. At the same time, harsh task conflicts can trigger relationship conflicts which are already latent between subgroups (Simons & Peterson, 2000). As outlined above, family TMTs consisting of family and nonfamily members can represent a prime environment for the formation of subgroups. It is therefore particularly important for CEOs to assume a balancing role to prevent the risk of escalating conflicts. Because of their focus on harmonious relationships and positive affect, prosocially CEOs might not be able to cope with this pressure and not be willing to take (drastic) prevention measures to ensure that task conflicts are confined early enough.

Third, prosocially motivated CEOs might be prone to arbitrariness and being taken advantage of. As outlined above, prosocial motivation does not necessarily imply the creation of universal and evenly distributed welfare to all stakeholders (Hernandez, 2012). Prosocially motivated CEOs might easily be mislead in their attempts to increase positive affect and create harmonious relationships with individual managers. As a consequence, prosocially motivated CEOs can be taken advantage of by individual TMT members because CEOs might be neither

able nor willing to turn down requests. In this regard, family TMT members in particular have access opportunities to the family CEO, such as at family events, which they can use to obtain preferred promotion in the TMT, higher salaries, or the preferential treatment of projects that they are in charge of. At the same time, it might be difficult for nonfamily TMT members to openly oppose such activities because of the family's power base. Hence family CEOs' prosocial motivation can lead to increased shirking and freeriding of family TMT members. Buchanan (1975) refers to this issue as the "Samaritan's dilemma"; family CEOs are incentivized by their own prosocial motivation to take actions that ultimately harm themselves and those they are trying to benefit. Consequently, CEO prosocial motivation can lead to a discriminatory behavior, differentiating the CEO's favorites from the "rest" (Grant & Berg, 2011). This is the case regardless of whether they are family members or not, even though in family firms preferential treatment of family members seems likely (Hernandez, 2012; Lubatkin et al., 2005). This in turn increases agency costs, and weakens the efficiency of monitoring and supervision (Schulze et al., 2003a).

The points outlined above give reason to assume that CEO prosocial motivation can display its "bright side" particularly when the level of task conflict within the TMT is moderate, the potential for relationship conflict is limited, and there is low risk of the formation of subgroups that play each other, thereby imposing on the CEOs' prosocial motivation. In family firms, this means that the nature and the effect of CEO prosocial motivation might depend on the ownership and management constellations in the family firm (Lubatkin et al., 2005). Hence, CEO prosocial motivation could contribute to promoting particularly efficient governance systems under clear-cut and unidimensional management constellations, as are usually present in the founder generation (Lubatkin et al., 2005; Schulze et al., 2002).

However, when management and TMT constellations become increasingly complex – e.g., when the family firm grows in terms of age and size – CEO prosocial motivation might increasingly reveal its "dark side" (Grant & Berg, 2011; Karra et al., 2006; Pagliarussi & Rapozo, 2011). CEO prosocial motivation represents a rationale not based on economic grounds. This makes CEO prosocial motivation prone to inefficiencies and arbitrariness, an augmented focus on particularistic goals and promotion of free-riding and shirking by favorites – particularly family members. When family TMTs consist of family and nonfamily members, CEO prosocial motivation can thus further accentuate latent differences between the two subgroups, increase faultlines, and cause distortions and schisms. Even though strong CEO prosocial motivation can also have supportive and beneficial effects on TMTs' explora-

tion and exploitation, I argue that preexisting gaps between family and nonfamily managers are widened rather than bridged. Conversely, when CEO prosocial motivation is not a strong influence, family CEOs might be better able to manage diverse family TMTs based on reconcilable and objective economic rationales. I thus hypothesize:

H9: The U-shaped relationship between family TMT involvement and exploration diminishes when CEO prosocial motivation is weaker.

H10: The U-shaped relationship between family TMT involvement and exploitation diminishes when CEO prosocial motivation is weaker.

2.3.4. Hypotheses overview

In chapter 2.3, I derive my hypotheses about the influence of family TMT involvement as well as the specific direct and moderating effects of FCNE goals and CEO prosocial motivation on exploration and exploitation. To summarize this chapter, I give a short overview of the hypothesized relationships in Table 2.

Table 2: Hypotheses overview

Key construct	Hypotheses
Family TMT involvement	H1a: There is a negative relationship between family TMT involvement and exploration.
	H1b: There is a U-shaped relationship between family TMT involvement and exploration.
	H2: There is a U-shaped relationship between family TMT involvement and exploitation.
CEO FCNE goals	H3: There is a negative relationship between CEO FCNE goals and exploration.
	H4: There is a negative relationship between CEO FCNE goals and exploitation.
	H5: The U-shaped relationship between family TMT involvement and exploration diminishes when CEO FCNE goals are weaker.
	H6: The U-shaped relationship between family TMT involvement and exploitation diminishes when CEO FCNE goals are weaker.
CEO prosocial motivation	H7a: There is a positive relationship between CEO prosocial motivation and exploration.
	H7b: There is a negative relationship between CEO prosocial motivation and exploration.
	H8: There is a positive relationship between CEO prosocial motivation and exploitation.
	H9: The U-shaped relationship between family TMT involvement and exploration diminishes when CEO prosocial motivation is weaker.
	H10: The U-shaped relationship between family TMT involvement and exploitation diminishes when CEO prosocial motivation is weaker.

3. Methodology

3.1. Sample and data collection

To test my hypotheses, I collected data from German family firms. I used the Amadeus database, listing all corporate organizations in Germany, as the basis and applied three filters to create my sample. First, I filtered for all organizations with more than 9 employees (thereby excluding micro enterprises[11]). Second, I filtered by industry, thereby excluding companies from all public and financial sectors. This resulted in a list of ~37.000 companies. Third, I filtered for all firms owned by a family or an individual by at least 20% and managed by a member of the owning family (family CEO). This definition is based on the recommendation by La Porta et al. (1999), who conducted a detailed study of ownership structures around the world. The definition has been used frequently in comparable studies of family firms (e.g., Cruz et al., 2010). As a result, I created a final sample of 949 firms, consisting of randomly selected firms and already established direct contacts.

I contacted these firms via personal letters and follow-up phone calls approximately one week after sending out the letters. I explained that my thesis focuses on family-firm related topics, thus ensuring that in addition to formal family firm criteria that I verified before the contact, participants felt addressed correctly as "family firms." I asked for the participation of the family CEO, additional family members employed at the firm and non-family employees, all with direct contact to the family CEO. To encourage participation as well as in order to pass back information to participating companies, I offered a firm-specific feedback package containing empirical results and benchmarking data in a comprehensive document. This offer was restricted to firms participating with at least 5 employees to ensure anonymity. The feedback packages comprised between 60 and 65 pages and included descriptive statistics concerning the individual firms' engagement in exploration and exploitation and additional data on employee motivation, engagement and creativity. Individual firms were benchmarked against their industry and against the total sample. Detailed descriptions of the scientific background of individual constructs were provided. Moreover, feedback packages comprised citations of practitioners and short case studies with best practice examples of e.g., organizational explo-

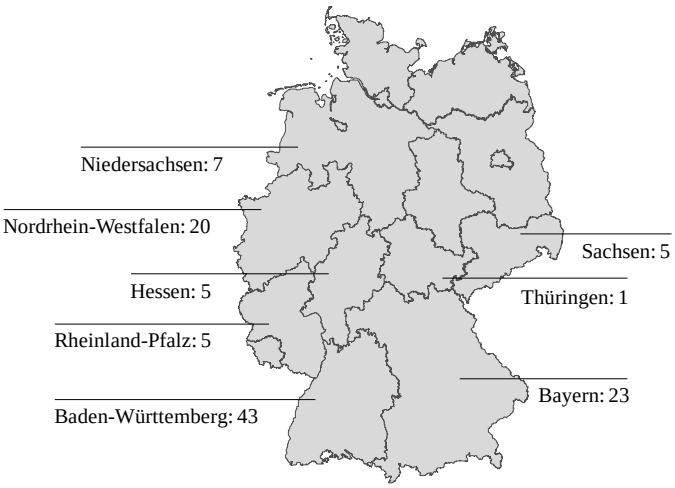
[11] The firm size definition is based on the EU recommendation 2003/361/EG, regarding the definition of micro enterprises. See also Hiebl, Adcroft, & Murphy (2015).

ration orientation. Feedback packages were sent via email and as a printed version to the firms' CEOs. I also offered participating firms the opportunity to cooperate with our institute to conduct "project studies" – projects, in which students work on specific practical questions, supervised by a project leader from a firm and an academic tutor from the university[12].

A total of 118 firms agreed to participate upon contact, representing a response rate of 12.4%. This response rate is comparable to similar studies that rely on primary data from family firm CEOs, especially regarding the collection of data that can be considered confidential by the respondents (e.g., Cruz et al., 2010; Zellweger et al., 2012). Due to incomplete answers, missing data and falling short of the EU definition of micro enterprises, the final sample was reduced to 109 firms. Regional distribution is illustrated in Figure 7 and is relatively consistent with a recent data ascertainment of family firms in Germany by Gottschalk et al. (2014).

Figure 7: Regional distribution of participating family firms

Source: Own illustration



This thesis is primarily based on the analysis of data provided by family firm CEOs, relying on a key informant approach resting on the assumption that family firm CEOs are best able to provide the information required for this thesis. This approach is similar to that of Dehlen et al. (2014) and Zellweger et al. (2012).

Survey data comprises CEO characteristics, TMT composition, firm characteristics, the firm's exploration and exploitation activities and other factors. CEOs are on average 51.8 years old and have worked for 20.8 years in their firm. 8 CEOs are female (7.3%) and 101 CEOs are male (92.7%). More than three quarters (78.0%) of the CEOs hold a university degree or a

[12] For a detailed description of the research project setup, see chapter 1.4.

comparable degree ("Hochschulabschluss"). TMTs on average have 2.6 members with the largest TMT consisting of 6 members and 17 TMTs consisting only of the CEO[13]. The average TMT size of my sample is relatively small but comparable to similar studies in the family firm context by Kraiczy et al. (2015a) (average TMT size = 2.6), De Massis et al. (2015b) (average TMT size = 3.4) and Ling and Kellermanns (2010) (average TMT size = 4.2). Furthermore, the small average TMT size can be expected, as approximately 50% of the sample firms have less than 100 employees. The firms are mostly from the manufacturing sector (80.7%), retail (8.3%), services (6.4%) and construction (4.6%)[14]. They are on average 90.1 years old, employ 336.0 employees and have average revenues (2013) of 55.2 million Euro. Sample characteristics are displayed in Table 3.

Table 3: Sample characteristics

Variable	Mean	S. d.	Min.	Max
CEO age (years)	51.8	10.6	31.0	81.0
CEO firm tenure (years)	20.8	10.7	1.0	54.0
CEO gender (% female)	7.3%	0.3	-	-
CEO education (% university degree)	78.0%	0.4	-	-
TMT size (# of TMT members)	2.6	1.2	1	6
Industry Manufacturing (%)	80.7%	0.4	-	-
Industry Retail (%)	8.3%	0.3	-	-
Industry Construction (%)	4.6%	0.2	-	-
Industry Services (%)	6.4%	0.2	-	-
Firm revenue (in € million)	55.2	105.6	1.7	568.0
Firm employees (#)	336.4	852.8	21.0	7737.0
Firm age (years)	90.1	61.1	5.0	370.0

Note: sample characteristics based on n = 109

3.2. Non-response bias

To analyze the representativeness of the sample and the possibility of non-response bias, I systematically checked for differences between respondents and non-respondents to my survey. First, I tested for differences between early and late respondents to my survey regarding my explanatory variables (family TMT involvement, CEO FCNE goals and CEO prosocial

[13] In a narrow sense, TMTs consist of more than one person. However, the consideration of the 17 TMTs including only the CEO is meaningful in the theoretical context of this thesis. In addition, robustness checks excluding the 17 TMTs confirm the results of the main models.
[14] Some sample firms are engaged in two or more of the above-named sectors (e.g., manufacturing and services). I assigned those firms to their dominant sector based on their SIC code.

motivation) with a one-way ANOVA (Kanuk & Berenson, 1975). The underlying assumption for that test is that late respondents are more similar to non-respondents than early respondents (Oppenheimer, 1966). The test has been applied frequently in comparable studies (Dehlen et al., 2014; Kammerlander et al., 2015; Zellweger & Dehlen, 2012). I compared both the subsample that completed the survey at a later date (later 50%) to the subsample that completed the survey at an earlier date (earlier 50%) and the subsample that completed part two of the survey within a shorter time interval (shorter time interval 50%) to the subsample that completed part two of the survey within a longer time interval (longer time interval 50%). I find only a slight indication of potentially higher CEO FCNE goals for non-respondents ($p < .05$)[15]. The results of the one-way ANOVA non-response bias test are illustrated in Table 4.

Table 4: Comparison of descriptive statistics between early and late respondents

	Early subsample		**Late subsample**		**One-way Anova**
Variable	Mean	S.D.	Mean	S.D.	Prob > F
Subsample split based on date					
Fam. TMT inv.	.75	.26	.74	.32	.76
CEO FCNE goals	4.67	1.39	5.18	1.04	.03
CEO prosoc. mot.	5.10	1.02	5.41	1.04	.12
Subsample split based on resp. time interval					
Fam. TMT inv.	.75	.30	.75	.28	.95
CEO FCNE goals	4.87	1.30	4.97	1.19	.67
CEO prosoc. mot.	5.17	1.05	5.33	1.03	.41

Second, I tested for the representativeness of my sample through a comparison of basic firm characteristics, such as revenue, number of employees and firm age (e.g., Zellweger et al., 2012). The findings are illustrated in Table 5 and Table 6. I find significant differences for all basic firm characteristics between respondents and non-respondents. The firms in my sample are larger both in terms of revenue and number of employees, as well as older than the overall sample. Taking into account my underlying selection criteria for the overall sample (organizations with more than 9 employees that are owned by a family or an individual by at least 20% and led by a family CEO), the differences between respondents and non-respondents can be expected. Although all firms in the total sample of 949 firms meet my formal requirements of being a family firm, the respondent sample only comprises those firms that felt correctly ad-

[15] A subsample comparison of the earliest 30% with the latest 30% (by date) yields no indication for a non-response bias of CEO FCNE goals (One-way Anova Prob > F = .20).

dressed and perceive themselves as family firms. Many younger or even newly founded firms perceive themselves as owner-managed rather than as family-managed. Being at an earlier stage, these firms frequently have fewer employees and lower revenues than established firms. Hence, the comparison between respondents and non-respondents suggests that my findings are especially applicable to later-stage family firms and do not necessarily generalize to earlier stage family firms or newly founded owner-managed firms.

Table 5: Comparison of descriptive statistics between respondents and non-respondents

	Respondents (n = 109)		**Non-respondents** (n = 830)		**t-Test**
Variable	Mean	S.D.	Mean	S.D.	Pr(|T| > |t|)
Revenue (€ million)	55.2	105.6	36.1	37.3	.00
Employees (#)	336.4	852.8	155.1	132.5	.00
Firm age (years)	90.1	61.1	60.0	40.0	.00

Note: Missing data (e.g., revenue) replaced by means

Table 6: Additional descriptive statistics of respondents and non-respondents

			95% confidence interval	
Variable	**n**	**Mean**	Lower bound	Upper bound
Respondent firms				
Revenue (€ million)	109	55.2	35.2	75.2
Employees (#)	109	336.4	174.5	498.3
Firm age (years)	109	90.1	78.5	101.7
Non-respondent firms				
Revenue (€ million)	830	36.1	33.6	38.7
Employees (#)	830	155.1	146.1	164.2
Firm age (years)	830	60.0	57.3	62.7

Note: Missing data (e.g., revenue) replaced by means

3.3. Common method bias

To ensure the validity of my analysis and mitigate concerns related to common method bias, I took several ex-ante precautions in the data collection process and performed further ex-post analyses. First, I ensured full data confidentiality to participants in order to decrease tendencies to answer the questionnaire in a socially desirable way (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) and administered the questionnaire items in a randomized order so that respondents could not draw conclusions regarding the intended hypotheses of the thesis (Podsakoff et al., 2003).

Second, I used a temporally separated approach to measuring the variables of this thesis as recommended by Podsakoff et al. (2003). I gathered information first on the outcome variables exploration and exploitation and the predictor variable family TMT involvement (because this predictor variable can be cross-checked with secondary data) and second on the predictor variable CEO FCNE goals[16] (because this variable cannot be cross-checked with secondary data). The second questionnaire was sent out seven days after participants answered the first questionnaire. On average, respondents answered the second questionnaire 16.6 days after the first questionnaire.

Third, following recommendations in the literature (e.g., Eddleston & Kellermanns, 2007; Zellweger et al., 2012), I collected data from additional family managers employed at the firm (49 family managers from 43 firms, equaling 39.4% of participating firms) and non-family employees (486 non-family employees from 85 firms, equaling 78.0% of participating firms)[17]. I used the two additional data sources to validate my constructs and mitigate concerns related to single-respondent bias (Davis et al., 2010). For the respective subsets, I calculated mean, standard deviation and correlation coefficient. FCNE goals were rated by the family CEO (mean = 4.94; s.d. = 1.24), additional family managers employed at the firm (mean = 5.03; s.d. = 1.45) and non-family employees (mean = 5.27; s.d. = 0.87). Ratings by the family CEO and additional family managers employed at the firm as well as non-family employees are significantly and positively correlated (family employees: $r = 0.44$, $p \leq 0.01$, non-family employees: $r = 0.44$, $p \leq 0.05$). Similarly, prosocial motivation was rated by the family CEO (mean = 5.21; s.d. = 1.10) and non-family employees (mean = 4.98; s.d. = 0.77). Ratings by the family CEO and non-family employees are significantly and positively correlated ($r = 0.33$, $p \leq 0.05$). Also, the control variable relationship conflict within the family was rated by the family CEO (mean = 2.51; s.d. = 1.28), additional family managers employed at the firm (mean = 2.63; s.d. = 1.47) and non-family employees (mean = 2.43; s.d. = 1.03). Comparably to FCNE goals, ratings for relationship conflict within the family by the family CEO and additional family managers employed at the firm as well as non-family employees are significantly and positively correlated (family employees: $r = 0.44$, $p \leq 0.01$, non-family employees: $r = 0.41$, $p \leq 0.01$). The results of this comparison indicate a high level of agreement between family firm CEOs, additional family managers employed at the firm and non-family employees and thus give reason to rely on family firm CEOs as key informants (Eddleston et al., 2008).

[16] CEO prosocial motivation was included in the first part of the questionnaire for content-related purposes.
[17] Responses were aggregated on the firm level.

Fourth, I validated CEO information regarding TMT composition with secondary data from the firm databases Hoppenstedt and Amadeus, from newspaper articles, company press releases and releases in the German Federal Gazette ("Bundesanzeiger"). CEO information is exactly matched in 95 (87.2%) of the 109 observations. Intraclass correlation coefficient (ICC) is .80 (e.g., Gibson & Birkinshaw, 2004; Grant, 2008) and the correlation coefficient is .88 ($p < .001$) indicating very high congruence between CEO information and secondary data. For observations where CEO information and secondary data deviated, I chose CEO information – in line with the key informant approach – as the CEO's specification and perception of who is part of TMT decision processes outweighs potentially outdated and incorrect secondary information (Miller et al., 2013b).

Fifth and finally, I conducted both an explanatory factor analysis and two confirmatory factor analyses to analyze relationships between the measured items (Hair, 2010; Podsakoff et al., 2003). For the explanatory factor analysis, all items of the respective full model were entered into a factor analysis. Common method bias is likely if "either (a) a single factor will emerge from the factor analysis, or (b) one 'general factor' will account for the majority of the covariance in the independent and criterion variables" (Podsakoff & Organ, 1986, p. 536). The analysis – illustrated in Table 7 – indicates ≥ 6 factors with Eigenvalues greater than one for all models, accounting for the better part of cumulative covariance, while the largest individual factor accounted for $\leq 24.8\%$ of the covariance. This leads me to the conclusion that there is no single dominant factor explaining covariance in either model.

Table 7: Explanatory factor analysis

	# of factors with Eigenvalue > 1	Cumulative share of covariance	Covariance share of largest factor
Interaction 1 (CEO FCNE goals)			
Exploration model	7	90.0%	23.2%
Exploitation model	7	91.9%	23.8%
Interaction 2 (CEO prosocial motivation)			
Exploration model	6	83.4%	23.7%
Exploitation model	7	90.6%	24.8%

For the confirmatory factor analyses, I first built a "trait model" for each of the dependent variables[18]. In the trait model, I included all items of the independent, the moderator and the dependent variable and let them load on their respective constructs, while constructs were allowed to correlate (Podsakoff et al., 2003; Williams, Cote, & Buckley, 1989). The goodness of fit indices RMSEA and SRMR are below .1 and hence indicate a good model fit both for the exploration and the exploitation model (Steenkamp & Baumgartner, 1998). Correspondingly, the two indices CFI and TLI are very close to or above the acceptance level of .9 for both interactions and for both the exploration and the exploitation model (Steenkamp & Baumgartner, 1998). Details are illustrated in Table 8.

Table 8: Confirmatory factor analyses

Measure	Trait model	Method model
Interaction 1 (CEO FCNE goals)		
Exploration model		
RMSEA	.059	.125
SRMR	.077	.113
CFI	.918	.625
TLI	.891	.518
Exploitation model		
RMSEA	.063	.127
SRMR	.070	.107
CFI	.934	.721
TLI	.912	.641
Interaction 2 (CEO prosocial motivation)		
Exploration model		
RMSEA	.042	.146
SRMR	.065	.143
CFI	.969	.618
TLI	.961	.522
Exploitation model		
RMSEA	.067	.185
SRMR	.073	.165
CFI	.938	.521
TLI	.921	.401

[18] To accommod ate the single-item construct "family TMT involvement" in the trait model, I used an approximation approach (e.g., De Clercq, Castañer, & Belausteguigoitia, 2011) and included the single item in the FCNE items. This approach yields more conservative results, as the single item does not load well on the FCNE proxy and hence decreases the level of the trait model fit as compared to the method model fit.

Subsequently, I built a "method model," corresponding to the above explanatory factor analysis (Williams et al., 1989). I entered all items of the independent, the moderator and the dependent variable into one model and let them load on the theoretical construct "common method variance." For all models, RMSEA and SRMR, as well as CFI and TLI indicate a poorer fit of the "method model" than of the "trait model." Hence, I assume that the items in my investigation are not likely to represent one single dominant factor.

Based on my ex-ante precautions and my ex-post analyses, I conclude that common method bias is likely not a major concern in my thesis.

3.4. Measures

The questionnaire was administered in German. Since I rely on established scale items from the English literature, all items were translated into German and back-translated into English to ensure consistency in line with the back translation test as suggested by Brislin (1970) and Chapman and Carter (1979). A native German speaking research associate, fluent in English, translated the original English items into German. Subsequently, another native German speaking research associate, fluent in English, back-translated the items into English. No inconsistencies were discovered upon comparison. In addition to dependent and predictor variables, I included control variables in the questionnaire, referring to individuals, the family and the firm. I summarize scale items of dependent and predictor variables in and key parameters of all measures included in Table 10 and Table 11 and describe them in detail in the following.

3.4.1. Dependent variables

The thesis' dependent variables, the *firms' exploration and exploitation activities*, have been analyzed with various measures in the past (e.g., He & Wong, 2004; Jansen et al., 2006; Lubatkin, 2006). For this thesis I follow the approach of Jansen et al. (2006), as this scale is applicable for the broad range of industries that the sample of my thesis comprises[19]. Furthermore, the scale has been used in various organizational contexts, e.g., for large corporations (Jansen et al., 2009a; Schulze, Heinemann, & Abedin, 2008), small and medium enter-

[19] The scale of Jansen, Van Den Bosch, & Volberda (2006) avoids terminology that narrows the focus of innovation to a technological perspective such as that of He & Wong (2004).

prises (Alexiev et al., 2010) and organizational units (Jansen et al., 2012; Jansen et al., 2006; Jansen et al., 2009b) and is therefore particularly applicable to my sample comprising different firm sizes.

Exploration and exploitation were each measured using six items with possible responses ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Questionnaire items for exploration contained questions like "We invent new products and services" and "Our firm accepts demands that go beyond existing products and services," while questionnaire items for exploitation contained questions like "We improve our provision's efficiency of products and services" and "We regularly implement small adaptations to existing products and services." Subsequently, a firm's level of exploration (respectively exploitation) was calculated as the mean of the six items associated with exploration (respectively exploitation). This procedure allows me to capture exploration and exploitation with a single measure each and at the same time reduced reliability on single responses (Hair, 2010). The resulting Cronbach's alphas are 0.73 for exploration and 0.79 for exploitation, suggesting a satisfactory reliability (Hair, 2010).

For robustness checks, I drew on shortened versions of the exploration and exploitation scales by Jansen et al. (2006) in addition to the standard six-item version. For exploration I included the five-item version as used by Alexiev et al. (2010) for which I received a Cronbach's alpha of 0.72. I also used the four-item exploration and four-item exploitation version as used by Jansen et al. (2009a). For the four-item exploration scale I received a Cronbach's alpha of 0.62. For the four-item exploitation scale I received a Cronbach's alpha of 0.73. I show robustness check results for the regression models using the shortened versions in the results section.

3.4.2. Independent and moderator variables

In this thesis I aim to capture the effect of family involvement on managerial decisions with respect to exploration and exploitation within the firm. Family influence within the TMT, defined as "the level of family involvement within the group of top executives in family firms" (Minichilli et al., 2010, p. 206) has mostly been operationalized by examining the number of family members in top management positions (Villalonga & Amit, 2006). Following this approach, I measured *family TMT involvement* as the share of family executives on the TMT (i.e., dividing the number of family TMT members by the total number of TMT

members as defined by respondents). The same operationalization has been applied by Minichilli et al. (2010), Sciascia and Mazzola (2008), Sciascia et al. (2013) and Zahra et al. (2007).

The variable *CEO FCNE goals* was measured using a scale developed by Chrisman et al. (2012) that consists of three items with possible responses ranging from 1 ("strongly disagree") to 7 ("strongly agree"). The level of CEO FCNE goals was calculated as the mean of the three items, resulting in a Cronbach's alpha of 0.68, slightly below the threshold of 0.7 as defined by Hair (2010)[20]. I therefore performed additional analyses to investigate the reliability of this measure. First, the low number of items in itself can potentially lead to lower Cronbach's alphas (Cortina, 1993) and variables with Cronbach's alphas between 0.6 and 0.7 have been used extensively in the literature and also in similar studies (Hill & Birkinshaw, 2014; Kammerlander et al., 2015; Shepherd et al., 2013b; Zellweger, Sieger, & Halter, 2011). In fact, some research suggests that lower Cronbach's alphas in interaction models can lead to more conservative regression results, thereby increasing the explanatory power of the overall regression model (Aguinis, 1995). Second, I performed an item-test correlation, measuring how individual items are correlated with the overall scale. All items are highly correlated with the overall scale (coefficients > 0.77) and thus well in excess of the sufficiency threshold of 0.35 as defined by Everitt (2002); dropping either item would reduce the overall scale reliability. Third, I performed confirmatory factor analyses (CFA) to investigate whether individual items fail to ideally reflect data. All items load on one factor and the respective factor loadings are > 0.57, which is above the cutoff threshold of 0.5 as defined by Hair (2010). The calculations are illustrated in Table 9. Based on my additional analyses I conclude that the reliability of CEO FCNE goals is not a major concern.

Table 9: CEO FCNE goals – scale characteristics

FCNE items	Item-test correlation	Cronbach's alpha without respective item	Factor loading
Item 1: Family harmony	.786	.587	.599
Item 2: Family social status	.775	.609	.579
Item 3: Family identity	.782	.562	.619

The variable *CEO prosocial motivation* was measured using a scale developed by Grant (2008) for the purpose of investigating antecedents of individuals' persistence, performance, and productivity. Grant and Berry (2011) reapplied the measure in a slightly adjusted manner

[20] Chrisman, Chua, Pearson, & Barnett (2012) find a Cronbach's alpha of 0.75 for FCNE goals.

in an empirical study on motivation and creativity, clearing the way for an application in the content-related topic of exploration and exploitation. The scale consists of four items responding to the question "Why are you motivated to do your work?" with possible responses ranging from 1 ("strongly disagree") to 7 ("strongly agree"). The level of CEO prosocial motivation was calculated as the mean of the four items, resulting in a Cronbach's alpha of 0.79.

3.4.3. Control variables

I controlled for different variables, referring to individuals, the family and the firm to account for the different areas of analysis in my investigation.

On the individual CEO level, I controlled for *CEO age* and *CEO tenure within the firm* to account for effects connected with CEO experience (Boling, Pieper, & Covin, 2015; Mom et al., 2009). For example, one could argue that CEOs with more experience have higher abilities regarding both exploration and exploitation activities. One could also argue that older CEOs are less entrepreneurial and focus more on routine tasks than on engaging in exploration activities (Kammerlander et al., 2015). I also controlled for *CEO gender*, as masculine and feminine traits are found to influence entrepreneurial self-efficacy, thereby potentially influencing exploration and exploitation (Mueller & Dato-On, 2008). Further, I controlled for *CEO level of education*, as increasing levels of education are connected with higher levels of information search and analysis (Papadakis, Lioukas, & Chambers, 1998). One could argue that individuals with increased cognitive abilities in information search and analysis engage more in exploration activities.

On the family level, I controlled for *relationship conflict* within the family, defined as the "perception of interpersonal incompatibility [that] typically includes tension, annoyance, and animosity among group members" (Simons & Peterson, 2000, p. 102). Higher levels of relationship conflict are detrimental to the quality of decisions in general (Simons & Peterson, 2000) and hence could negatively affect the consequent pursuit of both exploration and exploitation activities. Moreover, relationship conflict can lead to decreased identification with the team and its actions. While this distance to the team can lead to more accurate self-assessments of team performance and lower risk of hubris it can also lead to lower involvement of team members in decisions (Breugst, Patzelt, Shepherd, & Aguinis, 2012). To measure relationship conflict I used the 3-item relationship conflict subscale of the intragroup conflict scale developed by Jehn and Mannix (2001) which has been used and adapted to the family firm context in similar studies (e.g., Eddleston & Kellermanns, 2007). The three items are

1) "There is much relationship conflict among family members" 2) "Family members often get angry while working in our family firm" and 3) "There is much emotional conflict between family members." The items were measured on a seven-point Likert scale with possible responses ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Cronbach's alpha for relationship conflict is 0.87.

On the firm level, I controlled for *firm size*, measured as the natural logarithm of fulltime employees, as larger firms have more available resources yet are potentially less flexible and often characterized by inertia (Jansen et al., 2006). One could assume that older firms are more focused on exploiting existing resources than developing new ones, hence I controlled for *firm age*, measured as the natural logarithm of years since the foundation of the firm (Lubatkin, 2006). I also controlled for *firm performance*, as performance can have repercussive effects on innovation behavior (Chrisman & Patel, 2012). I asked respondents to assess their firm performance over the last three years on a seven-point Likert scale referring to the following three dimensions (shortened from Eddleston et al., 2008): 1) "growth in market share," 2) "growth in profitability" and 3) "return on equity." Cronbach's alpha of the performance scale is 0.75. Next, I controlled for *TMT size*, defined as the total number of members of the TMT, as TMT size can influence dynamics of a firm's decision-making behavior (Alexiev et al., 2010). Finally, I controlled for the *firms' industry*, to account for varying innovation intensity, as well as for varying environmental dynamism in the respective sectors (Kammerlander et al., 2015). Following Lubatkin (2006), I categorized the firms into manufacturing, retail, and construction. Services served as the reference industry in the analysis.

Table 10: List of scale items of outcome, predictor and control variables

Construct	Items
Exploration	1. Our firm accepts demands that go beyond existing products and services.
	2. We invent new products and services†.
	3. We experiment with new products and services in our local market†.
	4. We commercialize products and services that are completely new to our firm.
	5. We frequently utilize new opportunities in new markets.
	6. Our firm regularly uses new distribution channels.*
Exploitation	1. We frequently refine the provision of existing products and services†.
	2. We regularly implement small adaptations to existing products and services.
	3. We introduce improved, but existing products and services for our local market†.
	4. We improve our provision's efficiency of products and services.
	5. We increase economies of scales in existing markets.
	6. Our firm expands services for existing clients.
CEO Family-centered noneconomic (FCNE) goals	1. Family harmony is an important goal in making my business decisions.
	2. The social status of my family is an important factor in making my business decisions.
	3. My business is closely linked to the identity of my family.
CEO prosocial motivation	Why are you motivated to do your work?
	1. Because I care about benefiting others through my work.
	2. Because I want to help others through my work.
	3. Because I want to have positive impact on others.
	4. Because it is important to me to do good for others through my work.

* Excluded in the 5-item version of exploration

† Excluded in the 4-item versions of exploration and exploitation

Table 11: Overview of measures

	Variable	Number of survey items	Source of item wording in survey	Format scale	Cronbach's alpha
Dependent variables	Exploration orientation	6	Jansen et al. (2006)	7-point Likert scale	.73
	Exploitation orientation	6	Jansen et al. (2006)	7-point Likert scale	.79
	Exploration 5 items (rob.)	5	Alexiev et al. (2010)	7-point Likert scale	.72
	Exploration 4 items (rob.)	4	Jansen et al. (2009a)	7-point Likert scale	.62
	Exploration 4 items (rob.)	4	Jansen et al. (2009a)	7-point Likert scale	.73
	Ambidexterity 12 items (rob.)	Explor. & Exploit.	Jansen et al. (2006)	7-point Likert scale	n. a.
Predictor variables	Family TMT involvement	1	Sciascia et al. (2013), Minichilli et al. (2010)	Continuous (in %)	n. a.
	Family TMT involvement (rob.)	From databases, annual reports and websites		Continuous (in %)	n. a.
	CEO Family-centered noneconomic goals (FCNE) goals	3	Chrisman et al. (2012)	7-point Likert scale	.68
	CEO prosocial motivation	4	Grant (2008)	7-point Likert scale	.79
Controls (individ. level)	CEO age	1	n. a.	Continuous (in years)	n. a.
	CEO tenure within the firm	1	n. a.	Continuous (in years)	n. a.
	CEO gender	1	n. a.	Dummy (0 = male; 1 = female)	n. a.
	CEO level of education	1	n. a.	Dummy (0 = no bachelor's degree; 1 = bachelor's degree or higher)	n. a.
Controls (family level)	Relationship conflict among family members	3	Jehn and Mannix (2001), Eddleston and Kellermanns (2007)	7-point Likert scale	.87
Controls (firm level)	TMT size	1	n. a.	Continuous (logarithm of reported number of members of the TMT)	n. a.
	Firm performance	3	Shortened from Eddleston et al. (2008)	7-point Likert scale	.75
	Firm size	From databases, annual reports and websites		Continuous (logarithm of last reported number of employees)	n. a
	Firm age	From databases, annual reports and websites		Continuous (logarithm of year of foundation)	n. a
	Industry	From databases, annual reports and websites		Three dummy variables (0/1) for Manufacturing, Retail and Construction. Services are defined as reference category.	n. a

3.5. Hierarchical regression analysis

To test my theoretical hypotheses, I used multiple hierarchical regression analysis. In this approach, independent variables are included in the regression model step-by-step in a prespecified sequence (Cohen, Cohen, West, & Aiken, 2013). Following examples from the literature (e.g., Heavey & Simsek, 2014; Shepherd, Patzelt, & Wolfe, 2011), I started with a base model, including only the control variables. Subsequently I included the predictor variables (independent and moderator variables) and proceeded with the curvilinear model, including the squared independent variable family TMT involvement (testing for a U-shaped relationship) and the interaction model, including the interaction between independent and moderator variables. Control variables, predictor variables, squared terms and the interaction term were then combined for the full model.

Since my analysis includes two dependent variables (exploration and exploitation), I followed the same approach independently for each of the dependent variables (e.g., Kammerlander et al., 2015). In addition, I calculated separate interaction models for each of the two predictor variables CEO FCNE goals and CEO prosocial motivation. Consequently, this thesis comprises four main models – exploration and CEO FCNE goals (Table 15), exploitation and CEO FCNE goals (Table 16), exploration and CEO prosocial motivation (Table 23), exploitation and CEO prosocial motivation (Table 24).

The *base model* is a standard multiple linear regression model establishing the relationship between the dependent variable Y and the independent variable X_1. The relationship is further modeled through the error term e, which captures all other factors that influence the dependent variable apart from the independent variable. The constant term b_0 and the coefficient b_1 are the results of the estimation (Hair, 2010). The full equation can hence be written as follows (Hair, 2010):

$$Y = b_0 + b_1 X_1 + e \qquad \text{(E1)}$$

The *curvilinear model* corresponds to my hypotheses regarding a curvilinear relation between family TMT involvement and exploration and exploitation. I specified the curvilinear effect with a power transformation of the independent variable. The calculation thus includes both the linear component (independent variable) and the nonlinear component (independent variable squared). The full equation can hence be written as follows (Hair, 2010):

$$Y = b_0 + b_1 X_1 + b_2 X_1^2 + e \qquad \text{(E2)}$$

The *interaction model* includes the moderator term, which is a composite variable formed by the multiplication of the independent variable and the moderator variable (Hair, 2010). I hypothesize an interaction between the nonlinear component (i.e., the independent variable squared) and the moderator variable. For calculation purposes, therefore, both the linear component X_1, and the nonlinear component X_1^2 are multiplied with the moderator variable Z (Aiken & West, 1991). The full equation can be written as follows (Aiken & West, 1991):

$$Y = b_0 + b_1 X_1 + b_2 Z + b_3 X_1^2 + b_4 X_1 Z + b_5 X_1^2 Z + e \qquad \text{(E3)}$$

The interaction model E3 is in this case equivalent to the *full model* containing all hypothesized variables and interactions.

3.6. Estimation technique

I fitted the regression models relying on ordinary least squares (OLS) estimations. OLS determines regression parameters by minimizing the sum of squared residuals (i.e., the difference between predicted and actual values of the dependent variable) (Kohler & Kreuter, 2012). In order to allow for a meaningful application of OLS, data must meet the assumptions of homoskedasticity and normal distribution (Hair, 2010).

Homoskedasticity, assuming the same error terms across all independent variables, is central for linear regression models like OLS. If the assumption of homoskedastic data is violated (i.e., if data are heteroskedastic), OLS yields inefficient results (Hair, 2010). The assumption of homoskedasticity is met if the variance of the dependent variable is constant regardless of the value of the independent variables (Hair, 2010). I performed two tests on all four full regression models to detect potential heteroskedasticity in my data[21].

Regarding the CEO FCNE goals models, first, according to the Breusch-Pagan/Cook-Weisberg test, heteroskedasticity can be rejected for the full exploration model (χ^2 (1) = 0.90, p > χ^2 = 0.342). For the full exploitation model, the Breusch-Pagan/Cook-Weisberg test yields marginal evidence for heteroskedasticity at the 0.1 confidence level (χ^2 (1) = 3.23, p > χ^2 = .072). Second, the White test supports the assumption of homoskedasticity for the exploration

[21] See Table 15, 16, 23 and 24.

model (χ^2 (108) = 108.99, p > χ^2 = .455) and the exploitation model (χ^2 (108) = 108.99, p > χ^2 = .455) respectively[22].

Regarding the CEO prosocial motivation models, heteroskedasticity can be rejected for the full exploration model (χ^2 (1) = 1.03, p > χ^2 = 0.311), according to the Breusch-Pagan/Cook-Weisberg test. For the full exploitation model, the Breusch-Pagan/Cook-Weisberg test yields evidence for heteroskedasticity at the 0.05 confidence level (χ^2 (1) = 4.02, p > χ^2 = .045). The White test supports the assumption of homoskedasticity for the exploration model and the exploitation model (χ^2 (109) = 109.00, p > χ^2 = .455)[22].

Although there is only marginal evidence for heteroskedasticity for the exploitation models, I conservatively assumed heteroskedasticity. Heteroskedasticity can be mitigated by the use of OLS robust regression techniques (Wooldridge, 2003). In this regard the "sandwich estimator" proposed by Huber (1967) and White (1980) can be used to calculate robust standard errors in the case of heteroskedasticity (Freedman, 2006). Using robust standard errors changes confidence intervals and p-values but does not change coefficients of the OLS regression. Under homoskedasticity, robust standard errors are simply conventional OLS standard errors, not changing the interpretation of OLS results (Kohler & Kreuter, 2012). Hence, it is possible to use robust standard errors under heteroskedasticity and under homoskedasticity.

Further, I investigated the potential of omitted variable bias, which can occur when one or more important variables are left out in a model. Leaving out important variables can result in over- or underestimating the included variables (Wooldridge, 2003). Drawing on the regression specification-error test for omitted variables by Ramsey (1969)[23], I find no evidence for omitted variables for exploration (p > .759) and for exploitation (p > .108) in the models including CEO FCNE goals. In the models including CEO prosocial motivation, I similarly find no evidence for omitted variables for exploration (p > .647) and for exploitation (p > .728). Consequently, omitted variable bias is likely not a concern in my investigation.

I further analyzed my data for non-normal distribution, as normal distribution is a prerequisite for using and interpreting F and t statistics (Hair, 2010). To assess whether the variables under examination fulfill the assumption of normal distribution I investigated their skewness and kurtosis. Skewness describes whether the distribution of a variable is balanced – as normal distributions should be – or shifted to one side, while kurtosis describes distributions that are

[22] The White test only takes into account the independent variables in the equation; hence the results are identical for the exploration and the exploitation model.
[23] The test was performed with the specification of the Stata ovtest command.

either taller or flatter than normal distributions (Hair, 2010). Consequently, skewness and kurtosis offer an indication about normality, which I complemented with a graphical illustration test. Two control variables – firm size and firm age – deviate from the skewness threshold of -2 to 2 and the kurtosis threshold of 1 to 5 as suggested by George and Mallery (2010). I transformed the two variables with the natural logarithm to achieve a more normal distribution (e.g., Zellweger et al., 2012). Skewness and kurtosis of the transformed variables are displayed in Table 12.

Table 12: Overview of skewness and kurtosis

Variable	**Skewness**	**Kurtosis**
Threshold	-2 to 2	1 to 5
Controls (individual level)		
CEO age	.15	2.81
CEO tenure within the firm	.42	3.09
Controls (family level)		
Relationship conflict	1.21	4.24
Controls (firm level)		
TMT size	-.59	2.61
Firm performance	-.59	3.60
Firm size (ln)	.91	3.93
Firm age (ln)	-.91	4.17
Predictors		
Family TMT involvement	-.57	1.73
CEO FCNE goals	-.52	2.81
CEO prosocial motivation	-.38	2.63
Dependent variables		
Exploration orientation	-.35	2.24
Exploitation orientation	-.72	3.17
Exploration 5 items (robustn.)	-.35	2.34
Exploration 4 items (robustn.)	-.25	2.08
Exploration 4 items (robustn.)	-.68	2.96

Note: Dummy variables and categorical variables omitted

4. Results

4.1. Descriptive statistics and correlations

Means, standard deviations and Pearson correlations (two-tailed) are described in Table 13. Bivariate correlations are mostly well below the 0.7 threshold defined by Hair (2010). Additionally, some significant correlations, for instance those between CEO age and CEO firm tenure are expected[24]. The correlation between exploration and exploitation is positive and significant ($r = .74$, $p<.001$), in line with findings of previous and comparable studies (e.g., Gedajlovic et al., 2012b; Kammerlander et al., 2015). This underlines the notion that exploration and exploitation are complementary rather than two ends of a continuum. Significant correlations between independent variables and control variables (e.g., between CEO FCNE goals and CEO firm tenure) could raise concerns about the existence of multicollinearity, a phenomenon where independent variables are highly correlated. High multicollinearity can diminish a model's ability to predict the dependent variable and impair the determination of the effect of independent variables on the dependent variable (Hair, 2010).

Bivariate correlations are only one indicator of potential multicollinearity. To further determine whether multicollinearity is an issue for my model, I determined variance inflation factors (VIFs) for the measures (Hair, 2010). VIF values indicate "the effect that the other independent variables have in the standard error of a regression coefficient" (Hair, 2010, p. 161). High VIF values indicate the likelihood of multicollinearity (Hair, 2010). Results are illustrated in Table 14. For the calculation of VIFs in non-linear and interaction models, some precautions are required. To remedy the effects of correlations that stem from the inclusion of powers and interactions of the same variables, I mean-centered the predictor variables, which eliminates nonessential multicollinearity (Robins, Fraley, & Krueger, 2009) and reduces the correlation of powers and interactions to a manageable level (Allison, 2012), without changing the conclusions drawn from the regression coefficients (Dalal & Zickar, 2012). The highest VIF is 5.51 (mean = 2.55) for the full model using CEO FCNE goals as control variable and 4.32 (mean = 2.37) for the full model using CEO prosocial motivation as moderator variable. Both VIF values are thus below the recommended cutoff level of 10.0 (Hair, 2010; MacKenzie, Podsakoff, & Podsakoff, 2011).

[24] r is still below the .8 threshold indicating the likelihood of extreme multicollinearity (Lobel & St. Clair, 1992).

Table 13: Descriptive statistics and Pearson correlation table

	Mean	s.d.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. CEO age	51.83	10.56																
2. CEO gender	0.07	n/a	-0.14															
3. CEO educ.	0.78	n/a	-0.16	0.15														
4. CEO firm tenure	20.76	10.70	0.78***	-0.15	-0.16													
5. Relation. conflict	2.51	1.30	-0.13	0.15	0.02	-0.08												
6. TMT size	2.64	1.21	0.16	0.00	-0.01	0.04	-0.06											
7. Firm performance	4.83	1.02	-0.14	-0.14	-0.10	-0.13	-0.20*	0.07										
8. Firm size (ln)	4.93	1.14	-0.13	0.10	0.19*	-0.14	-0.04	0.20*	0.06									
9. Firm age (ln)	4.25	0.79	0.01	0.08	0.34***	0.17	-0.17	-0.09	0.00	0.12								
10. Manufacturing	0.81	n/a	0.11	-0.13	0.02	0.19	-0.01	0.07	-0.09	0.00	0.21*							
11. Retail	0.08	n/a	-0.08	0.17	0.16	-0.04	-0.01	-0.05	-0.10	0.01	0.16	-0.61***						
12. Construction	0.05	n/a	-0.06	0.11	0.01	-0.09	-0.06	-0.04	0.10	0.06	0.03	-0.45***	-0.07					
13. Fam. TMT inv.	0.76	0.29	-0.04	0.04	-0.03	0.04	0.09	-0.62***	-0.17	-0.40***	0.04	-0.05	0.08	0.01				
14. CEO FCNE goals	4.91	1.25	0.27***	0.00	-0.24**	0.36***	-0.13	0.17	0.21*	-0.11	0.06	0.01	-0.07	0.07	-0.02			
15. CEO prosoc. mot.	5.26	1.02	0.03	-0.04	0.00	0.14	-0.20*	-0.12	0.07	0.00	0.12	-0.16	0.23**	0.09	0.17	0.17		
15. Exploration	4.44	1.09	0.00	-0.12	-0.11	0.09	-0.27***	0.02	0.37***	0.08	-0.01	0.06	-0.08	-0.03	-0.17	0.04	0.18	
16. Expoitation	5.12	1.03	0.08	-0.08	-0.02	0.08	-0.26**	0.09	0.32***	0.20*	0.02	-0.05	-0.01	-0.02	-0.18	-0.04	0.25**	0.74***

N=109; * p < .05; ** p < .01; *** p < .001; (1) CEO gender: 0 = male, 1= female; (2) CEO educ.: 0 = no bachelor's degree, 1= bachelor's degree or higher

Table 14: Variance Inflation Factor (VIF) and Condition Index (CI)

	CEO FCNE goals model		CEO pros. mot. model	
Variable name	VIF	Condition Index	VIF	Condition Index
Controls (individual level)				
CEO age	2.90	1.00	2.96	1.00
CEO gender	1.15	1.41	1.14	1.42
CEO educ.	1.35	1.55	1.37	1.55
CEO firm tenure	3.29	1.78	3.09	1.80
Controls (family level)				
Relation. conflict	1.17	1.86	1.19	1.91
Controls (firm level)				
TMT size	1.80	1.92	1.74	1.96
Firm performance	1.34	2.05	1.23	2.22
Firm size	1.35	2.28	1.31	2.27
Firm age	1.82	2.33	1.79	2.35
Manufacturing	4.16	2.59	4.10	2.53
Retail	3.19	2.74	3.27	2.65
Construction	2.04	3.15	2.03	2.89
Predictors				
Fam. TMT inv.	1.98	3.55	2.04	3.56
CEO FCNE goals / CEO pros. mot.	5.51	5.44	4.32	5.01
Fam. TMT inv. squared	2.69	5.89	2.81	5.80
Fam. TMT inv. X FCNE goals / CEO pros. mot.	5.40	7.23	4.25	6.94
Fam. TMT inv. squared X FCNE goals / CEO pros. mot.	2.13	11.72	1.59	11.82
Mean VIF	2.55		2.37	
Condition number		26.61		26.71

Further, I examined the condition number, indicating the sensitivity of the overall function to small changes regarding predictor variables (Cheney & Kincaid, 2012). The main advantage of checking the overall model for multicollinearity with the condition number test is that multicollinearity is a problem of sets of variables rather than single variables (Flom, 1999). The condition number – depicted in Table 14 – is 26.61 for the full model using FCNE goals as moderator variable and 26.71 for the full model using CEO prosocial motivation as moderator

variable. This value is below the suggested cutoff of 30.0 (Hair, 2010). The results of the correlation table, the examination of VIFs and the condition number lead me to the assumption that multicollinearity is likely not a significant concern in my investigation.

In the following regression, I draw on uncentered predictor variables in line with recommendations from the literature (e.g., Dalal & Zickar, 2012; Echambadi & Hess, 2007). Conclusions drawn from uncentered and mean-centered regressions are essentially the same, because "uncentered and mean-centered models are statistically equivalent" (Echambadi & Hess, 2007, p. 443). However, the way of interpreting regression effects is different, specifically regarding the interpretation of interaction effects (Dalal & Zickar, 2012). The highest order regression effects (i.e., the terms that are added last into a regression) are identical in uncentered and mean-centered regressions. Lower order regression effects, however, differ in their meaning (Dalal & Zickar, 2012). Mean-centered lower order regression coefficients describe the effects of each variable while all other variables are at their mean values, while uncentered lower order regression coefficients describe the effects of each variable when all other variables are at zero (Echambadi & Hess, 2007). The latter effects correspond to accepted interpretation practices and can be appropriate in the statistical context of interactions. Hence, I draw on uncentered predictor variables in my main models for exploration and exploitation.

The following regression results are split in two parallel sections. Chapter 4.2 describes regression results for the full models of exploration and exploitation using CEO FCNE goals as moderator variable, and chapter 4.3 describes regression results for the full models of exploration and exploitation using CEO prosocial motivation as moderator variable. The sample size of 109 firms only allows for a limited number of predictor variables. The split approach ensures that the number of predictor variables is small enough to yield robust results and thus contributes to overall explanation power.

4.2. Regression results drawing on CEO FCNE goals as moderator variables

Tables 15 and 16 give the results of the OLS robust regression. The dependent variable in models 1-4 is exploration, and the dependent variable in models 5-8 is exploitation. Models 1 and 5 are the base models (E1) and contain only the control variables. Models 2 and 6 contain control variables and predictor variables and are mathematically consistent with the base models (E1). Models 3 and 7 are the curvilinear models (E2) and contain the quadratic terms of the independent variable. Finally, models 4 and 8 are the interaction models (E3) and con-

tain the interaction between the linear and non-linear terms of the independent variable and the moderator variable respectively. For both the exploration and the exploitation model, R-squared consistently increases by adding predictor variables and interaction terms.

4.2.1. Exploration regression results

First, I focus on the exploration model (models 1-4) illustrated in Table 15. In model 1, I estimated the effects of the control variables, which explain a relatively large amount of overall variance (R-squared = 0.230). The model shows a significant negative effect of relationship conflict (b = -0.190, $p < .05$) and a significant positive effect of performance (b = .371, $p < .001$) on exploration. The negative effect of relationship conflict on exploration is in line with my assumption regarding its general destructive impact on decisions and clear strategic alignment (Simons & Peterson, 2000). The positive effect of performance supports my assumption of a positively reinforcing effect of past success on exploration activities (Chrisman & Patel, 2012).

I continued with including the predictor variables family TMT involvement and CEO FCNE goals. Hypothesis 1a predicts a negative relationship between family TMT involvement and exploration. I find a negative correlation coefficient (b = -0.605), which is, however, not significant. Similarly, hypothesis 3 states that there is a negative relationship between CEO FCNE goals and exploration. I also find a negative but insignificant correlation coefficient (b = -0.097). The hypotheses that higher family TMT involvement and stronger CEO FCNE goals lead to lower levels of exploration can therefore not be supported.

Hypothesis 1b predicts a U-shaped relationship between family TMT involvement and exploration. To test this hypothesis, I included the squared term of family TMT involvement in model 3 (curvilinear model). I find a positive correlation coefficient (b = 2.312) but no significance. Thus I do not find support for a curvilinear relationship between family TMT involvement and exploration.

Table 15: Results of regression analysis for exploration (FCNE goals)

	Base model		Curvilinear model	Interaction / full model
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Controls (individual level)				
CEO age	-0.018	-0.020	-0.020	-0.019
	(0.015)	(0.015)	(0.015)	(0.015)
CEO gender	-0.032	0.055	0.060	0.030
	(0.473)	(0.472)	(0.473)	(0.456)
CEO educ.	-0.091	-0.147	-0.199	-0.232
	(0.244)	(0.252)	(0.256)	(0.245)
CEO firm tenure	0.027	0.032+	0.034*	0.033+
	(0.017)	(0.016)	(0.017)	(0.017)
Controls (family level)				
Relation. conflict	-0.190*	-0.191*	-0.194*	-0.224**
	(0.080)	(0.078)	(0.079)	(0.078)
Controls (firm level)				
TMT size	-0.035	-0.096	-0.099	-0.085
	(0.090)	(0.111)	(0.111)	(0.106)
Firm performance	0.371***	0.379**	0.371**	0.356**
	(0.103)	(0.113)	(0.113)	(0.113)
Firm size	0.094	0.040	0.036	0.006
	(0.077)	(0.081)	(0.079)	(0.074)
Firm age	-0.159	-0.141	-0.150	-0.220
	(0.164)	(0.168)	(0.166)	(0.166)
Manufacturing	0.252	0.223	0.172	0.319
	(0.446)	(0.460)	(0.447)	(0.445)
Retail	0.091	0.072	0.057	0.067
	(0.670)	(0.676)	(0.666)	(0.652)
Construction	-0.126	-0.098	-0.141	-0.007
	(0.559)	(0.544)	(0.549)	(0.555)
Predictors				
Fam. TMT inv.		-0.605	-3.761	31.070***
		(0.469)	(2.502)	(9.078)
CEO FCNE goals		-0.097	-0.106	1.698***
		(0.092)	(0.093)	(0.433)
Fam. TMT inv. sq.			2.312	-23.688***
			(1.873)	(6.925)
Fam. TMT inv. X FCNE goals				-6.878***
				(1.739)
Fam. TMT inv. sq. X FCNE goals				5.157***
				(1.353)
R-squared	0.230	0.254	0.265	0.332
Comparison to	-	Model 1	Model 2	Model 3
ΔR-squared	-	0.024	0.011	0.067
Wald test (p-value)	-	0.202	0.220	0.001

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (6 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

Hypothesis 5 states that the U-shaped relationship between family TMT involvement and exploration diminishes when CEO FCNE goals are weaker. Conversely, stronger CEO FCNE goals are hypothesized to accentuate the U-shaped relationship. To test this hypothesis, I included the interaction terms of family TMT involvement (linear and quadratic) and CEO FCNE goals in model 4 (interaction model). I find a positive and significant interaction term of family TMT involvement squared and CEO FCNE goals ($b = 5.157$, $p < .001$). The explained variance increases by 0.067 in model 4, underlining the explanatory power of the interaction term. According to Hair (2010), a curvilinear effect – and also a curvilinear interaction effect – can only be accepted if the difference between the model including the respective effect and the model not including the respective effect is significant. Therefore, I performed a Wald test to examine the relevance of the non-linear interaction effect (e.g., Block, Vries, Schumann, & Sandner, 2014; Zellweger et al., 2011). The significant result of the Wald test ($p < .001$) shows that the inclusion of the interaction term in model 4 leads to a significant improvement of the model fit as compared to the curvilinear model 3. The positive and significant interaction term and the significant model fit improvement underline my assumption that stronger CEO FCNE goals reinforce the U-shaped relationship between family TMT involvement and exploration while weaker CEO FCNE goals diminish the U-shaped relationship. These findings support hypothesis 5.

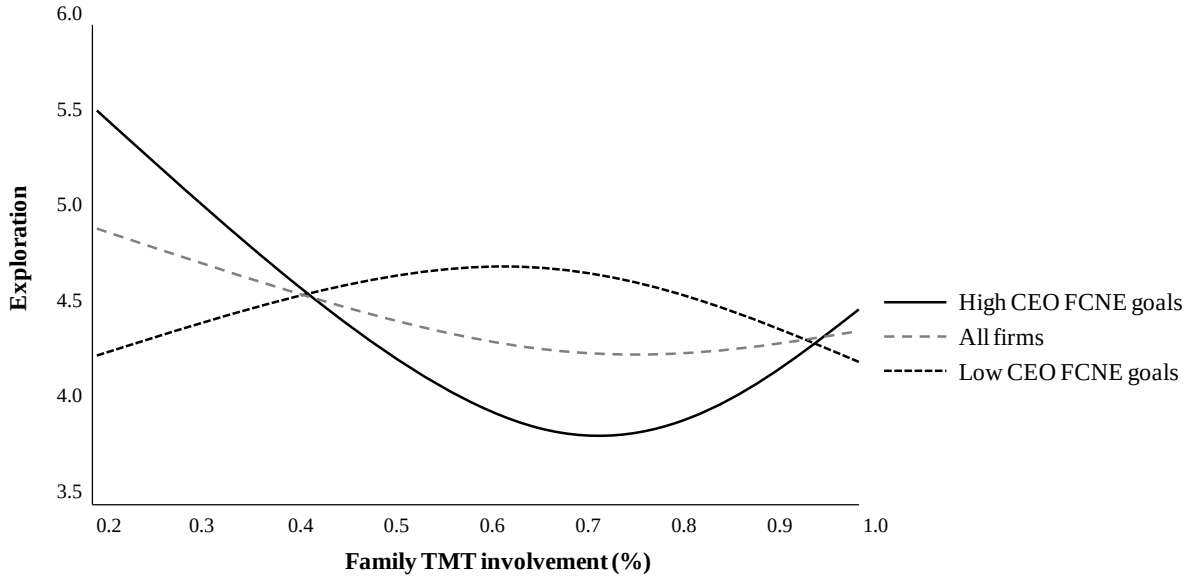
I examined the curvilinear interaction effect with four additional analyses. First, the coefficient of the linear term of the predictor variable in curvilinear models represents the tangential slope at the intercept of the quadratic term with the y-axis. As I do not find support for a direct curvilinear effect between family TMT involvement and exploration, I performed a split sample test, including only observations with higher FCNE goal levels[25]. The negative slope ($b = -7.925$, $p < .01$) supports the assumption of a U-shaped interaction relationship (Cohen et al., 2013). Second, I performed a statistical test suggested by Lind and Mehlum (2010) to assess the presence of a U-shaped (inverted U-shaped) relationship by testing whether the relationship is decreasing (increasing) at the start of the interval and increasing (decreasing) at the end of the interval. I find significant empirical evidence ($p < .05$) for a U-shaped relationship for higher values of the moderator variable CEO FCNE goals. Interestingly, I also find significant empirical evidence ($p < .001$) for the presence of an inverted U-shape for weaker CEO FCNE goals. This indicates that weaker CEO FCNE goals not only diminish the U-shaped relationship between family TMT involvement and exploration but actually reverse the rela-

[25] High values of FCNE goals are defined as values > 4.0 as the items are based on a 7-point-Likert scale with possible responses ranging from 1 ("strongly disagree") to 7 ("strongly agree").

tionship into an inverted U-shaped relationship. I elaborate on this finding in chapter 5. Third, I excluded extreme values of family TMT involvement (namely observations with family TMTs consisting only of one member (n = 17) and family TMTs with family TMT involvement below 25% (n = 3)), to make sure that the U-shape is not dependent on outliers. Results are shown in Table 22 and support the curvilinear interaction effect. Fourth, I performed various robustness checks including different measurements and scale versions of predictor and outcome variables. Results are shown in Tables 17, 18, 20, and 21 and further support the curvilinear interaction effect. The interaction effects are illustrated in Figure 8.

Figure 8: Curvilinear relationship between family TMT involvement and exploration with interaction effect of CEO FCNE goals

Source: Own illustration



The curvilinear relationship between family TMT involvement and exploration (hypothesis 1b) is represented by the grey dotted line, describing an insignificant U-shaped relationship. The interaction effect between family TMT involvement and CEO FCNE goals (hypothesis 5) is represented by the black dotted line and the black solid line. When CEO FCNE goals are stronger, the relationship between family TMT involvement and exploration is U-shaped with a minimum and turning point at 0.724 (p = 0.05). Under this condition, medium levels of family TMT involvement are connected with lower levels of exploration. Conversely, both a concentration of family members on the TMT and a concentration of non-family members on the TMT are connected with higher levels of exploration. When CEO FCNE goals are weaker, the U-shaped relationship between family TMT involvement and exploration diminishes and is reversed into an inverted U-shaped relationship with its maximum and turning point at

0.656 ($p < .001$) represented by the black dotted line. Under this condition, medium levels of family TMT involvement are connected with higher levels of exploration and more favorable than both a concentration of family members and a concentration of non-family members on the TMT. The additional analyses above, as well as the graphical illustration in Figure 8, further support hypothesis 5.

4.2.2. Exploitation regression results

Second, I focus on the exploitation model in Table 16 (models 5-8). Parallel to the exploration model, I first estimated the effects of the control variables in model 5, which explain a relatively large amount of overall variance (R-squared = 0.209). I find a significant negative effect of relationship conflict and a significant positive effect of performance on exploitation. The significant negative effect of relationship conflict on exploitation ($b = -0.154$, $p < .05$) is in line with my assumption regarding its general destructive impact on clear strategic alignment (Simons & Peterson, 2000). The positive effect of performance ($b = 0.284$, $p < .01$) supports my assumption that there is a positively reinforcing effect of past success on exploitation activities (Chrisman & Patel, 2012). Further, I find a positive and significant effect of firm size on exploitation ($b = 0.182$, $p < .01$), supporting the assumption that larger firms have more formalized mechanisms in place to increase efficiency (König et al., 2013).

In model 6, I continued with including the independent predictor variables family TMT involvement and CEO FCNE goals. Hypothesis 4 states that there is a negative relationship between CEO FCNE goals and exploitation. I find a negative and marginally significant correlation ($b = 0.163$, $p = 0.063$) lending some support to this hypothesis.

Hypothesis 2 predicts a U-shaped relationship between family TMT involvement and exploitation. As before, I included the squared term of family TMT involvement in model 7 (curvilinear model) to test this hypothesis. I find a positive and significant relationship between the squared term of family TMT involvement and exploitation ($b = 3.934$, $p < .05$). The explained variance in model 7 increases by 0.038 as compared to model 4 and the Wald test results in a significantly increased model fit ($p < .05$), lending further support to the hypothesis of a curvilinear effect (Cohen et al., 2013). I further examined the curvilinear interaction effect with four additional analyses. First, the linear term of family TMT involvement in model 7 shows a negative coefficient ($b = -5.539$, $p < .01$). The coefficient of the linear term represents the tangential slope at the intercept of the quadratic term with the y-axis. The negative slope at this intercept supports the assumption of a U-shaped relationship (Cohen et al., 2013).

Table 16: Results of regression analysis for exploitation (FCNE goals)

	Base model		Curvilinear model	Interaction / full model
Variable	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Controls (individual level)				
CEO age	0.003	0.001	0.000	0.001
	(0.018)	(0.018)	(0.017)	(0.018)
CEO gender	-0.025	0.075	0.085	0.073
	(0.361)	(0.372)	(0.374)	(0.363)
CEO educ.	0.060	-0.027	-0.115	-0.142
	(0.238)	(0.256)	(0.257)	(0.252)
CEO firm tenure	0.012	0.020	0.023	0.021
	(0.017)	(0.018)	(0.017)	(0.018)
Controls (family level)				
Relation. conflict	-0.154*	-0.161*	-0.165*	-0.183*
	(0.077)	(0.075)	(0.072)	(0.075)
Controls (firm level)				
TMT size	0.006	0.014	0.008	0.015
	(0.078)	(0.099)	(0.093)	(0.088)
Firm performance	0.284**	0.323***	0.309***	0.290**
	(0.087)	(0.091)	(0.091)	(0.091)
Firm size	0.182**	0.152+	0.145+	0.138+
	(0.068)	(0.079)	(0.074)	(0.075)
Firm age	0.000	0.025	0.009	-0.033
	(0.187)	(0.184)	(0.181)	(0.186)
Manufacturing	-0.498	-0.545	-0.631	-0.537
	(0.475)	(0.474)	(0.487)	(0.497)
Retail	-0.393	-0.453	-0.480	-0.479
	(0.660)	(0.644)	(0.652)	(0.664)
Construction	-0.738	-0.702	-0.775	-0.678
	(0.499)	(0.490)	(0.519)	(0.539)
Predictors				
Fam. TMT inv.		-0.169	-5.539**	10.594
		(0.504)	(2.093)	(9.125)
CEO FCNE goals		-0.163+	-0.179*	0.583
		(0.087)	(0.089)	(0.518)
Fam. TMT inv. sq.			3.934*	-8.709
			(1.516)	(6.557)
Fam. TMT inv. X FCNE goals				-3.215+
				(1.785)
Fam. TMT inv. sq. X FCNE goals				2.534+
				(1.304)
R-squared	0.209	0.240	0.278	0.301
Comparison to	-	Model 5	Model 6	Model 7
ΔR-squared	-	0.031	0.038	0.023
Wald test (p-value)	-	0.164	0.011	0.106

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploitation (6 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

Second, I performed the U-test suggested by Lind and Mehlum (2010) to assess the presence of a U-shape. I find significant evidence ($p < .05$) that the relationship is decreasing at the start of the interval and increasing at the end of the interval, suggesting a U-shaped relationship. These findings lend further support to hypothesis 2. Third, I reran the regression excluding extreme values of family TMT involvement to account for potential outliers. Results are illustrated in Table 22 and further support the curvilinear effect. Fourth, I again performed various robustness checks including different measurements and scale versions of predictor and outcome variables. Results are illustrated in Tables 19, 20, and 21 and further support the presence of a curvilinear effect.

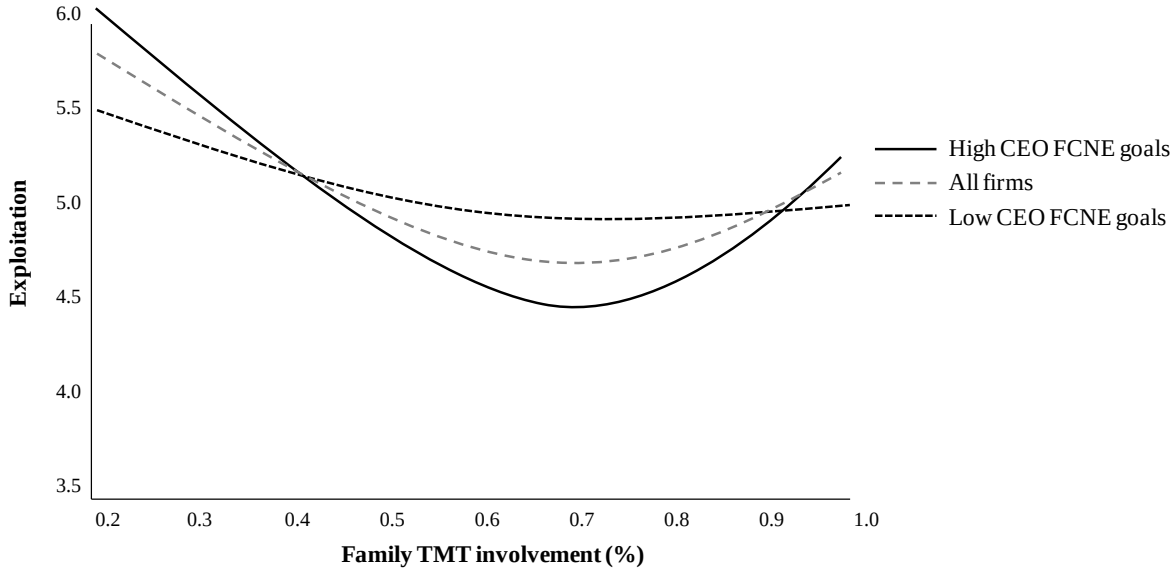
Hypothesis 6 states that the U-shaped relationship between family TMT involvement and exploitation diminishes with weaker CEO FCNE goals. Conversely, stronger CEO FCNE goals are hypothesized to accentuate the U-shaped relationship. Corresponding to the exploration model, I included the interaction terms of family TMT involvement (linear and quadratic) and CEO FCNE goals in model 8 (interaction model) to test this hypothesis. I find a positive and marginally significant interaction term of family TMT involvement squared and CEO FCNE goals ($b = 2.534$, $p = 0.055$). The positive and marginally significant interaction term shows that stronger CEO FCNE goals reinforce the steepness of the U-shaped relationship between family TMT involvement and exploration while weaker CEO FCNE goals diminish the U-shaped relationship between family TMT involvement and exploration. A split sample test including only high FCNE values[25] shows further evidence for a significant U-shaped relationship ($p < .01$). These findings lend some support to hypothesis 6.

The interaction effects of CEO FCNE goals are illustrated in Figure 9. The curvilinear relationship between family TMT involvement and exploitation (hypothesis 2) is represented by the grey dotted line. The minimum and turning point is at 0.718 ($p < .05$). TMTs consisting of family and nonfamily members are connected with lower levels of exploitation. Conversely, both a concentration of family members on the TMT and a concentration of non-family members on the TMT are connected with higher levels of exploitation. The interaction effect between family TMT involvement and CEO FCNE goals (hypothesis 6) is illustrated by the black solid line and the black dotted line. Weaker CEO FCNE goals (black dotted line) diminish the U-shaped relationship between family TMT involvement and exploitation. Under this condition, the relationship is not significant anymore. Conversely, stronger CEO FCNE goals reinforce the U-shaped relationship between family TMT involvement and exploitation. The U-shaped relationship between family TMT involvement and exploitation under stronger

CEO FCNE goals has its minimum and turning point at 0.703 ($p < .01$), i.e. when 70% of TMT members are also family members. When CEO FCNE goals are stronger, medium levels of family TMT involvement are connected with even lower levels of exploitation while a concentration of family members on the TMT and a concentration of nonfamily members on the TMT are connected with higher levels of exploitation. The graphical illustration in Figure 9 lends further support to hypothesis 2 and hypothesis 6.

Figure 9: Curvilinear relationship between family TMT involvement and exploitation with interaction effect of CEO FCNE goals

Source: Own illustration



4.2.3. Robustness checks with different scale versions of exploration

I conducted robustness checks to ensure that my findings are solid and do not depend on the measurement of the dependent variable exploration. For this purpose I drew on different scale versions that have been used in the literature. Table 17 and Table 18 provide the results of the robustness checks for exploration. Table 17 includes the regression results measuring exploration with the 5-item exploration scale used by Alexiev et al. (2010) in a study of small and medium enterprises (Cronbach's alpha = 0.72). Alexiev et al. (2010) focus mainly on exploration, hence there is no 5-item exploitation scale. Table 18 displays the regression results measuring exploration with the 4-item exploration scale as used by Jansen et al. (2009a) and Schulze et al. (2008) in a study on larger corporations (Cronbach's alpha = 0.61). Both robustness check regressions follow the same logical approach as the main model – model 1A and model 1B contain only the control variables, model 2A and model 2B contain the predictor

variables, model 3A and model 3B contain the curvilinear effects and model 4A and model 4B contain the interaction effects.

Parallel to my findings in the main model, hypothesis 3, predicting a negative relationship between CEO FCNE goals and exploration, cannot be supported. The correlation coefficients in models 2A and 2B are negative but insignificant. The same applies to hypothesis 1a, predicting a negative relationship between family TMT involvement and exploration.

Hypothesis 1b, predicting a U-shaped relationship between family TMT involvement and exploration, cannot be supported based on the robustness regression results. Neither model 3A nor model 3B finds significant evidence for a curvilinear relationship between family TMT involvement and exploration. This corresponds to the findings from the main model.

Hypothesis 5, stating that weaker CEO FCNE goals relax the U-shaped relationship between family TMT involvement and exploration, is supported by the robustness regression results. Measuring exploration with the 5-item scale yields a positive and significant result ($b = 5.191$, $p < .001$) for the interaction between CEO FCNE goals and family TMT involvement. Similarly, measuring exploration with the 4-item scale results in a significant and positive interaction ($b = 4.339$, $p < .01$) between CEO FCNE goals and family TMT involvement. The significantly improved model fit of model 4A compared to model 3A ($p < .001$) and of model 4B compared to model 3B ($p < .01$) further support hypothesis 5 (Cohen et al., 2013). I therefore conclude that the findings from the main model are solid across different measurements of the dependent variable exploration.

Table 17: Robustness regression exploration short version 1 (FCNE goals)

	Base model		Curvilinear model	Interaction / full model
Variable	**Model 1A**	**Model 2A**	**Model 3A**	**Model 4A**
Controls (individual level)				
CEO age	-0.014	-0.016	-0.016	-0.015
	(0.016)	(0.016)	(0.016)	(0.017)
CEO gender	-0.077	0.035	0.038	0.009
	(0.495)	(0.498)	(0.498)	(0.488)
CEO educ.	-0.104	-0.186	-0.221	-0.260
	(0.252)	(0.264)	(0.273)	(0.265)
CEO firm tenure	0.021	0.028+	0.029+	0.028
	(0.017)	(0.017)	(0.017)	(0.018)
Controls (family level)				
Relation. conflict	-0.202*	-0.207*	-0.208*	-0.241**
	(0.089)	(0.086)	(0.087)	(0.087)
Controls (firm level)				
TMT size	-0.054	-0.094	-0.096	-0.082
	(0.096)	(0.120)	(0.121)	(0.114)
Firm performance	0.365**	0.390**	0.384**	0.364**
	(0.112)	(0.124)	(0.124)	(0.124)
Firm size	0.125	0.071	0.068	0.042
	(0.086)	(0.092)	(0.090)	(0.084)
Firm age	-0.175	-0.150	-0.156	-0.229
	(0.178)	(0.181)	(0.181)	(0.180)
Manufacturing	0.433	0.389	0.355	0.513
	(0.462)	(0.477)	(0.470)	(0.475)
Retail	0.357	0.315	0.304	0.313
	(0.735)	(0.741)	(0.736)	(0.726)
Construction	0.095	0.133	0.104	0.252
	(0.595)	(0.577)	(0.585)	(0.600)
Predictors				
Fam. TMT inv.		-0.516	-2.638	31.984**
		(0.526)	(2.637)	(9.415)
CEO FCNE goals		-0.149	-0.155	1.606***
		(0.102)	(0.103)	(0.443)
Fam. TMT inv. sq.			1.555	-24.556***
			(1.979)	(7.190)
Fam. TMT inv. X FCNE goals				-6.850***
				(1.815)
Fam. TMT inv. sq. X FCNE goals				5.191***
				(1.418)
R-squared	0.199	0.228	0.232	0.293
Comparison to	-	Model 1A	Model 2A	Model 3A
ΔR-squared	-	0.029	0.004	0.061
Wald test (p-value)	-	0.155	0.434	0.001

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (5 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

Table 18: Robustness regression exploration short version 2 (FCNE goals)

	Base model		Curvilinear model	Interaction / full model
Variable	**Model 1B**	**Model 2B**	**Model 3B**	**Model 4B**
Controls (individual level)				
CEO age	-0.023	-0.025	-0.025	-0.023
	(0.017)	(0.017)	(0.017)	(0.018)
CEO gender	-0.014	0.090	0.095	0.072
	(0.464)	(0.467)	(0.469)	(0.455)
CEO educ.	-0.149	-0.212	-0.261	-0.297
	(0.272)	(0.271)	(0.276)	(0.264)
CEO firm tenure	0.028	0.035+	0.036+	0.034+
	(0.019)	(0.018)	(0.019)	(0.019)
Controls (family level)				
Relation. conflict	-0.173*	-0.174*	-0.176*	-0.204**
	(0.076)	(0.074)	(0.074)	(0.072)
Controls (firm level)				
TMT size	-0.044	-0.128	-0.131	-0.119
	(0.091)	(0.110)	(0.110)	(0.108)
Firm performance	0.346**	0.351**	0.344**	0.323**
	(0.103)	(0.114)	(0.113)	(0.114)
Firm size	0.076	0.006	0.002	-0.017
	(0.081)	(0.082)	(0.081)	(0.078)
Firm age	-0.163	-0.142	-0.151	-0.214
	(0.166)	(0.168)	(0.166)	(0.171)
Manufacturing	0.447	0.413	0.366	0.505
	(0.494)	(0.511)	(0.505)	(0.509)
Retail	0.174	0.157	0.142	0.149
	(0.671)	(0.692)	(0.683)	(0.677)
Construction	0.247	0.281	0.241	0.375
	(0.651)	(0.637)	(0.644)	(0.644)
Predictors				
Fam. TMT inv.		-0.801+	-3.764	24.861*
		(0.479)	(2.764)	(9.581)
CEO FCNE goals		-0.109	-0.118	1.314**
		(0.086)	(0.086)	(0.454)
Fam. TMT inv. sq.			2.172	-19.613**
			(2.081)	(7.174)
Fam. TMT inv. X FCNE goals				-5.673**
				(1.744)
Fam. TMT inv. sq. X FCNE goals				4.339**
				(1.338)
R-squared	0.214	0.251	0.261	0.313
Comparison to	-	Model 1B	Model 2B	Model 3B
ΔR-squared	-	0.037	0.010	0.052
Wald test (p-value)	-	0.079	0.299	0.007

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (4 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

4.2.4. Robustness checks with different scale versions of exploitation

Parallel to the robustness checks regarding exploration, I drew on an alternative measurement option for exploitation. Table 19 describes the results of the hierarchical OLS regression, measuring exploitation with the 4-item scale used by Jansen et al. (2009a) and Schulze et al. (2008) in a study of larger corporations (Cronbach's alpha = 0.73).

Parallel to my findings of the main model, I find a negative and marginally significant correlation (b = -0.162, p = 0.093) between FCNE goals and exploitation. This lends further support to hypothesis 4.

Hypothesis 2, predicting a U-shaped relationship between family TMT involvement and exploitation, is supported by the robustness regression results. I find a positive and significant relationship between the squared term of family TMT involvement and exploitation (b = 4.967, p < .01). R-squared increases by 0.053 in model 7A compared to model 6A and the Wald test indicates a significant model fit improvement (p < .01), further supporting the assumption of a curvilinear U-shaped effect (Cohen et al., 2013). The findings are in line with the main model.

Hypothesis 6 states that weaker CEO FCNE goals relax the U-shaped relationship between family TMT involvement and exploitation. In line with the main model, model 8A indicates a positive and marginally significant interaction effect (b = 2.542, p = 0.081). Stronger CEO FCNE goals are thus connected with a stronger U-shaped relationship between TMT involvement and exploitation, while weaker CEO FCNE goals diminish this U-shaped relationship. Therefore, I find some support for hypothesis 6, which underlines the findings from the main model.

The above findings lead me to the conclusion that the regression results from the main model are solid across different measurement models of exploitation.

Table 19: Robustness regression exploitation short version (FCNE goals)

	Base model		Curvilinear model	Interaction / full model
Variable	**Model 5A**	**Model 6A**	**Model 7A**	**Model 8A**
Controls (individual level)				
CEO age	0.005	0.003	0.002	0.004
	(0.020)	(0.020)	(0.019)	(0.020)
CEO gender	-0.049	0.035	0.047	0.037
	(0.389)	(0.404)	(0.398)	(0.389)
CEO educ.	0.031	-0.053	-0.164	-0.195
	(0.269)	(0.291)	(0.289)	(0.289)
CEO firm tenure	0.012	0.019	0.022	0.020
	(0.019)	(0.020)	(0.019)	(0.020)
Controls (family level)				
Relation. conflict	-0.135+	-0.144+	-0.149*	-0.168*
	(0.080)	(0.079)	(0.075)	(0.078)
Controls (firm level)				
TMT size	0.001	0.049	0.042	0.049
	(0.085)	(0.104)	(0.093)	(0.087)
Firm performance	0.284**	0.331***	0.315**	0.291**
	(0.091)	(0.094)	(0.094)	(0.095)
Firm size	0.211**	0.204*	0.195*	0.191*
	(0.073)	(0.083)	(0.075)	(0.075)
Firm age	0.088	0.111	0.091	0.047
	(0.206)	(0.200)	(0.196)	(0.202)
Manufacturing	-0.611	-0.657	-0.765	-0.663
	(0.509)	(0.506)	(0.531)	(0.548)
Retail	-0.588	-0.658	-0.692	-0.691
	(0.700)	(0.681)	(0.698)	(0.717)
Construction	-0.909+	-0.878+	-0.970+	-0.863
	(0.508)	(0.498)	(0.532)	(0.555)
Predictors				
Fam. TMT inv.		0.141	-6.637**	9.242
		(0.510)	(2.191)	(9.654)
CEO FCNE goals		-0.162+	-0.182+	0.542
		(0.093)	(0.095)	(0.549)
Fam. TMT inv. sq.			4.967**	-7.679
			(1.604)	(7.108)
Fam. TMT inv. X FCNE goals				-3.174
				(1.941)
Fam. TMT inv. sq. X FCNE goals				2.542+
				(1.439)
R-squared	0.202	0.227	0.280	0.304
Comparison to	-	Model 5A	Model 6A	Model 7A
ΔR-squared	-	0.025	0.053	0.024
Wald test (p-value)	-	0.216	0.003	0.150

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploitation (4 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

4.2.5. Robustness checks with ambidexterity

My theoretical approach is based on the assumption that exploration and exploitation are complementary rather than two ends of a continuum. Hence, I ran a further robustness calculation with the dependent variable "organizational ambidexterity" which is composed of the two dependent variables exploration and exploitation (Jansen et al., 2009a; O'Reilly & Tushman, 2013). In prior studies, organizational ambidexterity has been measured by multiplying (Gibson & Birkinshaw, 2004), adding (Jansen et al., 2009a; Lubatkin, 2006) and subtracting (He & Wong, 2004) exploration and exploitation. I ran OLS regressions using multiplicative, additive, and subtractive ambidexterity as dependent variables. I drew on the 6-item versions of exploration and exploitation to create a long version of organizational ambidexterity (Jansen et al., 2006). The results are illustrated in Table 20.

The additive calculation method for organizational ambidexterity yields explanatory power (Model 11A: $R^2 = 0.336$) similar to that of the multiplicative method (Model 11: $R^2 = 0.334$) and a considerably higher explanatory power than the subtractive method (Model 11B: $R^2 = 0.198$). The superior explanatory power of the additive method is further supported by findings of Jansen et al. (2009a) and Kammerlander et al. (2015). Organizational ambidexterity, calculated with both the multiplicative and the additive method, focuses on the absolute values of exploration and exploitation (Kammerlander et al., 2015). High values of organizational ambidexterity are thus achieved when either exploration or exploitation are higher, or – ideally – when both are at high levels. Conversely, subtractive organizational ambidexterity focuses on the balance of exploration and exploitation (Kammerlander et al., 2015). This balance can be achieved both at higher levels and at lower levels of exploration and exploitation. In this thesis, I aim to explain the reasons of higher and lower exploration and exploitation while I do not focus on how both activities are balanced. Hence a closer observation of multiplicative and additive organizational ambidexterity, focusing more on the absolute values of its constituents, is specifically useful and relevant for my investigation.

Hypotheses 3 and 4, stating that CEO FCNE goals are negatively associated with exploration and exploitation, find marginal support only for the additive model 10A (b = -0.285, p = 0.097).

Hypotheses 1b and 2, predicting a U-shaped relationship between family TMT involvement and exploration and exploitation, are supported by the multiplicative (model 10) and the additive (model 10A) models of organizational ambidexterity. The coefficients of the curvilinear

effect of family TMT involvement are positive and significant ($p < .1$ and $p < .05$). The curvilinear effect of family TMT involvement is not significant when the difference between exploration and exploitation (model 10B) is used as dependent variable. As outlined above, this finding suggests that family TMT involvement has an effect on the absolute value of exploration and exploitation (described by multiplicative and additive organizational ambidexterity) while it might not directly affect the balance of the two activities (described by subtractive organizational ambidexterity). Kammerlander et al. (2015) find similar results for multiplicative, additive and subtractive ambidexterity when analyzing the effect of CEOs' chronic regular focus on exploration and exploitation.

Hypotheses 5 and 6, stating that the U-shaped relationship between family TMT involvement and exploration and exploitation diminishes with weaker CEO FCNE goals, also hold true for organizational ambidexterity. The coefficients of the interaction effects are positive and significant for multiplicative (model 11; $p < .01$), additive (model 11A; $p < .01$) and also subtractive (model 11B; $p < .05$) ambidexterity.

The significantly improved model fit of the curvilinear and interaction model for the long and short version of multiplicative and additive ambidexterity ($p < .01$) further underlines the findings from the main model.

Table 20: Robustness regression ambidexterity (FCNE goals)

	Multiplicative ambidexterity			Additive ambidexterity			Subtractive ambidexterity		
Variable	**Model 9**	**Model 10**	**Model 11**	**Model 9A**	**Model 10A**	**Model 11A**	**Model 9B**	**Model 10B**	**Model 11B**
Controls (individual level)									
CEO age	-0.092	-0.099	-0.087	-0.019	-0.020	-0.017	-0.021	-0.020	-0.020
CEO gender	1.213	1.283	1.078	0.130	0.145	0.103	-0.021	-0.025	-0.043
CEO educ.	-0.015	-0.650	-0.921	-0.174	-0.314	-0.374	-0.120	-0.083	-0.089
CEO firm tenure	0.261+	0.278+	0.268+	0.053+	0.056+	0.054+	0.012	0.011	0.012
Controls (family level)									
Relation. conflict	-1.534*	-1.562*	-1.791**	-0.353*	-0.359*	-0.408**	-0.030	-0.028	-0.041
Controls (firm level)									
TMT size	-0.393	-0.431	-0.332	-0.082	-0.090	-0.069	-0.109	-0.107	-0.100
Firm performance	3.430***	3.334***	3.187***	0.702***	0.680***	0.646***	0.057	0.062	0.066
Firm size	0.778	0.727	0.543	0.191	0.180	0.144	-0.112+	-0.109+	-0.132*
Firm age	-0.909	-1.024	-1.543	-0.116	-0.141	-0.252	-0.165	-0.159	-0.187+
Manufacturing	-0.515	-1.132	-0.019	-0.323	-0.459	-0.218	0.768+	0.803+	0.855+
Retail	-1.122	-1.315	-1.250	-0.381	-0.424	-0.411	0.526	0.537	0.546
Construction	-3.755	-4.280	-3.232	-0.800	-0.915	-0.685	0.604	0.634	0.671
Predictors									
Fam. TMT inv.	-3.374	-42.009*	202.711*	-0.774	-9.299*	41.664*	-0.436	1.778	20.476*
CEO FCNE goals	-1.085	-1.197	11.248**	-0.260	-0.285+	2.281**	0.066	0.072	1.115**
Fam. TMT inv. sq.		28.309+	-156.257**		6.247*	-32.397**		-1.622	-14.979*
Fam. TMT inv. X FCNEG			-48.418**			-10.093**			-3.663*
Fam. TMT inv. sq. X FCNEG			36.692**			7.691**			2.624*
R-squared	0.259	0.283	0.334	0.262	0.287	0.336	0.151	0.163	0.198
Comparison to	Controls	Model 9	Model 10	Controls	Model 9A	Model 10A	Controls	Model 9B	Model 10B
ΔR-squared	0.024	0.024	0.051	0.028	0.025	0.049	0.020	0.012	0.035
Wald test (p-value)	0.241	0.050	0.007	0.187	0.047	0.007	0.282	0.250	0.043

N=109; coefficients of uncentered variables are reported; Control models not displayed

+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = ambidexterity (long version); sq. = squared

Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

4.2.6. Robustness checks with secondary data and reduced sample

I conducted further robustness checks to rule out the possibility that the regression results of the main model depend on CEO information regarding TMT composition and therefore could be subject to a single informant bias. I collected secondary data on TMT composition from the firm databases Hoppenstedt and Amadeus, from newspaper articles, company press releases and releases in the German Federal Gazette ("Bundesanzeiger"). As outlined before, CEO information is exactly matched in 87.2% of the observations, intraclass correlation coefficient (ICC), is .80 and the correlation coefficient is .88 ($p < .001$) indicating very high congruence between CEO information and secondary data.

I replaced family TMT involvement with "secondary family TMT involvement" and recalculated the main model for both exploration and exploitation. The results of this regression are illustrated in Table 21 and support the findings from the main model using primary CEO information on TMT composition. Hypothesis 1a, predicting a negative effect of family TMT involvement on exploration, again does not find support. Similarly, hypothesis 1b, predicting a U-shaped relationship between family TMT involvement and exploration, cannot be supported based on the robustness regression results in model 13 and 14. Also, Hypothesis 3, stating that CEO FCNE goals are negatively related with exploration, does not find significant support. This is in line with the findings from the main model. Hypothesis 5, stating that weaker CEO FCNE goals diminish the U-shaped relationship between family TMT involvement and exploration, is supported by the robustness regression results. Using secondary family TMT involvement leads to a positive and significant result ($b = 3.898$, $p < .05$) for the interaction between CEO FCNE goals and squared family TMT involvement.

For the exploitation model, hypothesis 4, stating that strong CEO FCNE goals are negatively related with exploitation, finds marginal support ($b = -0.156$, $p = 0.073$). Hypothesis 2, predicting a U-shaped relationship between family TMT involvement and exploitation, is supported by the robustness regression results in model 21 ($b = 3.233$, $p < .05$). Hypothesis 6, stating that weaker CEO FCNE goals relax the U-shaped relationship between family TMT involvement and exploitation, yields a positive and marginally significant interaction effect ($b = 2.551$, $p = 0.069$). Stronger FCNE goals are therefore connected with a reinforced U-shaped relationship between TMT involvement and exploitation, while weaker FCNE goals diminish this U-shaped relationship. Thus I find some support for hypothesis 4, which corresponds to the findings from the main model.

Therefore, I conclude that the findings from the main model are solid across different measurements of the predictor variable family TMT involvement.

In a similar manner, I reduced the sample by excluding extreme values of family TMT involvement to ensure that results are solid with regard to outliers. More specifically, I excluded observations with high concentrations of leadership (one TMT member only, n = 17) and observations where family TMT involvement is very low (below 25%, n = 3).

As a result, the sample was reduced to 89 observations (~80%). On the basis of this reduced sample, I reran the regression for both exploration and exploitation. Results are illustrated in Table 22 and support the findings from the main model. Interestingly, hypothesis 3, predicting a negative effect of FCNE goals on exploration, now finds support in model 24 based on the reduced sample ($b = -0.233$, $p < .05$). This indicates at least some support for this hypothesis, even though I do not find a significant relationship in the main model. Regarding the other hypotheses, results correspond to the main model. Hypothesis 1a, suggesting a negative effect of family TMT involvement on exploration, again cannot be confirmed. Similarly, hypothesis 1b, predicting a U-shaped relationship between family TMT involvement and exploration, cannot be supported, while hypothesis 5, stating that weaker CEO FCNE goals relax the U-shaped relationship between family TMT involvement and exploration, is supported by the regression results in model 26 based on the reduced sample ($b = 4.156$, $p < .05$).

Regarding exploitation, results based on the reduced sample are in line with the main model. Hypothesis 4, predicting a negative effect of CEO FCNE goals on exploitation, can be supported in model 25 ($b = -0.295$, $p < .01$). Also, a U-shaped relationship between family TMT involvement and exploitation (hypothesis 2), finds support in model 26 ($b = 4.271$, $p < .05$). Finally, regression results in model 27 regarding hypothesis 6, stating that the U-shaped relationship between family TMT involvement and exploitation diminishes with weaker FCNE goals, yield a marginally significant interaction effect ($b = 2.863$, $p = 0.074$).

Overall, these findings further support the robustness of the main model and suggest that the results are solid even when the sample is reduced by 20%.

Table 21: Robustness regression secondary TMT data (FCNE goals)

	Exploration (6 items)				Exploitation (6 items)			
Variable	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**	**Model 17**	**Model 18**	**Model 19**
Controls (individual level)								
CEO age	-0.018	-0.020	-0.020	-0.019	0.003	0.000	0.000	0.000
CEO gender	-0.032	0.037	0.027	0.065	-0.025	0.075	0.036	0.051
CEO educ.	-0.091	-0.123	-0.138	-0.155	0.060	-0.008	-0.062	-0.060
CEO firm tenure	0.027	0.032+	0.033*	0.031+	0.012	0.021	0.023	0.022
Controls (family level)								
Relation. conflict	-0.190*	-0.192*	-0.191*	-0.224**	-0.154*	-0.160*	-0.158*	-0.180*
Controls (firm level)								
TMT size	-0.035	-0.053	-0.057	-0.064	0.006	0.007	-0.006	-0.008
Firm performance	0.371***	0.384***	0.381**	0.365**	0.284**	0.316***	0.305***	0.300**
Firm size	0.094	0.057	0.059	0.051	0.182**	0.144*	0.148*	0.140*
Firm age	-0.159	-0.155	-0.157	-0.215	0.000	0.014	0.009	-0.029
Manufacturing	0.252	0.256	0.233	0.322	-0.498	-0.519	-0.600	-0.551
Retail	0.091	0.087	0.086	0.054	-0.393	-0.430	-0.436	-0.453
Construction	-0.126	-0.082	-0.097	-0.030	-0.738	-0.687	-0.740	-0.714
Predictors								
S. fam. TMT inv.		-0.368	-1.610	23.665+		-0.284	-4.726*	12.478
CEO FCNE goals		-0.096	-0.100	1.240+		-0.156+	-0.171+	0.791
S. fam. TMT inv. sq.			0.904	-18.130*			3.233*	-9.324
S. fam. TMT inv. X FCNEG				-5.162*				-3.485+
S. fam. TMT inv. sq. X FCNEG				3.898*				2.551+
R-squared	0.230	0.247	0.248	0.276	0.209	0.243	0.261	0.273
Comparison to	-	Model 12	Model 13	Model 14	-	Model 16	Model 17	Model 18
ΔR-squared	-	0.017	0.001	0.028	-	0.034	0.018	0.012
Wald test (p-value)	-	0.372	0.674	0.107	-	0.143	0.032	0.190

N=109; coefficients of uncentered variables are reported

+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (6 items) & exploitation (6 items); sq. = squared

Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

Table 22: Robustness regression reduced sample (FCNE goals)

	Exploration (6 items)				Exploitation (6 items)			
Variable	**Model 20**	**Model 21**	**Model 22**	**Model 23**	**Model 24**	**Model 25**	**Model 26**	**Model 27**
Controls (individual level)								
CEO age	0.004	0.006	0.005	0.000	0.017	0.020	0.018	0.014
CEO gender	-0.145	0.008	-0.005	-0.054	-0.005	0.162	0.131	0.099
CEO educ.	-0.146	-0.249	-0.282	-0.303	0.054	-0.071	-0.148	-0.166
CEO firm tenure	0.004	0.011	0.012	0.017	-0.003	0.007	0.008	0.011
Controls (family level)								
Relation. conflict	-0.089	-0.096	-0.104	-0.139	-0.132	-0.141+	-0.161*	-0.185*
Controls (firm level)								
TMT size	0.019	0.006	0.010	0.018	0.113	0.155	0.162	0.169
Firm performance	0.426***	0.474***	0.461***	0.434***	0.288**	0.366***	0.335**	0.314**
Firm size	0.111	0.048	0.050	0.030	0.198**	0.152+	0.158*	0.146+
Firm age	0.005	0.041	0.021	-0.059	0.052	0.101	0.054	-0.003
Manufacturing	0.319	0.300	0.288	0.384	-0.377	-0.408	-0.438	-0.367
Retail	0.585	0.582	0.587	0.582	-0.139	-0.162	-0.151	-0.156
Construction	0.030	0.145	0.117	0.163	-0.514	-0.384	-0.448	-0.412
Predictors								
S. fam. TMT inv.		-0.430	-2.960	25.698*		-0.066	-5.950*	13.616
CEO FCNE goals		-0.233*	-0.232*	1.436*		-0.295**	-0.294**	0.834
S. fam. TMT inv. sq.			1.837	-18.768*			4.271*	-9.896
S. fam. TMT inv. X FCNEG				-5.771*				-3.947+
S. fam. TMT inv. sq. X FCNEG				4.156*				2.863+
R-squared	0.240	0.303	0.310	0.345	0.229	0.307	0.341	0.358
Comparison to	-	Model 20	Model 21	Model 22	-	Model 24	Model 25	Model 26
ΔR-squared	-	0.063	0.007	0.035	-	0.078	0.034	0.017
Wald test (p-value)	-	0.044	0.388	0.042	-	0.024	0.027	0.190

N=89; coefficients of uncentered variables are reported

+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (6 items) & exploitation (6 items); sq. = squared

Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

4.3. Regression results drawing on CEO prosocial motivation as moderator variable

Table 23 and Table 24 show the results of the OLS robust regression drawing on CEO prosocial motivation as moderator variable. Parallel to the OLS robust regression including CEO FCNE goals as moderator variable, the dependent variable in models 28-31 is exploration, whereas the dependent variable in models 32-35 is exploitation. Models 28 and 32 are the *base models* (E1) and contain only the control variables. Models 29 and 33 contain the predictor variables and are mathematically consistent with the *base models* (E1). Models 30 and 34 are the *curvilinear models* (E2) and contain the quadratic terms of the independent variable. Finally, models 31 and 35 are the *interaction models* (E3) and contain the interaction between the linear and non-linear terms of the independent variable and the moderator variable respectively.

4.3.1. Regression results for exploration

Parallel to the regression results drawing on CEO FCNE goals, I first focus on the exploration model (models 28-31) illustrated in Table 23. Model 28 is equivalent to model 1 in Table 15, showing a significant negative effect of relationship conflict ($b = -0.190$, $p < .05$) and a significant positive effect of performance ($b = 0.371$, $p < .001$) on exploration.

I continued with including the predictor variables family TMT involvement and CEO prosocial motivation. Hypotheses 7a and 7b predict a positive respectively negative relationship between CEO prosocial motivation and exploration. I find a positive correlation coefficient ($b = 0.150$) but no significance. Hence, neither hypothesis 7a nor 7b can be supported.

Hypothesis 9 states that the U-shaped relationship between family TMT involvement and exploration diminishes with weaker CEO prosocial motivation. In order to test this hypothesis, I included the interaction terms of family TMT involvement (linear and quadratic) and CEO prosocial motivation in model 31 (interaction model). The interaction between quadratic family TMT involvement and CEO prosocial motivation is positive and significant ($b = 4.596$, $p < .05$). Explained variance increases by 0.035 ($p < .05$) in model 31 compared to model 30, underlining the explanatory power of the interaction term and the significance of the curvilinear interaction effect (Hair, 2010). This lends further support to hypothesis 9 and the assumption that weaker CEO prosocial motivation relaxes the U-shaped relationship between family TMT involvement and exploration.

Table 23: Results of regression analysis for exploration (Prosocial motivation)

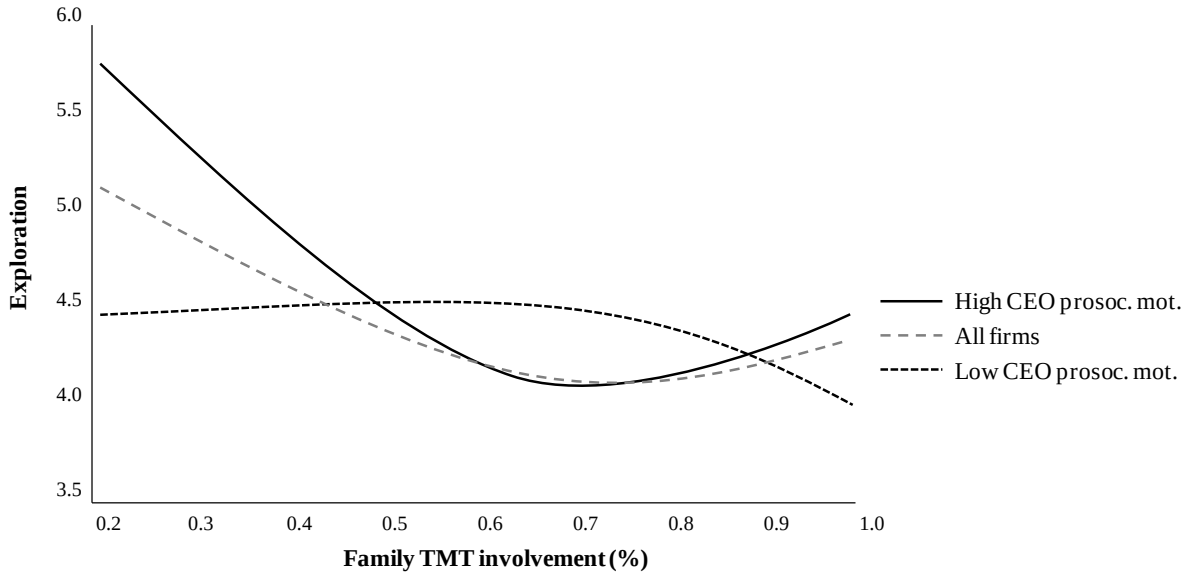
	Base model		Curvilinear model	Interaction / full model
Variable	**Model 28**	**Model 29**	**Model 30**	**Model 31**
Controls (individual level)				
CEO age	-0.018	-0.017	-0.017	-0.021
	(0.015)	(0.015)	(0.015)	(0.015)
CEO gender	-0.032	0.031	0.028	0.025
	(0.473)	(0.428)	(0.434)	(0.452)
CEO educ.	-0.091	-0.090	-0.125	-0.042
	(0.244)	(0.241)	(0.248)	(0.252)
CEO firm tenure	0.027	0.024	0.025	0.028+
	(0.017)	(0.017)	(0.017)	(0.016)
Controls (family level)				
Relation. conflict	-0.190*	-0.165+	-0.169+	-0.186*
	(0.080)	(0.086)	(0.087)	(0.085)
Controls (firm level)				
TMT size	-0.035	-0.118	-0.122	-0.123
	(0.090)	(0.113)	(0.114)	(0.112)
Firm performance	0.371***	0.339**	0.333**	0.330**
	(0.103)	(0.104)	(0.104)	(0.107)
Firm size	0.094	0.035	0.034	0.042
	(0.077)	(0.080)	(0.080)	(0.079)
Firm age	-0.159	-0.152	-0.160	-0.201
	(0.164)	(0.169)	(0.168)	(0.172)
Manufacturing	0.252	0.231	0.199	0.134
	(0.446)	(0.461)	(0.451)	(0.451)
Retail	0.091	-0.039	-0.031	-0.025
	(0.670)	(0.686)	(0.680)	(0.692)
Construction	-0.126	-0.209	-0.232	-0.253
	(0.559)	(0.545)	(0.549)	(0.573)
Predictors				
Fam. TMT inv.		-0.757	-3.051	29.353*
		(0.461)	(2.614)	(11.693)
CEO prosoc. mot.		0.150	0.133	1.973**
		(0.097)	(0.102)	(0.675)
Fam. TMT inv. sq.			1.687	-21.689*
			(1.961)	(8.820)
Fam. TMT inv. X CEO ps. mot.				-6.365*
				(2.451)
Fam. TMT inv. sq. X CEO ps. mot.				4.596*
				(1.833)
R-squared	0.230	0.261	0.267	0.302
Comparison to	-	Model 28	Model 29	Model 30
ΔR-squared	-	0.031	0.006	0.035
Wald test (p-value)	-	0.097	0.392	0.035

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (6 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

Again, I examined the curvilinear interaction effect between family TMT involvement, CEO prosocial motivation and exploration with four additional analyses. First, as I do not find support for a direct curvilinear effect between family TMT involvement and exploration, I performed a split sample test, including only observations with higher CEO prosocial motivation levels[26]. The negative slope ($b = -9.605$, $p < .01$), representing the tangential slope at the intercept of the quadratic term with the y-axis, supports the assumption of a U-shaped interaction relationship (Cohen et al., 2013). Second, the statistical test suggested by Lind and Mehlum (2010) reveals further evidence for the presence of a U-shaped relationship for high values of CEO prosocial motivation ($p < .05$). Parallel to the findings in model 4, drawing on CEO FCNE goals as moderator variable, I find significant empirical evidence ($p < .05$) for the presence of an inverted U-shaped relationship between family TMT involvement and exploration for low CEO prosocial motivation, indicating a reversal of the U-shaped into an inverted U-shaped relationship. Third, I reran the regression excluding extreme values of family TMT involvement to account for potential outliers. Results are given in Table 30 and yield no significant interaction effects. Fourth, I performed various robustness checks including different measurements and scale versions of predictor and outcome variables. Results are illustrated in Tables 25, 26, 28, and 29 and lend some support for the presence of a curvilinear effect. Hence, overall results indicate the presence of curvilinear interaction effect. The interaction effects from Table 23 are illustrated in Figure 10.

Figure 10: Curvilinear relationship between family TMT involvement and exploration with interaction effect of CEO prosocial motivation

Source: Own illustration



The curvilinear interaction effect between family TMT involvement and CEO prosocial motivation (hypothesis 9) is represented by the black solid line and the black dotted line. High CEO prosocial motivation leads to a U-shaped relationship between family TMT involvement and exploration with a minimum and turning point at 0.744 ($p < .05$). Medium levels of family TMT involvement are associated with lower levels of exploration, while a high concentration of either family or non-family TMT members is connected with higher levels of exploration.

Conversely, low CEO prosocial motivation leads to an inverted U-shaped relationship between family TMT involvement and exploration with a maximum and turning point at 0.677 ($p < .05$). Under this condition, medium levels of family TMT involvement are connected with higher levels of exploration and are more favorable for exploration than both a concentration of family members on the TMT and a concentration of non-family members on the TMT. This gives further support to hypothesis 9.

4.3.2. Exploitation regression results

In what follows, I focus on the exploitation model (models 32-35), illustrated in Table 24. Again, model 32 – comprising control variables only – is equivalent to model 5 and shows a significant negative effect of relationship conflict and a significant positive effect of performance on exploitation. In model 33, I included the predictor variables family TMT involvement and CEO prosocial motivation. Hypothesis 8 predicts a positive relationship between CEO prosocial motivation and exploitation, which can be supported ($b = 0.231$, $p < .05$).

Hypothesis 10 predicts that the U-shaped relationship between family TMT involvement and exploitation diminishes with decreasing CEO prosocial motivation. I tested this hypothesis by including the interaction terms of family TMT involvement (linear and quadratic) and CEO prosocial motivation in model 35 (interaction model). The regression yields a positive but insignificant result ($b = 2.533$). Further, the statistical test suggested by Lind and Mehlum (2010) yields marginally significant results ($p = 0.070$) for the presence of a U-shaped relationship between family TMT involvement and exploration when CEO prosocial motivation is high[26]. When CEO prosocial motivation is low, no significant evidence exists for the presence of a U-shaped or inverted U-shaped relationship between family TMT involvement and exploration. Further robustness checks (Tables 27, 28, 29, 30) yield no significant results – hence I find only indicative support for hypothesis 10.

[26] High CEO prosocial motivation is defined as values > 5.0 as this represents the mean value of this variable.

Table 24: Results of regression analysis for exploitation (Prosocial motivation)

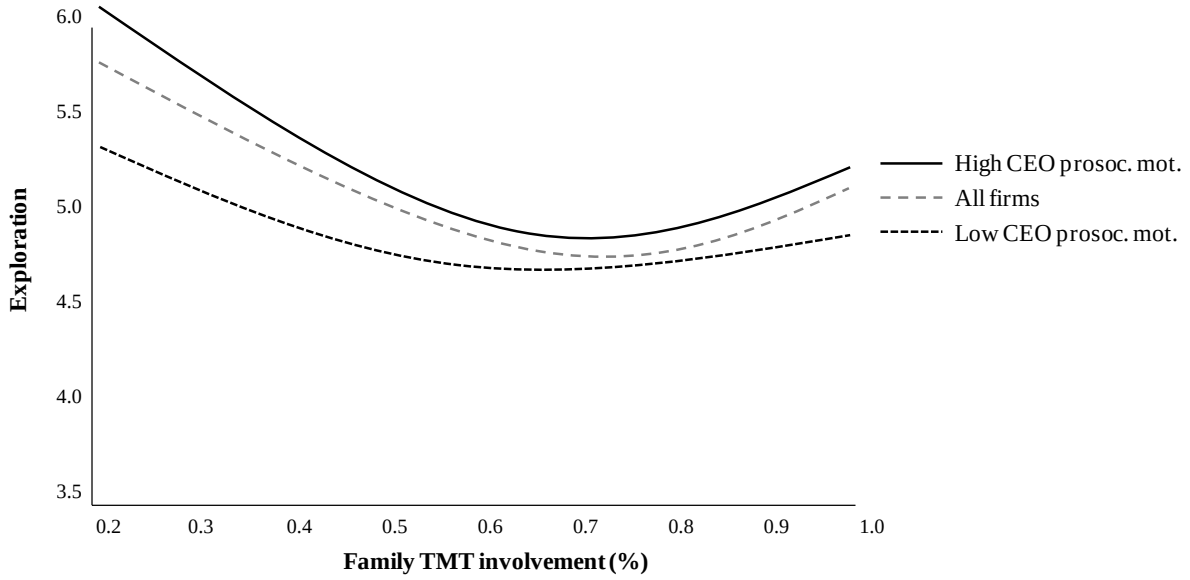
	Base model		Curvilinear model	Interaction / full model
Variable	**Model 32**	**Model 33**	**Model 34**	**Model 35**
Controls (individual level)				
CEO age	0.003	0.006	0.005	0.003
	(0.018)	(0.017)	(0.017)	(0.017)
CEO gender	-0.025	0.031	0.027	0.021
	(0.361)	(0.341)	(0.347)	(0.357)
CEO educ.	0.060	0.067	0.006	0.064
	(0.238)	(0.230)	(0.238)	(0.243)
CEO firm tenure	0.012	0.007	0.009	0.011
	(0.017)	(0.017)	(0.016)	(0.016)
Controls (family level)				
Relation. conflict	-0.154*	-0.120	-0.127	-0.136
	(0.077)	(0.088)	(0.087)	(0.087)
Controls (firm level)				
TMT size	0.006	-0.025	-0.032	-0.036
	(0.078)	(0.099)	(0.097)	(0.097)
Firm performance	0.284**	0.256**	0.246**	0.245**
	(0.087)	(0.090)	(0.090)	(0.092)
Firm size	0.182**	0.146+	0.143+	0.150+
	(0.068)	(0.079)	(0.076)	(0.080)
Firm age	0.000	0.006	-0.008	-0.032
	(0.187)	(0.189)	(0.189)	(0.193)
Manufacturing	-0.498	-0.528	-0.586	-0.617
	(0.475)	(0.484)	(0.494)	(0.489)
Retail	-0.393	-0.620	-0.605	-0.601
	(0.660)	(0.681)	(0.689)	(0.692)
Construction	-0.738	-0.877+	-0.916+	-0.925+
	(0.499)	(0.512)	(0.532)	(0.528)
Predictors				
Fam. TMT inv.		-0.410	-4.430+	14.024
		(0.498)	(2.381)	(14.460)
CEO prosoc. mot.		0.231*	0.201+	1.297
		(0.101)	(0.106)	(0.887)
Fam. TMT inv. sq.			2.956+	-9.952
			(1.720)	(10.184)
Fam. TMT inv. X CEO ps. mot.				-3.615
				(2.854)
Fam. TMT inv. sq. X CEO ps. mot.				2.533
				(2.019)
R-squared	0.209	0.255	0.276	0.288
Comparison to	-	Model 32	Model 33	Model 34
ΔR-squared	-	0.046	0.021	0.012
Wald test (p-value)	-	0.051	0.089	0.451

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploitation (6 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

The interaction effects from Table 24 are illustrated in Figure 11. The black solid line represents the interaction effect between family TMT involvement and CEO prosocial motivation when CEO prosocial motivation is stronger. The curvilinear effect is marginally significant and has its turning point at 0.719 (p = 0.070). The black dotted line represents the interaction effect between family TMT involvement and CEO prosocial motivation when CEO prosocial motivation is low. However, the curvilinear relationship is insignificant. This gives indicative support for hypothesis 10.

Figure 11: Curvilinear relationship between family TMT involvement and exploitation with interaction effect of CEO prosocial motivation

Source: Own illustration



4.3.3. Robustness checks with different scale versions

Parallel to the robustness checks focusing on the interaction with CEO FCNE goals, I drew on alternative scale versions to check the robustness of the interaction results using CEO prosocial motivation. Regression results, drawing on exploration as dependent variable, are illustrated in Table 25 – using the 5-item scale version by Alexiev et al. (2010) – and Table 26 – using the 4-item scale version by Jansen et al. (2009a). The robustness regression results again yield no support for either hypothesis 7a or 7b but give further support to hypothesis 9.

Regression results, drawing on exploitation measured with the 4-item scale by Jansen et al. (2009a), are illustrated in Table 27. Again, I find support for hypothesis 8 but no significant interaction effect (hypothesis 10), in line with the findings from the main model.

Table 25: Robustness regression exploration short version 1 (Prosocial motivation)

	Base model		Curvilinear model	Interaction / full model
Variable	**Model 28A**	**Model 29A**	**Model 30A**	**Model 31A**
Controls (individual level)				
CEO age	-0.014	-0.012	-0.012	-0.016
	(0.016)	(0.016)	(0.016)	(0.016)
CEO gender	-0.077	-0.010	-0.011	-0.016
	(0.495)	(0.446)	(0.449)	(0.467)
CEO educ.	-0.104	-0.101	-0.115	-0.019
	(0.252)	(0.249)	(0.259)	(0.264)
CEO firm tenure	0.021	0.017	0.017	0.021
	(0.017)	(0.017)	(0.017)	(0.017)
Controls (family level)				
Relation. conflict	-0.202*	-0.172+	-0.174+	-0.192*
	(0.089)	(0.096)	(0.097)	(0.095)
Controls (firm level)				
TMT size	-0.054	-0.129	-0.131	-0.133
	(0.096)	(0.121)	(0.123)	(0.122)
Firm performance	0.365**	0.331**	0.329**	0.327**
	(0.112)	(0.113)	(0.113)	(0.116)
Firm size	0.125	0.067	0.067	0.076
	(0.086)	(0.091)	(0.091)	(0.089)
Firm age	-0.175	-0.168	-0.171	-0.216
	(0.178)	(0.184)	(0.185)	(0.189)
Manufacturing	0.433	0.407	0.394	0.327
	(0.462)	(0.479)	(0.476)	(0.468)
Retail	0.357	0.184	0.188	0.194
	(0.735)	(0.755)	(0.757)	(0.763)
Construction	0.095	-0.014	-0.023	-0.045
	(0.595)	(0.576)	(0.581)	(0.599)
Predictors				
Fam. TMT inv.		-0.722	-1.643	33.378*
		(0.506)	(2.790)	(12.897)
CEO prosoc. mot.		0.190	0.183	2.196**
		(0.114)	(0.119)	(0.750)
Fam. TMT inv. sq.			0.678	-24.378*
			(2.089)	(9.699)
Fam. TMT inv. X CEO ps. mot.				-6.874*
				(2.670)
Fam. TMT inv. sq. X CEO ps. mot.				4.924*
				(1.993)
R-squared	0.199	0.232	0.233	0.267
Comparison to	-	Model 28A	Model 29A	Model 30A
ΔR-squared	-	0.033	0.001	0.034
Wald test (p-value)	-	0.091	0.746	0.036

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (5 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

Table 26: Robustness regression exploration short version 2 (Prosocial motivation)

	Base model		Curvilinear model	Interaction / full model
Variable	**Model 28B**	**Model 29B**	**Model 30B**	**Model 31B**
Controls (individual level)				
CEO age	-0.023	-0.022	-0.023	-0.027
	(0.017)	(0.017)	(0.017)	(0.016)
CEO gender	-0.014	0.049	0.046	0.046
	(0.464)	(0.434)	(0.443)	(0.469)
CEO educ.	-0.149	-0.152	-0.187	-0.117
	(0.272)	(0.270)	(0.276)	(0.289)
CEO firm tenure	0.028	0.027	0.028	0.031+
	(0.019)	(0.018)	(0.018)	(0.018)
Controls (family level)				
Relation. conflict	-0.173*	-0.154+	-0.158+	-0.175*
	(0.076)	(0.079)	(0.080)	(0.079)
Controls (firm level)				
TMT size	-0.044	-0.154	-0.158	-0.157
	(0.091)	(0.114)	(0.113)	(0.111)
Firm performance	0.346**	0.312**	0.306**	0.303**
	(0.103)	(0.105)	(0.105)	(0.109)
Firm size	0.076	0.006	0.005	0.011
	(0.081)	(0.082)	(0.082)	(0.083)
Firm age	-0.163	-0.156	-0.164	-0.201
	(0.166)	(0.172)	(0.171)	(0.177)
Manufacturing	0.447	0.432	0.399	0.338
	(0.494)	(0.507)	(0.500)	(0.499)
Retail	0.174	0.106	0.114	0.119
	(0.671)	(0.689)	(0.683)	(0.692)
Construction	0.247	0.200	0.178	0.156
	(0.651)	(0.646)	(0.652)	(0.674)
Predictors				
Fam. TMT inv.		-0.921+	-3.241	26.118+
		(0.481)	(2.884)	(14.807)
CEO prosoc. mot.		0.095	0.079	1.723+
		(0.092)	(0.098)	(0.872)
Fam. TMT inv. sq.			1.706	-19.664+
			(2.179)	(10.690)
Fam. TMT inv. X CEO ps. mot.				-5.772+
				(2.931)
Fam. TMT inv. sq. X CEO ps. mot.				4.204*
				(2.117)
R-squared	0.214	0.246	0.252	0.282
Comparison to	-	Model 28B	Model 29B	Model 30B
ΔR-squared	-	0.032	0.006	0.030
Wald test (p-value)	-	0.114	0.436	0.145

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (4 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

Table 27: Robustness regression exploitation short version (Prosocial motivation)

	Base model		Curvilinear model	Interaction / full model
Variable	**Model 32A**	**Model 33A**	**Model 34A**	**Model 35A**
Controls (individual level)				
CEO age	0.005	0.009	0.007	0.006
	(0.020)	(0.019)	(0.018)	(0.019)
CEO gender	-0.049	-0.001	-0.007	-0.011
	(0.389)	(0.360)	(0.360)	(0.367)
CEO educ.	0.031	0.043	-0.038	-0.003
	(0.269)	(0.258)	(0.265)	(0.272)
CEO firm tenure	0.012	0.005	0.007	0.008
	(0.019)	(0.018)	(0.017)	(0.017)
Controls (family level)				
Relation. conflict	-0.135+	-0.097	-0.106	-0.111
	(0.080)	(0.092)	(0.091)	(0.091)
Controls (firm level)				
TMT size	0.001	0.011	0.002	-0.001
	(0.085)	(0.103)	(0.097)	(0.098)
Firm performance	0.284**	0.262**	0.248**	0.248*
	(0.091)	(0.094)	(0.094)	(0.096)
Firm size	0.211**	0.194*	0.192*	0.196*
	(0.073)	(0.083)	(0.079)	(0.083)
Firm age	0.088	0.093	0.074	0.061
	(0.206)	(0.206)	(0.204)	(0.210)
Manufacturing	-0.611	-0.645	-0.721	-0.737
	(0.509)	(0.512)	(0.530)	(0.529)
Retail	-0.588	-0.865	-0.846	-0.843
	(0.700)	(0.717)	(0.732)	(0.737)
Construction	-0.909+	-1.077*	-1.128*	-1.132*
	(0.508)	(0.515)	(0.539)	(0.536)
Predictors				
Fam. TMT inv.		-0.127	-5.405*	4.846
		(0.496)	(2.471)	(15.403)
CEO prosoc. mot.		0.270*	0.232*	0.849
		(0.108)	(0.112)	(0.914)
Fam. TMT inv. sq.			3.881*	-3.215
			(1.795)	(11.038)
Fam. TMT inv. X CEO ps. mot.				-2.006
				(3.016)
Fam. TMT inv. sq. X CEO ps. mot.				1.391
				(2.163)
R-squared	0.202	0.255	0.286	0.290
Comparison to	-	Model 32A	Model 33A	Model 34A
ΔR-squared	-	0.053	0.031	0.004
Wald test (p-value)	-	0.048	0.033	0.796

N=109; coefficients of uncentered variables and robust standard errors (in parentheses) are reported
+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploitation (4 items); sq. = squared
Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

4.3.4. Robustness checks with ambidexterity

Parallel to the CEO FCNE interaction model, I conducted robustness checks using ambidexterity as dependent variable for the CEO prosocial motivation interaction model. Results are illustrated in Table 28. Ambidexterity was again calculated by multiplying (Gibson & Birkinshaw, 2004), adding (Jansen et al., 2009a; Lubatkin, 2006) and subtracting (He & Wong, 2004) exploration and exploitation. Hypotheses 7a and 7b and hypothesis 8 predict a negative (respectively positive) effect of CEO prosocial motivation on exploration and exploitation and are hence contradictory. Results in Table 28 indicate that overall the positive effect of CEO prosocial motivation prevails, suggesting that CEO prosocial motivation might play an important role in the simultaneous increase of exploration and exploitation. Hypotheses 9 and 10, stating that the curvilinear relationship between family TMT involvement and exploration and exploitation diminishes with decreasing CEO prosocial motivation, find support in model 38 ($b = 32.953$, $p < .05$) and in model 38A ($b = 7.129$, $p < .05$). However, the Wald test yields significant results only for model 38, thus the results are only indicative. This is consistent, with the mixed effects of the exploration and exploitation models.

4.3.5. Robustness checks with secondary data and reduced sample

Finally, I cross-checked the regression results, replacing family TMT involvement with secondary data collected from firm databases, newspaper articles, and company press releases. Results are illustrated in Table 29. For the exploration model, neither hypothesis 7a nor hypothesis 7b can be supported. Hypothesis 9, stating that high CEO prosocial motivation diminishes the curvilinear relationship between family TMT involvement and exploration, finds support ($b = 3.632$, $p < .05$). Regarding the exploitation model, hypothesis 8, predicting a positive effect of CEO prosocial motivation, can be confirmed ($b = 0.226$, $p < .05$). The curvilinear interaction effect (hypothesis 10) cannot be supported, in line with the main model.

The robustness check drawing on a reduced sample, illustrated in Table 30, yields marginally significant results for hypothesis 9, predicting a curvilinear interaction effect of CEO prosocial motivation on the relationship between family TMT involvement and exploration ($b = 3.680$, $p = 0.076$), and hypothesis 8, predicting a positive effect of CEO prosocial motivation on exploitation ($b = 0.228$, $p = 0.053$).

Overall, robustness checks largely confirm the results of the main model. However, only marginally significant effects of the curvilinear interaction effects of CEO prosocial motivation indicate that these must be interpreted with caution.

Table 28: Robustness regression ambidexterity (Prosocial motivation)

	Multiplicative ambidexterity			Additive ambidexterity			Subtractive ambidexterity		
Variable	**Model 36**	**Model 37**	**Model 38**	**Model 36A**	**Model 37A**	**Model 38A**	**Model 36B**	**Model 37B**	**Model 38B**
Controls (individual level)									
CEO age	-0.055	-0.063	-0.089	-0.011	-0.013	-0.018	-0.023+	-0.022+	-0.024+
CEO gender	0.986	0.955	0.911	0.062	0.055	0.046	-0.001	0.001	0.004
CEO educ.	0.628	0.199	0.868	-0.023	-0.119	0.023	-0.157	-0.131	-0.106
CEO firm tenure	0.162	0.176	0.201	0.031	0.034	0.039	0.017	0.016	0.017
Controls (family level)									
Relation. conflict	-1.212+	-1.257+	-1.379*	-0.285+	-0.296+	-0.322*	-0.045	-0.042	-0.050
Controls (firm level)									
TMT size	-0.645	-0.695	-0.721	-0.143	-0.154	-0.159	-0.094	-0.091	-0.088
Firm performance	2.959***	2.884***	2.872***	0.595***	0.578**	0.576**	0.082	0.087	0.085
Firm size	0.710	0.695	0.765	0.181	0.178	0.192	-0.110+	-0.109+	-0.108+
Firm age	-1.027	-1.128	-1.431	-0.146	-0.168	-0.234	-0.158	-0.151	-0.169
Manufacturing	-0.446	-0.847	-1.283	-0.297	-0.387	-0.483	0.760+	0.784+	0.751+
Retail	-2.585	-2.483	-2.436	-0.659	-0.636	-0.626	0.581	0.575	0.576
Construction	-5.133	-5.407	-5.545	-1.086	-1.147	-1.178	0.667	0.684	0.671
Predictors									
Fam. TMT inv.	-5.220	-33.310	202.453+	-1.168	-7.481	43.377+	-0.347	1.379	15.329
CEO prosoc. mot.	1.885*	1.680*	15.341*	0.380*	0.334+	3.270*	-0.081	-0.069	0.676
Fam. TMT inv. sq.		20.655	-147.092+		4.642	-31.641+		-1.269	-11.736
Fam. TMT inv. X C.ps m.			-46.255*			-9.980*			-2.750
Fam. TMT inv. sq. X C.ps.m.			32.953*			7.129*			2.063
R-squared	0.280	0.292	0.318	0.274	0.288	0.313	0.153	0.159	0.176
Comparison to	Controls	Model 36	Model 37	Controls	Model 36A	Model 37A	Controls	Model 36B	Model 37B
ΔR-squared	0.045	0.012	0.026	0.040	0.014	0.025	0.022	0.006	0.017
Wald test (p-value)	0.033	0.175	0.107	0.050	0.182	0.134	0.244	0.399	0.344

N=109; coefficients of uncentered variables are reported; Control models not displayed

+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = ambidexterity (long version); sq. = squared

Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

Table 29: Robustness regression secondary TMT data (Prosocial motivation)

	Exploration (6 items)				Exploitation (6 items)			
Variable	**Model 39**	**Model 40**	**Model 41**	**Model 42**	**Model 43**	**Model 44**	**Model 45**	**Model 46**
Controls (individual level)								
CEO age	-0.018	-0.018	-0.018	-0.021	0.003	0.005	0.004	0.002
CEO gender	-0.032	0.009	0.009	-0.039	-0.025	0.030	0.001	-0.026
CEO educ.	-0.091	-0.060	-0.060	-0.023	0.060	0.095	0.069	0.066
CEO firm tenure	0.027	0.025	0.025	0.027+	0.012	0.008	0.009	0.010
Controls (family level)								
Relation. conflict	-0.190*	-0.168+	-0.168+	-0.196*	-0.154*	-0.119	-0.121	-0.136
Controls (firm level)								
TMT size	-0.035	-0.069	-0.069	-0.062	0.006	-0.019	-0.030	-0.020
Firm performance	0.371***	0.345**	0.345**	0.342**	0.284**	0.252**	0.245**	0.241*
Firm size	0.094	0.055	0.055	0.062	0.182**	0.140+	0.144*	0.139+
Firm age	-0.159	-0.171	-0.171	-0.199	0.000	-0.011	-0.016	-0.032
Manufacturing	0.252	0.276	0.276	0.195	-0.498	-0.486	-0.526	-0.560
Retail	0.091	-0.002	-0.002	0.026	-0.393	-0.583	-0.564	-0.536
Construction	-0.126	-0.178	-0.178	-0.203	-0.738	-0.848+	-0.868+	-0.868
Predictors								
S. fam. TMT inv.		-0.491	-0.490	24.212*		-0.486	-2.935	7.413
CEO prosoc. mot.		0.134	0.134	1.470*		0.226*	0.208*	0.670
S. fam. TMT inv. sq.			0.000	-18.258*			1.782	-6.671
S. fam. TMT inv. X C.ps m.				-4.903*				-2.099
S. fam. TMT inv. sq. X C.ps m.				3.632*				1.708
R-squared	0.230	0.251	0.251	0.272	0.209	0.260	0.265	0.275
Comparison to	-	Model 39	Model 40	Model 41	-	Model 43	Model 44	Model 45
ΔR-squared	-	0.021	0.000	0.021	-	0.051	0.005	0.010
Wald test (p-value)	-	0.201	0.999	0.089	-	0.042	0.288	0.481

N=109; coefficients of uncentered variables are reported

+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (6 items) & exploitation (6 items); sq. = squared

Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

Table 30: Robustness regression reduced sample (Prosocial motivation)

	Exploration (6 items)				Exploitation (6 items)			
Variable	**Model 47**	**Model 48**	**Model 49**	**Model 50**	**Model 51**	**Model 52**	**Model 53**	**Model 54**
Controls (individual level)								
CEO age	0.004	0.006	0.005	-0.002	0.017	0.021	0.019	0.014
CEO gender	-0.145	-0.094	-0.106	-0.090	-0.005	0.041	0.010	0.016
CEO educ.	-0.146	-0.140	-0.166	-0.104	0.054	0.072	0.005	0.062
CEO firm tenure	0.004	0.002	0.002	0.009	-0.003	-0.007	-0.005	-0.001
Controls (family level)								
Relation. conflict	-0.089	-0.066	-0.075	-0.088	-0.132	-0.094	-0.117	-0.125
Controls (firm level)								
TMT size	0.019	-0.052	-0.049	-0.071	0.113	0.078	0.086	0.068
Firm performance	0.426***	0.395***	0.387***	0.389**	0.288**	0.261*	0.240*	0.243*
Firm size	0.111	0.063	0.065	0.064	0.198**	0.169*	0.175*	0.176*
Firm age	0.005	0.011	-0.005	-0.055	0.052	0.066	0.026	-0.007
Manufacturing	0.319	0.289	0.284	0.203	-0.377	-0.439	-0.452	-0.491
Retail	0.585	0.461	0.480	0.460	-0.139	-0.380	-0.329	-0.339
Construction	0.030	-0.055	-0.064	-0.121	-0.514	-0.684	-0.705	-0.730
Predictors								
S. fam. TMT inv.		-0.653	-2.491	23.088+		-0.387	-5.152	10.662
CEO prosoc. mot.		0.134	0.119	1.512*		0.228+	0.189	1.102
S. fam. TMT inv. sq.			1.341	-17.645+			3.478	-7.733
S. fam. TMT inv. X C.ps m.				-4.959+				-3.042
S. fam. TMT inv. sq. X C.ps m.				3.680+				2.158
R-squared	0.240	0.268	0.271	0.297	0.229	0.269	0.291	0.298
Comparison to	-	Model 47	Model 48	Model 49	-	Model 51	Model 52	Model 53
ΔR-squared	-	0.028	0.003	0.026	-	0.040	0.022	0.007
Wald test (p-value)	-	0.216	0.570	0.199	-	0.115	0.147	0.713

N=89; coefficients of uncentered variables are reported

+ p < .1; * p < .05; ** p < .01; *** p < .001; dependent variable (DV) = exploration (6 items) & exploitation (6 items); sq. = squared

Note: Constant term not displayed; results derived from robust OLS regression with STATA version 13.

5. Discussion

This thesis aims to enhance the understanding of how family TMT involvement, CEO FCNE goals and CEO prosocial motivation affect family firms' exploration and exploitation, drawing on upper echelon and agency tenets, complemented by behavioral and team dynamic aspects. The empirical results reveal linear and nonlinear effects of family TMT involvement, CEO FCNE goals and CEO prosocial motivation on exploration and exploitation. Both family and nonfamily TMT members have more or less pronounced intentions to engage in exploration and exploitation. However, TMTs consisting of both family and nonfamily members are not necessarily complementary in benefitting exploration and exploitation but can in fact have relation-oriented factional divides – faultlines – which impede strategic alignment. CEO FCNE goals and CEO prosocial motivation play pivotal roles in creating these faultlines. When those goals and motivations are considered important by family CEOs, faultlines are accentuated and can be diminished when they play no major role for family CEOs.

More precisely, I find no direct relationship between family TMT involvement and exploration (hypothesis 1a & 1b). However, including family CEOs' goals and motivations in the analysis alters the picture. When family CEOs put emphasis on FCNE goals, there is a U-shaped relationship between family TMT involvement and exploration. Conversely, the U-shape is diminished (and even reversed) when CEO FCNE goals are less important (hypothesis 5). The same applies to CEO prosocial motivation (hypothesis 9). I find indicative support for a negative relationship between CEO FCNE goals and exploration (hypothesis 3) and no support for a relationship between CEO prosocial motivation and exploration (hypothesis 7a and hypothesis 7b).

Regarding exploitation, I find a U-shaped effect of family TMT involvement (hypothesis 2). This effect is reinforced when family CEOs emphasize FCNE goals and diminished when CEO FCNE goals are less pronounced (hypothesis 6). CEO FCNE goals also have a direct negative effect on exploitation (hypothesis 4), while CEO prosocial motivation has a direct positive effect on exploitation (hypothesis 8). I do not find support for a moderating effect of CEO prosocial motivation (hypothesis 10). Results are summarized in Table 31.

Table 31: Results of OLS regression – hypotheses overview

Key construct		Hypotheses	Result
Family TMT involvement	H1a	There is a negative relationship between family TMT involvement and exploration.	Not confirmed
	H1b	There is a U-shaped relationship between family TMT involvement and exploration.	Not confirmed
	H2	There is a U-shaped relationship between family TMT involvement and exploitation.	Confirmed*
CEO FCNE goals	H3	There is a negative relationship between CEO FCNE goals and exploration.	Indicative
	H4	There is a negative relationship between CEO FCNE goals and exploitation.	Confirmed+
	H5	The U-shaped relationship between family TMT involvement and exploration diminishes when CEO FCNE goals are weaker.	Confirmed***
	H6	The U-shaped relationship between family TMT involvement and exploitation diminishes when CEO FCNE goals are weaker.	Confirmed+
CEO prosocial motivation	H7a	There is a positive relationship between CEO prosocial motivation and exploration.	Not confirmed
	H7b	There is a negative relationship between CEO prosocial motivation and exploration.	Not confirmed
	H8	There is a positive relationship between CEO prosocial motivation and exploitation.	Confirmed*
	H9	The U-shaped relationship between family TMT involvement and exploration diminishes when CEO prosocial motivation is weaker.	Confirmed*
	H10	The U-shaped relationship between family TMT involvement and exploitation diminishes when CEO prosocial motivation is weaker.	Not confirmed

+ p < .1; * p < .05; ** p < .01; *** p < .001;

In the following section, I highlight theoretical contributions, present implications for managerial practice, address limitations of this thesis, and map out areas for future research. The section ends with the conclusion.

5.1. Theoretical implications

The findings of this thesis comprise various theoretical implications. Following Huff (1999), I structure the implications according to current scholarly conversations about research on family firms, research on upper echelons, and research on exploration and exploitation.

5.1.1. Implications for family firm research

This thesis contributes to family firm research by combining family components and family essence elements to investigate exploration and exploitation. More specifically, I extend research on the effects of family TMT involvement as a key driver of actual family influence (Sciascia & Mazzola, 2008), add to research on family CEOs' goals and motivations (Chrisman et al., 2012), and contribute to research on exploration and exploitation in family firms (Hiebl et al., 2015).

Implications for research on the role of family TMT involvement

TMT involvement is an important means by which families influence family firms (Kraiczy et al., 2015b; Sciascia & Mazzola, 2008). Scholars have investigated the effects of family TMT involvement to address one of the fundamental questions of family firm research: "How do firms differ in terms of their financial performance?" (Gedajlovic et al., 2012a, p. 1010). Still, effects remain unclear, as findings to date show negative, positive, and curvilinear relationships between family TMT involvement and performance (Hoffmann, Wulf, & Stubner, 2014).

Mixed findings on effects of family management involvement could be due to insufficiently differentiated approaches of previous research. Research frequently has taken a relatively one-dimensional perspective towards family firm TMTs, differentiating between family firms led by a family CEO and family firms led by a nonfamily CEO (e.g., McConaughy, 2000), or measuring the degree of family TMT involvement with a one-sided focus on family TMT members (e.g., Sciascia & Mazzola, 2008). Mixed findings could also indicate the importance of including "intervening factors" in the form of strategic constructs, such as exploration and exploitation, which have been empirically shown to be relevant to short- and long-term firm performance (e.g., He & Wong, 2004; Lubatkin, 2006; Simsek, 2009).

With this thesis, I contribute to both of the above conversations by providing a detailed view of the effects of different levels of family TMT involvement on exploration and exploitation.

Drawing on upper echelon and agency tenets, complemented by behavioral and team dynamic aspects, this thesis explains the effects of TMTs consisting of family members, nonfamily members, and a mix of those (family TMT diversity). Contrary to my expectations, I do not find support for a direct linear or curvilinear relationship between family TMT involvement and exploration (hypotheses 1a & 1b), indicating the importance of additional contingency factors, which I discuss later in this section. I do, however, find a U-shaped relationship between family TMT involvement and exploitation, suggesting that faultlines, impeding a clear strategic alignment towards exploitation, can occur between family and nonfamily TMT members (hypothesis 2).

The curvilinear relationship between family TMT involvement and exploitation (Figure 8) shows that the level of exploitation is highest when the TMT consists largely of nonfamily members. When the ratio of family TMT members increases, the level of exploitation decreases rapidly, reaching its minimum at 71.8% family TMT involvement, whereupon the level of exploitation increases again, while staying below the level of TMTs consisting largely of nonfamily members. This indicates two points: first, TMTs consisting largely of nonfamily members achieve higher levels of exploitation, and second, diverse family TMTs are connected with lower levels of exploitation as compared to TMTs consisting of dominating factions of family or nonfamily members. The first point contributes to findings about the positive effects of clear leadership alignments (Miller et al., 2014). Results suggest that TMTs consisting of a family CEO and nonfamily TMT members could represent management constellations that allow family firms to benefit from agency advantages in the form of principal-agent unity while simultaneously avoiding TMT disruptions and agency costs caused by interfering family and nonfamily TMT members or preferential treatment of family TMT members in day-to-day operations. The second point suggests that family TMT diversity is negative for achieving higher levels of exploitation. Lower levels of exploitation in the vicinity of the minimum could be caused by TMT constellations where disruptions between family and nonfamily members are particularly pronounced because family members form a large enough subgroup to prevail in strategic discussions based on family-related preferences, thereby rejecting nonfamily members input and objectives. This can in turn result in overall TMT misalignment and adverse performance regarding exploitation.

In this context, the thesis extends the – so far – minimal findings regarding faultlines in family firms (Li & Lau, 2014; Minichilli et al., 2010). Faultlines and their detrimental effect on TMT alignment have been largely neglected in research on TMTs in general and on family firm

TMTs in particular and might constitute a reason for the mixed effects of family TMT involvement in research. The empirical results of this thesis support Minichilli et al. (2010), who argue that family firm TMTs "represent the ideal setting where natural faultlines occur among factions of family and non-family top executives" (p. 217). Future theorizing should therefore consider the importance of explicitly accounting for factions of family and nonfamily members when investigating the effects of family TMT involvement.

In addition, findings on the effects of family TMT involvement complement investigations regarding family firm professionalization (Chang & Shim, 2015; Dekker, Lybaert, Steijvers, & Depaire, 2015; Stewart & Hitt, 2012). Research to date has largely focused on emphasizing positive aspects of including nonfamily members in the TMT, arguing that nonfamily managers increase rationality and objectivity, while mitigating family relationship conflicts, thereby enhancing overall professionalism and promoting change and innovation (Cruz & Nordqvist, 2012; Sciascia et al., 2013). Supporting the findings of Minichilli et al. (2010) and Chang and Shim (2015), results of this thesis suggest a more careful approach to including nonfamily managers in the TMT. Evidence on potential faultlines between family and nonfamily managers suggests that family owners may consider concrete risks of worsened TMT performance when appointing nonfamily professionals to the TMT, specifically concerning the incompatibility of family-related goals. While negative aspects of appointing family managers (e.g., incompetence and entrenchment) have been addressed extensively in family firm research (e.g., Schulze et al., 2002; Schulze et al., 2003a; Schulze et al., 2001), findings of this thesis indicate the importance of considering potential negative effects looming behind the seemingly synergistic diversity of combining family and nonfamily TMT members.

Implications for research regarding the role of CEO FCNE goals

This thesis presents an important step in understanding the effects of family CEOs' noneconomic goals as "[t]he behavior of family firms is distinctively influenced by the noneconomic 'family goals' held by family owners and managers" (Chrisman & Patel, 2012, p. 976). FCNE goals are characteristic of family firms and a central axiom in family firm research (Chrisman et al., 2014b; Kotlar & De Massis, 2013). Based on the work of Gomez-Mejia et al. (2007), scholars have approached family firms from a socioemotional wealth perspective, thereby accounting for the importance of noneconomic goals in family firm behavior (e.g., Berrone et al., 2010; Chrisman & Patel, 2012; De Massis et al., 2013; Kellermanns et al., 2012; Zellweger & Dehlen, 2012). Moreover, some scholars have focused explicitly on the emergence of noneconomic goals in family firms (Cabrera-Suárez, Déniz-Déniz, & Martín-Santana, 2014;

Chrisman et al., 2012; Chua et al., 1999; Kotlar & De Massis, 2013; Westhead & Cowling, 1997; Zellweger et al., 2013). Despite this, only a few studies have explicitly measured the extent of noneconomic goals and how it influences family firm behavior and then have mostly focused on selected (positive) aspects, such as family-longevity goals (Kim & Gao, 2013). A notable exception is the case study-based approach of Kammerlander and Ganter (2015) who find that noneconomic goals influence family CEOs' assessment of emerging technologies and hence the firms' adaptation to discontinuous technological change. Consequently, my thesis is among the first to apply a quantitative approach to measuring CEOs' focus on family harmony, status, and identity – FCNE goals – and the resulting influence on family firm behavior. In this context, my thesis provides much-needed quantitative evidence for the propositions that CEO FCNE goals constitute distinct and strong stimuli for action in family firms and are indeed essential predictors of family firm behavior (Chrisman et al., 2012; Kotlar & De Massis, 2013).

The thesis contributes to an understanding of how CEO FCNE goals influence vital strategic activities of the firm – namely, exploration and exploitation. Research on family firms has suggested both positive and negative outcomes of owners' and managers' noneconomic goals regarding firm behavior and financial performance (Gedajlovic et al., 2012a). With regard to the adaptation to discontinuous technological change, Kammerlander and Ganter (2015) find that family CEOs' noneconomic goals can motivate both adverse and beneficial behaviors. More specifically, a desire for harmony and positive emotions could result in organizational inertia, while a focus on power and control could facilitate a timely recognition of discontinuous trends. The results of my thesis do not reveal a direct effect of CEO FCNE goals on exploration (hypothesis 3). This underlines the complexity and potentially contradictory effects of FCNE goals on exploration (Kammerlander & Ganter, 2015). While FCNE goals might encourage family CEOs to focus on long-term exploratory projects based on their intention to preserve family status and identity in the long run, fear of failure and loss of family ownership altogether might increase CEOs' myopic risk aversion. Clearly, further investigation regarding the effects of FCNE goals on firms' exploration activities is required.

This thesis does, however, uncover an important moderating effect of CEO FCNE goals on the relationship between family TMT involvement and exploration. A U-shaped relationship between family TMT involvement and exploration emerges when family CEOs emphasize FCNE goals (hypothesis 5). Results are illustrated in Figure 8 and suggest that the level of exploration is highest when the TMT consists largely of nonfamily members. As the share of

family TMT members increases, the level of exploration drops and reaches its minimum at 72.4%, whereupon the level of exploration increases again when family TMTs consist largely of family members, albeit staying below the level of family TMTs consisting largely of non-family members. The findings suggest that under higher levels of CEO FCNE goals, the combination of family CEOs and nonfamily TMT members seems to be beneficial for exploration, indicating that family CEOs have leeway to focus on long-term activities, while adverse effects of CEO FCNE goals are balanced out by nonfamily TMT members. Conversely, the combination of stronger CEO FCNE goals and family TMT diversity is connected with lower levels of exploration.

The results suggest that faultlines between family and nonfamily TMT members materialize only under certain conditions. Family CEOs' focus on family harmony, status, and identity – as subsumed by FCNE goals – hence constitutes an important factor for the emergence of faultlines between family and nonfamily TMT members. It is in the nature of things that CEO FCNE goals are confined to members of the family (Chrisman et al., 2012). In this context, CEO FCNE goals can motivate behaviors both productive and destructive regarding strategy and performance (Gedajlovic et al., 2012a). The results of this thesis show that the effect of CEO FCNE goals within TMTs consisting of family and nonfamily members can be entirely different from the direct effect regarding strategic activities. CEO FCNE goals aim for harmonious relationships within the owning family. Further, they aim to preserve and improve family status and the identity linkage between the family and the firm (Chrisman et al., 2012). Moreover, family CEOs frequently take on an exemplary role for family members. Consequently, CEO FCNE goals are likely to rub off on other family TMT members, yet not on nonfamily TMT members. Ultimately, CEO FCNE goals can have positive implications for nonfamily TMT members – usually through reciprocal effects. However, nonfamily TMT members can hardly share such FCNE goals or identify with them. Consequently, CEO FCNE goals manifest differences between family and nonfamily TMT members and contribute to the formation of ingroups (family TMT members) and outgroups (nonfamily TMT members), in line with social identity theory (Brewer, 2001; Tajfel & Turner, 1979), which can ultimately lead to a lower level of communication, interaction, and knowledge exchange with detrimental effects on exploration. These findings contribute significantly to research on family TMT diversity and cooperation of family and nonfamily TMT members, going beyond mere differentiations between family and nonfamily TMT members by identifying concrete family-related goals that manifest counterproductive differences between family and nonfamily TMT

members which can ultimately lead to faultlines (Miller et al., 2014; Minichilli et al., 2010; Patel & Cooper, 2014).

Results of this thesis reveal another insight into family TMT involvement. When family CEOs put less emphasis on FCNE goals, the U-shaped relationship between family TMT involvement and exploration is not only diminished (hypothesis 5) but in fact reversed into an inverted U-shape (maximum at 65.6% family TMT involvement). Under these circumstances, a combination of family and nonfamily TMT members seems to be more beneficial for exploration than TMTs consisting of concentrated factions. This result explains the lack of a direct curvilinear relationship between family TMT involvement and exploration as it is canceled out by opposite moderating effects. At the same time, this finding suggests a complementary perspective on family and nonfamily TMT members regarding exploration that is only revealed when dominant and superimposing FCNE goals are less pronounced. Under these conditions, family TMT members could, for instance, be more liberal and encouraging about input from nonfamily TMT members, while simultaneously integrating nonfamily TMT members into their social networks. This could contribute to leveraging their knowledge base more effectively and creating more connections with a higher number of outside partners, thus providing access to complementary assets and outside perspectives (König et al., 2013; Miller & Le Breton-Miller, 2005). This suggests that CEO FCNE goals constitute only a partial and rather negative aspect of family-related goals with regard to effects on family TMTs. Future research could investigate specific positive aspects of family-related goals that promote complementarity between family and nonfamily TMT members.

In this context, I add to another important aspect of research regarding family TMT involvement, namely how to integrate nonfamily TMT members to achieve higher TMT performance in family firms (Miller et al., 2014; Patel & Cooper, 2014). Findings of this thesis inform Patel and Cooper (2014) in their view that benefitting from diversity in family firm TMTs requires the cooperation of family and nonfamily TMT members in a partnership of equals. The authors argue that granting nonfamily TMT members an "equal seat at the table" (Patel & Cooper, 2014, p. 1626) can increase participation, lower turnover rates and ultimately lead to a wider range of strategic actions. The findings of this thesis suggest that higher levels of CEO FCNE goals could negatively influence structural equality between family and nonfamily TMT members. In this context, the findings also inform Eddleston et al. (2012) about conditions under which family firms may be better able to combine the in-depth knowledge of

family TMT members with the diverse perspectives of nonfamily TMT members to explore business opportunities.

Regarding exploitation, results reveal a negative effect of CEO FCNE goals (hypothesis 4). I argue that CEO FCNE goals can lead to particularistic and inefficient exploitation activities. Family CEOs might be reluctant to divest traditional business units or products or risk harmonious relationships with family members in favor of efficiency measures. Consequently, CEO FCNE goals can lead to an overall less efficient behavior regarding exploitation. In this context, results indicate that noneconomic goals in the form of FCNE goals contradict economic interests in the form of exploitation, which complements previous findings of the negative effects of owners' and managers' noneconomic goals and the respective emergence of agency costs (Schulze et al., 2003a).

CEO FCNE goals also impact family TMT dynamics regarding exploitation. Similar to exploration, the above described U-shaped relationship between family TMT involvement and exploitation is reinforced when family CEOs emphasize FCNE goals. This finding suggests that CEO FCNE goals can have a divisive role on family TMTs, further supporting my findings regarding CEO FCNE goals' moderating effect on the relationship between family TMT involvement and exploration. Similarly, when CEO FCNE goals are weaker, the U-shaped relationship between family TMT involvement and exploitation is relaxed and no longer significant (hypothesis 6). This implies that in the absence of divisive CEO FCNE goals the level of exploitation is relatively stable across varying levels of family TMT involvement, thereby supporting arguments that family and nonfamily TMT members have fundamentally similar intentions to engage in exploitation (Block, 2011; Hiebl et al., 2015).

Implications for research regarding the role of CEO prosocial motivation

The thesis also contributes to research regarding the effects of CEO prosocial motivation in the organizational context of family firms. Like FCNE goals, prosocial motivation and behavior represent an important aspect of many family firm research constructs (Berrone et al., 2010; van Gils, Dibrell, Neubaum, & Craig, 2014) and likewise comprise positive as well as negative effects on firm behavior and performance. Scholars have drawn on various aspects of prosocial motivation to explain family firm complexities, mostly confining prosocial motivation to members of the family (Schulze et al., 2003a). Simultaneously, research has largely focused on including prosocial motivation in higher-order theoretical constructs in conceptual approaches (Berrone et al., 2012; Kellermanns & Eddleston, 2004; Lubatkin, Durand, & Ling,

2007; Lubatkin et al., 2005; Schulze et al., 2002; Schulze et al., 2001). There are notable exceptions, such as the case study based approach by Karra et al. (2006), who find that prosocial motivation – in the form of parental altruism – reduces agency costs in early family firm stages and increases agency costs in later stages. In addition, quantitative approaches, such as that of Eddleston and Kellermanns (2007) and Eddleston et al. (2008), find that "reciprocal altruism" is positively connected with firm performance, participative strategy processes, and diminishment of relationship conflict in family firms. This thesis is among the first to take a wider perspective on prosocial motivation in family firms, not restricting the concept exclusively to family members, and quantitatively relating CEO prosocial motivation to concrete strategic activities in family firms.

Results of this thesis contribute to the understanding of positive and negative effects of CEO prosocial motivation with regard to family firm exploration and exploitation. As with the effects of CEO FCNE goals, I do not find a significant effect of CEO prosocial motivation on exploration (hypotheses 7a & 7b). I argued that CEO prosocial motivation can enhance employee creativity and commitment and foster an organizational environment that encourages and promotes exploration. Conversely, CEO prosocial motivation may increase risk-aversion in order not to risk ongoing operations, stakeholder relationships and jobs. Apparently none of these contradictory effects outweighs the other. Consequently, a conclusive evaluation has yet to be made and further investigation is required to clarify under what circumstances CEO prosocial motivation has positive or negative effects on exploration.

CEO prosocial motivation further contributes to understanding family TMT dynamics regarding exploration activities. As with CEO FCNE goals, the findings show that CEO prosocial motivation can play an important role in complex TMT settings consisting of family and nonfamily managers. Results indicate that high levels of CEO prosocial motivation are associated with a U-shaped relationship between family TMT involvement and exploration (hypothesis 9). Results are illustrated in Figure 10 and show a curvilinear relationship similar to the model including CEO FCNE goals. At high levels of CEO prosocial motivation, TMTs consisting largely of nonfamily members are connected with higher levels of exploration. With increasing family TMT diversity, the level of exploration decreases, reaching its minimum at 71.9% family TMT involvement, whereupon the level of exploration increases again, albeit staying at lower levels compared to family TMTs consisting of nonfamily members.

Scholars suggest that prosocially motivated family CEOs can encourage TMT members to cooperate more closely (Zahra, 2003), thereby creating an involvement-oriented organization-

al culture (Corbetta & Salvato, 2004; Hu & Liden, 2015) which ultimately enhances participative strategy processes (Eddleston & Kellermanns, 2007). This is in line with findings by Karra et al. (2006) regarding the positive effect of prosocial motivation in early stages of the family firm. My findings indicate that this positive perspective is particularly applicable under TMT constellations where the family CEO is predominantly complemented by either family or nonfamily TMT members as compared to members from both factions. Results indicate a different picture for TMTs consisting of family as well as nonfamily members, suggesting that negative aspects of CEO prosocial motivation prevail when latent tensions and conflicts within the TMT increase and prosocially motivated CEOs are neither able nor willing to cope with the pressure and prevent disruptions within the TMT from rigidifying. Moreover, under such conditions, CEO prosocial motivation can result in self-control issues and overall particularistic, arbitrary and inconsistent behavior, reinforcing differences between subgroups and corrupting the working relationships and mutual trust between family and nonfamily managers as it violates basic principles of productive cooperation comprising predictability and adhering to contracts and agreements. This in turn makes family CEOs vulnerable to being taken advantage of – particularly by family members – and prevents the establishment of equal partnerships between family and nonfamily managers, which are key to benefitting from family firm TMT diversity (Patel & Cooper, 2014; Verbeke & Kano, 2012). In this respect, the thesis answers calls for enhancing the understanding of prosocial motivations' "dark sides" (Grant & Berg, 2011). Moreover, this thesis suggests that scholars should take into account the role of family CEOs and family TMT constellations and consider respective "bright sides" and "dark sides" when investigating prosocial aspects in family firms.

Similar to the effect of CEO FCNE goals, the U-shaped relationship between family TMT involvement and exploration is not only diminished but in fact reversed into an inverted U-shape when CEO prosocial motivation is low. More precisely, under low CEO prosocial motivation, the level of exploration increases slightly up to its maximum at 67.7% family TMT involvement, whereupon the level of exploration decreases sharply (Figure 10). Results suggest that when prosocial motivation is less pronounced, family CEOs are better able to cope with and integrate family and nonfamily TMT members, thereby diminishing disruptions and relaxing faultlines to achieve higher levels of exploration. Simultaneously, results suggest that low CEO prosocial motivation has adverse effects on TMTs consisting predominantly of family members. This further supports the importance of CEO prosocial motivation for enhancing family TMT members' cohesion and creating an involvement-oriented organizational culture to foster participative strategy processes und ultimately exploration (Corbetta & Salvato,

2004; Eddleston & Kellermanns, 2007; Zahra, 2003). The results are similar to the moderating effects of CEO FCNE goals and thus further contribute to research regarding contingencies of positive and negative effects of family firm TMT diversity concerning exploration (e.g., Kraiczy et al., 2014).

Regarding exploitation, results suggest a positive effect of CEO prosocial motivation (hypothesis 8), indicating that prosocially motivated CEOs tend to focus on incremental improvements, maintaining traditional business units and accommodating family-related risk aversion. Apparently, efficiency measures are not off limits for prosocially motivated CEOs acting to foster overall wellbeing. This extends previous research regarding prosocial motivation by providing evidence of how prosocial motivation can lead to an increased focus on exploitation and hence pro-economic firm behavior (Grant & Berg, 2011; Hernandez, 2012; Siebels & zu Knyphausen-Aufseß, 2012).

Moreover, the results allow for the interpretation that decisions made by prosocially motivated CEOs tend to be perceived as caring and benefitting overall welfare (Grant, 2008; Grant et al., 2008). Hence, exploitation strategies entailing efficiency or other saving measures made by prosocially motivated CEOs may be viewed as necessary and consequently meet the approval and commitment of stakeholders. This could increase their likelihood of implementation and success and their acceptance as part of the firm's standard repertoire of strategic measures. Thus, this thesis contributes to research regarding the importance and effects of employees' perceptions of their supervisors' underlying motivations in family firms (Barnett & Kellermanns, 2006).

Results do not show a moderating effect of CEO prosocial motivation on the U-shaped relationship between family TMT involvement and exploitation, indicating that creativity- and cooperation-enhancing effects of prosocial motivation and lack thereof might have less impact on practical efficiency-oriented exploitation activities than on more future-oriented and complex exploration activities.

Implications for research on exploration and exploitation in family firms

This thesis connects family firm literature with research on exploration and exploitation. Given family firms' focus on exploitation in the form of stability and robustness of current operations as well as on exploration in the form of long-term survival and competitiveness, the connection of these two fields appears fruitful with regard to theoretical as well as practical implications.

Specifically, this thesis advances the understanding of family firm-specific antecedents of exploration and exploitation. Initial empirical studies find mostly positive connections between family firm status and exploration and exploitation (e.g., Lubatkin, 2006; Stubner et al., 2012). However, conceptual work came to more complex and ambiguous conclusions (e.g., Hiebl et al., 2015). This thesis is among the first to take a detailed look at family components as well as family essence to investigate exploration and exploitation in family firms. I find empirical evidence that family TMT involvement and family CEOs' goals and motivations present central antecedents of exploration and exploitation, thereby answering calls for a comprehensive investigation of the influence of family management involvement on exploration and exploitation, also considering nonfamily TMT members (Hiebl et al., 2015).

I find partial support for the proposition by Hiebl et al. (2015) that TMTs consisting largely of nonfamily members indeed tend to engage more in exploration, which offers additional insights into family and nonfamily TMT members' orientation to risky exploration projects (Hiebl, 2012; Kraiczy et al., 2014; Naldi, Nordqvist, Sjöberg, & Wiklund, 2007; Zahra, 2005). In this regard, the thesis addresses an important aspect of family firm research – namely the investigation of factors that contribute to keeping family firms exploratory over generations. Previous research suggests that later-generation family firms can be complacent and thus tend to refrain from risky exploration projects (Cassia, De Massis, & Pizzurno, 2012; Gedajlovic et al., 2012b; Withers, Drnevich, & Marino, 2011), which are central to ensuring long-term survival and competitiveness (Hiebl et al., 2015; Raisch & Birkinshaw, 2008). Consequently, the investigation of factors that foster or inhibit exploration is crucial for research regarding family firms' long-term orientation and success. Beyond actual family TMT involvement, this thesis suggests that CEO FCNE goals and CEO prosocial motivation constitute central contingency factors in this regard and can impair productive cooperation between family and nonfamily TMT members regarding exploration. Diverse TMTs are common, particularly in later stage family firms (Steier et al., 2015). Hence, this thesis presents an important step in understanding the multifaceted factors contributing to family firm long-term performance (e.g., Gedajlovic et al., 2012b; Gedajlovic et al., 2012a; Kammerlander & Ganter, 2015).

With regard to exploitation, the thesis shows that family CEOs' goals and motivations can have distinctively differing effects as antecedents. While CEO FCNE goals have a negative effect on exploitation, CEO prosocial motivation has positive effects. This indicates the particularistic nature of FCNE goals and concurrently shows that prosocial motivation can be positively associated with maintaining and improving current operations to contribute to over-

all stakeholder wellbeing. Both factors also have an indirect negative effect through their impact on family TMT dynamics. As outlined above, medium family TMT involvement can be particularly adverse for exploitation at stronger levels of CEO FCNE goals and CEO prosocial motivation. This finding highlights the negative influence of disruptions between family and nonfamily TMT members regarding the achievement of high levels of exploitation that can stem from arbitrary and particularistic behaviors of the CEO (Verbeke & Kano, 2012).

Summing up, this thesis contributes to family firm research by providing a detailed and nuanced approach to understanding family firm complexities (Chrisman et al., 2010; Gedajlovic et al., 2012a; Steier et al., 2015). The thesis supports research on the role of family TMT involvement as an important means of family influence on firm behavior (Kraiczy et al., 2015b; Sciascia & Mazzola, 2008). Moreover, results support arguments about the influence of family idiosyncrasies in the form of CEO FCNE goals and CEO prosocial motivation (Chrisman et al., 2012). Both factors are found to present important antecedents of exploration and exploitation in family firms (Hiebl et al., 2015; Lubatkin, 2006). Most importantly, however, the thesis presents further evidence that it is the interplay of family involvement and family goals and motivations that ultimately influences family firm behavior (Sharma et al., 2012). Family TMT involvement has different effects on exploration and exploitation depending on family CEOs' goals and motivations. Vice versa, CEO FCNE goals and CEO prosocial motivation can unfold productive or destructive effects depending on whether the TMT consists of family members, nonfamily members or a mix of those. The consideration of such contingencies helps us to understand whether and when the noneconomic motives of family managers lead to efficient or inefficient behavior regarding exploration and exploitation (Gedajlovic et al., 2012a). Results of this thesis regarding effects of family firm idiosyncrasies on common strategic outcomes further contribute to the distinctiveness of family firm research (Yu et al., 2012).

Beyond family firm research – integration into the broader management discourse

Apart from contributing to central axioms and the distinctiveness of family firm research (Yu et al., 2012), this thesis aims to further integrate family firm research into general management discourse (Gedajlovic et al., 2012a). This intention is manifested in two ways. First, I apply and combine several mainstream theories to address family firm specificities and account for respective complexities. Second, I focus on questions that are relevant for family firms but also present connecting points applicable to firms in general.

Chrisman et al. (2003) suggest that open questions in the field of family firm research are best addressed by drawing on mainstream theories of the firm. In this regard "joint approaches combining different theoretical frameworks can help to improve understanding of the family business" (Siebels & zu Knyphausen-Aufseß, 2012, p. 280). This thesis applies the upper echelon perspective as a general theoretical framework, further drawing on agency tenets, and behavioral and group dynamic aspects to investigate the relationship between family TMT involvement, CEO FCNE goals, CEO prosocial motivation, and exploration and exploitation. Consequently, the thesis accounts for the importance of CEOs and TMTs in firm behavior (Hambrick & Mason, 1984), while simultaneously including CEOs' and TMTs' utility derived from both economic and noneconomic objectives (Astrachan & Jaskiewicz, 2008; Schulze et al., 2003b; Zellweger & Astrachan, 2008), and accounting for TMT dynamics stemming from increasing family firm complexity and goal diversity (Minichilli et al., 2010; Patel & Cooper, 2014; Steier et al., 2015). Results indicate that the application of multiple theoretical perspectives facilitates addressing family firm complexities and hence increases explanatory power.

The thesis' second focus, on CEOs' and TMTs' effect on strategic behavior in the form of exploration and exploitation, contributes to research on strategic management. Particular emphasis is on the investigation of mixed motives – i.e., economic and noneconomic goals of the upper echelons. Mixed motives of different factions within diverse TMTs can provide firms with advantages that go beyond mere economic goals in the acquisition and utilization of financial and human resources that can be employed in exploring and exploiting products and services (Chua et al., 2011; Gedajlovic et al., 2012a). Conversely, mixed motives can also lead to business strategies that prevent or even destroy economic potential related to long-term survival, e.g., firms might choose not to join a cooperative in spite of increasing operating risks (Gomez-Mejia et al., 2007; Gomez-Mejia et al., 2010; Gomez-Mejia et al., 2001). This thesis contributes to research on mixed motives and capability development (Gedajlovic et al., 2012a), suggesting that in diverse family TMTs, consisting of family and nonfamily members, the emphasis of noneconomic goals can stand in contrast to economic considerations of exploration and exploitation. This thesis contributes as well to the literature by pointing out that economic and noneconomic goals can be reconcilable in conditions where family CEOs are combined with dominant factions of family or nonfamily TMT members (Patel & Chrisman, 2014). Additionally, the thesis provides evidence that mixed motives increase the complexity of TMTs and can ultimately lead to faultlines between subgroups, thereby corrupting joint decision-making, unity of command and strategic alignment. While family TMTs consisting of family and nonfamily members present an ideal setting for investigating

the effects of mixed motives, findings are by no means confined to the organizational context of family firms. Similar conditions could prevail in joint ventures, private equity portfolio companies, private-public partnerships or any other TMT setting where subgroups with differing relation-oriented basic goals and motivations can emerge. The thesis thus presents a meaningful case for the exemplary investigation of mixed motives in family firms that simultaneously has broad implications for firms in general, in line with the call by Gedajlovic et al. (2012a) to "'give back' and provide meaningful contributions to the general field of management" (p. 1010).

5.1.2. Implications for upper echelons research

Despite the prevalence of literature focusing on the upper echelons in mainstream organizational sciences since Hambrick and Mason's (1984) seminal work, research has only just started to investigate the specificities of family firm TMTs[27] (Patel & Cooper, 2014). Consequently, this thesis contributes to upper echelon literature by extending it further to the organizational context of family firms and exploring family firm idiosyncrasies, which I outline in section 5.1.1. Above and beyond that, this thesis also has implications for general upper echelon research, offering a detailed investigation of upper echelon dimensions along four lines.

First, this thesis extends research on the role of TMTs, which are the original unit of investigation in upper echelon research (Hambrick & Mason, 1984). The composition of the executive cadre has been connected with strong effects on firm strategy and performance (Hambrick & Cannella, 2004; Patzelt et al., 2009; Talke, Salomo, & Kock, 2011). The thesis provides further evidence for the importance of considering factional groups within TMTs individually, particularly regarding diverging risk-preferences and aspirations, while simultaneously highlighting potentially differing effects concerning the cooperation of those factional groups.

In this context, the thesis extends research regarding the "double-edged effects" of TMT diversity (Hambrick, Li, Xin, & Tsui, 2001; Milliken & Martins, 1996; Ndofor et al., 2015; Sciascia et al., 2013), which in this thesis is understood as TMTs' consisting of family as well as nonfamily members. To date, outcomes of TMT diversity regarding firm behavior and performance are mixed (Ndofor et al., 2015). Diverse TMTs can be more creative and open-minded (Bantel, 1994; Reagans & Zuckerman, 2001) but conversely often exhibit decreased cohesion, insufficient coordination, and ineffective communication (Hambrick et al., 2001;

[27] For an overview of the literature see chapter 2.3.

Lau & Murnighan, 1998; Milliken & Martins, 1996). In the context of family firms, Minichilli et al. (2010) find a negative relationship between family TMT diversity and performance, while Patel and Cooper (2014) find that family TMT diversity is positively connected with performance when the structural power of family and nonfamily TMT members is balanced. Results of this thesis suggest that TMT diversity can have negative effects on exploration and exploitation when disruptions emerge between factional groups, namely family and nonfamily TMT members. In this regard, results support the call for "further incorporating faultlines in research on TMT characteristics" (Ndofor et al., 2015, p. 1671). As outlined above, family firm TMTs are a setting where faultlines are likely to occur between family and nonfamily managers (Minichilli et al., 2010). Even though faultlines are not an original upper echelon concept, this thesis advocates the explicit consideration of faultlines in contexts where factional divides between managerial subgroups can be expected based on underlying social identities (Brewer, 2001; Li & Hambrick, 2005). Hence, this thesis follows calls to direct "greater attention to the variety of behavioral processes at work in the upper echelons of firms" (Carpenter et al., 2004, p. 773).

Second, the thesis contributes to research on CEOs' goals and motivations. CEO characteristics are an important component of upper echelon research, due to CEOs' prominent role as head of the TMT and (usually) ultimate decision maker (Carpenter et al., 2004; Hambrick & Mason, 1984). To date, the focus has mostly been on CEO demographics (e.g., age, professional background) or personality (e.g., risk-aversion). However, CEOs' behavior is not only influenced by past experiences but also by future-oriented goals and motivations (Carpenter et al., 2004). This thesis provides further empirical evidence that CEOs' goals and motivations (though not focusing on managerial self-interest alone but including other stakeholder groups as well) indeed can play an important role in absorbing and processing information in a given situation and making strategic choices accordingly (La Hayward & Hambrick, 1997; Ou, Waldman, & Peterson, 2015). Moreover, goals and motivations observed in this thesis are particularistic and noneconomic in nature, suggesting that CEO characteristics that are seemingly less relevant to the business context can nevertheless lead to both beneficial and adverse strategic outcomes regarding exploration and exploitation.

Third, this thesis complements upper echelon research regarding CEO-TMT interactions (Cao et al., 2010; Minichilli et al., 2010; Zhang et al., 2015). I follow Arendt et al. (2005) in assuming that a comprehensive understanding of firm behavior should include combined effects of CEOs, as principal decision makers, and other TMT members. The thesis analyzes the moder-

ating effect of family CEOs' idiosyncrasies on the relationship between family firm TMTs and exploration and exploitation, thereby complementing research on the impact of CEOs on TMT dynamics and resulting firm behavior (Peterson et al., 2003). Results suggest that the effects of CEOs' goals within TMTs can be entirely different than their direct effects on strategic activities, particularly when such goals relate only to a specific subgroup of TMT members. More precisely, when family-related goals of CEOs are stronger, TMTs consisting of family as well as nonfamily members are connected with lower levels of exploration and exploitation. Vice versa, when family-related goals of CEOs are weaker, the U-shape between family TMT involvement and exploration and exploitation is relieved and, for exploration, even reversed. In this respect, goals that relate predominantly or exclusively to specific subgroups can assume a divisive role regarding team dynamics. With this thesis, I provide empirical evidence for the reciprocal effects of family CEOs' goals and motivations, TMT composition and exploration and exploitation and hence contribute to the development of a more insightful upper echelon perspective of exploration and exploitation.

In addition, this finding sheds light on the role of CEOs' goals and motivations regarding the effects of TMT diversity. Research suggests that different sources of diversity have different effects on firm outcomes. While relation-oriented diversity tends to be connected with rather negative effects, task-oriented diversity can have positive outcomes (Kraiczy et al., 2014; Williams & O'Reilly, 1998). Results of this thesis indicate that noneconomic goals, related to a specific subgroup – namely family TMT members – can emphasize adverse relation-oriented diversity between family and nonfamily TMT members, while lower levels of these goals might allow productive task-oriented sources of diversity to come to the fore (Li & Hambrick, 2005). Consequently, this thesis adds to an understanding of the role of CEOs' goals and motivations in leveraging TMT diversity. At the same time, findings suggest that diversity within the TMT is not negative in itself. Members of the TMT will always have distinct roles and agendas (Fama, 1980), yet it is up to the CEO to prevent relation-oriented differences from dominating task-oriented discussions. In a broader sense, this also informs research regarding the effects of power in the upper echelons (Hambrick, 2007; Patel & Cooper, 2014) and perceptions of fairness and balance between team members and the resulting effects on team interaction and team outcomes (Breugst, Patzelt, & Rathgeber, 2015). The findings contribute as well to research regarding the adverse effects of differential treatment of TMT members by CEOs and the role of CEOs' authority in this regard (Dekker et al., 2015; Verbeke & Kano, 2012; Zhang et al., 2015).

Results of CEO-TMT interactions also offer an interesting perspective on TMT diversity and faultlines. In many TMT constellations, CEOs can be described as (leading) delegates of one subgroup, sharing common history, values, attitudes or goals with other TMT members (Li & Hambrick, 2005). Differences between subgroups can be reinforced when such CEO characteristics concur with demographic gaps, as is the case with family CEOs and family-oriented goals and motivations focusing on family TMT members. This can lead to TMT members' identifying more with their individual subgroup than with the TMT, which can ultimately lead to differential treatment and different values triggering disruptions and faultlines within the TMT (Chrobot-Mason et al., 2009). In this context, the thesis supports findings by Meyer et al. (2015) that faultlines are particularly detrimental for subgroups in which the CEO is not included – in this case the subgroup of nonfamily TMT members. Overall, the investigation of joint effects of CEOs and TMTs could significantly contribute to research on faultlines within TMTs (Li & Hambrick, 2005; Ndofor et al., 2015; Thatcher & Patel, 2012).

Results on the inverse U-shaped relationship between family TMT involvement and exploration at lower levels of family CEOs' goals and motivations offer another interesting vantage point regarding faultlines. Faultlines can lead to increased relationship conflict, task conflict, and decreased team cohesion and have thus generally been connected with negative effects on TMT dynamics and managerial alignment (Li & Hambrick, 2005; Ndofor et al., 2015; Thatcher & Patel, 2011; Thatcher & Patel, 2012; Tuggle et al., 2010). Yet, Thatcher and Patel (2012) suggest that moderate faultlines might also have positive effects. Under this assumption, latent faultlines between family and nonfamily TMT members would be reduced to a moderate level when they are not reinforced by divisive goals and motivations. Moderate subgroups in TMTs can lead to productive moderate levels of conflict (Simons & Peterson, 2000), higher levels of overall creativity (Bezrukova & Uparna, 2009), and increased group learning (Gibson & Vermeulen, 2003) which are important antecedents of exploration (Lavie et al., 2010). Hence, findings regarding an inverse U-shape could also be evidence of the potential positive effects of moderate faultlines (Li & Lau, 2014; Thatcher & Patel, 2012).

Fourth and finally, this thesis supports the importance of "intervening factors" when applying the upper echelon perspective to investigating TMT characteristics (Kraiczy et al., 2015a; Ndofor et al., 2015). Hambrick et al. (1996) argue that the effect of TMT diversity depends on the specific task being performed by the team. This might also explain mixed performance effects of TMT diversity in previous research, as it largely neglects "intervening tasks" that can facilitate the understanding of the link between TMT diversity and performance (Ndofor

et al., 2015). By focusing on exploration and exploitation as critical determinants of organizational performance, this thesis allows for a differentiated view of the effects of family TMT involvement and the role of family CEOs' goals and motivations, which exemplify the multifaceted and task-dependent effects of upper echelon characteristics. This finding can be extended to research on faultlines (e.g., Ndofor et al., 2015), suggesting that the emergence and effects of faultlines within the TMT might depend on the specific task being performed by the team. More precisely, the results of this thesis suggest that specific tasks in combination with underlying goals and motivations of CEOs can fuel and rigidify faultlines between subgroups within the TMT and eventually lead to misalignment and adverse performance regarding the respective task. Hence this thesis also highlights the need to explore the task-specific dimensions of faultlines in TMTs.

5.1.3. Implications for exploration and exploitation research

Exploration and exploitation have been found to be critical determinants of firm performance. While exploitation allows firms to profit from current operations, exploration opens up new opportunities, keeping firms agile for future challenges (March, 1991; Raisch & Birkinshaw, 2008). Apart from extending the constructs to the organizational context of family firms, as outlined in chapter 5.1.1, this thesis contributes to research on exploration and exploitation first by offering further evidence regarding general managerial antecedents and second by advancing insights into theoretical frameworks and fundamental assumptions.

First, this thesis extends research, investigating managerial antecedents of exploration and exploitation (Cao et al., 2010; Carmeli & Halevi, 2009; Halevi et al., 2015; Kammerlander et al., 2015; Li, 2013; O'Reilly & Tushman, 2008). Managers' and TMTs' characteristics play a central role in exploration and exploitation and this thesis answers calls for further inquiry into this complex relationship (Cao et al., 2010; Lavie et al., 2010). The thesis extends knowledge of the role of TMT characteristics, specifically investigating effects of family members, nonfamily members and the combination of family and nonfamily members. Results indicate that particularly TMTs comprising both family and nonfamily members exhibit significant effects regarding exploration and exploitation, thereby supporting research into the role of TMT diversity (Beckman, 2006). More precisely, TMT diversity is found to have double-edged effects on exploration and exploitation, depending on its nature, thereby supporting findings by Alexiev et al. (2010) and Li (2013). While relation-oriented diversity based on

conflicting group membership can have negative effects, task-oriented diversity can have positive effects on exploration and exploitation.

The thesis also adds to research into the role of top managers' individual goals and motivations (Chang, Wong, & Lee, 2015; Ferreira et al., 2014; Kammerlander et al., 2015; March & Shapira, 1992). Going beyond prior research, I suggest that CEOs' noneconomic goals and motivations can play an important role in exploration and exploitation. This might also inform research regarding CEOs' role in creating a supportive organizational environment that fosters exploration as well as exploitation (Harrison et al., 2006; Lavie et al., 2010; Miller & Le Breton-Miller, 2005). More research is required, specifically on the complex effects of noneconomic goals on exploration.

I further contribute to research on the joint impact of CEO and TMT characteristics on exploration and exploitation (Cao et al., 2010; Ferreira et al., 2014; Ou et al., 2015). Results suggest that CEOs can be a factor of discord at worst, incapacitating TMTs' willingness and ability to achieve higher levels of exploration and exploitation, while at best, CEOs can play an important role in leveraging constructive task-related diversity. This also informs research into the importance of alignment and shared vision in TMTs (e.g., Li, 2013) and the effects of managers' integration capabilities and lack thereof with regard to exploration and exploitation (Burton et al., 2012; Mom et al., 2009).

Second, this thesis also opens insights into the general understanding of exploration and exploitation. Results indicate a positive correlation between exploration and exploitation. Even though the relationship between exploration and exploitation is not the focus of this thesis, the findings give further support to the complementary perspective (He & Wong, 2004; Kammerlander et al., 2015; Knott, 2002). This does not imply equivalence between exploration and exploitation. Main effects of family TMT involvement, CEO FCNE goals and CEO prosocial motivation on exploration and exploitation are comparable at first glance but differ in details (e.g., no direct effect of family TMT involvement on exploration versus U-shaped effect on exploitation) and particularly with regard to underlying reasons. This supports research describing different organizational and managerial capabilities, structures, and mindsets required for exploration as compared to exploitation (e.g., Lavie et al., 2010) and provides further evidence for the "paradox view," suggesting simultaneous complementarity and disparity of the two activities (Wei et al., 2014).

In addition, this thesis is based on the assumption that characteristics, goals and motivations of managers and TMTs play an important role in determining the firms' exploration and exploitation activities. Results show that this is indeed the case, providing further incentives for the use of the upper echelon perspective as a general theoretical framework to complement research on exploration and exploitation, in line with suggestions by Lubatkin (2006) and Cao et al. (2010).

5.2. Practical implications

This thesis comes with important implications for managerial practice in family firms since it helps managers, family members, board members, consultants and other stakeholders to understand the complexity of family firm TMTs' central strategic alignment concerning exploration and exploitation.

Many family firms include nonfamily members in their TMTs, particularly in later stages and growth phases, based on practical considerations, lack of suitable family members, or to signal good governance to stakeholders (Chua et al., 2003; Cruz & Nordqvist, 2012; Dyer, 1989; Fang, Randolph, Memili, & Chrisman, 2015; Hall & Nordqvist, 2008; Jaskiewicz et al., 2015a; Sciascia et al., 2013). Even though results of this thesis cannot be conclusive, they nevertheless open room for debate about important considerations when combining family and nonfamily members in the TMT.

In this regard, findings are particularly relevant for family CEOs. Many CEOs are not explicitly aware of the extent and effects of their noneconomic goals (Kammerlander & Ganter, 2015). Based on the results of this thesis, family CEOs might consider in what way their strategic actions are influenced by FCNE goals and prosocial motivation and how this may impact nonfamily TMT members. Appreciating the existence and influence of noneconomic goals and motivations presents an important first step in making such aspirations transparent. This could help family CEOs to balance negative effects on TMT dynamics and firm behavior. Simultaneously, it could present a way to leverage positive aspects of noneconomic goals and motivations. For example, family CEOs could openly communicate their long-term vision and their intentions to pass on the firm to the next generation which could positively influence commitment and organizational identification among family as well as nonfamily employees (Tseitlin, in preparation).

Further, results of this thesis may provoke family CEOs to think about the composition and structure of TMTs. CEO-TMT relationships are a central antecedent of TMT performance and overall firm behavior (e.g., Arendt et al., 2005; Cao et al., 2010; Zhang et al., 2015). Family CEOs may take into account their idiosyncratic goals and motivations in selecting family and nonfamily managers to create a complementary and productive TMT. For example, CEOs with strong FCNE goals might take care that nonfamily TMT members are aware of these priorities and be outspoken enough to balance out and prevent myopic behavior. Prosocially motivated CEOs should be careful to avoid intense tensions that may stem from very dominant TMT members.

In addition, this thesis provides insights regarding suitable TMT constellations depending on the preferred strategic course of the firm. Family CEOs who intend to focus on exploration activities may extend their TMT with nonfamily members. Results indicate that family CEOs complemented by dominant factions of nonfamily TMT members can achieve particularly high levels of exploration. Simultaneously, family CEOs may emphasize integrative and balancing measures to prevent disruptions between family and nonfamily TMT members. For example, family CEOs could nominate a nonfamily TMT member as deputy to demonstrate equal treatment of family and nonfamily TMT members in order to positively influence perceptions of justice within the firm (Barnett & Kellermanns, 2006).

Family TMT members in general might question their motives for appointing nonfamily members to the TMT, their own goal structure consisting of economic and noneconomic goals, and their willingness to make these goals transparent. Simultaneously family TMT members may take into consideration goals of nonfamily TMT members to prevent the emergence of schisms between the two factions and ensure a productive basis for strategic behavior regarding exploration and exploitation.

In spite of such considerations, family and nonfamily TMT members are prone to form distinct subgroups which can be adverse for TMT performance (Minichilli et al., 2010). Consequently, family firm owners may consider establishing supervisory committees, perhaps in the form of supervisory boards (Patel & Cooper, 2014). A dual governance structure can contribute to leveraging positive effects of different abilities of family and nonfamily TMT members and of TMT diversity in general, while identifying and addressing potential emerging conflicts at the outset. Results of mixed goals and motivations of family and nonfamily TMT members and potentially conflicting objectives regarding strategic decisions involving explo-

ration and exploitation may help members of the supervisory board to increase their sensitivity to such issues in the TMT.

The findings of this thesis may further support external consultants or equity companies that seek to contribute to or invest in family firms in assessing the firms' TMT on issues of strategic orientation and performance potential. Individual goals and motivations of managers as well as TMT dynamics and previous modes of cooperation between family and nonfamily TMT members may be assessed to increase the understanding of the firm's potential to explore and exploit.

5.3. Limitations

Several limitations of this thesis must be acknowledged which could nevertheless present fruitful avenues for further research. The first set of limitations is the sample and sampling approach of this thesis. The second set of limitations are the constraints of measurements of predictor and outcome variables. Finally, the third set of limitations are the assumptions regarding risk aversion, TMT dynamics and faultlines.

First, with regard to the sample and sampling approach of this thesis, the *generalizability* of the model is limited by the relatively small sample size. This is particularly relevant for the hypothesized curvilinear relationships and interaction effects. Future studies should pursue large-scale approaches to test the suggested relationships of my model. Moreover, the sample is restricted to one country (Germany). For example, Laspita et al. (2012) suggest that the intergenerational transmission of entrepreneurial intentions varies across cultures. This could be an important antecedent of family firms' exploration and exploitation activities. While the sample of this thesis suggests a certain cultural consistency in the observed firms, generalizations of results to other countries should be made with caution.

The design of this thesis is *cross-sectional*, which inhibits a conclusion about the direction of the causal relationships of predictor and outcome variables. While it is reasonable to assume that CEOs and TMTs influence exploration and exploitation in line with the upper echelon perspective by Hambrick and Mason (1984), research suggests that organizational outcomes may also play a reciprocal role in determining the composition of organizations' TMTs (Carpenter et al., 2004). Qualitative research, like the investigation of CEOs' noneconomic goals and their effect on discontinuous technological change by Kammerlander and Ganter (2015), could help to deepen the understanding of the relationship between family firm TMTs and

exploration and exploitation. Moreover, the cross-sectional approach does not allow for observing the effect of time. While previous studies find that variables related to family influence and family culture are relatively constant over time (Craig & Moores, 2005), this might not be exactly the case for exploration and exploitation. Allison et al. (2014) suggest that exploration and exploitation are "stable over time, punctuated by dramatic changes" (p. 20). However, this shortcoming is mitigated to a certain extent, as I do not focus on how exploration and exploitation are structured and balanced in relation to each other but rather investigate the firm's general focus on these activities. Further, the design of this thesis does not allow for observing (past) performance differences as compared to performance aspiration levels. Patel and Chrisman (2014) suggest that the level of exploitative and explorative R&D investments differs depending on whether performance is above or below aspirations. Future research may take into account this contingency.

Further, this thesis relies on a *key informant approach* (CEO) and hence must accept a certain level of subjectivity and bias in the information about goals and motivations, as well as exploration and exploitation. I account for this shortcoming by drawing on information from additional family and nonfamily managers and employees for verification. Results suggest high levels of agreement (see chapter 3.1). Additionally, this shortcoming must be weighed against the benefits of insights gained from studying the behavior of non-public family firms, for which publicly available data is scarce and where the family CEO is often the only person with insights into both the business and family subsystems.

Second, several limitations relate to *constraints of measurements regarding predictor and outcome variables.* The main predictor variable of this thesis is family TMT involvement, measured as the proportion of family members on the firm's TMT. Family TMT involvement constitutes factual influence on the firm's day-to-day operations as well as on long-term strategy and consequently represents a key driver of actual family influence. Nevertheless, other factors that constitute family influence or family diversity and are relevant for exploration and exploitation, such as family ownership or generational involvement, may be explicitly included in future investigations to complement understanding of family participation in the firm. Specifically, a generational perspective could complement this thesis as generational stages have been connected to firm level outcomes such as entrepreneurial orientation (Cruz & Nordqvist, 2012).

Furthermore, the measurement of the predictor variables CEO FCNE goals and CEO prosocial motivation can have certain shortcomings. The FCNE goals scale items include noneco-

nomic goals of the family – namely family harmony, family status and family identity (Chrisman et al., 2012); in aggregating these three sub-aspects, potentially diverging effects of FCNE goals might be neglected. Moreover, the FCNE scale sub-aspects can tend towards somewhat negative aspects of families' noneconomic goals, thereby only implicitly considering positive aspects, such as patient capital and long-term orientation. Future research may take into account the diversity and different aspects of noneconomic goals in a more detailed manner, as "different aspects of noneconomic goals might lead to substantial deviations in organizational behavior" (Kammerlander & Ganter, 2015, p. 379). A similar limitation applies to CEO prosocial motivation. While the scale by Grant (2008) is well established in the literature, it does not consider the underlying reasons for prosocial motivation. Chang et al. (2009) suggest that the type of prosocial motivation has an impact on family firms' accumulation of social capital. Hence, future research may investigate whether different underlying reasons for prosocial motivation play a role with regard to managers' focus on exploration and exploitation. Again, the shortcomings of the measurement of CEO FCNE goals and CEO prosocial motivation have to be weighed against the insights gained from the quantitative investigation of CEO FCNE goals in the context of family firm TMTs and exploration and exploitation, which go beyond prior research in the field.

Regarding the outcome variables exploration and exploitation, this thesis draws on the established scales developed by Jansen et al. (2006). However, results might be subjectively influenced by the CEO and hence could be difficult to compare. Consequently, future research may complement the measurement approach of exploration and exploitation by obtaining objective financial data (e.g., R&D spending) or other secondary data (e.g., press releases about engagement in new ventures, efficiency measures, etc.). As such data is rarely obtainable for non-public family firms future studies could include publicly listed family firms in their sample. Recent research by Piao and Zajac (2015) suggests a difference between repetitive (repeating existing designs for existing products) and incremental (creating new designs for existing products) exploitation which might affect exploration in different ways. Future research hence may take into account a more detailed view of exploitation.

Third, *assumptions regarding risk aversion, TMT dynamics and faultlines* have certain limitations. A basic premise of this thesis is the notion that family TMT members are risk averse and hence tend to refrain from risky exploration projects. This notion is supported by theoretical and empirical studies that find lower debt levels and R&D spending of family firms compared to nonfamily firms (De Massis et al., 2013; Hiebl, 2012). However, the ongoing success

of many family firms indicates that these firms are in fact likely to succeed in exploring new products and services that contribute to their long-term competitiveness. Hence, less emphasis on exploration in general might not equate to lower exploration efficiency (Anderson et al., 2012; Hiebl et al., 2015). In this context, Duran et al. (2015) and Matzler et al. (2015) find that family firms indeed invest in less innovation but conversely exhibit a higher level of innovation efficiency than nonfamily firms. Future research may extend the findings of my thesis by taking into account a differentiation between exploration input and output. Moreover, my thesis is confined to investigating exploration and exploitation individually, thereby contributing to the understanding how these activities emerge in family firms. Future research might extend my findings by exploring the role of family firm TMTs in managing synergies and contradictions between exploration and exploitation in line with the complementary perspective (Knott, 2002).

Additionally, this thesis focuses explicitly on family TMT involvement, family CEOs' goals and motivations and exploration and exploitation. I do not, however, directly observe individual members of the TMT, nor dynamics within the TMT. Patel and Cooper (2014) suggest that power distribution between TMT members is an important factor in TMT performance. This thesis makes the simplifying assumption that members of the TMT all have a say in strategic decisions. However, in reality some members of the TMT might have less authority, be responsible for less relevant business departments, or be simply less senior. A more detailed understanding of the exact roles and actual distribution of power of TMT members could contribute to a more realistic picture of TMT dynamics. Further, even though FCNE goals relate to the family, nonfamily TMT members might consider themselves part of the family and be treated that way, or they might just selflessly share FCNE goals. This would naturally counteract the emergence of faultlines between family and nonfamily TMT members. Kotlar and De Massis (2013) suggest that "for family-centered goals to be taken into consideration and affect the firm’s strategic actions, these must be shared and embraced by a broader set of organizational members including, for example, professional managers." Consequently, future research may explicitly take into account family-related goals of nonfamily managers.

Moreover, the thesis does not account for the relationship between family and nonfamily TMT members. Research has shown that the level of cohesion (Smith et al., 1994), conflict (Li & Hambrick, 2005), and trust and benevolence (Cruz et al., 2010) play an important role in TMT cooperation and performance. Such "soft" factors could hence contribute to explaining the complexity of TMT dynamics in family firms.

Further, I assume that goal disparity and misalignment between family and nonfamily managers can result in faultlines that have an adverse effect on TMT performance (Li & Hambrick, 2005; Thatcher & Patel, 2011). However, specific insights regarding the effects of faultlines between family and nonfamily TMT members are still incomplete. Future qualitative research could investigate triggers and types of conflict between these subgroups, as well as potential conflict resolution mechanisms. Furthermore, I do not explicitly measure faultlines by, for instance, accounting for faultline strength (Ndofor et al., 2015; Thatcher & Patel, 2012). In addition, my thesis does not account for TMT member entry or exit. Summers et al. (2012) suggest that team member changes can result in shifting team coordination and thus affect team behavior and performance. Future research may investigate how the appointment of a new family or nonfamily TMT member influences faultlines within family firm TMTs. Overall, a more detailed investigation of family firm faultline characteristics – including longitudinal effects – could contribute to the understanding of faultlines' effects and potential coping mechanisms in the organizational context of family firms.

5.4. The road ahead – future research avenues and conclusion

Above and beyond addressing this thesis' limitations and following the described points of reference of further research, future research may extend my findings by addressing the following additional avenues. First, future studies could further investigate determinants of TMT dynamics in family firms that influence strategic decisions about exploration and exploitation. While higher-order group characteristics, such as group membership and basic goals and motivations, play an important role in determining the basic strategic setup and behavior of family firms, specific strategic decisions might substantially depend on the decision and negotiation process of family and non-family TMT members on exploration and exploitation, including micro-processes in the TMT such as decision comprehensiveness, quality and outcomes (Patel & Cooper, 2014). Future qualitative studies could focus on how such strategic decisions are prepared, discussed and decided, and specifically investigate the mechanisms how TMT members accommodate and manage potentially conflicting economic and noneconomic goals. In this regard, insights from team process research could advance the understanding of family TMTs internal dynamics (e.g., Lubatkin, 2006).

Second, researchers could explore conditions and contingencies that influence how noneconomic and economic goals can be managed and aligned (Kammerlander & Ganter, 2015; Patel & Cooper, 2014). It might be particularly useful to investigate how noneconomic goals can

be channeled in a way that serves overall firm performance. This relates to research on family firm governance (Carney, 2005). As Chrisman et al. (2013) put it: "we need to know how goals interact with other variables, particularly governance structures and resources, to influence strategic behavior and produce desired firm-level outcomes" (p. 1251). In this sense it might also be insightful to explore how family members achieve a consensus among themselves regarding their economic and noneconomic goals and how those goals are adopted in family firm governance (Chrisman et al., 2012; Kotlar, Fang, De Massis, & Frattini, 2014).

Third, family-related goals may have positive and negative effects on firm behavior and outcomes (Chrisman et al., 2012; Chrisman et al., 2013; Kotlar & De Massis, 2013; Patel & Chrisman, 2014). Consequently, future research may focus on specific family-related goals that have a positive effect, as such goals may represent important aspects of family firms' ongoing success (Duran et al., 2015; Siebels & zu Knyphausen-Aufseß, 2012). Results of this thesis indicate that when FCNE goals are considered less important by family CEOs, medium levels of family TMT involvement are associated with higher levels of exploration than are lower and higher levels of family TMT involvement. Arguably, under certain conditions, family TMT members contribute positively to diverse TMTs' performance. It is up to future research to identify and differentiate between "bright" and "dark" aspects of family-related goals and investigate means and mechanisms by which the former may be leveraged and the latter may be neutralized through family firm governance in order to benefit overall firm performance.

Fourth, results of this thesis suggest positive and negative effects of CEO prosocial motivation (Grant & Berg, 2011). Research shows that prosocial motivation is an important element of creating a productive and innovation-stimulating organizational environment (Grant, 2008; Grant & Berry, 2011; Harrison et al., 2006; Powell et al., 2014). Yet my findings indicate that negative aspects such as nepotism towards favorites or an excessive focus on positive affect and maintaining pleasant relationships with groups of managers can prevail in complex TMT constellations (Batson et al., 1995; Grant, 2007; Grant & Berg, 2011). Future research could investigate means to channel CEO prosocial motivation to maintain its positive aspects while making it less prone to arbitrariness and unequal treatment.

To conclude, family firms' engagement in exploration and exploitation is closely connected with family firms' long-term viability. Family firm TMTs, including CEOs, play a vital role in aligning the firms' activities toward those strategies. Drawing on the upper echelon perspective as general theoretical framework, complemented with agency tenets and behavioral and

group dynamic aspects, I theoretically and empirically investigate the effect of family TMT involvement and family CEOs' goals and motivations on exploration and exploitation. Results indicate complex and multifaceted relationships. Family firm TMTs with a high ratio of nonfamily members show a higher inclination towards exploration than TMTs consisting largely of family members. A combination of family CEOs and nonfamily TMT members can be particularly conducive to achieving higher levels of exploration because positive aspects of family CEOs' FCNE goals and prosocial motivation are combined with nonfamily TMT members' impartiality regarding family idiosyncrasies and external perspectives. However, diverse TMTs, consisting of family as well as nonfamily members, are not necessarily complementary in the sense of benefitting exploration but can in fact result in relation-oriented factional divides – faultlines – which impede strategic alignment towards exploration. CEO FCNE goals and CEO prosocial motivation play a pivotal role in reinforcing these faultlines. Conversely, when latent divides between family and nonfamily TMT members are not reinforced, a complementary perspective of the two subgroups emerges resulting in a positive relationship of medium family TMT involvement on exploration. Similarly, disruptions based on underlying values and goals between family and nonfamily TMT members can lead to lower levels of exploitation when both factions are represented on the TMT. These disruptions are accentuated when family CEOs emphasize FCNE goals and conversely relieved when FCNE goals play a minor role for family CEOs.

These findings show that family TMT involvement and family CEOs' goals and motivations present central antecedents of exploration and exploitation. Simultaneously, findings suggest a careful approach to including nonfamily managers in the TMT. Faultlines between nonfamily top management team members can impede family firms' approach to exploration and exploitation, and family CEOs' goals and motivations can reinforce disruptions between managerial subgroups. The combination of CEO and TMT characteristics hence presents an important step in comprehending family firms' exploration and exploitation activities.

The objective of this thesis is to enhance the understanding of family TMT involvement, family CEOs' goals and motivations and their effect on exploration and exploitation, thereby creating insights for scholars and practitioners alike. With this thesis, I contribute to research on family firms, upper echelons and exploration and exploitation and create a detailed picture of influences and contingencies that contribute to family firms' long-term viability, which also presents a central area of interest for practitioners. Simultaneously, the thesis presents reference points for general business management and future management research.

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Eidesstattliche Erklärung

Ich erkläre an Eides statt, dass ich die bei der promotionsführenden Fakultät für Wirtschaftswissenschaften der Technischen Universität München, zur Promotionsprüfung vorgelegten Arbeit mit dem Titel:

How do top management teams impact exploration and exploitation in family firms? The role of family top management team involvement and family CEOs' goals and motivations.

am TUM Entrepreneurship Research Institute unter der Anleitung und Betreuung durch Prof. Dr. Dr. Holger Patzelt ohne sonstige Hilfe erstellt und bei der Abfassung nur die gemäß § 6 Abs. 6 und 7 Satz 2 angegebenen Hilfsmittel benutzt habe.

- Ich habe keine Organisation eingeschaltet, die gegen Entgelt Betreuerinnen und Betreuer für die Anfertigungen von Dissertationen sucht, oder die mir obliegenden Pflichten hinsichtlich der Prüfungsleistungen für mich ganz oder teilweise erledigt.
- Ich habe die Dissertation in dieser oder ähnlicher Form in keinem anderen Prüfungsverfahren als Prüfungsleistung vorgelegt.
- Die vollständige Dissertation wurde nicht veröffentlicht.
- Ich habe den angestrebten Doktorgrad noch nicht erworben und bin nicht in einem früheren Promotionsverfahren für den angestrebten Doktorgrad endgültig gescheitert.

Die öffentlich zugängliche Promotionsordnung der Technischen Universität München ist mir bekannt, insbesondere habe ich die Bedeutung von § 28 (Nichtigkeit der Promotion) und§ 29 (Entzug des Doktorgrades) zur Kenntnis genommen. Ich bin mir der Konsequenzen einer falschen Eidesstattlichen Erklärung bewusst. Mit der Aufnahme meiner personenbezogenen Daten in die Alumni-Datei der TUM bin ich einverstanden.

München, den 24. Januar 2016: .....

Christian Röhm