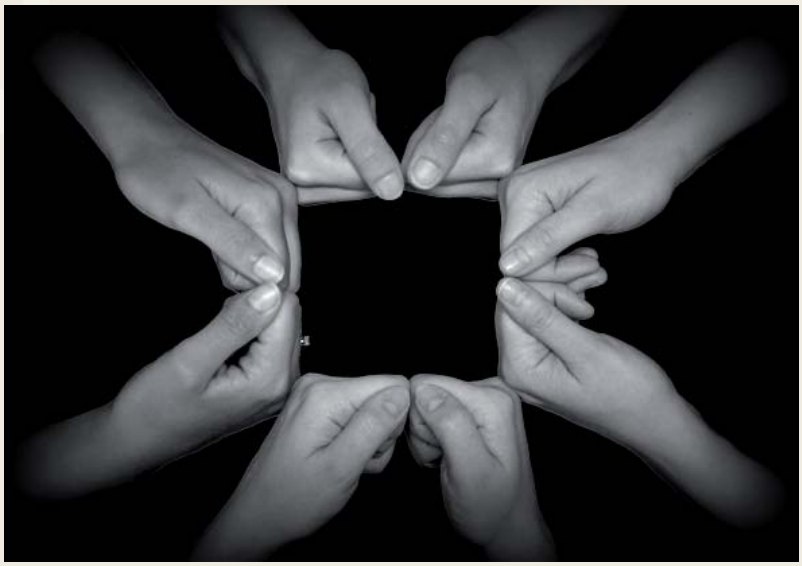
DOCTORAATSPROEFSCHRIFT

2012 | Faculteit Bedrijfseconomische Wetenschappen



Untangling the Multidimensional Construct of Professionalization in Private Family Owned SMEs: Working Towards a Family Business Typology

Proefschrift voorgelegd tot het behalen van de graad van Doctor in de Toegepaste Economische Wetenschappen, te verdedigen door:

Julie DEKKER

Promotor: prof. dr. Nadine Lybaert
Copromotoren: prof. dr. Roger Mercken
prof. dr. Tensie Steijvers

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Contents

List of Tables

List of Figures

Acknowledgements

After four years of conducting academic research and working on my Ph.D. dissertation, a moment of reflection seems well in place. Throughout my bachelor and master years at the University of Leuven I had none but one certainty, that writing a Ph.D. thesis was not something I aspired to do, or so I thought. After being fully informed of what the job precisely entails – being the person I am – I soon found it hard to resist the challenge. The possibility to further develop one's potential should never be left untouched. After a change of mind quickly followed a change of heart. Not long into the doctoral process, I truly began to enjoy my daily work. The possibility of developing and carrying out my own research ideas provided me with great satisfaction. Of course, no Ph.D. thesis is ever the product of one person's efforts. And for me, this is no different. Therefore, I would like to express my sincere gratitude to all the people who have helped me, in any way possible, to bring this doctoral thesis to a successful conclusion.

Of course, there are a few people that I would like to thank in person. I am sincerely and heartily grateful to my supervisor Nadine Lybaert, for the support and guidance she showed me throughout these four years. Nadine, you always had an unconditional faith in me. At all times, you saw success in everything I did or intended to do, even if I had a hard time seeing it myself. You taught me to have faith in my abilities and your genuine support provided me with enough strength and courage to pursue just about any idea or goal I desired. You have been a mentor to me in every sense of the word, for which I am grateful. Thus, for everything I have accomplished in these doctoral years, your contribution to this is irrefutable. Nadine, it has been an honor for me to have been under your supervision all these year.

Furthermore, I would like to express my gratitude to all the members of my doctoral committee. Tensie Steijvers and Roger Mercken, my co-promoters, who have helped guide me through this doctoral journey. I am grateful that you have taken the role of supervising me with such precision and dedication. Tensie, I am privileged to have been your first Ph.D. student. Your expertise truly helped shape the content of this dissertation. Strengthened by my doctoral committee member, Benoît Depaire, I had a diverse team of expertise on which I could fall back on. Benoît, you have pushed me to the utmost of my statistical ability, for which I am grateful. I have never met a man who could talk so passionately about statistics, making it difficult as a bystander not to share this passion.

At the final stage of my Ph.D. term, I was privileged to have Prof. Dr. Johan Lambrecht and Prof. Dr. Luca Gnan, both well respected members of the academic community, as members of my jury. I would like to convey my gratitude to you both for your many valuable comments during these final, yet crucial steps of my Ph.D. term. Your insightful remarks enabled me to further improve the quality of my dissertation.

Writing a Ph.D. thesis is sometimes said to be a solitary, at times even a tedious existence. For me, nothing could be farther from the truth, and for that I can only thank my colleagues. Yet, several of them don't like it when I use the term 'colleagues', and I must say, I have to agree with them, as some have become so much more to me than colleagues. Looking back on all our get-togethers, the (somewhat loud) lunch breaks, our happy hours on Friday, the countless celebrations for every birthday, publication, promotion, or whatever reason would suffice at that moment, they were all marked by pure enjoyment and endless laughter. Because of you all, I have looked forward to coming into work each single day, which I suppose, is a rare trait.

Lien, Karolien, Anneleen and Annelies, you truly hold a special place in my heart. Only a few week after the five of us met, we soon became an inseparable group. It is a synergy one hardly sees in a life. You have been there with me during all the highs and all the lows and have each become an indispensible part of my life. I cannot begin to express the magnitude of what your friendship has meant to

me these past years, and also, for the many years to come. I have grown so accustomed to spending every single day with you all, that it will be hard to let go. We have known such cheerfulness and laughter together, it has been a true bliss, my C.O.T.s.

Apart from all the wonderful new people that I had the privilege to meet during my time at Hasselt University, there are of course also those friends that have been there with me from way before. I would like to thank my closest friends for taking so much interest in what I have been doing these last few years. Perhaps even more important, you have given me the well-needed distractions and amusement which helped to take some of the pressure off at times.

Amongst all my dear friends, there is one person who will always stand out. Vera, you have been a friend to me in more ways than you can imagine. We have survived high school together and later on our years at the university in Leuven, on which we like to think back on as 'the good old days'. You have been the source of countless great memories I hold. Everything I have been through in life, I have shared with you, you have been my rock through it all for which I am grateful. I cannot wish for a more compatible, loyal and true friend than you.

In a final note, I would like to thank those who are most dear to me, my loving family. Their support has been invaluable. Jeroen and Jennifer, as children we would play make-believe for hours on end, and so we have been on many adventures together. Now, as we are older, our adventures still continue. To my brother and sister, who have both enriched my childhood, thank you. Finally, I would like to express my true gratitude to my mother, who has been the fuel behind my every accomplishment. Mom, you always saw great things for me, but left me the freedom to explore them on my own. You have given me unconditional support and have taught me how to become a strong and independent person. For everything that I will achieve in life, which includes this doctoral dissertation, it will have been because you enabled me to do so.

Julie Dekker
May 2, 2012

Samenvatting

Het fenomeen 'familiebedrijven' kent een voortdurend groeiende academische belangstelling en dit niet alleen in België maar ook ver buiten onze landgrenzen. Familiebedrijven vormen dan ook een unieke subcategorie binnen de groep van ondernemingen en hun economisch gewicht in de maatschappij is aanzienlijk. In België zijn aldus meer dan drie kwart van de ondernemingen in familiehanden en samen realiseren ze een derde van de totale toegevoegde waarde in ons land. Het idee van het 'professionaliseren' van familiebedrijven wint ook steeds meer aan belang en dit zowel in de academische wereld als in de bedrijfswereld, met allerhande seminaries, handboeken en op maat gemaakte stappenplannen.

Het begrip 'professionaliseren' binnen een familiebedrijf blijkt echter vaak herleid te worden tot het overstappen van familiaal management naar niet-familiaal management, of het zogenaamde 'professioneel' management. Hierin bestaat het gevaar dat een familiebedrijf dat zich wenst te professionaliseren, ten onrechte van de veronderstelling zou uitgaan dat het zich moet ontdoen van alle familieleden binnen het bedrijf. Deze simplificatie van het begrip maakt ook dat professionalisering plots een binaire aard krijgt: men is als familiebedrijf professioneel (d.i. men doet beroep op een niet-familiale manager), of men is dat niet. Er bestaan in dit opzicht dan ook geen gradaties in de mate waarin een familiebedrijf al dan niet kan professionaliseren. Door het aanwerven van een niet-familiale manager zou men van de ene op de andere dag als familiebedrijf 'professioneel' kunnen worden, wat uiteraard niet strookt met de realiteit.

Deze oversimplificatie van het concept 'professionalisering' binnen familiebedrijven verdient daarom verdere aandacht. Dit onderzoek richt zich bijgevolg op het verder uitdiepen van dit concept. De algemene onderzoeksdoelstelling van dit doctoraat wordt als volgt geformuleerd: *"Hoe kunnen*

we het multidimensionale construct van professionalisering identificeren wanneer dit wordt toegepast binnen de context van familiebedrijven, en welk effect heeft professionalisering op de bedrijfsprestatie?"

Op basis van deze algemene onderzoeksdoelstelling, worden drie specifieke onderzoeksvragen geformuleerd die in dit doctoraal onderzoek worden beantwoord. In het kader van de empirische toets van onze onderzoeksvragen, hebben we bedrijfsgegevens verzameld bij 532 private Vlaamse familiebedrijven door middel van vragenlijsten. Deze gegevens stellen ons in staat om het multidimensionale karakter van professionalisering in kaart te brengen, alsook het effect op de bedrijfsprestatie van een familiebedrijf.

Onze eerste onderzoeksvraag: "*Wat houdt het construct van professionaliseren binnen een familiebedrijf in?",* onderzoekt een bredere betekenis van het professionaliseringsbegrip dan tot nu toe gangbaar was. Er wordt van de veronderstelling uitgegaan dat wanneer een familiebedrijf professionaliseert, dit meer inhoudt dan het aanwerven van niet-familiale managers. De bestaande literatuur stelt ons in staat om andere kenmerken van professionalisering binnen een familiebedrijf te identificeren. Zo beschrijft de literatuur dat wanneer een familiebedrijf professionaliseert, er meer officiële governance systemen worden ontwikkeld binnen het bedrijf zoals een raad van bestuur, en dat er in deze raad ook externe, niet-familiale leden zetelen. Verder brengt het professionaliseren nog met zich mee dat er formele controlesystemen worden ontwikkeld en toegepast binnen het familiebedrijf, en dit zowel met betrekking tot financiële controle als human resource controle. Tot slot beargumenteert de bestaande literatuur nog dat wanneer een familiebedrijf professionaliseert, de controle over het bedrijf steeds minder gecentraliseerd is rond een autonoom persoon en er meer gedelegeerd wordt naar de verschillende niveaus binnen het bedrijf.

Op basis van deze theoretische inzichten zijn we overgegaan tot het empirisch toetsen van de verschillende dimensies die gerelateerd zijn aan het professionaliseringsconcept. Door het uitvoeren van een exploratieve factoranalyse zijn wij in staat om de multidimensionale aard van professionalisering weer te geven. Op basis van de verzamelde gegevens van 532 Vlaamse familiale KMO's,

blijkt dat het concept de volgende door ons geïdentificeerde onderliggende dimensies omvat: (1) Financiële controlesystemen; (2) Niet-familiale betrokkenheid in de governance systemen; (3) Human resource controlesystemen; (4) Decentralisatie van autoriteit; en (5) Werkzaamheid bedrijfstop. Door het identificeren van deze verschillende onafhankelijke dimensies, toont dit doctoraal onderzoek aan dat het professionaliseringsconcept ruimer kan geïnterpreteerd worden dan enkel het aanwerven van niet-familiale managers. Familiebedrijven kunnen zich professionaliseren via één van deze vijf dimensies – waarvan het aanwerven van niet-familiale managers een onderdeel is – of door een combinatie van meerdere. Dit heeft als gevolg dat er ook gradaties te onderscheiden zijn in het niveau van professionalisering. Deze verworven inzichten dragen bij tot de bestaande literatuur rond dit thema doordat het een kritische evaluatie biedt van het professionaliseringsconcept binnen familiebedrijven en het bestaande denkkader hierrond verruimt.

Na het beantwoorden van deze eerste onderzoeksvraag en het identificeren van de multidimensionale aard van professionalisering, stelt er zich onmiddellijk een volgende onderzoeksvraag, namelijk "*Hoe kunnen we familiebedrijven van elkaar onderscheiden op basis van dit professionaliseringsconcept?*". Hoewel familiebedrijven worden onderzocht als unieke subcategorie binnen de verzameling van ondernemingen, is dit geen homogene groep van bedrijven. Er bestaat niet één typisch familiebedrijf. Om deze complexiteit op een werkbaar niveau te houden, is het nuttig om familiebedrijven op te delen in verschillende types. Pogingen hiertoe zijn reeds in het verleden ondernomen, maar resulteerden vaak in oppervlakkige, statische en soms weinig zeggende classificatiesystemen. Ook hier draagt ons onderzoek bij tot de literatuur. Steunend op de theoretische inzichten die resulteerden uit onze eerste onderzoeksvraag, zijn we in staat om een onderscheid te maken tussen verschillende types familiebedrijven daarbij baserend op het professionaliseringsconcept.

Op basis van de verschillende professionaliseringskenmerken hebben we twee theoretische subsegmenten kunnen onderscheiden, namelijk 'Effective Openness' and 'Internal Formalization'. Dit eerste subsegment geeft weer in welke

mate het bedrijf open staat voor niet-familiale betrokkenheid in het bestuur van de onderneming, en tegelijkertijd dit bestuur ook de nodige ondersteuning en beslissingsbevoegdheid geeft om effectief te werken. Het tweede subsegment omvat de mate waarin het bedrijf interne formele controlesystemen implementeert binnen de organisatie. Een combinatie van deze twee subsegmenten, beide geïnterpreteerd als zijnde een continuüm, maakt het mogelijk vier unieke, niet overlappende en exhaustieve types van familiebedrijven te identificeren met hoge en/of lage waarden op beide continuüms. Deze vier types werden als volgt benoemd: 'Autocracy', 'Domestic Configuration', 'Clench Hybrid', and 'Administrative Hybrid'. Deze conceptuele typologie is vervolgens empirisch bevestigd door het toepassen van een clusteranalyse op onze dataset. Dit doctoraal onderzoek draagt aldus bij tot de academische discussie rond de diversiteit die er bestaat binnen de groep van familiebedrijven, en biedt een instrument om familiebedrijven op een gefundeerde manier van elkaar te onderscheiden.

Een laatste onderzoeksvraag waarop dit onderzoek zich richt, heeft betrekking op de link naar de bedrijfsprestatie. De onderzoeksvraag wordt als volgt geformuleerd: '*In welke mate heeft professionalisering een effect op de bedrijfsprestatie?*'. Zoals eerder werd vermeld, bestaat er in de wetenschappelijke literatuur een tendens om professionalisering gelijk te stellen aan het aanwerven van een niet-familiale manager. Een gevolg van deze simplistische benadering is dat de huidige onderzoeksresultaten over het effect van professionalisering van een familiebedrijf op de bedrijfsprestatie niet consistent zijn. Zowel positieve als negatieve effecten op de financiële prestatie werden in bestaand onderzoek gevonden. Wij herbekijken deze relatie, maar met het verschil dat professionalisering niet als ééndimensionaal, maar als multidimensionaal concept wordt benaderd. Op basis van de resultaten van de regressieanalyse zijn we in staat om een genuanceerder beeld te creëren wat betreft het effect op de bedrijfsprestatie. Uit onze dataset kan afgeleid worden dat enkele, maar niet alle, dimensies van professionalisering bedrijfsprestatie positief kunnen beïnvloeden. Concreet betekent dit dat wanneer een bedrijf professionaliseert door ofwel de familiale betrokkenheid in governance systemen te verminderen (dimensie 2), ofwel meer human resource

controlesystemen te integreren (dimensie 3), ofwel autoriteit te decentraliseren binnen het bedrijf (dimensie 4), dit gepaard zal gaan met een stijging van hun bedrijfsprestatie. Op die manier kan een bedrijf zich richten op verschillende dimensies om het familiebedrijf te professionaliseren en zo een gunstig effect te creëren op de bedrijfsprestatie.

Met deze doctorale studie wordt een nieuwe stap gezet in de richting van een verdere uitdieping en verduidelijking van het professionaliseringsconcept wanneer dit wordt toegepast binnen het unieke domein van familiebedrijven. De verworven inzichten vullen enkele vaak genoemde hiaten op die terug te vinden zijn in de huidige relevante literatuur rond professionalisering en diversiteit binnen de groep van familiebedrijven. Zo draag dit doctoraatsonderzoek bij tot het bestaand wetenschappelijk onderzoek rond dit thema en creëert het nieuwe onderzoekspisten voor verder toekomstig onderzoek.

1. Introduction

Family business professionalization has become increasingly important, and this in the world of academic research with increasing journal space devoted to the topic each year, as well as in the world of practitioners with a raising amount of seminars and all sorts of "how-to" books and manuals. Yet, "Professionalization" is often thought to mean "changing from family management to non-family management". Even though hiring a non-family to lead the company can be part of professionalization, this is not the only possible element of professionalizing a family business. More so, one should be aware of falling into the trap of assuming that the way to make your business more professional is to get rid of family employees. If we consider that most industry leaders around the world are family businesses, we must recognize the fact that family business professionalization is possible and can be successful in this context. Therefore, a business can be family-owned and managed and be professional. Terms like "family managers" and "professional managers" imply that the only way to be "professional" is to be "non-family". This is, to our opinion, an oversimplification of the professionalization construct and therefore deserves further attention. Thus, the main research objective of this dissertation is: "*How can we untangle the multidimensional professionalization construct within a family business context and to what extent does it affect firm performance?*".

The contextualization of this dissertation topic is purposely that of the family business. Family firms warrant the attention of scholars as they represent a vital part of economic life. For Belgium, we know that 77% of the businesses are in fact family businesses and that their share in the job generation amounts to 45% (FBNet, 2011). They also have a notable contribution to the wealth creation of the country. If we look at a wider context, namely that of Europe, over two-third of the businesses in most of these countries are considered to be family firms. In

America this proportion can easily climb to 95% of the total number of organisations (IFERA, 2003). While family businesses are especially prevalent among privately-held small and medium-sized enterprises (SMEs) (Daily & Dollinger, 1993; Neubauer & Lank, 1998), many of the largest publicly-traded corporations are also controlled by families (Anderson & Reeb, 2004; La Porta et al., 1999). Although no definition of family firms has yet gained widespread acceptance, the main distinguishing characteristic is that organizational processes and corporate policy are substantially influenced by a family system (Chua et al., 1999; Sharma, 2004), typically through family involvement in ownership (Anderson & Reeb, 2003; Barth et al., 2005; Neubauer & Lank, 1998) and/or management (Cromie et al., 1995; Gulbrandsen, 2005; Tagiuri & Davis, [1982] 1996). As such, the most common way to describe the unique characteristics of family businesses compared to other categories of organizations is the so called three-circle model (Gersick et al., 1997; Tagiuri & Davis, [1982] 1996). Family businesses are then characterized by the overlap of three separate spheres: the ownership, the business and the family itself. These three components are intertwined and constantly affect each other. This makes family firms by structure, strategy and operation, very different from non-family firms (Gersick et al., 1997).

In past research (e.g. Craig et al., 2008; Schulze & Gedajlovic, 2010; Sharma, 2004; Ward, 2008), family businesses have, therefore, rightfully been approached as a distinctive subset within the group of organizations due to the family involvement connected to all levels of the organization. Yet, as any other type of firm, family businesses are submissive to general organizational development models, such as the life cycle model, which typically defines a set of predetermined stages or phases through which an organization evolves (e.g. Gabrielsson, 2007; Gedajlovic et al., 2004; Hofer & Charan, 1984; Masurel & van Montfort, 2006). These transitions can be contingent on the time period (Steinmetz, 1969), the size of the organization (Flamholtz & Randle, 2007), or other organizational needs (Hofer & Charan, 1984; Masurel & van Montfort, 2006). This unique transition from an entrepreneurial business, often owner-managed, to a more formalized, structured and institutionalized corporation is depicted as the

professionalization process (Chandler, 1977; Flamholtz & Randle, 2007; Zahra & Filatotchev, 2004).

When studying professionalization in a family business context, it gives the construct an extra dimension, namely the family-dimension. The amount of family involvement in the top level of the family business and the choice between a family manager and a non-family – often referred to as professional – manager becomes a unique aspect of professionalization in the context of private family firms. However, this causes the bulk of the scholarly studies related to the professionalization construct within a family business context to solely focus on this particular feature and neglecting other aspects, and as such, treat the presence of a non-family manager as a synonym for business professionalization (e.g. Bennedsen et al., 2007; Klein & Bell, 2007; Lin & Hu, 2007; Zhang & Ma, 2009). This tendency of equating professional managers with external, non-family managers, leads to the outdated assumption that family members are inherently non-professional managers that must be replaced so that the firm can grow (e.g. Berenbeim, 1990; Bloom & Van Reenen, 2007; Chittoor & Das, 2007; Daily & Dollinger, 1992, 1993; Gulbrandsen, 2005; Levinson, 1971; Schein, [1983] 1995). It simplifies the professionalization concept into something binary, which is at the least worrying.

We believe that the cause of this oversimplification of the professionalization construct can, to a certain extent, be attributed to the lack of a singular and sound definition of the construct. Even in the most recent studies of concept, authors stay vague when it comes to stating the meaning of professionalization, for example by saying "the term implicitly or explicitly entails other dimensions [than hiring a full-time, salaried, non-family manager], such as formal training, meritocratic values, formalized structures, or independent directors." (Stewart & Hitt, 2012). Based on such descriptions, the reader is still in the dark on what the exact features or characteristics are, and if and how they need to occur in order for the process to be defined as professionalization. As such we agree with researchers such as Debicki et al. (2009), who indicate that this concept is in need of some good empirical research as it has not been sufficiently examined up till now. Relating to the main research objective of this dissertation

and based on these prior insights, we formulate the first research question: *"What is the content of the professionalization construct within a family business context?"*.

If we are able to identify the multi-dimensional essence of the professionalization construct when it is applied in a family business context, almost simultaneously one might argue, what can we do with this information? It is known that in recent years there is a growing consensus that family firms cannot be perceived as a homogeneous group (see Chrisman et al., 2005; Melin & Nordqvist, 2007; Sharma et al., 1997; Westhead & Howorth, 2007). It is not a "one size fits all" situation, which asks for a more tailored approach of the matter. In order to keep complexity at a comfortable level, increased variety imposes us to find ways to classify the items under research. This still recognizes the heterogeneity within the group of research objects, but at the same time enables us to make statements about a subgroup comprising more than one firm. We contend that the insights on the professionalization construct can offer a basis to make a sound distinction between different types of family businesses. These issues are therefore addressed in the second research question: *"How can we distinguish family businesses based on the professionalization construct?"*.

Researchers have noted that more attention should be given to creating and comparing different types of family businesses (Melin & Nordqvist, 2007), since faith is fading away in research results that start with "thé family firm is/has...", and is replaced by a healthy suspicion. Is it even realistic to think one can make such a statement that holds for all family firms? It might become difficult to have confidence in the research findings that are possibly based on samples which are a mix of different types of firms (Sharma & Nordqvist, 2008). Therefore, Chrisman et al. (2007) and Davis (2009) call for finding ways to distinguish between different categories of family firms. As such, we contribute to the family business literature by developing a new and innovative way to scrutinize private family firms.

The research objective of this dissertation: *"How can we untangle the multidimensional professionalization construct within a family business context and to what extent does it affect firm performance?"* leads us to a third and final research question which we intend to address in this thesis. More precise, the affect

that professionalization has on business performance, given that the construct is in fact multidimensional. As aforementioned, the trend exists in current family business literature to simplify the professionalization concept into something binary, that is the presence/absence of a non-family manager. Based on this kind of measurement, the results of these empirical studies which assess the impact of the family business professionalization level on the firm's performance are not consistent. Some posit that this effect is positive (e.g. Barth et al., 2005; Duréndez et al., 2007; Lin & Hu, 2007; Sciascia & Mazzola, 2008), while others argue a negative effect (e.g. Anderson & Reeb, 2003; McConaugby et al., 2001; Miller & Le Breton-Miller, 2006) or no effect at all (e.g. Daily & Dalton, 1992; Daily & Dollinger, 1992).

We reason that the inconsistency in these results, therefore, might be due to the misconception or content reduction of the professionalization process. As these authors tend to treat professionalization as something unidimensional, they might overlook the possible linkage that this feature has with other dimensions of professionalization. For example, the simultaneous occurrence of other professionalization features that facilitate (impede) the effectiveness of the non-family manager may lie at the foundation of studies finding a positive (negative) effect of non-family managers on firm performance. In this respect, we can think about authority decentralization and delegating decision power as part of the professionalization concept, which might be necessary for a non-family manager to increase performance (Moores & Mula, 2000). As these studies do not take into account other aspects of professionalization, we argue that there is a need to reexamine the relationship. We therefore formulate our third and final research question: *"To what extent does professionalization affect firm performance?"*.

We present a visualization of the main research objective with the three concrete research questions in Figure 1. As a result of the information derived from the current literature we address our first research question (RQ1). Based on these insights, we then proceed with answering the second (RQ2) and third research question (RQ3). Beneath each research question, the applied statistical method in order to answer the research question is referred.

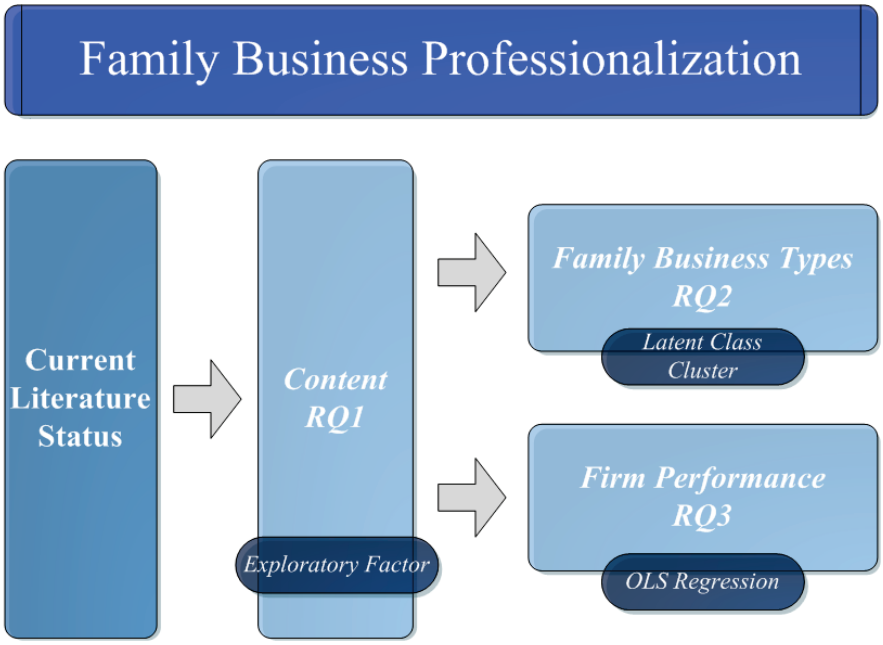


Figure 1: Main research objective

Outline of the dissertation

Chapter 2 provides the reader with detailed and profound insights in the existing family business professionalization literature as well as the family firm typology literature. Both reviews are required to uncover the existing gaps. Further, the professionalization discussion is justified through a multi-theory underpinning. Finally, by identifying multiple features that repeatedly return in the professionalization descriptions of the present literature, this chapter formulates an answer – completely embedded in theory – on the first research question: *"What is the content of the professionalization construct within a family business context?"*.

Next, in ***Chapter 3*** we build a new conceptual framework to distinguish family firms based on the professionalization construct. This issue is addressed in light of the theoretical insights regarding the multidimensional nature of professionalization obtained in Chapter 2. The new composed typology differentiates four novel types of family firms, which are further discussed in-depth. This chapter thus provides an answer, again, only from a theoretical perspective, to the second research question, namely *"How can we distinguish family businesses based on the professionalization construct?"* .

In ***Chapter 4*** we explicate the development of the survey instrument as well as the data collection process. Due to a lack of existing scales for the professionalization construct, Chapter 4 describes how the concept is operationalized in this study. Further details of the sample selection are provided, together with some general descriptive statistics regarding the responding family firms.

In ***Chapter 5*** we readdress the first research question, yet this time throughout an empirical perspective. The reader is guided through the steps of the exploratory factor analysis. The main objective in this chapter is to identify uncorrelated underlying factors in the variable set which will help explain the content of the professionalization construct within a family business context.

Chapter 6 contains the results of a model-based cluster analysis. This is performed in order to readdress the second research question, "*How can we*

distinguish family businesses based on the professionalization construct?", yet this time based on the empirical findings. The multidimensional content of professionalization, as it is explored in Chapter 5, is now required as input for the cluster analysis in order to empirically identify distinct groups of family firms in the data set.

In ***Chapter 7*** we bring all the findings regarding the different types of family firms together. That is to say, the second research question is answered once through insights based on theory (Chapter 3), and once empirically through the results of the cluster analysis (Chapter 5). Therefore, Chapter 7 is devoted to the comparison between these empirical clusters and the prior conceptually constructed groups. This gives us an indication of the possible usability of our typology to produce a simplified version of the reality. Further, the empirically derived clusters are further identified through additional analysis.

Chapter 8 contains the findings regarding the third and last research question, namely *"To what extent does professionalization affect firm performance?"*. This chapter explicates how we assess whether professionalization has an effect on business performance, by means of an OLS regression analysis. By using the dimensions of professionalization discovered through the factor analysis, we are able to evaluate the effect of each dimension separately, and assess whether there are possible conjunctional effects between the different professionalization dimensions which might amplify or reduce the singular effects on firm performance.

Finally, in ***Chapter 9,*** general conclusions are drawn regarding the findings in this study. We point to the areas where this thesis might provide a contribution to the current research literature, and provide suggestions and avenues for future research to focus on.

We like to conclude this introduction by highlighting the exploratory nature of this entire research. Therefore, in order to satisfy the reader of this dissertation, it is important to set the expectations right. As such, we strive to provide the reader a state of the art synthesis of the research regarding the professionalization topic. The exploratory study in the empirical section is a first step in the empirical

demarcation of the professionalization construct when it is approached multidimensionally. It is not the intention of this thesis to provide the reader with ready-to-use measurement scales. Our results can, however, provide a basis for future scale development of the professionalization construct. As such, the main contribution of this thesis lies in the exploratory manner in which we re-approach the professionalization construct and introduce a unique and novel way of typologizing the family business.

2. Creating a Basis for Discriminating amongst Family Firms by Using the Professionalization Construct: Literature Review

2.1 Introduction

In order to create a thorough and in-depth understanding of what professionalization means in a family business context, we scrutinize relevant literature on the topic. As such, in this chapter we seek an answer to our first research question: "*What is the content of the professionalization construct within a family business context?*". By focusing on previous published scholarly work, we, for the time being, approach our research question purely from a theoretical perspective. We strive to identify the distinct features of the professionalization construct as they are embedded in the existing literature.

Yet, based on the review it appears that the bulk of family business literature has a tendency of treating professionalization as a very narrow concept. In most studies the scholarly researchers seem to address and also measure the construct of professionalization as the presence of a non-family manager within the family company. As such, the entire process of professionalization is being reduced to a binary variable, namely as something that can 'happen overnight' within the firm. This has recently led to several attempts of studies to contribute in defining and clarifying the concept of professionalization or in specifying general characteristics of professionalization when it is applied within a family business context. A state of the art review (section 2.2) leads us to explain

professionalization as a multidimensional construct and determine distinct features, which are derived from the literature.

A critical concern that arises based on our findings from the literature – namely the general simplistic approach of professionalization – is that this might be due to the fact that the professionalization discussion is lacking relevance in the family business domain. The construct might not lend itself to be applicable in this given context. In section 2.3 we search for a justification for the professionalization matter when it is applied in a family business setting by using a multi-theoretical perspective.

Through the multi-theory underpinnings we find that the professionalization discussion is indeed valid given the family business context and that its interpretation goes beyond the hiring of a non-family manager. These insights thus justify and indicate the relevance of our second research question: *"How can we distinguish family businesses based on the professionalization construct?"*. However, before we are able to address this question, we must first ascertain if and how other studies have used this construct to differentiate amongst family firms.

To address this concern we review the set of existing family firm typologies in section 2.4. The results of this assessment indicate that the majority of these typologies stay on a surface area by basing family firm diversity on the amount of family involvement in ownership and/or management. This has high resemblance to the unidimensional perspective of family business professionalization. Both try to deduce a firm outcome or behavior based on the involvement of an outside non-family member, which is not a balanced derivation. By causing family firms to change type based largely on firm composition, might make these existing typologies too arbitrary as they might lead to simplistic distinctions which have few implications.

As such, this chapter will be concluded by highlighting the gap in the family business typology literature and by indicating that the research field is in need of grounded alterations and new outlooks. In this respect we posit that the

multidimensional perspective of professionalization can contribute to the development of a more profound family firm typology.

2.2 Untangling the Construct of Professionalization Based on the Literature

In the general business literature, many researchers have devoted their attention to the analysis of firm's professionalization which is often placed in the context of organizational development (e.g. Flamholtz & Randle, 2007; Gabrielsson, 2007; Gedajlovic et al., 2004; Hofer & Charan, 1984; Whisler, 1988). A popular approach has been to assess the firm's development by means of a type of growth model, such as a life cycle model, which typically describes a set of predetermined stages or phases through which an organization evolves over time. In this flow of academic literature, the concept of professionalization is often used to indicate the transition of an entrepreneur/founder to professional management.

Flamholtz (1986; 2007), being one of the key authors concerning business professionalization, describes this process through the introduction of several features such as formal planning, regular scheduled meetings, defined responsibilities, performance appraisal systems, formal training, management development, formal governance bodies, and control systems, which are essential to make a successful transition. This transition from entrepreneurship to a professional firm is, according to Flamholtz (1986), contingent on the size of the organization. Firms in the entrepreneurial phase are characterized by informality, lack of systems, and a free-spirited nature, while those in the professional management phase tend to be more formal, have well-developed systems, and follow a profit-oriented approach. A similar transition process is described by Hofer and Charan (1984). They define a professionally managed firm as one which has a functional organization structure based on current needs, delegates decision-making authority to subordinate managers, uses formal information analysis, has stable corporate strategies, and is free from excessive dependency on any particular individual. The transition is seen as a process which contains multiple steps, such

as the development of a professional board of directors, changing the decision-making process, and modifying organizational structure. As such, professionalization is approached as a multi-faceted construct in the general business literature. Authors have analyzed professionalization from a variety of perspectives, such as: professionalization of start-up (Hellmann & Puri, 2002); professionalization of management practices (Bresnen & Fowler, 1996; Scacchetti, 1966; Zupanov, 1973); professional human resource management (Wright, 2008); and professionalization of accounting practices (Roberts & Coutts, 1992; Velayutham & Perera, 1996).

If we concentrate on the family business domain, the professionalization of family businesses has become a major research concern in the entrepreneurship and governance literature (e.g. Chandler, 1977; Chrisman et al., 2003; Daily & Dalton, 1992; Gedajlovic et al., 2004; Giovannoni et al., 2011; Zahra & Filatotchev, 2004). And, even though the construct cannot be captured in one sound definition, researchers do not seem to be hesitative to study (a part of) the phenomenon (e.g. Songini, 2006; Von Nordenflycht, 2010). As the concept of professionalization has found its way in the family business research, it has given the general approach on the subject an extra dimension, namely the family-dimension. The amount of family involvement in the top level of the family firm and the choice between a family manager and a non-family – often referred to as professional – manager becomes a unique aspect of professionalization in the context of private family firms, causing most empirical studies on professionalization to solely focus on this particular feature (e.g. Bennedsen et al., 2007; Chittoor & Das, 2007; Gedajlovic et al., 2004; Klein & Bell, 2007; Lin & Hu, 2007; Zhang & Ma, 2009).

Yet, as the general management literature indicates (Flamholtz & Randle, 2007; Hofer & Charan, 1984), professionalization is a multidimensional construct, including other elements such as, amongst others, the establishment of governance structures, a delegation of control and the implementation of formal control systems, which are often neglected in the studies of professionalization in the family business research field. Similar conclusions have recently been drawn in the family business field, as Stewart and Hitt (2012) argue that, even though

professionalization lacks a singular meaning in popular or scholarly discourse, the term implicitly or explicitly entails other dimensions, such as formal training, meritocratic values, formalized structures, or independent directors (e.g. Chua et al., 2009; Chua et al., 1999; Tsui-Auch, 2004). By reviewing the relevant family firm literature, we similarly conclude that there is no uniform definition of what is meant by the concept professionalization within a family business. What is even more worrying, is that we can identify a tendency of equating professionalization of the family business exclusively with the entrance of non-family managers. We attempt to grasp this variety in definition that exists in the literature, ranging from very narrow to more broadened viewpoints. An overview of the various definition contents of professionalization throughout the family business literature is presented in Table 1.

Table 1. Overview of the various definition contents of professionalization in a family business context

Definition of professionalization within a family firm	**References**
Narrow definition	
Professional manager = external, non-family manager with formal business training	*e.g. Barth et al.(2005); Bennedsen et al. (2007); Bernheim (1990); Bloom and Van Reenen (2007); Chittoor and Das (2007); Corbetta (1995); Daily and Dollinger (1992, 1993); Duréndez et al. (2007); Dyer (1989); Gulbrandsen (2005); Klein and Bell (2007); Levinson (1971); Lin and Hu (2007); Schein (1983/1995); Zhang and Ma (2009)*
Threshold approach	
The transition from entrepreneurial (family) to professional (non-family) management is inevitable	*e.g. Daily and Dalton (1992);Gedajlovic et al. (2004); Whisler (1988); Zahra and Igor Filatotchev (2004)*
Definition extensions	
Involvement of family managers or non-family managers	*e.g. Dyer (1989); Giovannoni et al. (2011); Hall and Nordqvist (2008); Tsui-Auch (2004)*
Professionalization of governance systems (e.g. board of directors)	*e.g. Craig and Moores (2002); Lane et al. (2006;) Songini (2006); Suáre and Santanta-Martín (2004); Stewart and Hitt (2011); Yildririm-Öktem and Üsdiken (2010)*
Development of formal systems of control	*e.g. Chua et al. (2009); Dyer (2006); Giovannoni et al. (2011); Sonfield and Lussier (2009); Songini (2006); Tsui-Auch (2004)*
Delegation of control & decision-making	*e.g. Chua et al. (2009); Hofer and Charan (1984); Stewart and Hitt (2012)*

A substantial part of the basis for the earliest definition of professionalization in the family literature can be traced back to the work of Schein (1968). Referring to professional managers in a general business context, Schein suggests that: (1) their actions are driven by a set of general principles or propositions independent of a particular case under consideration; (2) they are deemed to be "experts" in the field of management and to know what is "good" for

the client; (3) their relationships with clients are considered helpful and objective; (4) they gain status by accomplishment as opposed to status based on ties to the family; and (5) they belong to voluntary associations of fellow professionals. These criteria are extrapolated to the family firm context in the work of, among others, Dyer (1989) and Chittoor and Das (2007). Professionalization is then defined as the entrance of an external, non-family manager. Often the specialized technical knowledge (Corbetta, 1995) or formal business training (Dyer, 1988), are seen as the primary assets held by these non-family managers. This is by far the most narrow, but also most commonly used definition of professionalization of a family business when we look at other theoretical and empirical research on the subject (e.g. Barth et al., 2005; Bennedsen et al., 2007; Berenbeim, 1990; Bloom & Van Reenen, 2007; Chittoor & Das, 2007; Corbetta, 1995; Daily & Dollinger, 1992, 1993; Duréndez et al., 2007; Dyer, 1988; Gulbrandsen, 2005; Klein & Bell, 2007; Levinson, 1971; Lin & Hu, 2007; Schein, [1983] 1995; Zhang & Ma, 2009). The entrance of a professional manager, i.e. an external, non-family manager, has often been linked to the succession issues. In this perspective, professionalization has been put forward as the crucial missing link for successful succession in family-owned businesses (Chittoor & Das, 2007). Or, as concluded by Levinson (1971) in his much cited article: "the wisest course for any business, family or non-family, is to move to professional management as quickly as possible". Based on case studies, Berenbeim (1990) outlines specific steps that family firms must take to successfully make this transition to professional management.

Authors following the threshold approach (e.g. Daily & Dalton, 1992; Gedajlovic et al., 2004; Whisler, 1988; Zahra & Filatotchev, 2004) even take this reasoning one step further. These authors perceive professionalization – which is the hiring of a non-family manager – as a threshold moment, and proclaim that this transition is inevitable. Their reasoning for this is that all family firms outgrow the expertise and resources of the entrepreneur-founder, thereby saying all family firms must endure this transition to professionalization through external expertise.

The tendency in the literature to equate professional managers with external, non-family, non-owner managers, leads to the outdated assumption that

family members are inherently non-professional managers that must be replaced so that the firm can grow. As such, Hall and Nordqvist (2008) caution that professional management and family management are often seen as mutually exclusive. One of the first to deviate from this simplistic assumption, was Dyer (1989). In his highly influential article on the integration of professional management into a family owned business, he defines the professional manager based on the criteria of Schein (1968), yet considering both family members as well as non-family members as plausible candidates.

Building on previous research, Hall and Nordqvist (2008) also attempt to elaborate the narrow definition of professionalization. They depict professional management in a family business as: (1) an in-depth understanding of the unique sociocultural patterns originating from the family's influence on a business and their goals, which is referred to as *cultural competence*; and (2) to be able to make effective use of relevant education and experience in a particular family business, i.e. *formal competence*. The authors conclude that when these requirements are met, professional management becomes indifferent to family membership. This extended understanding of professional family business management is one of the first in attempting to include the social and cultural dimensions of the owning family. Yet, their work encounters several limitations as the authors treat organizational culture and family culture as homogeneous which is, as they suggest, a simplification.

In recent years, there have been some new attempts to further elaborate and refine the concept of professionalization within the family firm context. The institutionalization of professional management, through the employment of professionally trained non-family managers, was linked with a higher degree of formalization which includes the implementation of systems of financial control, bureaucratic rules on recruitment, and promotion and dismissal based on merit (Tsui-Auch, 2004). Chua et al. (2009) also include the development of some sort of system of control as part of the professionalization process which, according to the authors, typically starts with the employment of non-family managers. They argue that professionalization involves changes in the firm's authority relationships,

norms of legitimacy, and incentives. Through the agency approach Chua et al. (2009) discuss the implementation issues of formal performance evaluation systems and incentive compensation systems in a professionalization context. Songini (2006) broadens the notion of professionalization even further. She considers that the process relates to the adoption and diffusion of: formal governance mechanisms such as board of directors; formal strategic planning and control systems (e.g. budgeting, reporting, and management accounting); and the involvement of non-family members in boards and management, often called professional managers. This board professionalization is the main focus in the work of Yildirim-Öktem and Üsdiken (2010), who identify this as the sharing with or relinquishing authority and control to those from outside the family. They believe internal and environmental complexity to have an effect on board professionalization. The importance of the professionalization of governance is also visible in the work of Suáre and Santana-Martín (2004), who indicate that growing family firms need more professionalized and complex systems of governance to manage the divergent family and business interests. A key segment of these systems is the implementation of professional HRM practices, such as recruitment and selection procedures, employee training, and formal performance appraisal. Yet, family firms are less likely to apply these professional HRM practices than non-family firms (de Kok et al., 2006). This definition extension through which professionalization also appears to include management tools is also supported by the comments of Sonfield and Lussier (2009). Besides the entrance of non-family managers and the transition to a more formal and objective leadership style, professional management – according to the authors – also involves: the use of outside consultants, advisors and professional services; more time engaged in strategic management activities; and the use of more sophisticated financial management tools.

The assessment of these recent studies has signified the importance of the implementation of formal control systems within the context of firm's professionalization. As such, authors like Chua et al. (2009), Giovannoni et al. (2011), Sonfield and Lussier (2009), and Songini (2006) have reintroduced this feature within the professionalization definition, which is in accordance with the

earlier and more general concept interpretation as is found in the work of, for example, Flamholtz (1986; 2007) and Hofer and Charan (1984). Yet, within this process of formalizing the company systems, we observe that most researchers focus on the implementation of formal financial control systems, such as output controls, accounting systems, monitoring controls and budget standards (Chua et al., 2009; Gedajlovic et al., 2004; Giovannoni et al., 2011; Pérez de Lema & Duréndez, 2007; Sonfield & Lussier, 2009). However, as de Kok et al. (2006) implicate, HRM practices are also an important segment of the formal systems. The manner in which a firm handles the recruitment of new personnel, assesses their performance, assigns possible rewards and provides suitable training programs can be important personnel controlling systems, especially in a family business environment. Family firms have often been criticized for hiring people because of their family status and not their qualifications (Kellermanns & Eddleston, 2004). A formalized manner for the selection and evaluation can therefore offer more transparency, and can prevent the family from engaging in particularism, meaning that irrelevant criteria such as kinship ties, are used when recruiting an employee, instead of universalistic criteria, such as competence (Dyer, 2006). Moreover, the performance evaluation of family members can be colored due to what is known as familial altruism, which treats people for who they are rather than what they do (Schulze et al., 2001). Finally, the development of formal training programs is prominent for developing capabilities, growth and profitability. Often, the on-the-job training is replaced by high quality formal training programs during the critical growth stages of the family business (Kotey & Folker, 2007). Thus, we can conclude that besides the financial control systems, the control systems related to personnel-issues are just as important in the process of professionalizing business systems.

Based on this extensive literature review, we can say that there is an inconclusive picture regarding professionalization within the family business literature. The field lacks a general agreement on the contents of the construct of professionalization. Academics in the field have mainly focused on the unique aspect of professionalization when it is applied to the family business context, namely the hiring of an external, non-family manager. This perspective also

appears to be the basis of most of the empirical studies concerning the topic, which might explain the inconsistencies and contradictory results. By neglecting the multidimensional nature of professionalization and the tendency to equate professional managers with external, non-family, non-owner managers – making family management and professional management mutually exclusive – some authors are led to conclude there is a positive effect of professionalization on firm's financial performance (e.g. Barth et al., 2005; Duréndez et al., 2007; Kotey, 2005), while others identify a negative effect (e.g. Miller & Le Breton-Miller, 2006; Oswald et al., 2009; Sciascia & Mazzola, 2008), or no effect at all (e.g. Daily & Dalton, 1992; Daily & Dollinger, 1992; Lin & Hu, 2007; Westhead & Cowling, 1997). We argue that the inferences about family firm activity are limited when the entire process of professionalization is reduced to a binary variable, namely as something that can 'happen overnight' within the firm.

Due to this theoretical obscurity, we believe in the necessity of a well-founded concept description, which acknowledges the multidimensional basis of professionalization. Based on the extensive review of various studies regarding the professionalization topic, we attempt to grasp the content of this construct. Multiple features repeatedly return in the professionalization descriptions of the present literature. As such, we ascertain that, when applied in the family business context, the concept of professionalization is not limited to (1) the entrance of non-family managers; but also encompasses (2) the establishment of effective governance structures such as boards and councils (Flamholtz & Randle, 2007; Songini, 2006; Suáre & Santana-Martín, 2004); (3) the professionalization of the board by the appointment of non-family and external board members (Craig & Moores, 2002; Lane et al., 2006; Songini, 2006; Stewart & Hitt, 2012; Whisler, 1988; Yildirim-Öktem & Üsdiken, 2010); (4) a delegation of control and decentralization of authority (Chua et al., 2009; Hofer & Charan, 1984); (5) the establishment of formal financial control mechanisms (Chua et al., 2009; Flamholtz & Randle, 2007; Giovannoni et al., 2011; Perren et al., 1998; Sonfield & Lussier, 2009; Songini, 2006); and (6) the establishment of formal human resource control mechanisms (de

Kok et al., 2006; Dyer, 2006; Flamholtz & Randle, 2007; Kopriva & Bernik, 2009; Tsui-Auch, 2004).

By identifying these six features, we have a first indication of what the content of the professionalization construct within a family business context might be, which is our first research question. Thus, in concurrence with other recent studies (e.g. Chua et al., 2009; Sonfield & Lussier, 2009; Songini & Gnan, 2009; Stewart & Hitt, 2012), we argue that professionalization, when it is studied within a family business context, must be considered as a multidimensional construct and entails these priorly mentioned features, which are derived from the literature. The empirical examination will be further discussed in Chapter 4 and following.

Based on these insights, and contrary to various previous studies (e.g. Berenbeim, 1990; Bhattacharya & Ravikumar, 2004; Chittoor & Das, 2007; Hofer & Charan, 1984), we contend that a family firm can professionalize without having to employ non-family managers, i.e. family firms can retain control within the family but professionalize through, for example, establishing formal control systems, or decentralize authority to several subordinates. By redefining the multifaceted construct of professionalization, we offer a more nuanced perspective compared to the existing narrow approach. This has considerable implications for current literature concerning professionalization of the family business. As mentioned, most empirical studies in this field mainly focus on the unique aspect of professionalization when it is applied in a family business context, i.e. hiring non-family managers (e.g. Gulbrandsen, 2005; Klein & Bell, 2007; Lin & Hu, 2007). By isolating this one feature, authors might neglect the effect of studying different elements of professionalization that act simultaneously.

A final remark to these six identified features of family business professionalization is that they are not exclusive to family firms. These features are drawn from the family business literature, but they can be extrapolated to non-family firms as well. (1) The entrance of non-family managers would, in a non-family context, be related to the specialization and managerialization of the competences available. (2) The establishment of effective governance structures such as boards and councils, would relate to the articulation of different roles in

terms of monitoring of the activities, of contribution to the strategic planning, and of the establishment of an effective network of relationships for achieving competences and resources. (3) The professionalization of the board by the appointment of non-family and external board members, can be interpreted as the independence of the board from the management. (4) The delegation of control and decentralization of authority, would relate to the goal of coping with the needs of differentiation and integration of the specific task environments that the management faces. (5) The establishment of formal financial control mechanisms is the introduction of the hard side of the performance management systems in a business, and (6) the establishment of formal human resource control mechanisms is the introduction of the soft side of the performance management systems in a business. As such, these general professionalization features are not that different between family and non-family businesses. The main difference concerns the extra 'family' component when the concept is studied within a family business context. This can coincide with the occurrence of specific family firm related issues such as nepotism, parental altruism, self-control, outside involvement, and how this is linked to family firm professionalization. In this dissertation we only focus on professionalization in a family business context, yet expanding it to non-family firms can be an important step for future research.

2.3 Theoretical Underpinnings for a Professionalization Discussion within a Family Business Context

A first critical concern related to the professionalization matter within a family business context, is the justification of the discussion in the family firm setting. The fact that this construct is often simplified into a binary variable, might be caused by a lack of relevance in the family business domain. Family firms are traditionally depicted as having a great desire to retain and centralize control which stems from the will to preserve the power to exercise authority and shape strategy in one's own business (Gedajlovic et al., 2004; Gersick et al., 1997; Yildirim-Öktem & Üsdiken, 2010). This concurs with the idea of Gómez-Mejía et

al. (2007) of preserving socioemotional wealth – which refers to non-financial aspects of the firm that meet the family's affective needs – as one of the drivers of family firm behavior. Using socioemotional wealth as reference point, firms are likely to place a high priority on maintaining family control even if this means accepting an increased risk of poor firm performance. Moreover, based on the traditional agency assumptions, Jensen and Meckling (1976) argue that the separation of ownership and control will lead to agency problems and incur monitoring costs for the principal due to asymmetric information, bounded rationality, and divergent interests between principal and agent. Therefore, owner-managers would be less eager to allow non-family managers or board members and would desire to centralize control in their own hands which can make formal controlling mechanisms superfluous.

From this perspective, the professionalization discussion within a family business context might be perceived as somewhat redundant. Agency theorists, beginning with Fama and Jensen (1983), have long presumed that the overlap of family ownership and management minimizes the agency costs, which gives family firms less incentives to engage in firm professionalization. However, by introducing the problems of altruism and self-control, Schulze et al. (2001) have shown how family ownership and management can expose family firms to agency problems that were not anticipated in the standard agency theory framework of Jensen en Meckling (1976). These costs can be mitigated by introducing objective monitoring and performance evaluation systems – which is part of the professionalization construct – that will counteract the altruistic tendencies amongst family members. As such, agency theory highlights the need for family firms to adopt agency cost control mechanisms, such as formal governance systems, managerial control systems and the involvement of non-family members in governance and managerial roles – all features of family firm professionalization in the broader perspective – in order to diminish agency costs due to family firm characteristics. These agency costs can concern free riding, ineffective managers, non-alignment of interest among family members, familial altruism, nepotism and distributive injustice which gives non-family agents the incentive to engage in shirking (Gomez-Mejia et al., 2001;

Lubatkin et al., 2005; Schulze et al., 2003; Songini & Gnan, 2009; Van den Berghe & Carchon, 2003). These family firm specific problems, referred to by Lubatkin et al. (2005) as the 'dark side' of altruism, can be mitigated through family firm professionalization.

However, a multi-theoretical view on professionalization appears to be required, as we can also find a justification for family firm professionalization within the principles of the organizational control theory and company growth theory. According to these theories, as environmental and organizational complexity increase, it becomes necessary for a company to professionalize, i.e. adopt formal control mechanisms, decentralize decision-making (Moores & Mula, 2000) and delegate responsibility (Goffee & Scase, 1985). Also, the increased organizational complexity necessitates the firm to define more formalized and clear managerial responsibility and to delegate this responsibility to specialized managers (Songini & Gnan, 2009). By requiring more advanced managerial skills, the limitations of the family manager's capabilities might become more manifest (Bhattacharya & Ravikumar, 2004; Burkart et al., 2003). Limiting management positions primarily to family members may therefore lead to hiring sub-optimal people who cannot be easily dismissed (Blumentritt et al., 2007; Dyer, 1989; Lee et al., 2003). Hence, the high requirement for managerial skills will lead to a separation of ownership from management and often the hiring of a non-family CEO who will be capable of implementing the necessary control mechanisms in order to cope with the increased organizational complexity (Lin & Hu, 2007). The company growth theory "justifies" this ceding of control to external, qualified managers, as it enables family firms to expand beyond the familial capabilities, and proceed to the next stage of development (Daily & Dalton, 1992; Gedajlovic et al., 2004). Thus, as firms grow beyond the capacity of family control (e.g., increase in size and scope, compete in more competitive industries, encounter rapid technological innovation), the pressure for firm professionalization keeps increasing (Chandler, 1977; Zhang & Ma, 2009).

Further, in light of the organizational control theory and company growth theory we also argue that, due to firm growth and evolution, ownership can get

fractured. As more family members enter in the family business, especially across generations, the conflict and tension between parent and child or siblings or cousins will extend, due to distrust (Steier, 2001), conflicting goals (Lubatkin et al., 2005), jealousy, etc. (Davis & Harveston, 1999). This will create a non-refrainable need to control relatives and thus, impel the family firm to constitute formal control systems.

Reasoning for why family organizations would engage in firm professionalization can also be found in the perspectives of the institutional theory. The professionalization of the family business can be instigated by firm's quest for legitimacy by conforming to external formal or non-formal expectations (Yildirim-Öktem & Üsdiken, 2010). DiMaggio & Powell (1983) state that this mimetic adaption is a mechanism through which organizations tend to conform to external institutions. Firms actively imitate others as a response to uncertainty and for the purpose of reducing trial cost and gaining social legitimacy. Family firms will most likely emulate other family firms which have successfully hired external board members and managers (Zhang & Ma, 2009).

Based on these theoretical underpinnings, we argue that among the group of family firms, there exists a wide variety of firms that perceive the need to and possibly engage in a higher or lesser extent of professionalization. However, we do not assert that all family firms must increase their business professionalization level or feel the need to do so. Similar as to Chittoor and Das (2007) and Stewart and Hitt (2012), we argue that extensive professionalizing might not be needed or appropriate, or that some firms' situation might not require a transition. For some firms, we assume that the desire to retain control within the family and to centralize authority, even if this means accepting an increased risk of poor firm performance, may outweigh the perceived benefits of professionalization (Gedajlovic et al., 2004; Gersick et al., 1997; Yildirim-Öktem & Üsdiken, 2010). In these firms, the low amount of professionalization that is present, might suffice for them in order to run the business. It might also be that in these firms where the drive to professionalize is low, the preservation of socioemotional wealth might be high. Through a socioemotional reference point, these family firms are likely to place a

high priority on maintaining family control (Gómez-Mejía et al., 2007). This is in contradiction with business professionalization through features such as increasing formal systems of control and decentralizing control and decision-making authority, often to non-family members.

2.4 Existing Family Firm Typologies: The Gap in the Literature

Given that the professionalization discussion is indeed valid within the family business context, and that its interpretation goes beyond the hiring of a non-family manager, we might be able to use the construct to differentiate between different types of family firms. This matter is addressed in our second research question: "*How can we distinguish family businesses based on the professionalization construct?*". Yet, we must first ascertain if and how previous studies were able to differentiate family firm types, and whether they have used the professionalization construct to do so.

Since there is a growing consensus that family firms cannot be viewed as a homogeneous entity (e.g. Chrisman et al., 2005; Sharma et al., 1997; Westhead & Howorth, 2007), authors repeatedly inquire ways to distinguish amongst different types of family firms (e.g. Basco & Pérez Rodríguez, 2009; Chrisman et al., 2007; Dyer, 2006; Melin & Nordqvist, 2007; Sharma & Nordqvist, 2008). As in any field of study, variety necessitates a way of classifying the objects of study – to simplify the number of types – which helps researchers explain them and communicate about them (Davis, 2009). Ownership composition, involvement in management, family/financial objectives and strategy orientation are often used in academic studies to differentiate within the group of family firms (e.g. Barth et al., 2005; Corbetta, 1995; Gedajlovic et al., 2004; Gulbrandsen, 2005; Kotey & Folker, 2007; Moores & Mula, 2000; Pérez de Lema & Duréndez, 2007; Sharma et al., 1997).

Due to the intergroup heterogeneity, the family business field has responded to the existence of different kinds of family businesses by developing typologies to classify them (e.g. Basco & Pérez Rodríguez, 2009; Birley et al., 1999;

Corbetta, 1995; Davis, 2009; Dyer, 1988, 2006; Gersick et al., 1997; Lubatkin et al., 2005; Poza, 2007; Sharma, 2004; Sharma & Nordqvist, 2008; Westhead & Howorth, 2007). Basco and Perez-Rodriguez (2009) argue that typologies are especially useful for future research because they synthesize a large quantity of information, reduce fragmentation and draw attention to dimensions that act simultaneously. They better identify the nature of the family firm phenomenon and allow family firms to be organized into unique meaningful categories.

Yet, when we scrutinize the existing family firm typologies, we find that a considerable part of these typologies base family firm distinction on the amount of family involvement. As such, there is a definite resemblance with the narrow definition of family business professionalization. Both seem to link firm behavior to the proportions of family/non-family involvement. Family firm types which are based on high family involvement, correspond to the narrowed definition of non-professionalized firms. As externals enter the business, family involvement decreases, shifting the firm to another type, and making them – almost instantly – professional Therefore, we ascertain that the construct of professionalization has been used in the past to distinguish family firms, however based on the narrow content understanding of the concept.

A chronological overview of the existing family firm typologies is presented in Table 2. Although these typologies are initially different from one another, they all share a similar basis, with the main exception of Dyer (1988, 2006), Basco and Pérez Rodríguez (2009) and Sharma (2004). As we mentioned, when examining the set of typologies, it becomes apparent that family ownership and/or management involvement are the principles.

Table 2. Chronological overview of family firm typologies

Author(s)	**Year**	**Basis of differentiation**	**Types of family firms**
Dyer	1988	- nature of relationships - human nature - nature of truth - the environment - universalism/particularism - nature of human activity - time	* Paternalistic culture * Laissez-Faire culture * Participative culture * Professional culture
Corbetta	1995	- ownership - presence of family in board of directors/ directive bodies - number of employees	* Domestic family business * Traditional family business * Extended family business * Open family business
Gersick, Davis, Hampton and Lansberg	1997	- ownership development - family development - business development	* Controlling owner * Sibling partnership * Cousin consortium * Passing the baton
Birley, Ng and Godfrey	1999	- family involvement in the business	* Family In * Family Out * The Jugglers
Sharma	2004	- performance on family dimensions - performance on business dimensions	* Warm hearts-deep pockets * Pained hearts-deep pockets * Warm hearts-empty pockets * Pained hearts-empty pockets
Lubatkin, Schulze, Ling and Dino	2005	- family ownership dispersion	* Controlling owner * Sibling partnership * Cousin consortium
Dyer	2006	- agency costs - familial liabilities - familial assets	* Clan family firm * Professional family firm * Mom & pop family firm * Self-interested family firm
Poza	2007	- family systems - business systems (i.e. ownership and management)	* Family-first * Ownership-first * Management-first

Westhead and Howorth	2007	- ownership - management - family/financial objectives	* Average family firm * Professional family firm * Cousin consortium family firm * Professional cousin consortium family firm * Transitional family firm * Open family firm
Sharma and Nordqvist	2008	- ownership - management	72 different types
Basco and Pérez Rodríguez	2009	- family orientation - business orientation	* Immature family enterprise * Family-enterprise first * Business-first
Davis	2009	- ownership - business - family	* Economic provider family business * Entrepreneurial venture family business * Private owner-manager family business * Private active-controlled family business * Private passive-controlled family business * Private non-family managed family business * Public-family controlled business * Family business groups

One of the earlier classifications is that of Corbetta (1995). He identifies subgroups of family businesses based on ownership, presence of family members in the board of directors or in other directive bodies of the firm, and the number of employees. The intersection of these three variables permits the identification of four kinds of family businesses, namely "domestic", "traditional", "extended" and "open" family businesses. Gersick et al. (1997) create four classic family business types based on the combinations of the different developmental stages concerning ownership, family, and business, also known as the three-circle model of Tagiuri and Davis ([1982] 1996). In accordance to this classification of Gersick et al. (1997), first generation family firms are then typically owner-managed entrepreneurial

organizations. Through rapid growth and change they develop into established businesses which are owned by a sibling partnership. In turn, this will evolve into a complex, mature cousin consortium. The last category is a business at the brink of transition, controlled by a "passing the baton family", as it is called. There is a disengagement of the senior generation from the business and a key challenge to successfully make a generational transfer of family leadership. Based on the model of Gersick et al. (1997), Lubatkin et al. (2005) distinguish between three types of family firms based on three broad stages of ownership dispersion over generations: the "controlling owner" family firm, where the founder/owner/manager also exercises the rights of control, the "sibling partnership", where ownership is in hands of several members of a single generation, and the "cousin consortium", where ownership is further fractionalized when it is passed on to third and later generations. The research of Birley et al. (1999) and Birley (2001) constitutes another typology. Family firms are grouped on the basis of family involvement in the firm. "Family In" firms are very influenced by the family's needs and concerns, "Family Out" firms hardly focus on family issues during the decision-making process, and in the last type "The Jugglers" the owner tries to balance both family and firm needs. Again, family involvement appears to be the foundation for differentiation.

Contrary to the previous typologies, Westhead and Howorth (2007) explicitly acknowledge the executive power of family members in the company's day-to-day operations. They split the family involvement within the company into, on the one hand, family involvement in ownership, oppose to family involvement within management. Through adding firm's orientation towards either family versus financial objectives, the authors argue that dilution of ownership and the introduction of non-family members into the management structure, will lessen the focus on family objectives and increase the focus on financial objectives. Ownership is subdivided into three groups, i.e. close family, diluted within the family, and diluted outside the family. Within the management aspect, they distinguish a family dominant and a non-family dominant management. This gives rise to six types of family firms, namely: "Average family firms", "Professional family firms",

"Cousin consortium family firms", "Professional cousin consortium family firms", "Transitional family firms", and "Open family firms". Ownership and management is also used by Sharma and Nordqvist (2008) to scrutinize family firms. By extending the utility of the classic three-circle model of family firms, they develop a stakeholder mapping technique which differentiates 72 distinct family business categories. They further propose that a firm that experiences coherence between the guiding values, the extent and mode of family involvement in the business, and the employed governance structures, will be more likely to achieve the desired performance objectives. Yet, the authors indicate that it would be more desirable to find a smaller number of categories that are able to encompass a large proportion of the population (Sharma & Nordqvist, 2008).

Another attempt to combine ownership and management issues is found in the work of Poza (2007), who built upon the earlier work of Ward (1987). With reference to the three-circle model of Tagiuri and Davis ([1982] 1996), consisting of a family, a business and an ownership system, Ward (1987) suggests that any family firm has three possible philosophical orientations: business first, family first, and family enterprise first. Based on these insights, Poza (2007) proposes to categorize family firms based on their propensity to have "family-first", "ownership-first", or "management-first" perspective on issues. Basco and Pérez Rodríguez (2009) extend Poza's idea by suggesting management of a whole integrated system instead of jointly optimizing two systems (i.e. family and business). They develop a holistic framework for the family-business interaction, leading to the identification of three groups: "immature family enterprise", "family-enterprise first", and "business-first". A similar focus on the interaction of the three subsystems (i.e. ownership, business, family) of the family business system, originating from the three-circle model, is found in the proposed categories by Davis (2009). He believes that most family companies will fall into one of his eight theoretically developed types. These types then differ among each other regarding, for example, the amount of control the family retains, the amount of family involvement within the business, the firm size, and the firm's purpose. Yet, the author signifies the need for

further refinements as he regards these types to be no more than useful recommendations for future typology development.

Like Basco and Pérez Rodríguez (2009), there are some other typologies that are not solely based on the static combination of ownership and management. Dyer (1988), being a pioneer in the development of family firm typologies, examines 40 family firms after which he deducts four types of family business cultures based on their orientation to several predetermined cultural assumptions (e.g. nature of relationships, nature of truth, nature of human activity). Even though the author distinguishes four different types, being "paternalistic culture", "laissez-Faire culture", "participative culture", and "professional culture", over 80% of the investigated family firms belong to the "paternalistic culture". Sharma (2004) also dissociates herself from the traditional disposition by creating a typology for family firms based on their performance, respectively on both family and business dimensions. Therefore, by using a two by two matrix, four variations of the performance of family firms can be conceptualized based on whether a positive performance is experienced on one or both dimensions, i.e. "warm hearts-deep pockets", "pained hearts-deep pockets", "warm hearts-empty pockets", and "pained hearts-empty pockets". Performance is also one of the key components in the typology proposed by Dyer (2006). Four quadrants are composed based on agency costs, familial liabilities and familial assets. The types were labeled: "clan family firm", "professional family firm", "mom & pop family firm", and "self-interested family firm". Dyer postulates that the "clan family firm", due to significant family assets and low agency costs, will have the highest performance. The contrary type is the "self-interested family firm", with their significant familial liabilities and high agency costs, they can have difficulty in surviving.

So, when we scrutinize the existing set of typologies and classification schemes, we find a subgroup that differentiates family firms solely on the amount of family involvement in ownership and/or management (e.g. Birley et al., 1999; Corbetta, 1995; Gersick et al., 1997; Lubatkin et al., 2005; Poza, 2007; Sharma & Nordqvist, 2008; Westhead & Howorth, 2007). Family firms are assigned to the same type due to their similarity in family involvement, which is then the basis for

concluding more or less identical behavior regarding other firm aspects. This oversimplifies the essence of a family business to such an extent that the mere presence of family becomes a representative for all firm behavior, activity and outcome. One of these mentioned outcomes is financial performance. Yet, linking this with a typology based on family involvement is rather dubious given that studies have revealed contradictory results when it comes to the effects of family involvement on firm's financial performance (Stewart & Hitt, 2012). These typologies therefore might not be suitable to study performance differences within the population of family firms given the heterogeneity observed regarding firm operations within each type of family firm.

Further, by basing firm distinction mainly on family ownership and/or management aspects, it generates a very static presentation on how the family firm *'is',* i.e. on how the family firm is composed. This makes it impossible for the users of these schemes to discriminate between family firms which do operate differently (e.g. working procedures, controlling mechanisms, decision-making authority, management quality, etc.) although they have equal representation of family within ownership and management. Like Miller (1996), we argue that a typology or classification scheme may not be too thin or arbitrary, meaning that it either has too few components or that it fails to show how and why these components interrelate. Such schemes make simplistic distinctions that have few implications (Doty & Glick, 1994).

Finally, some of the current family firm types suffer from overlaps and are not jointly exhaustive, meaning that not all existing family firms can be subdivided into these categories (e.g. Corbetta, 1995; Davis, 2009). Mutual exclusiveness, internal homogeneousness and collective exhaustiveness are necessary attributes to qualify as classification systems (Chrisman et al., 1988). Typologies then differentiate from classification systems because typologies identify ideal types of organizations, whereas classification systems specify decision rules to categorize organizations (Doty & Glick, 1994).

After a thorough review of the existing family firm typology literature, we ascertain that the professionalization construct, in its narrow understanding based

on family/non-family involvement, has been used in the past to distinguish family firms as we can see a high similarity between this narrow definition and the family involvement based typologies. Both try to deduce a firm outcome or behavior based on the involvement of an outside non-family member. As such, we believe that this research domain is in need of an extended and more profound version of the family involvement based typologies. We argue that only the initial family firm cultural types developed by Dyer (1988) was a first step towards a typology that takes into account how the firm actually behaves by looking at the culture living in the firm. Elements of delegation, authority and mutual understanding are present in this typology. Besides the family firm typologies developed by Basco and Pérez Rodríguez (2009) and Sharma (2004), the remaining typologies mainly focus on the amount of family involvement in the company.

Based on the compliance between these family involvement based typologies and the narrow approach of professionalization, we believe that our novel insights concerning the professionalization construct developed in section 2.2 can be of added value in the matter. As such, our objective is to distinguish between different types of family firms based on the revised multidimensional construct of professionalization. In doing so, we will extend the previous narrow family involvement based typologies by taking into account several aspects with respect to how the family firm behaves and operates. Through these improvements, this new typology based on professionalization can be complementary to some of the existing typologies which tend to have a more profound contribution to the research field as they also go beyond firm composition (e.g. Basco & Pérez Rodríguez, 2009; Dyer, 1988; Sharma, 2004). Combined they are another step towards the comprehensive understanding of the heterogenic group of family firms.

2.5 Summary

In this chapter, both the gaps in the professionalization literature as well as in the family firm typology literature are depicted. Even though the professionalization discussion within a family business context can be justified through multiple

theoretical perspectives, the review of the existing studies on the topic has revealed a tendency of oversimplifying this professionalization construct. New research has made an effort to contribute to the extension and clarification of this construct. However, since professionalization still lacks a singular and sound definition, there is a high necessity for further thorough research on the concept definition. This issue is captured by our first research question, namely the identification of the content of the professionalization construct within a family business context. In this chapter we were able to generate a first indication of this content, yet exclusively based on the literature. Through the extensive review, we are able to identify multiple features that repeatedly return in the professionalization descriptions of the present literature. We ascertain that, when applied in the family business context, the concept of professionalization entails: (1) the entrance of non-family managers; (2) the establishment of effective governance structures such as boards and councils; (3) the professionalization of the board by the appointment of non-family and external board members; (4) a delegation of control and decentralization of authority; (5) the establishment of formal financial control mechanisms; and (6) the establishment of formal human resource control mechanisms. These insights have enabled us to pronounce a first theoretical response with regard to our first research question.

Besides the critical concern of justifying the professionalization discussion within a family business context through a multi-theory approach, we were also concerned whether the construct has been previously used in the literature to differentiate family firms. The identified constrains in some of the exiting typologies relating to the narrow approach of professionalization, and the possible solution that our insights concerning the construct can offer, leads us to address our second research question: "*How can we distinguish family businesses based on the professionalization construct?*". We argue that the broader understanding of professionalization that considers professionalization as a multidimensional construct, will offer a foundation to adjust and extend the family involvement based typologies.

3. Developing a New Conceptual Framework Based on Professionalization

3.1 Introduction

Based on the family firm typology literature, it has become apparent that a majority of the typologies tends to differentiate family firms merely based on firm composition with respect to the amount of family involvement. Through the professionalization lens, this resembles to the narrow definition of professionalization, i.e. the entrance of a non-family manager. We argue that the multifaceted approach of professionalization can yield a basis to refine these previous typologies by including additional relevant dimensions which pertain to firm operations, governance activity and controlling mechanisms. As such, the second research question will be the focal point of this chapter, namely *"How can we distinguish family businesses based on the professionalization construct?"*.

In section 3.2 we theoretically derive two higher level dimensions, i.e. *Effective Openness* and *Internal Formalization,* each comprising several professionalization features. Family firms can become professional by either of the two dimensions or by combining both. By connecting these two dimensions we build a conceptual framework to distinguish family firms based on the professionalization construct. The new composed typology differentiates four novel types of family firms, i.e. *Autocracy, Domestic Configuration, Clench Hybrid* and *Administrative Hybrid,* which are discussed in section 3.3. This new typology strives for an unambiguous understanding of the professionalization process within the family business context, and creates a basis for categorizing family firms which goes beyond the traditional static classification models. This chapter concludes by formulating some critical remarks that accompany the framework (section 3.4).

3.2 Constructing a Framework Based on Professionalization

Literature has enabled us to identify family business professionalization as a construct that entails: (1) the entrance of non-family managers; (2) the establishment of effective governance structures such as boards and councils; (3) the professionalization of the board by the appointment of non-family and external board members; (4) the delegation of control and decentralization of authority; (5) the establishment of formal financial control mechanisms; and (6) the establishment of formal human resource control mechanisms. Yet, a classification scheme based on six items – leading to 64 types – is not perceived as very attractive as it lacks intuitive appeal (Sharma & Nordqvist, 2008). Therefore, at this point we argue that it is possible to make a distinction between two independent higher level dimensions of professionalization.

The first four elements being (1), (2), (3) and (4) are more related to the governing aspects of the business, i.e. the firm's willingness and openness to engage non-family members in the top level of the company, but also to provide firm executives with proper supporting governance mechanisms and decision-making authority in order to work effectively. We label this dimension as *Effective Openness*. In the work of Gubitta and Gianecchini (2002), the authors identify the 'openness' dimension in their discussion on different governance models in family firms. The degree of openness is then defined as the capability to involve family and non-family individuals in management, board of directors or other governance bodies. Yet, the authors signify that this index of openness is only a counting of the number of non-family members involved in governance bodies, it provides no indication of the adequateness in which it is done in order to accomplish a purpose or produce the desired effect in the governance of the firm. By this we mean that non-family members must not only be present in the firm, they must also be able to work effectively for the business. Therefore, we have chosen for the label *Effective Openness*, as this does not only imply the presence of non-family managers but also the fact that they are supported by governance bodies and are

assigned delegated control and decision-making authority which gives them the tools to adequately accomplish business purposes.

A second dimension is found within features (5) and (6). They encompass the implementation of formal control systems in order to monitor, measure and evaluate corporate activity in an objective, transparent and formalized manner. As this dimension represents the degree in which a family firm increases its formalization within the business, we label this *Internal Formalization.* As such, we distinguish between the dimension labeled *Effective Openness* that comprises features (1) to (4), and the dimension *Internal Formalization,* constituted by features (5) and (6). A family business can professionalize through the occurrence of both processes simultaneously, yet it is also possible that they develop independently and/or subsequently.

By combining the two continuums, i.e. *Effective Openness* and *Internal Formalization*, we build our framework to distinguish family firms. We create four distinct groups based on high or low scores on both axes, which is visualized in Figure 2. Each group represents a specific type of family firm. Based on the unique traits that characterize each type of family firm, we construct a distinctive label for each group, namely *Autocracy, Domestic Configuration, Clench Hybrid,* and *Administrative Hybrid*. Every private family firm can be mapped on this scheme, based on their orientation towards the two continuums. Pursuant to the necessary attributes to qualify as a typology (Chrisman et al., 1988; Doty & Glick, 1994), the four types are mutually exclusive, collectively exhaustive, internal homogeneous and represent 'ideal' types at an organizational level. In the following section each group will be further discussed in a stereotypical manner. Yet, we keep in mind that, within each stereotype, there can occur variations as we have to take firm-level idiosyncrasy into account.

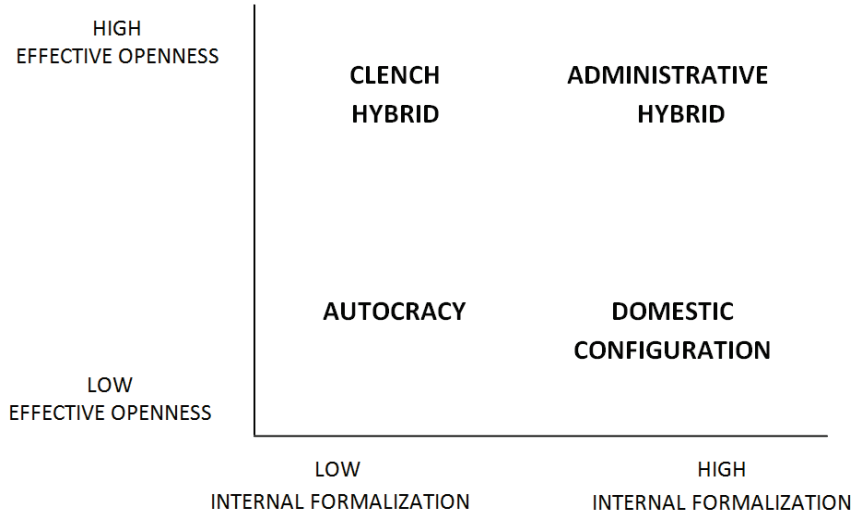


Figure 2. Four family firm types based on the professionalization construct

3.3 Four Family Firm Types

(1) Autocracy: The A*utocracy* family firm type represents the typical owner-managed family firms where the level of professionalization is very low. The owner (or a very limited selection of the family) retains personal control over the business and there is a high centralization of authority, somewhat comparable to the "controlling owner" family firm type developed by Gersick et al. (1997) and Lubatkin et al. (2005). Yet, going beyond the ownership/management structure, most of firm's operations and planning tends to be done in the head of the entrepreneur and frequently on an ad hoc basis. In this type, the low amounts of *Effective Openness* indicates that most executive positions are expected to be fulfilled by family members and that there are few formal governance systems present. If they are present – to meet legal requirements for example – they are expected to be quite passive. These so-called rubber stamp boards will not lead to much actual board involvement (Lane et al., 2006; Pieper et al., 2008). Regarding the horizontal axis, low amounts of *Internal Formalization* indicates that few formal human resource and financial control mechanisms are present, apart from

the necessary financial accounting systems. Instead, these company types rely extensively on informal controls, such as shared values and norms, kinship ties, common interest, rituals and ceremonies, which are proven to have great significance and influential power within the family business context (Daily & Dollinger, 1992; de Vries, 1993; Habbershon & Williams, 1999; Pollak, 1985). As such, these firms are characterized by altruism, loyalty and trust, and are highly centralized around the family. In the family business literature, this type description has resemblance to what authors have defined as autocratic management or leadership style (Dyer, 1989; Sorenson, 2000). Dyer (1986) indicates that in this "paternalistic culture", relationships are arranged hierarchically and the leader retains all key information and decision-making authority. Based on these similarities, we chose for the labeling of the *Autocracy* type.

(2) Domestic Configuration: In this type of family firm, management is still largely in hands of the family. It is expected that the amount of non-family members in the management team (or the board of directors if present) is very limited, hence the labeling "*Domestic*". Corbetta (1995) applied the term to refer to family firms where ownership and directive bodies were exclusively made up by family members. As in the *Autocracy* type, family involvement in firm's operations is very high and there are also hardly any governance structures present in the organization, indicating that the *Effective Openness* is still very limited. This however does not imply that these firms cannot work in a professional manner. While shifting across the horizontal *Internal Formalization* axis, family managers increase the firm's professionalization by implementing systems of control. These firms typically have formalized budget plans, several monitoring systems to warrant that actions of (family) managers correspond to organizational goals, also, organizational output is measured and compared to predetermined standards so that possible deviations can be adjusted, periodic reports on behavior and output are drafted to assess performance, and rewards are assigned accordingly. Thus, both financial and human resource control systems are being introduced. Informal

controls can still be present in this type of family firm but they are not as predominant as in the *Autocracy* type.

(3) Clench Hybrid: In the *Clench Hybrid*, authority and decision-making is more decentralized and is delegated to subordinate (non-family) managers. To effectively manage this shared liability, different governance bodies are developed and actively participate in firm's operations. Also, the family involvement starts to decrease as the firm opens up to non-family members. All management functions are not solely in hands of the family anymore, neither are the board seats. The term "*Hybrid*" has been used in prior studies to indicate the combination or co-dependence of family and non-family managers (Tsui-Auch, 2004; Zhang & Ma, 2009). Although this hybrid is a mixture of family and non-family members in the organization, the control systems are not (yet) adapted to this new composition. Since the *Internal Formalization* is still very low, they rely to a great extent on informal controls, such as shared values and norms, strong bonds, mutual trust, loyalty, routines, etc.. The members of the organization are, as it were, 'clenched' together. Besides some accounting systems, other formal controls, financial as well as personnel related, are very scant.

(4) Administrative Hybrid: This last type contains family firms where *Effective Openness* and *Internal Formalization* are both high. They have opened up their organization to external, experienced non-family managers, which creates a hybrid on the management level. Family and non-family managers find themselves in a co-dependent relationship. Thus, family involvement in firm's operations diminishes and authority is decentralized. The board of directors, also including external and independent board members, fulfills an active role in advising and supervising the firm's activity. Family forums are established to preserve family objectives, but also other governing bodies, such as councils, boards and assemblies, are instituted to warrant an adequate and capable governance of the family firm. Simultaneously with the development of adequate governance bodies, more and

more formal control systems are introduced in the company. The family business has well defined budget plans and formalized objectives, monitors the behavior and output of the firm, measures the results and compares them with preset standards so that deviation can be noticed and, if necessary, adjusted. Besides these multiple financial systems, the control systems regarding personnel issues are developed as well. *Administrative Hybrids* are expected to have established formal recruiting and training systems to further develop the capabilities of personnel (family and non-family) and to ensure long-term welfare. Also, a formal, pre-set evaluation of employee performance is established, combined with a possible rewarding system. The *Administrative Hybrid* thus has the maximum amount of professionalization as it has high values on both axes.

3.4 Critical Remarks

This new developed framework shows that there are important differences between the four groups, and that these variations between the firm types go beyond the sole effect of how the family firm is composed with respect to ownership dispersion and management, which marks the innovativeness of this typology. Moreover, contrary to most prior interpretation of the professionalization construct, i.e. hiring a non-family manager, we contend that, based on our conceptual framework, a family firm can professionalize without having to employ non-family managers. This can be accomplished through developing the capabilities present within the family by means of formal training, performance evaluation or controlling mechanisms, thus through the dimension of firm's *Internal Formalization*. By remodeling the multidimensional concept of professionalization into two distinct dimensions, we offer a more nuanced perspective.

A first remark we want to make, is that firm size is not used as a discriminative variable in this context. It is presumable that the bulk of the firms of each type will be from a comparable size, yet, we believe that the size of the firm cannot exclusively predetermine group membership. By doing so, we distinguish our framework from the traditional life cycle-approach and evolutionary models. In

most of these models the different stages are sequential, meaning that a firm must 'complete' a stage before passing on to the next (Hofer & Charan, 1984). The organizational development throughout the stages is usually contingent upon firm size, such as the number of employees, sales revenues or return on assets (Daily & Dalton, 1992; Flamholtz, 1986; Flamholtz & Randle, 2007). In this aspect, we disagree with the traditional life cycle-approach. In the professionalization framework it is indeed possible to move from one type to the next, nonetheless, firms are not obliged to pass through every type. Moreover, a backwards or reverse motion is equally possible, contrary to most of the life cycle and evolutionary models. In this respect, professionalized family firms might want to re-obtain personal control, and shift back to the *Autocracy* type.

Second, the concept of professionalization, which constitutes the two dimensions of *Effective Openness* and *Internal Formalization*, is interpreted as a process. As such, the framework represents two continuums, indicating that there can be high or low amounts of both dimensions in a firm. In this respect, our approach differs from some authors that understand the professionalization of a family firm as a threshold moment (e.g. Chittoor & Das, 2007; Daily & Dalton, 1992; Gedajlovic et al., 2004; Whisler, 1988). As was mentioned in the review section (section 2.2), this understanding of the concept makes professionalization binary, meaning that a family firm either is or is not professional, based on the mere presence of a non-family manager. In the work of, for example, Corbetta (1995), Giovannoni, et al. (2011), Hall and Nordqvist (2008), Songini (2006), Stewart and Hitt (2012), and Tsui-Auch (2004) it is possible to find reference to the idea that there are in fact gradations in the level of professionalization, making the process approach more realistic.

Third, authors perceiving professionalization as a threshold moment (e.g. Gedajlovic et al., 2004; Whisler, 1988) proclaim that this transition is in fact inevitable because all firms eventually outgrow the expertise of the entrepreneur-founder. This suggests that all family businesses must endure this transition to professionalization through external expertise. We however presume that this can be the case, but it is not determined to be so. For example, the organizational

control theory indicates that, within the *Autocracy* type firms, social and informal controls are more efficient than administrative control systems, due to their common shared values and languages, informal and kinship relationships, and small groups of people in charge of ownership, governance, and management (Daily & Dollinger, 1992; de Kok et al., 2006; Moores & Mula, 2000; Perren et al., 1998; Songini & Gnan, 2009; Suáre & Santana-Martín, 2004). As such, increasing business professionalization is not seen as an unavoidable necessity, as a business with low levels of professionalization can also manage themselves well. Also, family firms are able to professionalize their business in several other ways, other than the entrance of a non-family member, such as the development of an active board or the implementation of monitoring and controlling systems. In this respect family firms are able to professionalize based on internal capabilities, which is something that has often been neglected in current research. The causes or drivers of this professionalization process can be versatile. Increasing firm size, lack of qualified family managers, external market competitiveness and increased complexity, firm's quest for legitimacy, and changing firm's basic values and assumptions are just some examples of what can cause family firms to move away from the *Autocracy* type and shift to one of the other three types as they start taking on the process of further professionalizing the family business[1].

Forth, since these different types are not seen as step stones to an ultimate organization form, we argue that there is no ranking of any kind between the four groups. There is no predilection type of family firm that stands out. It is only through some specific needs or problems a firm might encounter (e.g. a lack of management talent within the family), that one type can become more suitable than another. As such, we follow a more contingency-based approach. If and how a family firm might professionalize, is influenced by the context within which it operates. Consequently, it is also possible that a firm is localized in a specific type without ever perceiving the need to cross over to another. This remark might have

[1] For an extensive overview of the different drivers we refer the reader to the work of Dyer (1989), Songini (2006), and Zhang and Ma (2009).

interesting implications for analyzing and comparing the performance of the different types in future research. Our typology allows researchers to scrutinize family firm types through the multidimensional professionalization concept. These different dimensions simultaneously constitute firm operations, and thus, might affect firm's financial performance. Perhaps this explains some of the contradictory results of previous studies (e.g. Chittoor & Das, 2007; Daily & Dalton, 1992; Duréndez et al., 2007) which tend to focus on one isolated dimension – usually the presence of a non-family manager – and deduce an explanation regarding family firm's performance. Yet, it is also possible that there is no difference regarding performance between the four types. In this respect we follow the assumption that every firm resides in its "ideal type" of professionalization based on their specific needs.

Finally, when assessing the two dimensions of our professionalization construct from a systems theory perspective (Distelberg, 2009; Pieper & Klein, 2007; Tagiuri & Davis, [1982] 1996), which differentiates between the subsystems of family, business, ownership and management, the professionalization construct in this dissertation is mainly directed on the business and management subsystems. The subsystem of family is also partially addressed as the professionalization construct entails family involvement in the business activity and governance. What is not included in this research is the relation between family business professionalization and the ownership subsystem. The stage of ownership, the ownership dispersion or the involvement of venture capitalists and the impact on professionalization are areas which need to be addressed in future research.

3.5 Summary

In this chapter we have addressed the second research question, i.e. *"How can we distinguish family businesses based on the professionalization construct?"*, from a conceptual perspective. By acknowledging the multidimensional essence of professionalization and based on the content description of the construct formulated in Chapter 2, we are able to discriminate two higher level dimensions, i.e. *Effective Openness* and *Internal Formalization*. By combining these two continuums, we can deduct four new conceptual types of family firms, namely the *Autocracy, Domestic Configuration, Clench Hybrid,* and *Administrative Hybrid.* Hence, we build on previously developed family firm typologies and extend them by adding extra dimensions (besides the family involvement) for differentiating family businesses. This multidimensional approach, which also takes firm operations into account, allows a much more dynamic perspective. This opposes most of the previous typologies which are limited to a static representation of how family businesses 'are' or how they are constituted. By taking the versatility of firm's operations, ability and practices into account, we respond to the gap that is underlined by Melin and Nordqvist (2007), namely that an important limitation in the literature on family businesses is the assumption that all family businesses conduct their governance and management in the same way. Therefore, we take a step towards filling the knowledge gap related to family firm diversity.

As both the content of the professionalization construct (related to research question 1), and the family firm types based on professionalization (related to research question 2) have a conceptual nature, a next step will be to seek empirical validation for the matter.

4. Data Collection

4.1 Introduction

In Chapter 3 we propose a conceptual framework, based on the professionalization traits found in the literature. In order to assess this conceptual framework through exploratory research, we gathered data from private family owned SMEs. In this chapter we thoroughly explicate the manner in which the survey questions for the data collection are constructed. As the review of the extant literature revealed no existing scales, the two conceptual constructs of professionalization, i.e. *Effective Openness* and *Internal Formalization*, are operationalized based on traits in the current literature. In section 4.2 we elaborate on the development of these variables.

Details on the criteria for the sample selection are provided in section 4.3. The population of interest for this study contains all non-listed, family owned SMEs located in the Flemish Region of Belgium. The questionnaire reached a total of 6,556 SMEs which met the proposed criteria during February of 2010. A response rate of 13.58% provided us with a final data set of 532 private family firms. The content of the data set is thoroughly elucidated as we provide general descriptive statistics regarding the responding family firms.

4.2 Developing Variables to Assess Professionalization

Variables relating to *Effective Openness* and *Internal Formalization* are composed to derive a theoretically grounded and empirically tested typology of private family firms. Both conceptual constructs which signify firm's professionalization, are

assessed based on traits in the current literature. In a previous chapter, professionalization of the family business is described as a process which coincides with: (1) the hiring of non-family managers; (2) the establishment of effective governance structures such as boards and councils; (3) the professionalization of the board by the appointment of non-family and external board members; (4) the delegation of control and decentralization of authority; (5) the establishment of formal financial control mechanisms; and (6) the establishment of formal human resource control mechanisms. Regarding these features, suitable survey questions are developed to measure the variables in the population of interest. This results into a total of 25 surrogate variables: 11 variables for *Effective Openness* which are listed in Table 3 and 14 variables for *Internal Formalization* presented in Table 4. Also questions regarding more general and descriptive variables are enclosed in the questionnaire (see Table 5). These descriptive variables will be used to define and distinguish the empirically constructed groups. The final survey instrument (Appendix A.1) was reviewed by a group of academics and pilot tested on several family business CEOs before it was sent out to the population of interest. The determined variables and the developed survey questions, are discussed in following paragraphs.

4.2.1 Measuring Effective Openness

Effective Openness is defined as the professionalization dimension which relates to the governing aspects of the organization, i.e. the firm's willingness and openness to engage non-family members in the top level of the company, but also to provide them with proper supporting governance mechanisms and decision-making authority in order to work effectively. Coupled to the professionalization description given above, this comprises the first four features being: (1) hiring of non-family managers; (2) the establishment of effective governance structures such as boards and councils; (3) the professionalization of the board by the appointment of non-family and external board members; and (4) the delegation of control and decentralization of authority. Table 3 gives an overview of the included survey questions regarding the amount of *Effective Openness* of the family business. Each

survey question is assigned an individual variable number, ranking from EO_1 through EO_11, and a short description to indicate the content. Regarding the answer possibilities we refer the reader to Appendix A.1 and Appendix A.2. In this paragraph we elucidate the theoretical fundaments which lead us to develop the survey questions.

Table 3. Survey questions for Effective Openness

Var.	*Survey question*	*Description*
EO_1	Are you, as CEO, part of the family?	*Family CEO*
EO_2	How many managers are part of the management team (including CEO)? (= variable D_10) How many managers of this management team are connected by blood bonds?	*Family Involvement in management team*
EO_3	What is the highest educational degree obtained by the main family managers (besides the CEO)?	*Educational level family managers*
EO_4	How often does the management team officially meet on an annual basis?	*Management activeness*
EO_5	How many people (= natural individuals) are part of the board of directors? (=variable D_11) How many board directors are connected by blood bonds?	*Family involvement in board of directors*
EO_6	How many people (= natural individuals) are part of the board of directors? How many external board directors (= non-relatives and not working for the company) are there on this board of directors?	*External board directors*
EO_7	How often does the board of directors officially meet on an annual basis?	*Board activeness*
EO_8	Is there an official family council present within the company?	*Family council*
EO_9	Is there another formal board, forum or committee that gives advice to the company and/or the family, besides the board of directors and/or the family council?	*Other governance structures*
EO_10	Do all employees within the company directly report to the CEO (without using an intermediary)?	*Centralization of authority*
EO_11	Are all major decisions within the company autonomously made by the CEO, and then communicated downwards?	*Delegation of control*

One of the most distinct characteristics of professionalization described in current literature, is the presence of an external, non-family manager within the family business. Most of the studies concerning family firm professionalization have mainly focused on this unique dimension (e.g. Barth et al., 2005; Bennedsen et al., 2007; Chittoor & Das, 2007; Duréndez et al., 2007; Dyer, 1988; Zhang & Ma, 2009). The separation of ownership and management can be beneficial for the increasing professionalization of the family firm . Therefore, CEOs of family businesses are asked whether or not they are part of the owning family (variable EO_1). This separation of ownership and control can go beyond the role of the CEO, to the entire management team of the company (Sciascia & Mazzola, 2008). The involvement of the family within the management team is assessed by asking the CEO's of the family firms how many managers are part of the management team and how many of these belong to the owning family. This enables us to calculate the proportion of family involvement in the management team (variable EO_2). Strong family dominated management teams centralize control around the owning family, and thus result in low amounts of professionalization (Chittoor & Das, 2007). As more non-family managers are brought into a family business, there will be a greater use of professional styles of management (Sonfield & Lussier, 2009). To have an indication of the capabilities of the company managers, respondents are also asked to specify the highest educational degree obtained by the main family managers (variable EO_3). Since we know that family management and professional management should not be seen as mutually exclusive (Hall & Nordqvist, 2008), the education level might give an indication of the quality of the overall management team (Dyer, 1989).

Besides the management team, professionalization also relates to the board of directors, namely the appointment of non-family and external board members. In terms of governance, professionalization indicates that the oversight of family business' managers is passed from an autocratic authority to a group of highly qualified people (Blumentritt et al., 2007). By asking how many people are on the board, and how many of them are part of the owning family, we are able to determine the proportion of family involvement in the board of directors (variable

EO_5). Further, the appointment of external board members, something which is advised to family firms (Sharma et al., 1997), is another important feature of *Effective Openness* as it also indicates the board's professionalization (Lane et al., 2006; Yildirim-Öktem & Üsdiken, 2010). External board members can bring fresh perspectives and new directions, but also act as arbitrator when needed (Whisler, 1988). Based on the survey question, in which external board members are defined as non-family and not working for the company, we are able to determine the proportion of external board directors within the family companies (variable EO_6).

The openness to external, non-family members, whether it concerns the board or the management team, is just one aspect of the *Effective Openness* dimension. To successfully professionalize the family business, the company must also provide effective supporting governance mechanisms. By establishing well operating governing bodies such as boards and councils, the company is able to work more effectively. The existence of a board and management team is already queried in preceding questions. Yet, even though a family firm can assert that they have a board of directors within the company, in some cases this is only to meet legal requirements. Consequently, these so-called rubber stamp boards will not lead to much actual board involvement (Lane et al., 2006; Pieper et al., 2008). To get some insights into the intensity of board activity, the amount of official board meetings is inquired (variable EO_7) (Jackling & Johl, 2009; Sharma & Nordqvist, 2008). Active boards have a significant influence on the quality of decision-making in the family firm (Gersick et al., 1997; Sharma & Nordqvist, 2008). A similar reasoning for the management team leads us to question how often the management team officially meets on an annual basis (variable EO_4). This can give an indication to what extent the entire management team is involved in organizing and planning the day-to-day functioning of the firm (Flamholtz, 1986). If firm's professionalization is low, it is presumable that a single person (most likely the family firm owner) is in charge of operational leadership (Goffee & Scase, 1985). Governance bodies, other than the board of directors and the management team, can be beneficial for firm's communication and transparency and thus

contribute to the professionalization (Suáre & Santana-Martín, 2004; Van den Berghe & Carchon, 2003). For family firms specific, family institutions – such as a family council – can represent the needs and interests of the family members and create a healthy link between the family and the company (Mustakallio et al., 2002). A family council provides a structured forum for family issues to be aired outside the business activities, and as such can be seen as the professionalization of the family (Blumentritt et al., 2007) . Variable EO_8 verifies if there is an official family council present within the company. Besides a board of directors and/or a family council, there can also be other governance bodies present within the organization, such as an advisory board (Lambrecht & Lievens, 2008) or a family assembly (Suáre & Santana-Martín, 2004), which also contribute to firm's professionalization. This aspect is enquired through variable EO_9.

A last feature of professionalization which relates to the *Effective Openness* dimension is a delegation of control and an increasing decentralization of authority around the (family) owner (Gulbrandsen, 2005). Professionalization through more company openness, such as allowing non-family managers into the company, can only be effective if these externals also have some decision power in the company. Through delegation of control, the decision-making process is distributed throughout the organization. As Moores and Mula (2000) demonstrate, centralization of authority may be particularly characteristic of the early stages in the lifecycle of a family business. Founder-run firms are very ardent for concentrating control within the business, even when this is detrimental for firm's performance (Daily & Dollinger, 1993). We included survey questions to assess the amount of centralization of authority (variable EO_10) and the delegation of control (variable EO_11).

4.2.2 Measuring Internal Formalization

Similar to the development of the *Effective Openness* dimension variables, Table 4 shows the survey questions regarding *Internal Formalization* of the family firm. This dimension comprises features: (5) the establishment of formal financial control

mechanisms; and (6) the establishment of formal human resource control mechanisms, of the professionalization definition. The *Internal Formalization* dimension is separate from the *Effective Openness* dimension in the sense that a family firm can also professionalize from within, thus without the need for a non-family manager and/or board member. Generally, family firms tend to attach great importance to family control and preservation of management positions to family members (Gersick et al., 1997). Yet, in these circumstances a family firm can still professionalize by developing formal control systems, which can counteract the negative outcome from altruistic tendencies toward family members, possibly resulting in free riding, perk consumption, colored evaluation and adverse selection (Kellermanns & Eddleston, 2004). The transition from an informal to a more formalized internal company environment consists of the implementation of both financial as well as human resource control systems. Family firm literature tends to argue that family firms overall rely less on formal management control tools opposed to non-family firms (Daily & Dollinger, 1993; Jorissen et al., 2005; Kotey, 2005). Though, even within the group of family firms there can occur differences regarding their reliance on the amount of formal management practices (Moores & Mula, 2000; Perren et al., 1998). Therefore, we include several questions to assess the magnitude of explicit formal controls present within the family business. Regarding the variables which are developed to assess *Internal Formalization*, individual variable numbers are assigned from IF_1 through IF_14. The description in the right column of Table 4 indicates what the question intends to measure. Similarly to the *Effective Openness* dimension, the concept of *Internal Formalization* is operationalized based on the elements found in the literature (e.g. Chua et al., 2009; de Kok et al., 2006; Flamholtz & Randle, 2007; Sonfield & Lussier, 2009; Songini, 2006).

Table 4. Survey questions for Internal Formalization

Var.	*Survey question*	*Description*
IF_1	Does the business plan of your company include a market analysis?	*Use of business plan*
	Has the business plan been adjusted over the last year?	
IF_2	Does the CEO of the company individually decide which organizational strategy must be followed?	*Informally constituted strategy*
IF_3	Is there a report or document in which the company objectives with reference to next year's sales, are fully and accurately computed?	*Formalized financial goals and objectives*
IF_4	Does the company own reports in which the proposed budgets of the company are compared with the actual figures?	*Use of budgets*
IF_5	Are the deviations from the budgeted targets monitored to perhaps undertake future actions?	*Budget evaluation system*
IF_6	Does management prepare quarterly reports?	*Firm performance evaluation system*
IF_7	Are the staff meetings usually formally prepared and planned in advance?	*Formal scheduled staff meetings*
IF_8	Are the financial results systematically communicated to the executives?	*Financial information availability*
IF_9	Does the company use incentive payments based on performance, for example through bonuses?	*Incentive payment system*
IF_10	Are the periodical performance reviews with the managers of the company drawn up in reports?	*Personnel performance evaluation system*
IF_11	Are the procedures regarding the recruitment of new staff noted down in a document?	*Formal recruitment system*
IF_12	Does the company provide formal internal or external training programs for their employees?	*Formal training system*
IF_13	Does the company often rely on ad hoc solutions (one-time solutions, which are not considered as fixed rules)?	*Informal decision making*

IF_14	Does the family (or part of the family) have informal meetings to discuss business related issues?	*Informal family meeting*

In the general management literature and the relevant family literature, we find multiple components which are postulated as part of the implementation of formal controlling systems. Our concept of *Internal Formalization* differentiates between the implementation of control systems related to firm's financial aspects and those related to personnel-issues, i.e. the human resource control systems. The financial management tools refer to planning systems, budgeting, company performance evaluation and reporting (Daily & Dollinger, 1993; Flamholtz, 1986; Flamholtz & Randle, 2007; Jorissen et al., 2005; Pérez de Lema & Duréndez, 2007; Sonfield & Lussier, 2009; Songini & Gnan, 2009). Regarding formal planning, variable IF_1 questions the firm's development and usage of a business plan (Duréndez et al., 2007). Also, the outlining of financial goals and objectives can give an indication of the firm's planning systems (variable IF_3). Further, having regular and formally planned contact moments for organizational staff members is also a feature of increased *Internal Formalization* (variable IF_7). If there is a high informal environment within the family company, meetings would be much more sporadic or only when the staff is obliged by circumstances (Flamholtz, 1986). Next, the development of formalized realistic budgets in the organization and the usage of these budget plans are inquired through variables IF_4 and IF_5. Another aspect of the formal financial management tools is a system for the evaluation of firm's performance (variable IF_6) and the availability of this financial information (variable IF_8). In our survey questions we specifically ask for documents or reports as this is a significant feature of formalization (Jaworski, 1988). It is not enough that, for example, budget plans are constructed only in the head of the family entrepreneur. They have to be feasible and accessible for other members of the firm, thereby creating more transparency and increasing *Internal Formalization*. If a family organization finds itself in an autocratic atmosphere where there is a heavy reliance on informal controls and decision-making, it is

expected that there will be less discussion about strategies and processes, which is measured by means of variable IF_2 (Kellermanns & Eddleston, 2004). Also, in these circumstances planning tends to be done in the head of the family entrepreneur and frequently on an ad hoc basis (variable IF_13) (Flamholtz, 1986), indicating low amounts of *Internal Formalization*. A final variable assessing the informal tendencies is variable IF_14, which queries whether the family has informal meetings. These last three questions are included for the reason that literature argues that management practices tend to be informal within family firms, and therefore rely less on formal control systems (Daily & Dollinger, 1993; Pérez de Lema & Duréndez, 2007; Perren et al., 1998).

Besides the implementation of formal financial controls, a family business can also increase its *Internal Formalization* by developing proper human resource control systems to assess personnel in an objective manner. As such Chua et al. (2009) argue that designing effective incentive compensation and performance evaluation systems for managers is a particularly important challenge of professionalization (Flamholtz, 1986). Kopriva and Bernik's (2009) research results have proven that certain family companies have to bring in better ways of human resource management in order to become more professional. Businesses should implement formal and objective mechanisms when employing, evaluating and paying employees. Unbiased standards for an objective performance evaluation can counteract some of the problems originating from familial altruism. Schulze et al. (2001) caution that parental altruism biases parental perceptions and thus colors performance evaluation and can create exorbitant compensation for family members. Objective performance evaluation is assessed by means of variable IF_10 which asks respondents if reports are drawn up of the periodical performance reviews with the managers of the company. To spur managerial performance, the organization can establish sufficient incentive systems and reward methods (Kopriva & Bernik, 2009), which is questioned by variable IF_9. Research has pointed out that these formal appraisal systems are more extensively used by non-family firms, but can also appear within the family business context (Cromie et al., 1995). Another issue of transparency concerns the recruitment procedures of new

personnel. To prevent the family from engaging in particularism, meaning that irrelevant criteria such as kinship ties are used when recruiting an employee (Dyer, 2006; Kellermanns & Eddleston, 2004), formal selection procedures can be established to warrant a more objective screening and selection (Flamholtz, 1986). Formal recruitment is questioned through variable IF_11. Finally, besides recruitment, performance assessment and assigning possible rewards, providing suitable training programs is also an important personnel controlling system (de Kok et al., 2006). Kotey and Folker (2007) argue that small SMEs, and in particular family-owned firms, tend to rely more on informal, on-the-job training. By providing formal training programs to their employees (variable IF_12), family firms can increase their *Internal Formalization*, and as such professionalize the family business (Dyer, 1989).

4.2.3 Descriptive variables

Several general variables regarding the family firms are also included in the questionnaire. In order to assess whether a business is a family business or not, we searched the literature for a suitable operational definition. There have been numerous attempts to articulate conceptual and operational definitions of family firms in the past (Chua et al., 1999; Handler, 1989; Litz, 1995), yet none has gained widespread acceptance (Sharma, 2004). The existing set of definitions can vary from very broad to very narrow definition contents. Most of them seem to revolve around the important role of family in terms of determining the vision and control mechanisms used in a firm, and creation of unique resources and capabilities (Sharma, 2004). One can even argue that a single definition of family firms does not exist, i.e. it is not a binary concept, but that the family business is more of a continuum with a certain extent and manner of family involvement in and influence on the enterprise (Astrachan et al., 2002). However, having a narrow and complex definition of a family business will automatically impose restrictions on the data collection. According to Astrachan et al. (2002) the employed definition of family firms should measure what it intends to measure and assist in providing reliable research results. Therefore, we operationalized an inclusive family firm

definition (Westhead & Cowling, 1998), which is widely used (Chrisman et al., 2004; Chua et al., 2009; Poutziouris et al., 2006; Westhead & Howorth, 2007). The definition regards a firm as being a family firm if more than 50% of ordinary voting shares is owned by members of the largest single family group related by blood or marriage. This definition is also not submissive to subjective interpretation of the CEO of the company, as some definitions include the opinion of the CEO as to whether he/she perceives the firm as a family firm. This question might be answered differently depending on the fact if the CEO is part of the owning family or not. As such, based on the survey question D_1, it is possible to distinguish between family and non-family firms.

Subsequently, several family firm characteristics are inquired. Concerning the organization in general, we include questions on the generation in charge of the business (D_2), the number of company owners (D_8), and the development phase it is situated in (D_9). Also the size of the management team (D_10) and the size of the board of directors (D_11) is assessed. Other questions, which are related to the CEO position, are whether or not the CEO is part of the owning family (D_3), and if so, to which generation he or she belongs (D_4). Further, the CEOs are asked about their highest educational degree obtained (D_5), their age (D_6), and their tenure as CEO in the company (D_7). An overview of these descriptive variables which are included in the questionnaire, is presented in Table 5.

In addition, financial information is collected on the companies that cooperated in our survey by using the Bel-First database of Bureau Van Dijk. This database contains detailed financial information on all Belgian firms. We derive information about the age of the firm (D_12) which is captured by the number of years in business[2]. Also, information on the number of full-time employees is gathered, which enables us to determine the size of the firm (D_13). The Return on Total Assets is used to assess financial performance (D_14), and finally sector information is collected based on the NACE(BEL)-codes (D_15). A list of these descriptive variables derived from the Bel-First database is presented in Table 6.

[2] In the current business form.

Table 5. Descriptives: general survey questions

Var.	*Survey question*	*Description*
D_1	Is at least 50% of the voting shares owned by members of a single family?	*Family business*
D_2	Which generation of the family (counted since the establishment of the company) currently owns the majority of shares?	*Generation in charge*
D_3	Are you (=CEO) part of the owning family?	*CEO nature*
D_4	To which family generation do you (=CEO) belong?	*CEO generation*
D_5	What is your (=CEO) highest degree obtained?	*CEO educational level*
D_6	What is your (=CEO) age?	*CEO age*
D_7	How many years have you (=CEO) been working as CEO of this company?	*CEO tenure*
D_8	How many owners does the company have?	*Firm owners*
D_9	In which development phase would you situate the company?	*Development phase*
D_10	How many managers are part of the management team?	*Size management team*
D_11	How many people (= natural individuals) are part of the board of directors?	*Size board of directors*

Table 6. Descriptives: Bel-First data

Var.	*Bel-First data*	*Description*
D_12	Number of years in business	*Firm age*
D_13	Full-time employees	*Firm size*
D_14	Return on total assets	*Financial performance*
D_15	NACE(BEL)-codes	*Firm sector*

4.3 Data Collection

4.3.1 Sample selection

The focus of this study is on the professionalization within private Flemish family-owned SMEs, which are surveyed by means of an online questionnaire. Several predetermined criteria are employed to determine the population. Firstly, all firms must be non-listed companies, located in the Flemish Region or the Brussels-Capital Region with Dutch as the official language. We also require a minimum of 10 employees to exclude the micro organizations. Further, we exclude all non-profit associations, public institutions, educational institutions and the financial sector (i.e. financial services, banks and insurance companies). Finally, our defined population is in compliance with the official European definition of Small and Medium-sized Enterprises, which indicates that a firm should have 250 employees or less, and a maximum turnover of € 50 million or a maximum balance sheet total of € 43 million. Considering these criteria, we hold a primary selection frame of 8,238 organizations. After manually deleting all double records[3] and bounced mailing addresses, we dispose of a remaining selection of 6,556 SMEs. Online questionnaires are mailed to all chief executives of this final selection.

Since it is not possible to make a prior distinction between family and non-family firms, the resulting company selection contains both types. As such, our population of interest, being private Flemish family-owned SMEs, is part of a larger population which contains both family and non-family SMEs. By integrating a question (D_1) that distinguishes between family and non-family firms, the survey instrument is designed to only collect data concerning the family businesses. Non-family firms were immediately directed to the end of the questionnaire after a negative response on variable D_1. As such, no additional information is gathered with regard to these non-family companies.

[3] Double records are two or more firms that hold a different registered organizational number, but have the same company address, the same ownership composition, and the same contact information (e-mail address).

For this study, we employ the Snap WebHost software which enables us to identify and manage responses, schedule invites and reminders, and include seed data from databases. After the questionnaire is published, Snap WebHost simultaneously sends out e-mails to invite all organizations of our selection to participate. The software allows us to follow the progression of our target group (for example, if they have started filling out the survey). Snap WebHost also permits us to identify the respondents, thereby enabling us to look up additional financial information in the Bel-First database with regard to the responding firms. Our first mailing was on the 25th of February in 2010. After a two week waiting period, a first reminder was sent to the firms that did not yet fill out the online questionnaire. The second and also last reminder was sent on the 25th of March, which is again an additional two weeks later.

After our three-wave mailing, a total of 890 questionnaires are obtained, which yields a response rate of 13.58 percent. Because the software 'allows' respondents to start filling out the questionnaire without having to finish it, 167 responses had to be removed as they did not complete the questionnaire. Partially filled out surveys are unsound for further analyses. Finally, an additional 35 cases had to be removed due to inconsistent answers[4]. As a result, this leaves us with a remaining of 688 valid responses, meaning that the entire questionnaire was filled out and the answers where submitted. The response pattern of our data collection is shown in Table 7. The table shows us that the three response waves are more or less of the same magnitude.

[4] Inconsistent data can be: (1) firms who indicate that they do not have a board of directors, but in a subsequent question fill out that there are *n* family members on the board of directors; (2) firms where the number of family board members > total number of board members.

Table 7. Response pattern of completed surveys

Variable	*Total response*	*Percentage*	*Amount removed (non-family firms)*	*Amount kept (family firms)*	*Percentage*
Response wave 1	251	36.48%	- 51	200	37.59%
Response wave 2	220	31.98%	- 52	168	31.58%
Response wave 3	217	31.54%	- 53	164	30.83%
Total	**688**	**100%**	**-156**	**532**	**100%**

Since our population of interest is a subset of the larger population which is addressed, the entire response group is split based on variable D_1. Therefore, of the remaining 688 responding firms, 156 are removed from subsequent analyses, for the fact that they did not meet the 50% ownership condition to qualify as a family business. This results in a final response group of interest of 532 organizations. Henceforth we will use this selection of organizations as final data set for all further analyses. The frequency tables of the data set regarding all included variables are enclosed in Appendix A.2 throughout Appendix A.5.

4.3.2 Controlling for bias in response

To avoid some amount of response bias in advance, a single respondent is targeted, namely the CEO of the company. Secondly, the response bias of early versus late respondents is examined by comparing the 20% earliest respondents with the 20% latest respondents (Kanuk & Berenson, 1975). We conducted several t-tests to compare the mean for multiple variables[5] included in the analyses (i.e. *firm age, firm size, return on assets, generation in charge, CEO tenure, CEO age, firm owners, size of management team, size of board of directors)*. The results indicate

[5] To conduct a t-test, data must be measured at least at the interval level (Field, 2009).

that there is no significant difference between the early and late respondents, suggesting that the chance for a response bias in the results is very small. We repeated these t-tests with cut-off points at 10% and 30%[6], which yields similar results. Besides the mean, we also observe the F-value of Levene's test for equality of variances for all three cut-off points, which is less dependent upon assumptions of normality. We can conclude that equality of variance cannot be rejected in all groups for each tested variable. Besides examining the response bias for early versus late respondents, we also assessed if there might be a difference between the firms of the three different waves of reminders. These additional t-tests indicated no significant differences between the firms of the three reminder waves.

4.3.3 Descriptive statistics

When we scrutinize the data set of family firms regarding the four industry types, we can see a relatively equal representation concerning the different industries, which is illustrated in Table 8. When looking at some general descriptive statistics presented in Table 9, we can see that the *firm size*, captured by the number of full-time employees, amounts to an average of 29 employees. The median value (19 employees) is much lower, which is apparent since the variable f*irm size* has a skewed distribution. Thus, there are a few high-number-employee cases which raises the value for the mean and which is assessed by measuring the distribution's skewness. Further, the average *firm age* is approximately 27 years, with a standard deviation of 13.96 years and a median of 23 years.

[6] At the 30% cut-off point, there is only a significant difference between the mean of the early response group and the late response group for the variable *generation in charge*.

Table 8. Industry representation in the data set

Sector	*Construction*		*Production*		*Service*		*Wholesale/retail*	
Total	*Frequency*	*%*	*Frequency*	*%*	*Frequency*	*%*	*Frequency*	*%*
532	129	**23.6**	154	**28.2**	121	**22.1**	143	**26.1**

Table 9. Descriptive variables of data set

Variable	*Mean*	*Median*	*Std. Deviation*	*Minimum*	*Maximum*
Firm size (number of employees)	28.60	19	28.18	10	229
Firm age (years)	26.80	23	13.96	6	110
Number of owners	2.26	2	1.56	1	10
Generation in charge	1.88	2	0.91	1	5
CEO age (years)	46.71	47	9.09	25	78
CEO tenure (years)	16.10	15	9.64	1	53

When looking at some owner-specific numbers (Table 9), the family firms in this data set have two owners on average, and it is usually the first (39.3%) or second (40.6%) generation which is in charge of the company (Table 10). However, one-fifth of the data set represents third or later generation family firms. The CEO of the family organization is on average 46 years old, has a higher educational degree, and has a job tenure (as CEO) of 16 years in the company (Table 9). The maximum of CEO age appears to be 78, which is well above the legal retirement age. Table 11 shows the distribution of the educational level of the company's CEO. It is quite salient that one third of the family firm CEOs does not have a diploma beyond the higher secondary level which generally corresponds to the final stage of compulsory education. By constructing a cross tabulation for the highest educational degree obtained and differentiating between family and non-family CEO, we can see that this group of lower educated CEOs almost entirely consists

of family CEOs. Non-family CEO's either have a higher educational degree or an university diploma (Table 12).

Table 10. Distribution across the generation in charge

Generation	*First*		*Second*		*Third*		*Fourth*		*Fifth*	
	Freq.	*%*	*Freq.*	*%*	*Freq.*	*%*	*Freq.*	*%*	*Freq.*	*%*
	209	**39.3**	216	**40.6**	77	**14.5**	22	**4.1**	8	**1.5**

Table 11. Distribution of educational level of CEO

Educational level CEO	*Lower secondary level*		*Higher secondary level*		*Higher education short term*		*Higher education long term*		*University*	
	Freq.	*%*	*Freq.*	*%*	*Freq.*	*%*	*Freq.*	*%*	*Freq.*	*%*
	34	**6.4**	128	**24.1**	126	**23.7**	99	**18.6**	145	**27.3**

Table 12. Educational level CEO and family membership CEO

		Educational level CEO				
		Lower secondary level	*Higher secondary level*	*Higher education short term*	*Higher education long term*	*University*
CEO	*Non-family CEO*	0	4	11	17	24
	Family CEO	34	124	115	82	121
TOTAL		**34**	**128**	**126**	**99**	**145**

Table 13 provides some insights in the board[7] and management team composition of the family firms in the data set. The median family firm has a management team that consists out of 3 managers and has 3 members on the board of directors. Family involvement in these two governing bodies appears to be divergent. Family dominance in the board of directors is exceedingly high, with a median value of 100 percent. This indicates that more than half of the firms in the data set have a board which exclusively consists out of family members. Representation of external board members, meaning non-relative and not working in the organization, is very limited, with a median value of 0. Considering the entire data set, 82 percent does not have an external board member on their board of directors. Firms that do have external representation, appoint in almost all cases (91.67 percent) one, or at the utmost two external directors. If we look at the amount of external board members with regard to the size of the board, Table 14 clearly states that external directors are in most cases the minority group on the board. Of the 96 family firms which have external representation on their board, only 4 businesses have a board of directors which exclusively consists out of external board members.

The family involvement in the management team seems to be more moderate than that in the board of directors. Table 13 shows that the median proportion of family in the management team is 75 percent. When looking at the distribution of the family involvement, we can see that there are high amounts at the end of the scale, i.e. 7.7 percent of these firms have no family involvement in their management team, opposed to 47.9 percent of the firms having a management team consisting exclusively out of family managers. The remaining firms are scattered between these two extremes, i.e. 18.2 percent of the firms have a management team with the family as a minority group, in 13.0 percent of the cases family is the majority group, and in the remaining 13.2 percent there is an equal amount of family and non-family within the management team (Table 15).

[7] The data set includes limited liability companies (public limited companies (NV) and private limited liability companies (BVBA)). General partnerships (VOF) and non-profit organizations (VZW) were not included in the original sample.

Table 13. Board and management team composition

Variable	*Mean*	*Median*	*Std. Deviation*	*Minimum*	*Maximum*
Number of managers in management team	3.05	3	1.70	1	10
Family involvement in management team (%)	68.73	75	34.41	0	100
Number of board members	2.88	3	1.45	0	10
Family involvement in board of directors (%)	84.00	100	27.40	0	100
External board directors (%)	7.70	0	18.01	0	100

Table 14. Distribution of external board members

External board members on BoD	*Minority group*		*Equal to amount of family board members*		*Majority group*		*Only external board members*	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
	59	**61.45**	22	**22.92**	11	**11.46**	4	**4.17**

Table 15. Distribution of family involvement in management team

No family		*Family minority*		*Equal amount*		*Family majority*		*Only family*	
Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
41	**7.7**	97	**18.2**	70	**13.2**	60	**13.0**	255	**47.9**

One can always think of additional information that might have been interesting given the research topic. As such, for future research we encourage academics to survey more in detail the ownership structure of the family business.

It could be interesting to assess whether the amount of family ownership is related to some of the research findings. Also, a more in-depth assessment of the board can aid future research. We only included the amount of non-family involvement and external board members, yet the consideration of, for example, active and passive board members or board involvement might also deserve some attention. In this research we strived for the most optimum balance between the amount of information we wanted to receive of the companies and their willingness to cooperate.

4.4 Summary

As to empirically explore the proposed theoretical framework developed in the former chapter, we need to collect the required data. Lacking existing measurement scales that can be employed, this chapter concentrates on the theoretical founding of the developed questions in the existing literature. We developed 25 proxy variables so as to assess the two theoretically constructed dimensions of professionalization, being *Effective Openness* and *Internal Formalization.*

Apart from the development of the survey questions and their theoretical underpinnings, this chapters also presents detailed information on the content of the collected data set. The descriptive statistics of the 532 private family firms that make up our sample, provide us with an overall impression of the firm profiles regarding their size, age, composition, ownership, etc.. These figures also make it quite perceptible that within the group of family businesses, there can be considerable differences amongst firms. This is in line with what current literature often suggests, namely that family firms cannot be viewed as a homogeneous entity (Chrisman et al., 2005; Sharma et al., 1997; Westhead & Howorth, 2007). We expect that the subsequent factor and cluster analyses will generate some more insights on these intra-group differences, and also provide an empirical answer to our first two research questions.

5. Identifying the Dimensions of Professionalization: Exploratory Factor Analysis

5.1 Introduction

The fundaments of the typology which we have developed in Chapter 3, are entirely embedded in theory. In order to find empirical support for our theoretical framework, we collected data from the predefined population of interest. Based on the professionalization features that we identified through the existing literature, we posited that there are two higher level dimensions, i.e. *Effective Openness* and *Internal Formalization,* each comprising several professionalization features. We argue that the 25 variables, developed in Chapter 4, are observable indicators that can be used to scrutinize these two dimensions. To examine to what extent the 25 theoretically constructed variables are in fact measuring what is intended, a factor analysis is performed. The primary purpose of this interdependence technique is to define the underlying structure among the variables in the analysis (Hair et al., 2006). As there are no prior developed scales which we can apply, factor analysis can be of assistance to uncover the amount of correlation among the variables. In doing so, it will enable us to group highly correlated variables together, and create a new composite measure to represent variable groups (Field, 2009). We expect the variables EO_1 to EO_11 to be overt features of the underlying concept of *Effective Openness*, and the IF_1 to IF_14 variables as elements of the latent concept of Internal Formalization. Together, these two dimensions will then give an indication of the amount and nature of the family firm's professionalization process.

This chapter starts with determining the appropriate factoring technique for this study, with reference to the factor extraction method and rotation method (section 5.2). In the following part of the chapter (section 5.3), the results of the factor analysis are critically evaluated. Once the final factor solution is obtained, interpreted, labeled and validated, the acquired information can assist us in empirically answering our first research question, namely "*What is the content of the professionalization construct within a family business context?*".

5.2 Methodology

5.2.1 Exploratory versus confirmatory factor analysis

Within the field of factor analysis, a distinction is made between confirmatory factor analysis and exploratory factor analysis. The latter method is used to uncover latent dimensions underlying a data set, examining which items have the strongest association with a given factor (DiStefano et al., 2009), or as a data reduction method (Hair et al., 2006). The exploratory factor technique analyzes a set of correlated observed variables without actually knowing in advance either the number of factors that are required to explain their interrelationships or their meaning or labeling. The choice of the number of factors then depends on statistical criteria (such as the eigenvalue and Cronbach's alpha). Confirmatory factor analysis on the other hand, postulates certain relationships among the observed and the latent variables assuming a pre-specified pattern for the model parameters. This technique is mainly used for testing (and validating) prior exploratory research. Therefore, the number of latent variables and the different indicators that will be used to measure each latent variable are known in advance. This implies that the researcher has enough sufficient knowledge to define the relationships between the constructs (latent variables) and the indicators (observed variables) that they explain (Bartholomew et al., 2008).

As we have no prior empirical evidence or underlying theoretical proof that our constructed variables are in fact valid indicators to explain the specific structures and latent variables, an exploratory factor analysis is more suitable in

the given context. The derived variables are based on an accumulation of multiple traits that were found in relevant literature, yet without having any (statistical) affirmation. As such, we can only assume that there might be a relation between (some of) the constructed variables and the two latent constructs we wish to measure, i.e. *Effective Openness* and *Internal Formalization*. By applying the exploratory method, we do not set any a priori constraints on the estimation of components or the number of components to be extracted, nor do we ax ante assign variables to specific factors (Hair et al., 2006).

5.2.2 Evaluating appropriateness of the data set

Before executing an exploratory factor analysis, the data set must be evaluated on its appropriateness for this type of analysis. Hair et al. (2006) enumerate several conditions which must be met. First, a researcher is required to evaluate the sample size. The sample size should contain at least 100 cases, and the minimum is to have at least 10 times as many observations as the number of variables to be analyzed. Similar case-requirements are found in the work of Neter et al. (1996), who state at least 6 to 10 cases for every variable as the general rule of thumb. One should always try to obtain the highest cases-per-variable ratio to minimize the chances of overfitting the data, meaning that the obtained factors would be sample-specific with little generalizability. The data set used in this study contains 532 cases with no missing values. The 10 *Effective Openness*[8] variables and 14 *Internal Formalization* variables result in a respondent-variable ratio of approximately 22:1, which is well above the recommended value of 10:1.

In accordance to Hair et al. (2006), the next step is to ensure that the variables are sufficiently intercorrelated to produce representative factors. Three empirical measures as guidelines are proposed to assess the degree of interrelatedness. These measures can assist the researcher in evaluating the

[8] Variable EO_3 is eliminated from further analysis. Due to an error in the questioning method, the variable creates a distortion regarding the respondents as it only applies to some of the family firms.

appropriateness of the data for conducting a factor analysis. First, the partial correlations are studied, which indicates the correlation between two variables controlling for the effects of all the other variables. High partial correlations indicate a low intercorrelation among the variables, meaning that only little of the correlation between two variables is explained by the other variables. This can be an indication that there are probably no underlying factors. As a rule of thumb, partial correlations above 0.7 are considered as high. Partial correlations can be examined in the anti-image correlation matrix (Appendix B.1). It appears that there are high amounts of intercorrelation between the variables in the data set because the partial correlations are very low. The highest partial correlation is 0.597 between variable IF_4 and IF_5, which is still considered small (< 0.7). This high intercorrelation between the variables is a first indication that underlying factors may exist.

A second measure to assess the degree of interrelatedness, and thus the appropriateness of factor analysis, is the Bartlett's test of sphericity, which is a statistical test that examines the entire correlation matrix. This test provides the statistical significance that the correlation matrix has significant correlations among at least some of the variables. Applied to our data set, the Bartlett's test indicates that the correlations, when taken collectively, are significant at 0.01 level (Table 16). This is a second indication that this data set is fit for factor analysis.

Finally, a last measure that should be taken into account is the measure of sampling adequacy [MSA]. This index ranges from 0 to 1, reaching 1 when each variable is perfectly predicted without error by the other variables. We can interpret the measure as follows: 0.80 or above is meritorious; 0.70 or above is middling; 0.60 or above is mediocre; 0.50 or above is miserable; and below 0.50 is unacceptable. Both the overall MSA, as well as the MSA per variable can be examined. According to Hair et al. (2006) one should always strive for an overall MSA value of at least 0.50 before proceeding with the factor analysis. Table 16 shows the overall MSA measure with a value of 0.805, which is interpreted as excellent for a factor analysis. The MSA per variable can be examined by looking at the anti-image correlation matrix (Appendix B.1). The diagonal of this table

contains the MSA value per variable and is indicated by subscript 'a'. Overall, these values are between 0.7 and 0.9, indicating a good fit for performing a factor analysis. However, there is one outlier, namely the MSA value of IF_13 (0.519), which is one of the variables that assesses the amount of informal decision-making within the family company. It is advisable to delete variables with an MSA value under 0.5 for further analysis. As it is just above this threshold, we shall keep this variable for now. However, we will be attentive to IF_13 in the following analyses. Based on the results of our three tests, we can conclude that our data set is a perfect candidate for factor analysis.

Table 16. Overall MSA and Bartlett's test of sphericity

Kaiser-Meyer-Olkin measure of sampling adequacy.		.805
Bartlett's test of sphericity	Approx. Chi-Square	2842.643
	df	276
	Sig.	.000

5.2.3 Factor extraction method

After evaluating the appropriateness of the data set based on sample size, cases-per-variable ratio and the three measures for interrelatedness, a factor analysis can be conducted. When deciding on a method of extracting the factors, we consider the common factor analysis as well as the component analysis, both being methods of exploratory factor analysis (Hair et al., 2006). These two techniques are quite comparable and may often yield similar results about the number and nature of components or factors (Bartholomew et al., 2008). The difference between these two methods is their use of explained versus unexplained variance of a variable. The component analysis, also known as the principal component analysis (PCA), considers the total variance among the indicators to derive latent factors. This differs from the amount of variance carried into the factor matrix by the common

factor method. Common factor analysis, also called principal factor analysis (PFA), or principal axis factoring (PAF), only considers the common or shared variance, and thereby assumes that both the unique and error variance are not of interest in defining the structure of the variables. Thus, factors resulting from a common factor analysis are based only on the common variance (instead of the total variance with PCA) (Hair et al., 2006).

Although there is still considerable amount of debate over which factor model is the more appropriate one, studies have shown similar results with both methods (Bartholomew et al., 2008; Hair et al., 2006). In this study, we apply the PCA method and use the PAF as a robustness check of the found factor solution. Our results show that there is no considerable difference between the two methods. Both extract the same number of factors and allocate similar variables to each factor. The PAF method does however generate a lower amount of significant factor loadings. Thus, some variables that are significant in the PCA method, may not be in the PAF method. This is due to the fact that the PAF technique only focuses on the shared variance of the variables. For an exploratory study, it is best to have a sufficient amount of explaining variables per factor with a significant factor loading, as this facilitates factor interpretation and lessens ambiguity.

5.2.4 Number of factors to extract

The exploratory factor method, contrary to the confirmatory method, has no predetermined number of factors that have to be extracted from the data. Therefore, one should combine a conceptual foundation (what do I expect?) with some empirical evidence (what does my data support?). Three different criteria are used to determine the optimal number of factors. First, we can determine the number of factors that we might anticipate based on the literature. A review of related prior studies, might give us an indication of what to expect. Second, we can apply the latent root criterion. This is the most commonly used technique to verify the number of factors. This criterion considers only factors with a latent root or eigenvalue greater than 1 as being significant. A factor with an eigenvalue less than

1 indicates that this particular factor accounts for less variance in the data set than a single variable, and should therefore be discarded. A final criterion that can be applied is the scree test criterion, which is a graphical method to determine the number of factors. The scree test is derived by plotting the eigenvalues against the number of factors in their order of decreasing eigenvalues. The point at which the curve first begins to straighten out is considered as the cutoff point (Hair et al., 2006). This point is a visual indication of the maximum number of factors to extract. An important remark is that these three criteria are mere indications for a researcher, as they can all lead to different conclusions on the number of factors. The specific factors which will eventually be subtracted from the model depend on the researcher's opinion which should be guided by these criteria as well as by the interpretation of the final factor model. Therefore, several factor solutions can (and should) be considered and assessed, before deciding on the final set of factors (Field, 2009).

When we apply these three criteria to the data set, we can see that they indeed lead to different conclusions. First, we determine the amount of factors which we might expect based on the insights from the literature. We are attempting to measure two concepts, i.e. *Effective Openness* and *Internal Formalization*, by means of 24 proxy variables, thus we expect to derive two factors which correspond with these concepts. The second criterion we employ is that of the latent root. Appendix B.2 gives the eigenvalue of each potential factor in the analysis. According to the latent root criterion which states that only factors with an eigenvalue above 1 should be retained, 7 factors can be extracted from the data. These 7 factors account for 54.8% of the total variance in the factor model. Finally, the scree plot which is presented in Figure 3 shows that initially the plot slopes steeply downward. The curve begins to straighten out at 4 or 5 factors.

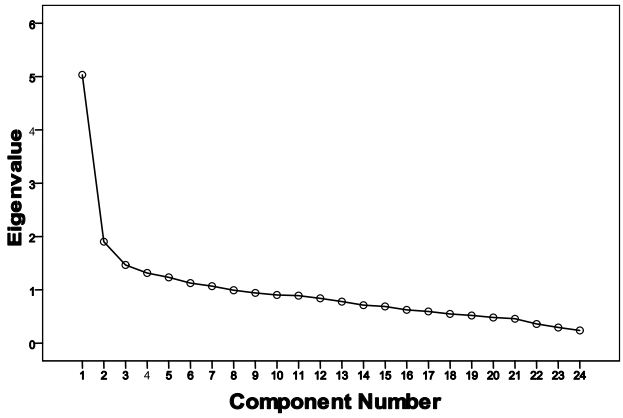


Figure 3. Scree plot

In summary, at this point there is no clear-cut indication on how many factors should be extracted. Therefore we start with considering the highest amount of factors suggested which is, based on the latent root criterion, the 7 factor model[9]. We then examine the factor loadings for each variable to see if any non-significant variables should be excluded from our analysis. This in turn might result in fewer factors.

[9] We repeated the analysis for the 2 factor model (criteria: expectation based on literature) and for the 5 factor model (criteria: scree plot). After stepwise deleting the variables with non-significant loadings in the 5 factor model, the final factor solution was based on 18 variables and generated 5 factors which accounted for 55.67% of the total variance in the model. This final retained factor solution was identical to the one discussed in this dissertation which is based on the latent root criterion. A similar procedure for the 2 factor model generated a final factor solution with 11 variables and 2 factors which accounted for 49.76% of the total variance in the model. The content of these two factors has high resemblance to two factors of the final factor solution discussed throughout this dissertation. Yet, by imposing a restriction on the number of factors derived (namely 2), further information from additional factors is missed. Therefore, a 5 factor model is preferred over a 2 factor model.

5.2.5 Factor rotation method

To interpret a factor solution, the initial factor matrix containing the factor loadings for each variable on each factor, is analyzed. Factor loadings are the correlation of each variable and the factor, thus making a variable representative of a factor if they have high loadings on that specific factor. These loadings are therefore the key for interpreting the significance of each variable in defining each factor. However, these initial factor solutions are often difficult to interpret and therefore a factor rotation is performed. In most cases rotation of the factors improves the interpretation by reducing some of the ambiguities in the initial solution. When executing a factor rotation, the reference axes of the factors are turned about the origin until some other position has been reached. The main difference between the rotated and unrotated solution is the amount of variance accounted for by each factor. More precise, an unrotated factor solution extracts factors in the order of their variance extracted. Therefore, the first factor tends to be a general factor with almost every variable loading significantly and thus also accounting for the largest amount of variance. Subsequently, the second (and following) factors will account for successively smaller portions of variance (Hair et al., 2006). This is visualized in Appendix B.2 where we can see that the first component accounts for 20.66% of the total variance in the model. The second component accounts for significant less variance, namely 8.06%, and so on. The ultimate effect of rotating the factor matrix is to redistribute this variance to achieve a simpler, theoretically more meaningful factor pattern. We can distinguish two types of factor rotations, i.e. orthogonal rotation and oblique rotation. The orthogonal rotation respects the orthogonality of the reference axes of the factors and results in a factor solution where the factors are independent from each other. A non-orthogonal or oblique rotation, is not bound by this restriction and can lead to correlated factors (Field, 2009). Both the orthogonal rotation method Varimax and the oblique rotation method Oblimin, are applied in this study to see if they result in diverging factor solutions.

When interpreting these rotated factor solutions, the factor loadings must be evaluated on both their practical as well as their statistical significance. A factor

loading represents the correlation between an original variable and its factor. To assess the statistical significance, Hair et al. (2006) provide guidelines about the level of factor loading necessary to be statistically significant given a specific sample size (Table 17). According to these figures, we can consider factor loadings of .30 as statistically significant, as our sample size is 532 which is considerably larger than the threshold of 350 observations. However, besides the statistical significance, the authors urge to also take the practical significance of the factor loadings into account. Practical significance is not based on any mathematical proposition, and as a rule of thumb loadings of ± .50 or more are considered as practically significant. The researcher should therefore consider both types of significance when evaluating factor loadings. Variables which have no significant loadings for any factor are very poor indicators and are considered for deletion. The same holds for indicators which have crossloadings, i.e. factor loadings which are significant on multiple factors. This will create difficulty during the interpretation of the factors, as the factors should be distinct and potentially represent separate concepts, which of course is difficult if they share a number of variables. In some cases different rotation methods can solve the problem of cross-loadings or insignificant factor loadings. However, if the problem persists, the variable should be deleted from the analysis.

Table 17. Guidelines for identifying significant factor loadings based on sample size (Hair et al., 2006, p.128)

Factor loading	Sample size needed for significance[a]
.30	350
.35	250
.40	200
.45	150
.50	120
.55	100
.60	85
.65	70
.70	60
.75	50

[a] Significance is based on a .05 significance level (α), a power level of 80 percent, and standard errors assumed to be twice those of conventional correlation coefficients

5.3 Results of the Factor Analysis

5.3.1 A 7 factor model

The first factor solution which we evaluate is the 7 factor model, which is also suggested by the latent root criterion. Both the orthogonal (Varimax method) and the oblique (Oblimin method) rotation are performed. The tables with the factor loadings can be found in Appendix B.3 and Appendix B.4. Factor loadings larger than 0.5, which are both practical and statistical significant, are marked bold. If we look at the factor solutions, both the Varimax and the Oblimin rotated versions of the factor model give more or less similar results. There appear to be no crossloadings in either method. However, there are several variables with no significant loadings for any of the factors. For the Varimax rotation, variables IF_1, IF_7, IF_10 and IF_14 have factor loadings beneath the threshold value of 0.5 (Appendix B.3). In the Oblimin rotation, variables IF_1, IF_7, IF_9, IF_10

and EO_2 are not significant (Appendix B.4). As is mentioned before, variables with non-significant loadings are poor indicators and should be considered for deletion. This evaluation for possible deletion must be done for each variable separately, since the removal of one variable can alter the entire model (Hair et al., 2006). Of the common non-significant variables, IF_1 appears to have the lowest loading (Appendix B.3). Also, if we look at the communality (Appendix B.5), which represents the amount of variance accounted for by the factor solution for each variable and thus can help the researcher to assess the overall contribution of a variable, we see that this is just beneath the middle value. The other two non-significant common variables, IF_7 and IF_10, have a communality value which is higher than IF_1. Therefore, the analysis is repeated after eliminating IF_1.

Appendix B.6, indicating the eigenvalues and the total variance explained, still supports a 7 factor model after deleting variable IF_1. When looking at the factor solutions for both rotation methods (Appendix B.7 and Appendix B.8), we can see that the factors deducted from the model contain the same variables as in the first analysis. However, the Oblimin rotation method has considerable more non-significant factor loadings (i.e. variables EO_2, IF_7, IF_9, IF_10 and IF_14) than the Varimax method (i.e. variables IF_7 and IF_14). As we are striving to assign as many variables as possible to a factor (for explanatory reasons), we are convinced that the Varimax method is more appropriate for this study. Factors can be more adequately defined, especially in an exploratory study, if they are composed of multiple variables (Field, 2009). A second reason which leads us to prefer the Varimax to the Oblimin method, is the fact that there are non-correlating factors in the solution of the former. As was previously explicated, the oblique rotation method allows factors to correlate, making them dependent of one another. Even though this is not something we prospect, we must take the possibility into account. If we look at the component correlation matrix (Appendix B.9) produced in the Oblimin solution, we see that the correlation between the factors is very low. Thus, it can be questioned if an oblique rotation is required under these circumstances. Based on these considerations we focus on the Varimax

method from this point forward. As a robustness check, the final Varimax factor solution is also carried out by means of an oblique rotation.

If we continue evaluating the factor loadings of the 7 factor Varimax model (Appendix B.7), we find variables IF_7 and IF_14 to be non-significant. Based on the lowest factor loading, variable IF_14 is considered for deletion. Its communality value is quite acceptable, however it does not seem to have a significant correlation with any of the factors. Therefore, we repeat the analysis without IF_14 to see if our factor solution improves. The eigenvalues in Appendix B.10 still support a 7 factor model and the total variance explained by our new model has increased from 55.66% to 57.08%. Appendix B.11 shows the factor loadings of the Varimax rotation method. In this 7 factor model with our 22 remaining variables, only the variable IF_7 has no significant loading. But, as this value of 0.49 is just beneath the threshold value of 0.5 for having practical significance, we decide not to eliminate this variable yet as it is still statistically significant due to our sample size. At this point, approximately all variables have a significant loading for one of the components in the Varimax rotation method, as such we have no reason to delete any of the remaining variables. Therefore we can start interpreting and labeling the retained factors and assess their reliability.

As a robustness check of this factor solution, we also apply the Oblimin rotation method (Appendix B.12). We can see that through the deletion of variable IF_14, both variables EO_2 and IF_9 have become significant in their loading for a specific factor. Yet, variable IF_6 with a loading of 0.498 has dropped beneath the threshold value (0.50). Even though the factors derived from the model do not differ from those in the Varimax method which indicates robustness of the solution, the amount of significant loadings is lower when applying the Oblimin rotation. Namely, variables IF_6, IF_7 and IF_10 are not significant in the Oblimin solution, of which only IF_7 has a value beneath the threshold of 0.50 in the Varimax method.

5.3.2 Interpreting and labeling the factors

To ease interpretation, some variables are reversely coded so that the value sign (+/-) of the variables can be interpreted alike. More precise, variables EO_1, EO_2, EO_5, EO_10, EO_11, IF_2, IF_13 and IF_14 are included in the analysis with reversed coding. This will be indicated through adding the superscript 'R' to the variable (e.g. EO_1^{R}) . Based on Appendix B.11, our first factor (F1) contains the variables IF_3 through IF_6. Originally, these four variables were intended as part of measuring firm's *Internal Formalization*. When looking at our survey questions on which these four variables are based, we can see that they are linked to setting financial goals (IF_3), using budgets to reach these goals (IF_4), evaluating budgets on their success (IF_5), and finally a formal evaluation of the firm's financial performance (IF_6). These four formal management control systems are thus related to the financial achievements of the organization. Therefore, we label F1 as the amount of *Financial Control Systems*. Next, to determine the reliability of our F1 measure, we assess the internal consistency of our concept by means of Cronbach's coefficient alpha. This reliability score should exceed 0.7 when conducting confirmatory factor analysis, although a 0.6 level can be used in exploratory research (Hair et al., 2006). For social science data it is argued that a value of 0.5 can be acceptable (Kline, 1999). Low α scores can indicate that the test either does not contain enough variables or that the items have very little in common. If anα score is beneath the threshold value of 0.6 and there are 3 or more items in the factor, each item should be considered for deletion to test if this might increase α. Our factor F1 has a Cronbach's alpha of 0.78, which is well above the recommended level and thus can be considered as a reliable score.

The second factor (F2) that we can extract from the rotated component matrix (Appendix B.11), contains the variables EO_1^{R}, EO_2^{R}, EO_5^{R} and EO_6. These four variables were initially meant as measures for *Effective Openness*. EO_1^{R} indicates whether or not the CEO is a family member, the other variables indicate the amount of family involvement within the management team (EO_2^{R}) and within the board of directors (EO_5^{R}), and the amount of external board members (EO_6). Based on these variables, we believe that this factor

indicates the decreasing family involvement as the firm professionalizes. Therefore, we label our F2 concept as the amount of *Non-family Involvement in Governance Systems*. The reliability of F2 is assessed by means of the Cronbach's alpha. The value 0.65 indicates that the reliability of our measure is above the threshold value of 0.6 .

The third factor (F3) of our factor model contains four variables, i.e. variables IF_9 through IF_12. As mentioned before, variable IF_7 has a factor loading of 0.49 for this third factor, which is just beneath the threshold value of 0.5 for having practical significance. However, we have not yet excluded this variable from the analysis. The Cronbach's alpha is assessed both with and without the variable IF_7. This can help us to determine if IF_7 has a significant contribution to the reliability value of the factor, which can be a motive to include the variable in our measure. The reliability coefficient amounts 0.512 when considering variables IF_9 through IF_12. However, by adding variable IF_7 to the factorized dimension, Cronbach's alpha increases to 0.61, thereby crossing the threshold value of 0.6 for having an acceptable level of reliability. Next, the content of these five variables are observed to decide on a suitable factor label. Contrary to the first factor F1 which has its focus on the use of financial control systems, this factor has its focal point on the performance and evaluation of personnel: starting from a formal recruiting instrument for new personnel (IF_11), to the formal staff meetings (IF_7) and evaluation of the personnel performance (IF_10), with the possibility of rewarding this performance (IF_9) and eventually providing formal training programs (IF_12) to adjust or improve capabilities. As all these formal control systems are related to the cycle of personnel, we label factor F3 as the amount of *Human Resource Control Systems*.

This brings us to our fourth factor (F4), which contains variables that indicate if all employees directly report to the CEO (EO_10^R), if all major decisions are autonomously made by the CEO (EO_11^R) and if the CEO of the company individually decides which organizational strategy must be followed (IF_2^R). At first sight this factor seems to contain two variables (EO_10^R and EO_11^R) which we believe, measure *Effective Openness*, and one (IF_2^R) which

measures *Internal Formalization*. However, when critically examining the content of these three variables, they all appear to be related to centralization/delegation of control and authority. In line with the direction towards firm professionalization, we assign the label *Decentralization of Authority* to the factor F4. In hindsight we can ascertain that variable IF_2^{R} might not have been well formulated as measurement of *Internal Formalization*. Apparently, the emphasis in this survey question is on the 'individual decision-making' of the CEO about organizational strategy, rather than on strategy constitution as was originally intended. The Cronbach's alpha of F4 is 0.57 which is just beneath the accepted level of 0.6 (Hair et al., 2006). Yet, it is still above the threshold value (0.5) for social science data in accordance to Kline (1999). Removing one of the variables from this dimension only decreases the Cronbach's alpha value. As the value is between the two threshold values and because this is an exploratory study, we shall keep the factor F4. We are however aware that the reliability of the measure is not optimal.

The fifth factor (F5) contains only two variables, i.e. EO_4 and EO_7. These variables measure the amount of formal meeting of the management team (EO_4) and the board of directors (EO_7). As these variables indicate how often these two governance systems come together to formally discuss, plan and execute organizational goals and strategy, we provide the label of *Top Level Activeness* to the factor F5. The Cronbach's alpha is again between the threshold values of 0.6 and 0.5 (with a value of 0.55) . As this factor only contains two variables, it is not possible to remove any of the variables to increase the reliability of this factor. For the same reasons as mentioned before, we shall keep this factor. We also believe it to be an important component for measuring our latent concepts, and we do not want to restrict our possibilities too much in advance. Again, we are aware of the implications that this less desirable reliability value can have.

Variables EO_8 and EO_9 construct factor F6. Variable EO_8 indicates whether or not the family firm has an official family council present in the organization. Variable EO_9 specifies if there is any other formal board, forum or committee present, besides the board of directors and the family council, that might give advice to the company and/or the family. Even though these two

variables seem to be indicators of a common aspect, for example the establishment of governance structures – which indicates high professionalization according to current literature (Suáre & Santana-Martín, 2004) – the reliability coefficient is quite poor. Factor F6 has a Cronbach's alpha of 0.26 which is too low to keep this factorized dimension. The cause of this might be found in the polarized response pattern of variable EO_8. If we look at the frequency table of EO_8 (Appendix A.2), it appears that only 35 out of 532 respondents indicate that they have an official family council, which is approximately 6%. As such we expect that EO_8 is not a representative measure to include in further analyses. Regarding variable EO_9 – which specifies if there is any other formal board, forum or committee present in the organization – 99 out of the 532 organizations respond positive, which is about 18% and thus is a more balanced response pattern (Appendix A.2). From a theoretical perspective, we might also argue that having a family council or other family advisory boards might not be directly linked to family business professionalization. Since these are more family governance mechanisms which relate to managing the link between family and business, instead of relating to family business professionalization (Suáre & Santana-Martín, 2004).

Finally, the last factor in the model (F7) contains variables IF_8 and IF_13^{R}. Factor analysis, especially exploratory factor analysis, is a very intuitive and interpretative method, where the researcher has to look for underlying meaning and latent concepts in the tangle of data. The researcher must have the ability to assign some meaning to the factors and interpret the nature of the variables (Field, 2009; Hair et al., 2006). Although the variables IF_8 and IF_13^{R} have significant factor loadings on our last factor F7, we see no relation or underlying connection that could bind these two variables in a factorized dimension. IF_8 indicates if financial results are systematically communicated to the executives, whereas IF_13^{R} specifies if the company often relies on ad hoc solutions. The Cronbach's alpha score for F7 confirms our suspicion, with a reliability coefficient of 0.16, which is extremely low. Therefore, we decide to remove this factor from the final solution.

5.3.3 Final factor solution

At this point, 5 factors of our 7 factor model have been positively evaluated on their reliability and labeled based on the covert connections between the correlated variables. Four variables, belonging to factors F6 and F7, are now considered for deletion, i.e. IF_8, IF_13^{R}, EO_8 and EO_9. One by one they are removed from the factor analysis to see if any of the factor values change. The Varimax rotated component matrices of these four factor solutions are shown in Appendix B.13 through Appendix B.16. By deleting these four variables successively, there appears to be no considerable impact on the distribution of the variables on the different factors, nor on the significance of the factor loadings of each variable. A notable change did occur in the number of factors presented in our factor solution. The initial eigenvalues in Appendix B.17 show that there are only five components with an eigenvalue above 1, instead of seven in our previous factor solutions. This factor reduction is quite evident as the four variables that have been removed from the analysis constitute two factors (namely F6 and F7). Our new 5 factor model accounts for 55.673% of the total variance. Appendix B.17 shows us that we can increase the total amount of explained variance up to 60.895% by adding an extra factor dimension, even though the eigenvalue of this extra component would be less than 1. In doing so, the remaining 18 variables would be redistributed over six, instead of five factors. As this is a substantial enlargement of the explained variance, the option must be taken into consideration. We explored this possibility, but did not pursue it due to very low Cronbach's alpha values which makes the new factors not reliable. As such, it would decrease the overall value of our factor solution.

Table 18 provides an overview of each retained factor of the model with the variables which have a significant factor loading and the Cronbach's alpha value. We have computed five factor scores for each subject in our data set. These factor scores represent the degree to which each subject scores high on the group of items with high loadings on a factor. As such, higher values on the variables with high loadings on a factor will result in a high factor score. These factor scores can be used as input variables for any subsequent analysis. One of the advantages of

using factor scores, is that these scores are computed based on the factor loadings of all the variables on the factor, opposed to only combining the variables per factor. Furthermore, factor scores are by default orthogonal and can avoid complications caused by multicollinearity (Hair et al., 2006).

Table 18. Final factor solution

Factor	*Label*	*Variables*	*Cronbach's Alpha*
F1	Financial Control Systems	IF_3, IF_4, IF_5, IF_6	0.78
F2	Non-family Involvement in Governance Systems	EO_1^{R}, EO_2^{R}, EO_5^{R}, EO_6	0.65
F3	Human Resource Control Systems	IF_7, IF_9, IF_10, IF_11, IF_12	0.61
F4	Decentralization of Authority	IF_2^{R}, EO_10^{R}, EO_11^{R}	0.57
F5	Top Level Activeness	EO_4, EO_7	0.55

When we relate these findings to our first research question, namely "*What is the content of the professionalization construct within a family business context?*", the exploratory results of the factor analysis, thus, identify 5 uncorrelated dimensions with respect to the professionalization construct. This is an indication that the focus of previous research – that has proxied family business professionalization through the presence of a non-family manager – might have been too narrow. The results of the factor analysis show that the presence of non-family managers is indeed a notable feature of professionalization (retained in F2), yet it is not an equivalent of the concept. There are other dimensions through which family businesses can increase their professionalization level, which is more in line with the general understanding of the concept within management literature (Flamholtz & Randle, 2007; Hofer & Charan, 1984). Yet, The empirical findings are also an indication that there are more dimensions to the construct than our two hypothesized dimensions, being *Effective Openness* and *Internal Formalization*.

5.3.4 Validating the factor solution

The validation of a factor analysis and the resulting factor solution is essential, according to Hair et al. (2006), especially when attempting to define underlying structure among the variables. As a robustness check, we estimate the final factor solution again, but by means of an alternative rotation method, i.e. Oblimin. If we compare the solutions of the Varimax rotation (Appendix B.16) with the Oblimin rotation (Appendix B.18), we can see that the factor loadings for variables IF_7 and IF_10 have decreased in the latter rotation method. For IF_10 this decline causes the factor loading to drop beneath the significance threshold value of 0.5 in the Oblimin rotated solution. Despite this, results seem to be similar concerning the number of factors extracted from the model and the allocation of the variables, which makes our factor solution quite stable. As the Varimax method generates more variables with a significant factor loading, it is preferred as final solution over the Oblimin method. The component correlation matrix (Appendix B.19), which is generated when applying an oblique rotation technique, again indicates that there is no significant correlation between the five factors, making the Oblimin rotation redundant. These conclusions are similar to those based on the component correlation matrix of the 7 factor model (Appendix B.9).

Besides applying alternative rotation methods, another way to assess the robustness of the solution across the sample is by randomly splitting the sample into two subsets and estimating the factor model for each subset to test for comparability (Field, 2009). We applied this split sample analysis to our data set, and the resulting Varimax rotated factor loadings for the two subsets (SAMPLE_1 and SAMPLE_2) are shown in Appendix B.20 and Appendix B.21. The two Varimax rotation solutions are quite comparable both in terms of factors retained and the allocation of variables to the factors. The factor loadings of SAMPLE_1 are highly comparable to those of the original factor solution conducted on the entire data set. Variables are distributed in exactly the same way across the different factors, with IF_7 being the only variable with a factor loading just beneath the significance threshold value of 0.5. The factor loadings of SAMPLE_2 have some minor deviations, namely variables IF_9 and IF_12 do not have

practical significant factor loadings for factor 2, and variable IF_2^R is also just beneath the level of practical significance with a loading of 0.45 for the fourth factor. Overall, with these results we can be reasonably assured that the results are stable within our sample.

5.4 Summary

The first research question of the dissertation questions "*What is the content of the professionalization construct within a family business context?*". In Chapter 2 we ascertained that professionalization is a multifaceted construct, and identified six features that indicate its content based on the existing literature. As such, we argued that professionalization entails: (1) the entrance of non-family managers; (2) the establishment of effective governance structures such as boards and councils; (3) the professionalization of the board by the appointment of non-family and external board members; (4) a delegation of control and decentralization of authority; (5) the establishment of formal financial control mechanisms; and (6) the establishment of formal human resource control mechanisms. In a next step, we hypothesized that there are two higher level dimensions, i.e. *Effective Openness* and *Internal Formalization,* each comprising several professionalization features. The identification of these dimensions was needed to build the conceptual framework for distinguishing family firms based on professionalization. We collected data on 11 variables indicating *Effective Openness* and 13 indicating *Internal Formalization.*

The exploratory factor analysis performed in this chapter, identifies five uncorrelated underlying factors in our variable set. The empirical findings therefore suggest that there are more dimensions to the construct than our two hypothesized dimensions. Through the factor analysis, highly correlated variables are grouped together, and new composite measures are created to represent these variable groups. The final retained factors indicate that family business professionalization can be assessed based on the amount of: (1) *Financial Control Systems* (F1); *Non-family Involvement in Governance Systems* (F2); *Human Resource Control Systems*

(F3); *Decentralization of Authority* (F4); and *Top Level Activeness* (F5). Based on these exploratory results, we answer our first research question and contend that the professionalization construct within the family business context contains these five uncorrelated dimensions.

6. Identifying Different Types of Family Firms: A Model-Based Cluster Analysis

6.1 Introduction

The multidimensional content of professionalization, as it is explored in the previous chapter, is now required as input in order for us to carry out the next empirical step in our methodology process. In this chapter, we address the second research question, "*How can we distinguish family businesses based on the professionalization construct?",* based on our empirical findings. As such, we are striving to identify distinct groups in the data set, with regard to the derived factors in Chapter 5. To obtain this objective, we apply a cluster analysis based on the computed factor scores for each case in the data set. In general, the purpose of cluster analysis is to separate data elements into groups or clusters such that both the homogeneity of elements within the clusters and the heterogeneity between clusters is maximized (Hair et al., 2006). In this study, the five factors are the manifest variables for professionalization on which our 532 observations will be grouped.

This chapter begins with a comprehensive elucidation on the methodology regarding the cluster analysis (section 6.2). These methodological insights bring us to opt for a model-based clustering technique, also known as the latent class clustering technique. This technique has some significant advantages compared to traditional clustering methods, which are fully explained in this section. The following section (section 6.3) then discusses the actual execution of the cluster analysis, and the final cluster results which are obtained.

6.2 Methodology

6.2.1 The technique of clustering

Within cluster analysis, a distinction can be made between several methods. The most general differentiation can be made between traditional clustering, which is a similarity-based clustering technique, and model-based clustering, which regards a mixture of underlying probability distributions. In the traditional cluster analysis, the primary purpose is to group objects based on the characteristics they possess. The resulting cluster of objects should exhibit high internal (within-cluster) homogeneity and high external (between-cluster) heterogeneity. There are however different methods in how clusters are formed. Regarding traditional clustering, the most general distinction is between hierarchical and non-hierarchical clustering. The former method is a stepwise clustering procedure that either combines objects into clusters (agglomerative method), or divides them (divisive method). More precise, the agglomerative method begins with each object in a separate cluster. Then, in each subsequent step, the two clusters that are most similar are combined to build a new aggregate cluster. The process is repeated until all objects are finally joint into a single cluster. The divisive method is the opposite procedure, starting with all objects in a single cluster, and then dividing them into additional clusters that contain the most dissimilar objects. Both methods result in the construction of a hierarchy or treelike structure which is called a dendrogram (Hair et al., 2006). Also, once an object is clustered, it cannot be reassigned to a different cluster (Bartholomew et al., 2008). In contrast to these hierarchical methods, non-hierarchical procedures do not involve the treelike construction process. Instead, they assign objects into clusters once the number of clusters to be formed and their starting points are specified. These starting points, or cluster seeds, have to be pre-specified by the researcher for each cluster. One of the most widely known algorithms of non-hierarchical clustering is the K-means clustering (Hair et al., 2006).

The second clustering technique, besides the traditional clustering, is a model-based approach, which has been referred to as model-based clustering

(Bensmail et al., 1997), mixture likelihood approach to clustering (McLachlan & Basford, 1988), latent class cluster analysis (Vermunt & Magidson, 2002) or finite mixture models (Fraley & Raftery, 2002). Model-based clustering assumes the observed data to come from a mixture of probability distributions. In this probabilistic point of view, every observation has a specific probability of belonging to a specific cluster and every cluster has a different underlying probability distribution from which its data elements are generated. When the distribution functions are defined, the problem of finding the clusters results in a parameter estimation problem. Model-based clustering derives a useful division into a number of clusters, where both the number of clusters and the properties of the clusters are to be determined. As such, it differs from the traditional cluster analysis algorithms which are based on distance criteria, whereas model-based analysis is based on the probability of classifying cases (Vermunt & Magidson, 2002).

For our study, we apply the model-based clustering, also known as latent class (LC) clustering or finite mixture models. We implement the software package of Latent GOLD as it disposes of a model-based clustering technique. Besides the advantages that LC clustering holds over traditional clustering, the choice for this method is also guided by the opinion of McCutcheon (1987), who states that analysis of typologies is an important use of LC analysis. The method can be employed either for empirically characterizing a set of latent types within a set of observed indicators, or as a method for testing whether a theoretically postulated typology adequately represents the data.

6.2.2 The advantages of model-based clustering compared to traditional clustering methods

Both model-based clustering, as well as the traditional clustering techniques are used to discover groups based on observed data and also assign the cases to one of the discovered groups. There are however multiple differences between the two methods of clustering. The first and probably the most distinctive difference is that with model-based clustering a statistical model is postulated for the population

from which the sample under study is coming. As such, it is assumed that the data is generated by a mixture of underlying probability distributions. Cases are classified into clusters using the model-based posterior membership probabilities estimated by the maximum likelihood method. Traditional clustering methods, on the other hand, allocate objects to clusters based on some kind of distance criterion. These criteria typically involve minimizing the within-cluster variation and/or maximizing the between-cluster variation. Such a distance measure can however be quite arbitrary, meaning it is sensitive for scaling and magnitude of the variables. This is another advantage of the model-based clustering approach, where scaling is not an issue (Vermunt & Magidson, 2002).

Second, contrary to traditional clustering, model-based clustering is a non-parametric test. Therefore, it does not presume any assumptions related to linearity, normal distribution or homogeneity. Traditional clustering methods do assume normal distributions of the variables and typically use standardized variables to attempt to eliminate the effects due to scale differences. If they do not standardize variables, they will risk creating clusters that are dominated by variables having the most variation (Magidson & Vermunt, 2002). In addition, if we look at the measurement level of the variables, in model-based clustering it is straightforward to specify cluster models for sets of indicators of different scale types (count-ordinal-nominal-continuous), contrary to traditional clustering which requires the same measurement level for all variables (Vermunt & Magidson, 2002).

Third, the choice of number of clusters is less arbitrary with model-based clustering as it involves rigorous statistical tests (log likelihood, BIC, AIC, CAIC, AWE). In the traditional hierarchical clustering, the number of clusters is determined by measuring overall similarity through means of a distance measure. In the non-hierarchical clustering methods an ad-hoc approach for classification is applied, meaning that the number of clusters is predetermined with seed points per cluster. As such, there is no statistical assistance in determining the appropriate number of clusters in these traditional clustering techniques (Hair et al., 2006).

Fourth, with traditional cluster methods, cases are exclusively assigned to a single cluster (Bartholomew et al., 2008). As such, cluster membership becomes a

binary variable with the sole values 0 and 1, and consequently resulting in a crisp clustering of the cases (Rousseeuw, 1995)[10]. This is in contrast to model-based clustering, where class membership for each case i takes on any value in the interval [0,1], and sums to one over all clusters. Thus, cases are assigned with a certain probability to each cluster, which is in fact more realistic. If needed, crisp assignment for the cases is possible, namely to the cluster with the highest probability, also known as the modal class (Magidson & Vermunt, 2004).

Additional advantages of LC clustering are that – as with any statistical model – it is possible to impose restrictions on the parameters to obtain more parsimony, and apply formal tests to check their validity. Moreover, the LC cluster model can be easily extended to include exogenous variables (covariates) in the probability model which can be used to predict class membership. Also, more general structures can be used for the cluster specific multivariate normal distributions, meaning that the (sometimes unrealistic) assumption of equal variances and the assumption of zero correlations can be relaxed (Vermunt & Magidson, 2002).

6.2.3 Model-based clustering: general probability structure

The probability structure of the LC model is based on a general probability structure which will be elucidated first. This general probability structure defines the relationships between the exogenous (z), latent (x), and response or *indicator* (y) variables. For every case i, there are T response variables, which are denoted as y_{it} and where $1 \leq t \leq T$. The model is then built to predict the membership for every case i to a single latent group. This is a single nominal latent variable x with K categories which are called *classes,* and where $1 \leq x \leq K$. In LC analysis it is possible (but not obligatory) to include exogenous variables in the probability model, which vary between cases and may be used to predict class membership.

[10] Within the hierarchical clustering techniques it is even so that, once objects are assigned to a specific cluster, they cannot be relocated.

These exogenous variables are called *covariates* and are denoted as $z_{ir,}$ $1 \leq r \leq R$, where R is the number of covariates (Vermunt & Magidson, 2005). This leads to the following general mixture model probability structure:

$$f(\mathbf{y}_i|\mathbf{z}_i) = \sum_{x=1}^{K} \mathrm{P}(x|\mathbf{z}_i)\ f(\mathbf{y}_i|x, \mathbf{z}_i) \tag{1}$$

The bold face is used to indicate vectors, that is, symbols that refer to the entire set of T responses $\mathbf{y}_i$, or the entire set of R covariates $\mathbf{z}_i$. In this model we are specifying a probability density function $f\ (\mathbf{y}_i|\mathbf{z}_i)$, corresponding to a particular set of $\mathbf{y}_i$ values given a particular set of $\mathbf{z}_i$ values. On the right-hand side of the equation, $\mathrm{P}(x|\mathbf{z}_i)$ then indicates the probability of belonging to a certain latent class x given an individual's realized covariate values, and $f\ (\mathbf{y}_i|x,\ \mathbf{z}_i)$ is the probability density of $\mathbf{y}_i$ given x and $\mathbf{z}_i$. For this last part of the model formulation we can denote that:

$$f(\mathbf{y}_i|x, \mathbf{z}_i) = \prod_{h=1}^{H} f(\mathbf{y}_{ih}|x, \mathbf{z}_i) \tag{2}$$

The symbol $\mathbf{y}_{ih}$ refers to one of the H subsets of y_{it} variables, and T_h denotes the number of variables in subset h. The equation above then implies that y variables belonging to different sets are assumed to be mutually independent given the latent and exogenous variable.

The probability structure for the basic LC cluster model is a special case of the general model given in equation (1) and (2). This basic model assumes local independence among all indicators, meaning that variables are independent within latent classes. As such, the observed items are conditionally independent of each other given an individual score on the latent variable. Thus, the latent variable explains why the observed items are related to another. The following structure serves as a starting point of a LC cluster analysis.

$$f(\mathbf{y}_i|\mathbf{z}_i) = \sum_{x=1}^{K} P(x|\ \mathbf{z}_i)\ \prod_{t=1}^{T} f(y_{it}|x) \tag{3}$$

Without covariates, this simplifies to:

$$f(\mathbf{y}_i) = \sum_{x=1}^{K} P(x) \prod_{t=1}^{T} f(y_{it}|x) \tag{4}$$

Based on equation (3), we can see that covariates affect the latent variable, i.e. the clusters, but have no direct effects on the indicators; and indicators are assumed to be mutually independent given cluster membership. This makes each $f(y_{it}|x)$ a univariate probability density. The possibility of the inclusion of covariates to predict class membership is an important extension of the LC model (Vermunt & Magidson, 2005).

In the general LC cluster model there is (a) a single nominal latent variable x; (b) T response variables y_{it} that can be nominal, ordinal, continuous, and/or counts; (c) R numeric or nominal covariates z_{ir} affecting x; and (d) direct relationships between indicators and/or direct effects of covariates on indicators. Depending on the scale types of the variables in a set, a particular distribution form is assumed for $\mathbf{y}_{ih}$. When the descriptive features are categorical (nominal or ordinal), a multinomial distribution is assumed for $\mathbf{y}_{ih}$. For continuous variables we use a multivariate normal distribution, and finally, count variables can be modeled via Poisson or binomial distributions. With regard to the latent variables in the model, they are assumed to come from a multinomial distribution (Vermunt & Magidson, 2005).

As the LC cluster analysis in this research is based on continuous indicators, we will expound on this specific subject. The extension of LC models with continuous observed variables formalizes the connection between LC modeling and finite mixture modeling. The basic structure of a LC cluster model for continuous y variables is:

$$f(\mathbf{y}_i) = \sum_{x=1}^{K} P(x)\, f(\mathbf{y}_i|x) \tag{5}$$

The least restrictive model is obtained by assuming that the y's come from class-specific multivariate normal distributions, which is known as an unrestricted

finite mixture model of multivariate normals. As such, each latent class has its own set of means $\boldsymbol{\mu}_x$ and its own variance-covariance matrix $\boldsymbol{\Sigma}_x$. Usually, more restricted models for continuous variables are employed. The most restrictive model assumes that all covariances equal zero, which is equivalent to the local independence assumption. As such, this more restricted finite mixture model for continuous response variables and covariances equal to zero, can be written in the exact same way as the probability structure in equation (4). However, Latent GOLD enables the user to relax the local independence assumption by allowing for associations between indicators. In this aspect, Latent GOLD automatically calculates bivariate residuals which can be used to detect which pairs of observed variables are more strongly related than can be explained by the formulated model. If the user would then include local dependencies using information on bivariate residuals, the program automatically sets up the correct and most parsimonious probability structure for the situation concerned (Vermunt & Magidson, 2005).

Another important aspect in the specification of mixtures of normal distributions is whether to work with cluster-dependent or cluster-independent error variances. If we allow cluster-dependent variance, the model has to estimate a different covariance matrix $\boldsymbol{\Sigma}_x$ for each cluster. Whereas, if a more restricted model is imposed with cluster-independent variance, only one covariance matrix has to be estimated, which applies to all the clusters in the model. If the number of y variables (i.e. the indicators) and/or the number of latent classes is large, this will yield models that have many parameters to estimate. As the number of parameters increase, the risk of modeling noise and overfitting the data increases as well, and the model's parsimoniousness will decrease. As such, one can obtain more parsimonious structures by employing cluster-independent variances (Vermunt & Magidson, 2005).

6.3 Results of the Latent Class Cluster Analysis

6.3.1 Determine the number of latent classes

We are striving to model our data so that the family firms are divided into several distinct and mutually exclusive groups (i.e. the values of the latent variable), based on their individual scores on the five factors (i.e. the manifest variables). LC analysis is a non-parametric test, as such, it does not enforce any assumptions on the variables related to linearity, normal distribution or homogeneity. The goal of traditional LC analysis is to determine the smallest number of latent classes K that is sufficient to model the observed data. The analysis typically starts by fitting the K=1 class baseline model. After each model estimation, the overall model fit is evaluated. If the model does not provide an adequate fit, the entire model is re-estimated after adding a subsequent class. This process continues by fitting successive LC models to the data, each time adding another dimension by increasing the number of classes by 1, until the simplest model is found that provides an adequate fit. As such, the most optimal trade-off between model's parsimony and fit is chosen (Magidson & Vermunt, 2004).

The five factors (F1, F2, F3, F4 and F5) are selected as indicators in the LC cluster analysis. These five manifest variables are all continuous variables, and are – as factor scores – by default orthogonal and thus non-correlated. We opt not to include covariates in the model estimation. As mentioned in previous paragraphs, covariates (z_{ir}) are exogenous variables that are included to predict cluster membership. *Firm size* and *firm age* are examples of variables which can be used as covariates in the model estimation. As such, one can opt to use these case features to explain some of the differences in latent class membership in advance. We, however, do not want to set any prior conditions or constraints on the allocation of cases to a certain class. Rather, we will compare clusters afterwards and use such descriptive variables to define the clusters. The applied probability structure for this LC cluster model therefore corresponds with equation (4). We impose the local independence assumption which assumes no associations between

the indicators within the clusters. Finally, we also employ cluster-independent error variance.

Under these conditions, we start by estimating a 1-Cluster model, after which the model is re-estimated for each additional class added. Table 19 summarizes the model output for a 1-Cluster model throughout an 8-Cluster model.

Table 19. Model summary output

Model	*Cluster*	*LL*	*BIC*	*Npar*
Model_1	1-Cluster	-3771.8741	7606.5147	10
Model_2	2-Cluster	-3656.2830	7412.9923	16
Model_3	3-Cluster	-3590.7624	7319.6111	22
Model_4	4-Cluster	-3528.7568	7233.2595	28
Model_5	5-Cluster	-3546.8134	7307.0328	34
Model_6	6-Cluster	-3496.2075	7243.4807	40
Model_7	7-Cluster	-3493.0482	7274.8219	46
Model_8	8-Cluster	-3470.0407	7266.4668	52

The parameters of each model are estimated by optimizing the maximum likelihood (ML) criterion, through means of an iterative procedure, which is the so-called expectation-maximization (EM) algorithm. To assess how well a model fits the data, we observe the Log-Likelihood (*LL*) if the indicator variables are continuous. The lower the absolute *LL* value, the better the model fits the data. In Table 19, we can see that the absolute *LL* follows a decreasing trend as the number of clusters increases. However, the higher the number of clusters, the more parameters that have to be estimated by the cluster model. This in turn will decrease the model's parsimony and increase uncertainty concerning parameter

estimations. Therefore, the goal of LC analysis is to determine the smallest number of classes that is sufficient to explain the associations observed among the indicator variables. For this reason, it is required to consider the so-called information criteria (or parsimony indices), which weigh both model fit and parsimony. The most widely used in LC analysis is the Bayesian Information Criterion, otherwise known as the BIC statistic (Magidson & Vermunt, 2004). The Latent GOLD program also provides two additional information criteria, i.e. the Akaike Information Criterion (AIC), and the Consistent Akaike Information Criterion (CAIC). All three information criteria weigh the fit and parsimony of an estimated cluster model, and can be used to determine the number of latent classes. When comparing different models for the same data, one will prefer models with lower values on the indices (Vermunt & Magidson, 2005). These information criteria are based on the log-likelihood (*LL)*, sample size (*N)*, and the number of parameters estimated (*Npar*), and are defined as:

$$\mathrm{BIC}_{LL} = -2LL + (\log N)Npar \tag{5}$$

$$\mathrm{AIC}_{LL} = -2LL + 2Npar \tag{6}$$

$$\mathrm{CAIC}_{LL} = -2LL + [(\log N) + 1]Npar \tag{7}$$

Table 20. Information criteria of cluster models

Model	*Cluster*	*AIC*	*CAIC*	*AWE*
Model_1	1-Cluster	7563.7483	7616.5147	7699.2812
Model_2	2-Cluster	7344.5660	7428.9923	7608.8762
Model_3	3-Cluster	7225.5249	7341.6111	7623.8911
Model_4	4-Cluster	7113.5135	7261.2595	7590.5418
Model_5	5-Cluster	7118.4820	7297.8879	7834.4597
Model_6	6-Cluster	7122.9948	7334.0605	7979.2322
Model_7	7-Cluster	7063.9562	7306.6818	7971.0853
Model_8	8-Cluster	7047.5953	7321.9808	8060.2560

If we observe the BIC value to determine the number of clusters, Table 19 shows that a 4-Cluster model generates the lowest BIC value, indicating that this is the most adequate model generated in our results. Based on the AIC and CAIC in Table 20 we can draw similar conclusions. Only Model_7 and Model_8 generate an AIC value lower than the selected 4-Cluster model. However, after running the estimation algorithm several times these model solutions were not selected due to their instability. From a theoretical idealistic point of view, the model is fitted iteratively to obtain the global best solution. Unfortunately, an estimation algorithm may instead converge on a local rather than a global maximum solution. A local maximum solution – which can cause parameter estimates to be biased – is the best solution in a neighborhood of the parameter space, but not the global maximum. These local maxima are related to the complexity of the model, i.e. they become more common as the number of latent classes, and thus the number of parameters to be estimated, increase. There is no simple way to check whether a given solution is a true maximum or only a local one. Therefore, it is strongly recommended to run the estimation algorithm several times, with different

parameter start values. If they all give the same solution, then it is likely to be the global maximum (Bartholomew et al., 2008). After re-estimating our models several times, the 1- through 4-Cluster solution appears to generate identical results in every estimation. The 5- through 8-Cluster models are less stable in their results, indicating that local maxima could be the problem.

Finally, a last index that can contribute to the selection of the proper number of latent classes, is the Average Weight of Evidence (AWE) criterion. AWE takes into account how well a given model can predict to which latent class cases belong given their observed *y* (and possible *z*) values, and the possible classification error. Therefore, this criterion adds a third dimension to the previously described information criteria. It weights model fit, parsimony, and the performance of classification. As with the other information criteria, the lower AWE, the better the model (Vermunt & Magidson, 2005). In Table 20 – which portrays the AWE values for all 8 models – shows that a 4-Cluster model has a noticeable lower AWE score than the other cluster solutions. Based on all above mentioned arguments, we chose a 4-Cluster model as our final cluster solution, as it is a stable estimated solution and the most parsimonious with regard to the overall model fit, according to the information criteria.

6.3.2 Assessing the selected cluster model

Before analyzing the different clusters, we first observe the parameter output section generated by Latent GOLD. For the indicator variables, i.e. F1, F2, F3, F4 and F5, the model estimates the β parameter for each cluster, the overall intercept per indicator variable and the variance per indicator variable, which are both cluster independent (Table 21). The β parameters combined with the intercept per variable, result in the class specific means $\hat{\mu}_{t,x}$, which is presented in the profile output (Table 22) .

Table 21. Parameter output

Indicator variables	*Overall intercept*	*Class-independent error variance*	*Beta* **Cluster1**	**Cluster2**	**Cluster3**	**Cluster4**	Wald	p-value
F1	-0.1391	0.1856	-0.7695	1.0390	0.8363	-1.1058	2257.4888	2.4e-489
F2	0.7395	0.2877	-1.0385	-1.1858	1.2318	0.9924	1106.9953	1.1e-239
F3	0.0366	0.9954	-0.0828	-0.0292	0.0812	0.0308	1.3483	0.72
F4	-0.0595	0.9803	0.1051	-0.0005	0.2856	-0.3902	7.9667	0.047
F5	0.0394	0.9816	-0.0944	0.0423	-0.2718	0.3240	7.1366	0.068

The significance of the sets of estimated β parameters within the model can be assessed by means of the Wald statistic (Table 21). Wald's test indicates that it is likely that factor F3, which is the use of *Human Resource Control Systems* within a private family SME, is not significantly different between the four clusters. This does not imply that the factor F3 in general is non-significant, but only that it does not contribute much to the differentiation between the four clusters. Thereby, one can assume that family firms in all four groups will, on average, employ the same amount of *Human Resource Control Systems.*

We reestimate the entire model after excluding factor F3, to see the extent of the impact of this superfluous indicator variable[11]. The new estimated model, based on only four indicator variables, generates approximately identical results. Both parameter estimates as well as cluster profiles (which is discussed in the next section) are not considerably different from the results which included F3. This is an additional confirmation of the stability and robustness of our estimated model. The parameter output and cluster profiles for this re-estimated 4-Cluster model without F3, are provided in Appendix C.1 and Appendix C.2. So, we decide to keep

[11] Factor F5 is significant at the threshold value of 0.1, but not at the 0.05 level. For this reason, and because the Wald statistic is only an indication value, F5 was not excluded from the model.

F3 included as it does not detract any value from the final solution, but might give some insights in the clusters orientation with regard to F3.

Table 22. Profile output

Factors	*Cluster1*	*Cluster2*	*Cluster3*	*Cluster4*
Cluster Size	**227**	**220**	**60**	**25**
	42.67%	**41.35%**	**11.28%**	**4.70%**
F1 - Financial Control Systems	-0.9085	0.8999	0.6972	-1.2449
F2 - Non-family Involvement in Governance Systems	-0.2989	-0.4463	1.9714	1.7320
F3 - Human Resource Control Systems	-0.0462	0.0073	0.1178	0.0674
F4 - Decentralization of Authority	0.0456	-0.0600	0.2261	-0.4497
F5 - Top Level Activeness	-0.0550	0.0817	-0.2324	0.3634

Based on the parameter estimations in Table 21, the class specific means $\hat{\mu}_{t,x}$ can be computed, which makes the profiling of the clusters much easier. The first part of the profile output, shown in Table 22, contains the estimated marginal latent probabilities, i.e. cluster sizes. The second part of the profile output reports the class-specific marginal means (probabilities) for all indicators (Vermunt & Magidson, 2005). These means are interpreted relatively to each other, and make it possible to define the discriminate features between the clusters.

Cluster 1: This cluster contains family organizations which utilize a limited amount of formal financial control systems (F1) within the organization. They have a low amount of non-family involvement within the governance systems (F2) such as the management team and the board of directors. As such, firm governance is highly centered around the owning family. They also have low amounts of formal human resource control systems (F3) within the organization,

however it is not significantly different from the other three clusters. There is a moderate amount of centralized control (F4) within the organization. And finally, the activeness of the management team and the board of directors (F5) is low, indicating that the amount of formal meetings is probably fixed to meet legal requirements. 42.67% of the organizations in the data set have a high probability of belonging to this cluster.

Cluster 2: This cluster contains 41.35% of the family firms from the data set. The cluster is characterized by very high amounts of formal financial control systems (F1) which are implemented in the organization, such as output controls, budget controls and financial performance evaluation systems. As in Cluster 1, these firms also have a high family involvement within the governance systems of the business, since the class-specific marginal mean for non-family involvement (F2) is considerably low in Cluster 2. Further, firms located in this cluster have a slightly higher usage of formal human resource control systems (F3) compared to Cluster 1, yet again we remark that it is not significantly different between the clusters. There also appears to be some amount of centralization of control (F4) present in the company, somewhat similar to the amounts in Cluster 1. The top level activeness (F5) has increased a bit compared to Cluster 1, yet it is still quite moderate.

Cluster 3: Organizations which have been assigned to Cluster 3 have, on average, high amounts of formal financial control systems (F1) present in their organization. The amount of non-family involvement in the governing systems (F2) has increased notably, making the amount of family involvement the absolute lowest in this type of family firm compared to all four clusters. The use of formal human resource control systems (F3) has the highest value in this cluster, without being significantly different. The cluster mean for decentralization of authority (F4) indicates that this firm type is characterized by high amounts of decentralization and delegation of control compared to the other three clusters. Finally, the amount of top level activeness (F5) appears to be low in this cluster. The number of firms belonging to Cluster 3 based on their probability structure, is fairly smaller than the amount belonging to Cluster 1 or 2, namely 11.28%.

Cluster 4: This is by far the smallest cluster, containing 4.70% of the family firms of the data set. The cluster mean for the use of formal financial control systems (F1) is the absolute lowest in this type of family firm compared to the other three clusters. As such, we can assume that there are hardly any formal financial control systems present in this organizational type. As in Cluster 3, non-family involvement within the governance systems (F2) is considerably high, making these firm types less family dominated. The use of formal human resource control systems (F3) is moderate, and the decentralization of authority (F4) appears to be quite low. The activeness of the management team and the board of directors (F5) in this last cluster is high, which indicates that we can expect more formal meetings in this type of family firm.

Some additional output that is provided by Latent GOLD for the cluster solution is the ProbMeans output and the Classification output. In order for us to be thorough, we also briefly discuss these outputs. First, the ProbMeans output can give some additional detailed information which can assist the researcher during the interpretation of the cluster profiles. The ProbMeans portrays the distribution of the latent variable for a certain level of an observed variable. The ProbMeans output therefore re-expresses the parameters in terms of row percentages which sum to one over latent classes. Given a certain indicator value y_i for a specific case i, the ProbMeans enables the researcher to scrutinize the probability of being classified in a certain latent class (Vermunt & Magidson, 2005). The ProbMeans output is given in Table 23, and is seen as an additional tool for class interpretation. By means of example, if a family firm from our data set would have a factor score lying in the interval [-2.027, -1.052] of factor F1 – which measures the use of *Financial Control Systems* – there would be an 85% probability that this specific firm would belong to Cluster 1 and a 15% probability that it would belong to Cluster 4.

Table 23. ProbMeans output

	Cluster1	*Cluster2*	*Cluster3*	*Cluster4*
F1				
[-2.027, -1.052]	0.8531	0.0000	0.0000	0.1469
[-1.047, -0.502]	0.9223	0.0011	0.0050	0.0716
[-0.501, 0.553]	0.3609	0.4067	0.2149	0.0174
[0.558, 1.033]	0.0007	0.7954	0.2039	0.0000
[1.036, 1.845]	0.0000	0.8421	0.1579	0.0000
F2				
[-1.559, -0.670]	0.2832	0.7168	0.0000	0.0000
[-0.665, -0.432]	0.4541	0.5459	0.0000	0.0000
[-0.431, -0.231]	0.7390	0.2610	0.0000	0.0001
[-0.230, 0.639]	0.5544	0.4401	0.0042	0.0014
[0.645, 4.202]	0.1109	0.0760	0.5774	0.2357
F3				
[-2.412, -0.954]	0.4945	0.3381	0.1087	0.0587
[-0.943, -0.295]	0.4185	0.4502	0.0931	0.0382
[-0.290, 0.207]	0.4853	0.3964	0.0763	0.0420
[0.207, 0.906]	0.3561	0.4894	0.1163	0.0382
[0.909, 2.425]	0.3892	0.3660	0.1853	0.0595
F4				
[-1.936, -0.978]	0.3890	0.4581	0.0468	0.1061
[-0.977, -0.377]	0.4660	0.3941	0.1119	0.0280
[-0.376, 0.303]	0.5067	0.3468	0.1168	0.0298
[0.311, 1.029]	0.3416	0.4295	0.1852	0.0438
[1.043, 2.427]	0.4403	0.4128	0.1182	0.0288
F5				
[-2.350, -0.785]	0.4444	0.3738	0.1489	0.0328
[-0.785, -0.421]	0.5329	0.3584	0.0825	0.0261
[-0.420, 0.0399]	0.4164	0.4072	0.1166	0.0598
[0.0480, 0.695]	0.3774	0.4611	0.1368	0.0247
[0.715, 2.585]	0.3713	0.4408	0.0947	0.0932

Second, the Classification output of Latent GOLD contains the classification information for each response pattern i^* (i.e. the individual factor scores per case on the five factors). For every case *i,* the probability of belonging to each of the four clusters is computed. As such, the underlying statistical model assigns a set of posterior probabilities p_{ik} to each response pattern i^*. Subjects are then assigned to the latent class with the highest latent classification probability (Vermunt & Magidson, 2005). By means of example, Table 24 shows the Classification output of the first ten cases in the data set.

Table 24. Classification output (first ten cases)

Case	*C_1*	*C_2*	*C_3*	*C_4*	*Modal*
X_1	0.00	1.00	0.00	0.00	2
X_2	0.00	0.00	1.00	0.00	3
X_3	0.00	1.00	0.00	0.00	2
X_4	1.00	0.00	0.00	0.00	1
X_5	0.00	1.00	0.00	0.00	2
X_6	0.02	0.00	0.23	0.75	4
X_7	1.00	0.00	0.00	0.00	1
X_8	0.00	1.00	0.00	0.00	2
X_9	0.00	0.00	0.92	0.08	3
X_{10}	0.00	1.00	0.00	0.00	2

As we can see in Table 24, the probability of a firm belonging to only one specific cluster is sometimes equal to 1, whereas in other cases, the probability is distributed over 2 or more clusters. For example, case X_6 has a 2% probability of belonging to Cluster 1, a 23% probability of belonging to Cluster 3, and a 75% probability of belonging to Cluster 4. As such, LC analysis only determines the probability that a certain case will belong to a specific cluster. If we want to group the cases into mutually exclusive classes, the modal cluster per case will be selected, which in our example is Cluster 4. In order to assess the quality of the

clustering solution we calculate the entropy criterion (McLachlan & Peel, 2000) as formulated in equation (8).

$$I(k) = 1 - \frac{\sum_{i=1}^{n} \sum_{x=1}^{k} p_{ik} \ln(p_{ik})}{n \ln(1/k)} \tag{8}$$

p_{ik} then denotes the posterior probability that case i belongs to cluster k and with the convention that $p_{ik} \ln(p_{ik}) = 0$ if $p_{ik} = 0$. In case of perfect classification, the criterion equals to 1 and for the worst case clustering the value of the criterion equals 0. For our data we calculate the entropy score $I(4) = 0.94$, which indicates a very good separation between the clusters.

6.3.3 Analytical remarks

We restricted the LC cluster model by imposing cluster-independent error variance. In doing so, one variance score for all clusters (per indicator) is computed, contrary to a separate variance per cluster, which significantly reduces the number of parameters to be estimated. By means of comparison, the model was also estimated with cluster-dependent error variance. The number of parameters to be estimated increased from 28 to 43. We also encountered some very high bivariate residuals, indicating that there are several pairs of strongly related observed variables. If a bivariate residual value is substantially larger than 1, it suggests that the model falls somewhat short of explaining the association in the pairs of indicators (Magidson & Vermunt, 2004). When allowing cluster-dependent error variance, we obtain six moderate to strongly related pairs of observed variables, i.e. (F4, F2), (F3, F2), (F5, F2), (F4, F1), (F3, F1) and (F5, F1), with a bivariate residual value between 1.64 and 16.68. Consequently, we must relax the local independence assumption between several indicators, and as such add some direct effects into the model. This caused the number of parameters that had to be estimated by the LC model to increase considerably, namely 67 parameters. As a result, the overall model fit (LL) has only slightly improved, and the information criteria (BIC, AIC, CAIC and AWE) – which take parsimony into account – indicate no substantial improvement. Moreover, the AWE value shows that, with this less restrictive

model, there is an increased possibility for classification errors. Finally, several re-estimations of the model did not always generate similar output, indicating that there might be a problem of local maxima as previously discussed.

As we have mentioned before, one of the main objectives of LC analysis is to select the most parsimonious model, i.e. selecting a model with the least amount of parameters possible, while still being able to have sufficient explanatory power. This is because each additional parameter which is introduced into the model adds some risk of overfitting the data. Thus, excessively complex models suffer from modeling noise and have poor predictive power. If we choose to estimate the model with cluster-dependent error variance, the amount of parameters would be unacceptably high. The positive effect on the overall model fit would be minimal compared to the loss of parsimony. As such, we did not pursue this option further as it would be a devaluation of the final cluster results.

A second remark concerns the bivariate residuals in the selected 4-Cluster model. Although they are not as high as in the previous estimated model with cluster-dependent error variance, there are however three pairs with a value above 1 (Table 25). To be consistent with the prescribed statistical technique of LC clustering, we relaxed the local independency assumption for several indicator pairs to see if this could lead us to a better solution, meaning an increased fit and parsimony. The local independency assumption was successively relaxed, starting with the pair with the highest bivariate residual value, i.e. (F2, F3). The results of additionally adding direct effects to the model are shown in Table 26.

Table 25. Bivariate residuals of 4-Cluster model

	F1	F2	F3	F4	F5
F1	.				
F2	1.0288	.			
F3	***2.7762***	***3.3366***	.		
F4	0.0947	1.0017	0.0002	.	
F5	0.5601	***2.5632***	0.0003	0.1587	.

Table 26. Adding direct effects in the model

Adding direct effects	*LL*	*BIC*	*Npar*
Local independency	-3528.7568	7233.2595	28
Direct effect (F2,F3)	-3526.9686	7235.9598	29
Direct effect (F2,F3), (F1,F3)	-3525.2321	7238.7636	30
Direct effect (F2,F3), (F1,F3), (F5,F2)	-3524.1858	7242.9475	31
Direct effect (F2,F3), (F1,F3), (F5,F2), (F1,F2)	-3523.1217	7247.0960	32
Direct effect (F2,F3), (F1,F3), (F5,F2), (F1,F2), (F4,F2)	-3522.0426	7251.2144	33

It is not until we have added five direct effects to the model that all bivariate residual values are beneath the threshold value of 1. By allowing these direct effects we are implicitly saying that there is an association or correlation between two (or more) variables within a given cluster. To evaluate the effects, we compare the *LL* value (indicating model fit) and the BIC statistic (parsimony index) for all estimated models. With each direct effect added, the overall model fit improves with only 1 unit. The BIC statistic, which weights both model fit and parsimony, appears to increase. This leads us to conclude that by adding

subsequent direct effects to the model, the overall model solution deteriorates. From an analytical perspective, one has to make a trade-off between overall model fit and parsimony when conducting LC cluster analysis. Since the minimal increase in overall model fit cannot outweigh the loss of parsimony, we prefer a model with some very small amounts of covariance between variables, over a less parsimonious model. In addition, the correlation coefficient was calculated based on the variance and covariance values, to assess the magnitude of the correlation between the indicators. The highest correlation appeared to be only 10% and this between factor F1 (measuring the use of *Financial Control Systems*) and factor F3 (measuring the use of *Human Resource Control Systems*). This (small) correlation is in fact not all that surprising, since both factors are indicators for the amount of firm's *Internal Formalization.* In conclusion, the best model solution is generated by imposing the local independence assumption which assumes no associations between the indicators within the clusters, and by selecting cluster-independent error variance.

6.4 Summary

In this chapter we approached our second research question, namely "*How can we distinguish family businesses based on the professionalization construct?",* from an empirical perspective. Based on the five dimensions of professionalization, which are derived from the exploratory factor analysis, the latent class cluster analysis rendered four types of family businesses. This implies that family firms differ from each other in the way that they professionalize, but also in the amount that they professionalize. As for Cluster 1, for example, we see that the cluster means for each factor are low compared to the other three clusters. As a result, Cluster 1 will probably represent all family firms where the overall professionalization level of the firm is low.

Thus, regarding our second research question, we argue that we can use the professionalization construct to distinguish family businesses, and that this renders four significant and distinct family firm types. The question then remains, as to

what extent our theoretically constructed types developed in Chapter 3, resemble to (or differ with) the 4 empirically derived clusters generated in this chapter. Do the findings of our theoretical approach deviate considerably from the empirical approach?

7. Four Family Firm Types

7.1 Introduction

While the factor analysis discussed in Chapter 5 revealed five different dimensions of family firm professionalization, allowing 32 firm types in case of dichotomous dimensions, the cluster analysis based on these five factors in Chapter 6 only discovered four family firm types. Remarkably, this number of empirically derived firm types corresponds to the number of types developed from theory in Chapter 3. Therefore, the relation between the four theoretical family firm types and the four empirical family firm types deserves further attention. As such, we will examine whether there is any concurrence between the theoretical answer and the empirical answer to our second research question, namely *"How can we distinguish family businesses based on the professionalization construct?"*.

In this chapter we examine whether we can use the theoretical profiles to identify the four clusters in the data set. If this is indeed possible, it will allow us to generate a simplified version of the reality, which is the overall objective of a typology. In section 7.2 we discuss the comparison between the empirical clusters and the prior conceptually constructed groups. The following section 7.3 builds a statistical profile for the four family firm types. In view of these descriptions, we conduct multiple Kruskal-Wallis and Mann-Whitney tests. These results enable us to identify the significant differences between the four clusters regarding some of the general descriptives presented in Chapter 4.

7.2 Comparing the Family Firm Typology with the Clustering Result

Based on the conceptual framework, we developed four family firm types with respect to their amount of professionalization, i.e. *Autocracy, Domestic Configuration, Clench Hybrid,* and *Administrative Hybrid* (Figure 2). These four types were derived from the two theoretical underlying independent dimensions of professionalization, i.e. *Effective Openness* and *Internal Formalization*. These two dimensions resulted from a theoretical study based on an extensive review of the existing literature. However, at the same time, the factor analysis uncovered a five-dimensional framework, which conflicts with the two-dimensional construction proposed by theory. By means of a clustering analysis and based on this five-dimensional framework, four family firm types which are present within our population were identified. It is possible that there is a resemblance between these four empirical family types and the four profiles derived from theory. As such we will examine this more in detail.

When looking at the five factors resulting from the factor analysis, it appears they strongly relate to either one of the previously developed theoretical dimensions (*Effective Openness* and *internal Formalization*). That is to say, factor F1 (*Financial Control Systems*) and F3 (*Human Resource Control Systems*) are both related to the concept which is defined as *Internal Formalization*. The remaining three factors, i.e. F2 (*Non-family Involvement in Governance Systems*), F4 (*Decentralization of Authority*) and F5 (*Top Level Activeness*) can be associated with the theoretical dimension of *Effective Openness*. To aid visual interpretation and comparison between the family firm clusters in the data, we provide Figure 4. The scales are constructed based on the class-specific marginal means from the LC cluster analysis presented in Table 22. Since the range and the upper and lower limits vary among the five factors (Table 23), the mean values for each factor have been standardized so that they will take on a value between [0,1], which makes comparison possible.

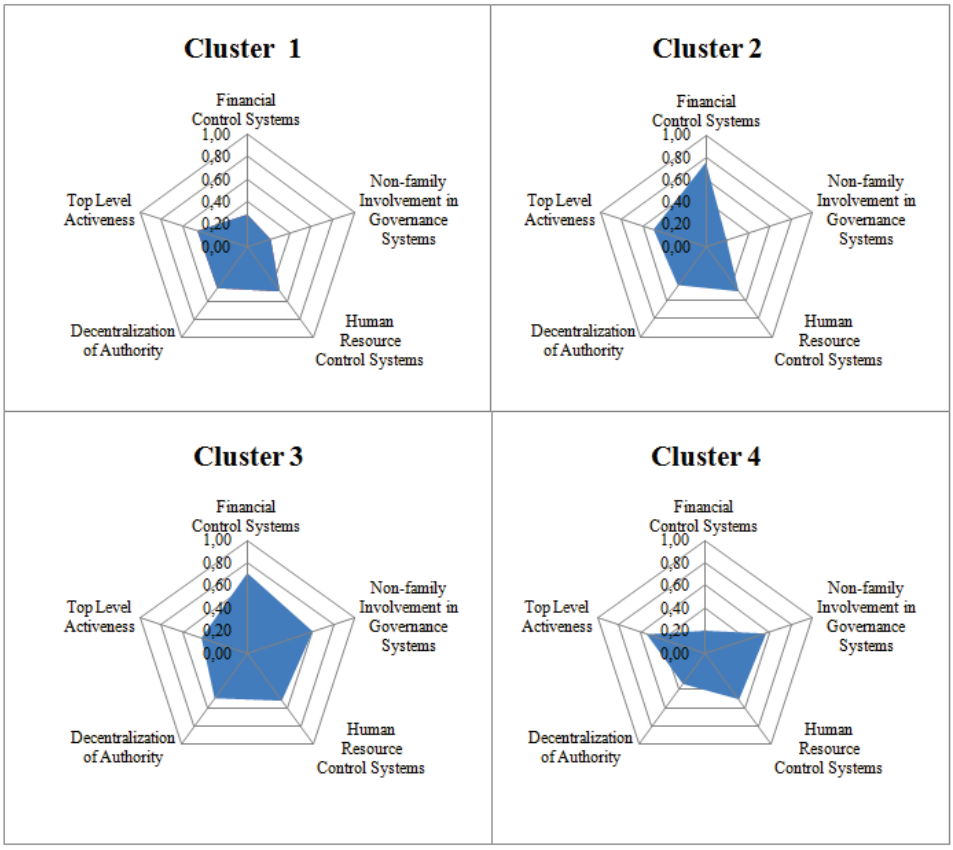


Figure 4. Four clusters of family firms in a five-dimensional professionalization framework

When scrutinizing the features of the *Autocracy* family firm type (Chapter 3), we see that it is characterized by a very low amount of professionalization. On the two-dimensional framework (Figure 2), it scores low on both the *Effective Openness* dimension, as well as the *Internal Formalization* dimension. There are few formal controls present in this type, high amounts of family involvement in organizational activity and an owning family-member who prefers to retain personal control over the business, making the centralization of authority high and the amount of top level activeness low. When looking at the cluster profile output in Table 22, and the visual representation in Figure 4, we can find very high

resemblance between the *Autocracy* and the features of Cluster 1. The visualized profile of Cluster 1 clearly shows that the professionalization level is much lower compared to the other three clusters. As such, we can identify our Cluster 1 as the *Autocracy* type.

Secondly, the *Domestic Configuration* is similar to the *Autocracy* type with the distinction that the *Domestic Configuration* has extensively implemented formal control systems, and thus has increased firm's *Internal Formalization*. Regarding the amount of *Effective Openness,* this type is still quite similar to the *Autocracy* type, which implies a high amount of family involvement in governance systems, accompanied by centralized authority and moderate to low amounts of top level activeness. If we look at Figure 4, we can see that the amount of control systems, especially the financial control systems, has increased noticeably in Cluster 2 and Cluster 3 (compared to Cluster 1 and Cluster 4). Yet, the profile description of the *Domestic Configuration* indicates that there are still high amounts of family involvement and centralized control, which is not the case for Cluster 3. As such, we can identify our Cluster 2 as the *Domestic Configuration* type due to its high resemblance regarding the firm professionalization manner.

The third theoretically derived type is the *Clench Hybrid*, which is located in the top left corner of the framework (Figure 2). This type is characterized by a high amount of *Effective Openness* and low *Internal Formalization*. As such, this profile type is contrary to the previously discussed type (*Domestic Configuration).* Instead of professionalizing through formal control systems (*Internal Formalization*), this type increases business professionalization through decentralizing control around the owning family, hiring outside managers – thereby diminishing the amount of family involvement in business governance – and by increasing the amount of top level activeness. The opposing profile to Cluster 2 is found in Cluster 4, where the amount of control systems is low, yet has higher levels on the other priorly mentioned factors. Based on the cluster profile output in Table 22, we can see that there is still a high centralization of authority in this type. It is possible that, since the family has lost a substantial amount of control in the organization due to the professionalization through hiring externals, and since

explicit control systems have not (yet) been developed to support this new organizational structure, a centralization of control might be the initial reaction of the firm to successfully cope with these new developments. The multidimensional construct from the factor analysis indicates that a family business can professionalize through different dimensions, yet that these processes may probably not always occur simultaneously. It is possible that, concerning Cluster 4, the decentralization of authority is a subsequent step after the increased top level activeness and the reduction of the amount of family involvement. We can identify Cluster 4 as the *Clench Hybrid* type, with regard to professionalizing the business by opening up to non-family members in governance systems – thereby reducing the amount of family influence – and by increasing the activity and involvement of the board of directors and management team. The dimensions regarding the implementation of formal controlling systems and the decentralization of authority have not been put in progress.

The final theoretical family firm type is the *Administrative Hybrid*, which is characterized by both high amounts of *Effective Openness* as well as *Internal Formalization*. This family firm type has the highest amount of professionalization compared to the other three types. This profile is visibly recognizable in Figure 4 as Cluster 3. Compared to the other three clusters, it has high values on practically all dimensions of professionalization. Cluster 3 can thus be identified as the *Administrative Hybrid* type. As such, firms belonging to Cluster 3 will generally have the highest level of professionalization. Only the amount of top level activeness appears to be low. It is possible that this dimension has not yet been fully developed. Or, when we look at relevant literature, we can argue that these less extreme values for top level activeness can be attributed to the fact that the top level does not want to overdo their role. As Lane et al. (2006) argue, having more than six meetings per year without coping with a crisis can indicate ineffectiveness.

Based on the comparisons above, and with regard to the second research question, *"How can we distinguish family businesses based on the professionalization construct?",* we can state that there is high conformity between

the features of the theoretically constructed types based on the framework (Figure 2) and the empirical derived clusters (Figure 4). As such, we are able to employ the theoretically developed types in order to identify the clusters in the data. This is all summarized in Figure 5, which is the visual representation of our answer to the second research question, namely *"How can we distinguish family businesses based on the professionalization construct?"*. These four types of family firms based on professionalization generate a much more workable tool when discussing the differences between the types, as opposed to combining high and low scores on the five dimensions discovered through the factor analysis which generate over 32 different types. This is the objective of any typology, i.e. to simplify the number of types due to the variety present in the field. The variety creates a need to classify the objects as to help researchers explain them and communicate about them (Davis, 2009).

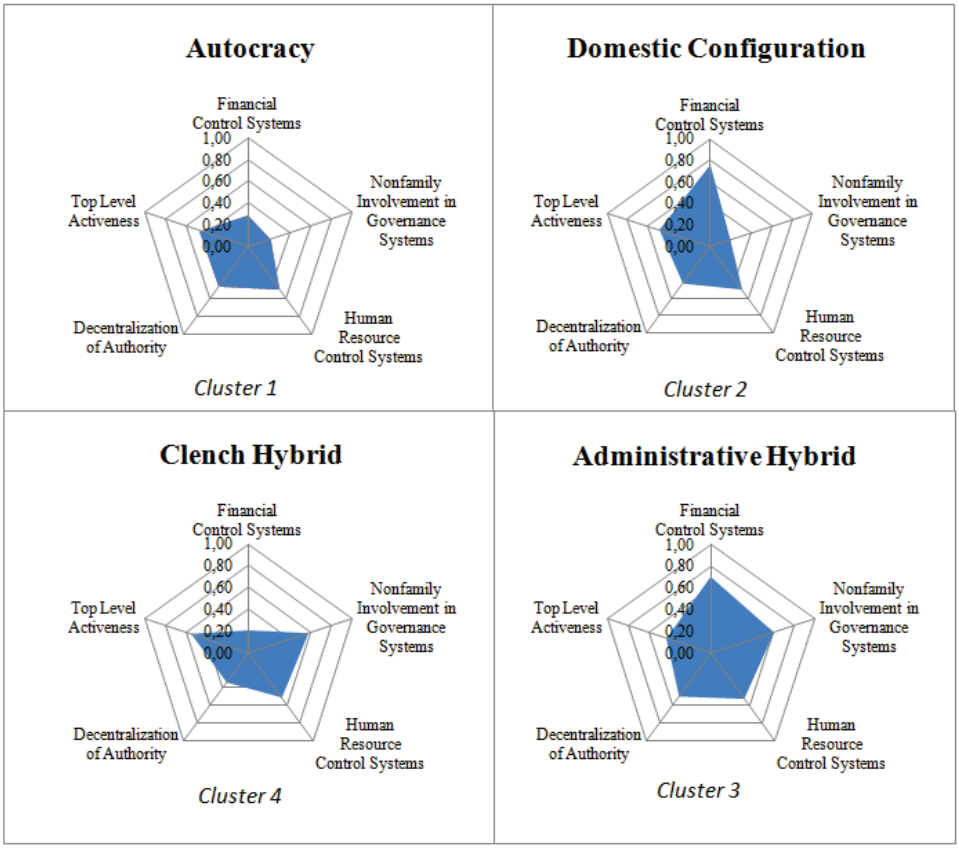


Figure 5. Four family firm types

7.3 Statistically Defining the Four Family Firm Types

7.3.1 Kruskal-Wallis test

Now that the four family firm types have been statistically identified, we wish to collect additional information regarding the profiles of these types. For this reason, the clusters are compared with regard to several descriptive variables summed up in Table 27, to assess if there are additional statistically significant differences between the groups, other than those which are already signified in the factor and cluster analyses. For this objective, ANOVA tests are suitable. Similar to a t-test, which tells us whether two samples have the same mean, the ANOVA indicates

whether three or more means are the same, so it tests the null hypothesis that all group means are equal. However, the reliability of the ANOVA tests results from several preset assumptions. That is, the variance in each experimental condition needs to be fairly similar, observations should be independent, and the dependent variable should be measured on at least an interval scale. Finally, in terms of normality, the distributions within groups should be normally distributed (Field, 2009). After conducting the Kolmogorov-Smirnov test and the Shapiro-Wilk test to check normality, and Levene's test for homogeneity of variance, there appears to be some violations of the equal variance assumption. Moreover, the descriptive variables were not normally distributed within each cluster.

Field (2009) points out that ANOVA is in fact very robust to violations of its assumptions. The reliability of the F-statistic of the ANOVA is relatively unaffected by non-normality. However, this is on the condition that all group sizes are equal. Based on Table 22. Profile output, which shows the proportional sizes of the empirical clusters derived from the LC cluster analysis, it is apparent that equal cluster sizes do not apply to this study. As such, due to unequal groups, the F-statistic will be biased since normality is violated. A non-parametric counterpart for the ANOVA is found in the Kruskal-Wallis test. This is a distribution-free variant which is based on ranking the data. Non-parametric tests, however, are said to be less powerful. That is, if there is a genuine effect in the data, a parametric test is more likely to detect it than a non-parametric one. Yet, this statement is only true if the assumptions of the parametric test are met, which is not the case. Thus, there is no increased chance of a type II error – which is rejecting an effect that does exist – when using non-parametric tests, if the sampling distribution is not normally distributed (Field, 2009).

The Kruskal-Wallis test is used in this study to discover statistical differences between the four independent clusters. As basis for comparison, we employ the descriptive variables from Table 5 and Table 6 discussed in Chapter 4. These are all continuous variables, expect for *CEO education* and *development phase* which are measured at an ordinal level. For each tested variable, the test

statistic H and the significance are shown in Table 27 below. The associated degrees of freedom is 3 (the number of groups minus one).

Table 27. Kruskal-Wallis test for descriptive variables

Variable	*Description*	*Test statistic H*	*p-value*
D_2	Generation in charge	5.241	0.155
D_4	CEO generation	11.028	0.012**
D_5	CEO educational level	23.991	0.000***
D_6	CEO age	3.088	0.378
D_7	CEO tenure	24.496	0.000***
D_8	Firm owners	1.673	0.643
D_9	Development phase	3.512	0.319
D_10	Size management team	30.517	0.000***
D_11	Size board of directors	38.052	0.000***
D_12	Firm age	4.791	0.188
D_13	Firm size	18.347	0.000***
D_14	Financial performance	5.690	0.128

*, **, *** significant at 0.10, 0.05, 0.01 level respectively

Since we are conducting multiple significance tests on a set of variables, we should make a distinction between the individual type I error rate and the familywise type I error rate. The former is the probability that we find a significant effect for a single variable which does not exist. The latter is the probability that we find at least one significant effect which does not exist in the entire set of variables. To control for the familywise error, the Bonferroni correction is used which derives the appropriate individual level error rate by dividing the required familywise error rate by the number of simultaneous tests. Consequently, a familywse type I error rate of 0.05 corresponds to an individual level type I error rate of . This results in a threshold value of 0.00417, i.e. 0.05/12. Variables with a p-value less than 0.00417 have statistically different average values between the four clusters. Table 27 shows that we cannot detect statistical differences among

the four clusters with respect to the *generation in charge* (D_2), *CEO generation* (D_4), *CEO age* (D_6), *firm owners* (D_8), *development phase* (D_9), *firm age* (D_12), and *financial performance* (D_14). However, a statistically significant difference between the four clusters exists for *CEO education level* (D_5), *CEO tenure* (D_7), *size management team* (D_10), *size board of directors* (D_11), and *firm size* (D_13).

The Kruskal-Wallis test only indicates that the differences exist, it does not specify between which clusters these are situated. Table 28 presents the cluster means regarding each descriptive variable. For instance, the highest average *CEO age* (D_6) is located in the *Clench Hybrid*. However, based on the Kruskal-Wallis test we know that this mean does not differ significantly from the other three clusters. *CEO tenure* (D_7), on the other hand, does have significant distinctive power over the clusters. The results in Table 28 show that the average *CEO tenure* within the *Autocracy* type and the *Domestic Configuration* is approximately 16.7 years, which is noticeably larger than the 10.8 years in the *Administrative Hybrid*. The *Clench Hybrid* then contrasts with an exceedingly high *CEO tenure* of more than 18 years. To find out which of these intergroup differences are statistically different, we conduct the post hoc Mann-Whitney test, which is the non-parametric equivalent to the independent t-test.

Table 28. Cluster Means of the descriptive variables

Variable	*Description*	*Autocracy*	*Domestic Configuration*	*Clench Hybrid*	*Administrative Hybrid*
Significantly different based on Kruskal-Wallis					
D_5	CEO educational level[a]	3.28	3.27	3.16	4.12
D_7	CEO tenure	16.66	16.72	18.28	10.78
D_10	Size management team	2.73	3.16	2.64	4.02
D_11	Size board of directors	2.61	2.88	2.80	3.97
D_13	Firm size	25.07	29.35	19.60	43.00
Significantly non-different based on Kruskal-Wallis					
D_2	Generation in charge	1.93	1.85	1.60	1.92
D_4	CEO generation	2.02	1.90	1.40	2.00
D_6	CEO age	46.03	46.95	49.08	47.45
D_8	Firm owners	2.32	2.20	2.00	2.40
D_9	Development phase[b]	2.56	2.48	2.44	2.48
D_12	Firm age	27.69	25.57	25.60	28.45
D_14	Financial performance	6.16	4.78	6.01	7.63

[a] Lower secondary level = 1; Higher secondary level = 2; Higher education short term = 3; Higher education long term = 4; University = 5
[b] Startup = 1; Expansion = 2; Maturity = 3

7.3.2 Mann-Whitney test

By using the Mann-Whitney test it is possible to compare two independent group means that come from the same population. Like the Kruskal-Wallis test, the observation values are converted into ranks, which are then summed to determine the test statistic U. If this test statistic is significant ($p < 0.05$), the null hypothesis which states that the mean value of one group is not different from the mean value of the other group, will be rejected (Kvanli et al., 1989). In our case we need to compare four groups, instead of two, and this for a set of five variables. Field (2009) points out that it is not optimal to apply lots of Mann-Whitney tests as it will inflate the type I error rate, unless an adjustment is made to ensure that the familywise type I error rate does not build up to more than 0.05. Again, we need to

apply the Bonferroni[12] correction. This results in an adjusted critical value of significance of 0.00167 which must be used in the Mann-Whitney test.

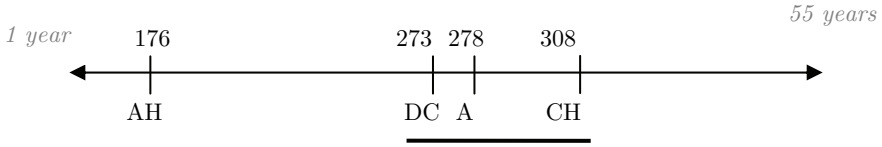
For each variable which is significant, based on the Kruskal-Wallis test (Table 26), six Mann-Whitney tests are conducted to compare all four clusters. The mean values of two groups are significantly different from each other when $p <$ 0.00167. The results are graphically presented in Figure 6 based on a method introduced by Demsar (2006). The four clusters are ordered from low to high which is indicated beneath the horizontal axis. This order is based on the mean rank value generated by the Kruskal-Wallis test, which is indicated above the horizontal axis. As such, the group with the lowest mean rank is the group with the greatest number of lower scores in it. Similarly, the group that has the highest mean rank will have a greater number of high scores within it (Field, 2009). When two or more clusters are connected by a bold line, it indicates that the mean values are not significantly different between the clusters. Any cluster which falls outside this area is significantly different from the other groups (Demsar, 2006). The clusters are labeled based on their initials, i.e. A (*Autocracy*), DC (*Domestic Configuration*), CH (*Clench Hybrid*), and AH (*Administrative Hybrid*).

Figure 6. Mann-Whitney results

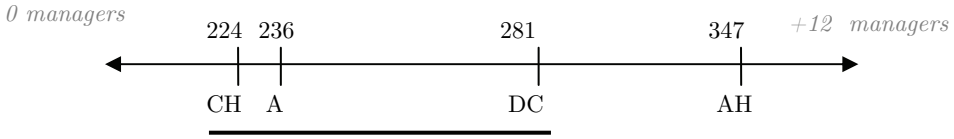
(a) D_5 – CEO educational level

[12] Bonferroni correction: 0.05/30 = 0.00167

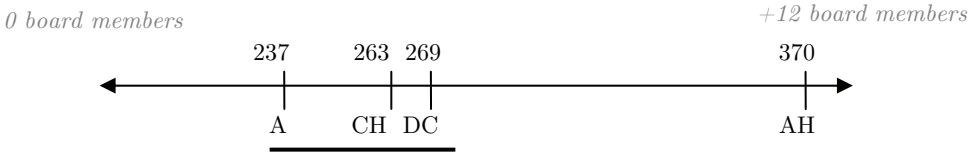
(b) D_7 – CEO tenure



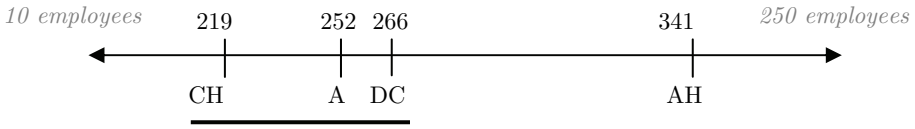
(c) D_10 – Size management team



(d) D_11 – Size board of directors



(e) D_13 – Firm size



When looking at some other CEO features that discriminate between the clusters, Figure 6(*a)* indicates that, with regard to the educational level of the CEOs (D_5), the lowest average educational level is localized in the *Clench Hybrid*, however it is not significantly lower than in the *Autocracy* or the *Domestic Configuration*. On the other hand, CEOs in *Administrative Hybrid* possess a significantly higher educational degree in comparison with the other three clusters.

This might be ascribed to the higher amount of non-family CEOs in the *Administrative Hybrid.* When hiring non-family managers, they are drawn from a much larger and superior pool of managerial talent than when the choice is restricted to family membership (Chua et al., 2009; Le Breton-Miller et al., 2004). Outside non-family managers are hired for their expertise, which has been proposed as an important benefit to family firms when they professionalize the business (Carney, 2005; Sirmon & Hitt, 2003).

Yet, although these CEOs in the *Administrative Hybrid* are highly educated, their tenure as CEO of the company (D_7) is significantly shorter compared to the other three clusters (Figure 6*(b)*), with an average mean difference of more than 6 years. More precise, Table 28 shows that the CEOs in the *Autocracy, Domestic Configuration* and *Clench Hybrid* have an average tenure of 16 to 18 years, which is significantly longer than the average of 10.7 years in *Administrative Hybrid*. This might also be explained by the large number of non-family CEOs in *Administrative Hybrid*, who typically have much shorter tenures as CEO within a family business compared to family CEOs. In a study conducted by McConaughy (2000) which centered around the comparison of family CEOs versus non-family CEOs in a family-controlled firm, the results indicate that the average tenure of a family CEO is 17.6 years, compared to 6.43 years for non-family CEOs. The difference in tenure can be explained by the overall lower commitment of non-family CEOs to the family business (Daily & Dollinger, 1993; Dyer, 1988; Schein, [1983] 1995).

Next, when comparing the size of the management team (D_10) and the size of the board of directors (D_11) between the four clusters, the *Autocracy* and the *Clench Hybrid* have the lowest number of members, yet the average value is not significantly different from the *Domestic Configuration* (Figure 6*(c)* and *6(d)*). The size of the management team and that of the board is, however, significantly larger in the *Administrative Hybrid*, with a cluster average of 4 managers and 4 board members. This is not unexpected, since the *Administrative Hybrid* increased the company's professionalization through the *Decentralization of Authority* dimension (F4) (Figure 4), which in turn causes the company to relinquish control

to a larger set of executives. These results are in line with the expectations based on previous literature, i.e. that there is a positive relationship between the amount of family business professionalization and the diffusion of governance mechanisms (Hofer & Charan, 1984; Songini, 2006). As professionalization increases, the governance of the company is transferred from usually one autocratic (family) leader to a larger group of skilled family and/or non-family members (Flamholtz & Randle, 2007; Gedajlovic et al., 2004), as such authority within the family business becomes decentralized (Greiner, 1998). For the board of directors within family-controlled firms, larger board size has been considered as an indicator of more active and influential boards, as opposed to the image of small, family-dominated and thus passive bodies (Gabrielsson, 2007; Yildirim-Öktem & Üsdiken, 2010).

Last, regarding the variables collected by means of the Bel-First database, the four clusters are not significantly different regarding their age (D_12), nor are there differences in their performance (D_14). Yet, the Kruskal-Wallis test did signify a distinction concerning the firm size (D_13) (Table 27). With an average of 43 full-time employees, the companies from our data set located in the *Administrative Hybrid* are significantly larger than those in the *Autocracy*, the *Domestic Configuration* and the *Clench Hybrid* (Figure 6*(e)*) which have, on average, respectively 25, 29 and 19 full-time employees. It has been verified in previous research that an increase in size can be one of the drivers for a family business to increase professionalization (Chua et al., 2009; Craig & Moores, 2005; Duréndez et al., 2007; Flamholtz, 1986; Suáre & Santana-Martín, 2004). Also, according to the company growth theory, as a firm grows the pressure for firm professionalization keeps increasing (Chandler, 1977; Greiner, 1998). When relating the organization size (D_13) with the professionalization dimension of *Non-family Involvement in Governance Systems* (F2), it appears that companies with high family involvement are significantly smaller than those with reduced family involvement. Keeping control within the family is said to restrict the size to which firms can grow (Zhang & Ma, 2009).

Based on these Mann-Whitney results, which allow us to compare the clusters based on some other features than the professionalization dimensions, it

becomes apparent that the *Administrative Hybrid* has a quite distinct profile compared to the other three types. Even though the four types are all significantly different from each other regarding the professionalization dimensions, the *Autocracy, Domestic Configuration* and *Clench Hybrid* show a considerable amount of similarity when it comes to these more general firm characteristics. As such, the *Administrative Hybrid* stands out as type because of its significantly larger firm size, number of managers and number of board members, but also by having a significantly higher educated CEO with a relatively shorter tenure as CEO in the company.

7.4 Summary

Our second research question, *"How can we distinguish family businesses based on the professionalization construct?",* was answered through insights based on theory which led to a two-dimensional family firm typology in Chapter 3. Through data collection and statistical analyses the question was answered again in Chapter 5, but this time from an empirical perspective. As both approaches generated four distinct family firm types, this chapter was devoted to the comparison between these empirical clusters and the prior conceptually constructed groups. We found very high resemblance between the profile descriptions based on empirical versus theoretical insights. This indicates the possible usability of our typology to produce a simplified version of the reality which enables further discussion and research on the matter.

Further empirical tests to statistically define the four family firm types, indicated that within companies where the professionalization is low (e.g. *Autocracy*) the educational level of these CEOs is overall lower, compared to firms from the data set with higher amounts of professionalization. Yet, their tenure as CEO in the company is considerably longer. Thus, as professionalization within the family business context increases, it is more likely that the company will employ higher educated (often non-family) CEOs, but who have a shorter CEO tenure in the company. Also, when the professionalization level within the family business

increases, the number of managers and board members will also enhance. As such, we can signify a movement from centralized control to a more dispersed situation. We are able to anchor our findings in the literature regarding the process of family firm professionalization.

8. The Effect of Family Business Professionalization as a Multidimensional Construct on Firm Performance

8.1 Introduction

A third and last research question which has not yet been addressed is *"To what extent does professionalization affect firm performance?"*. The link to performance has already been made in the context of the four derived family firm types in Chapter 7. In that matter, the Kruskal-Wallis test signifies no significant difference between the four types of family firms with regard to their financial performance. In this chapter, we assess the effect of family firm professionalization on business performance, yet apart from firm membership to one of the previously defined types. For this, we will employ the five professionalization dimensions from the factor analysis in Chapter 5.

A short recap of the professionalization literature (section 8.2) signifies an inconsistency in the results of previous studies regarding the effect of professionalization on firm's performance. Hypothesizing that this might be caused by proxying professionalization with the presence of a non-family manager, we reassess this relation, yet, while acknowledging the multileveled essence of professionalization. For each professionalization dimension which we identified in Chapter 5, we formulate a specific hypothesis regarding its relation to business performance (section 8.3). This is followed by the methodology section, which indicates the used data set and measures (section 8.4). Through a regression analysis (section 8.5) we assess if, and which, professionalization dimensions have an effect on business performance. Further, we search for possible conjunctional

effects between the different professionalization dimensions which might amplify or reduce the singular effects on firm performance. The final obtained results are further discussed in section 8.6. We expect that by measuring the concept in a multidimensional way, wherein these dimensions might act simultaneously, it is possible to make a more profound and justified link to the effect it has on firm performance.

8.2 Literature review: Recap

Scholarly research within the family business domain has devoted a considerable amount of attention to the financial performance of family firms. These studies often tend to focus on the effect of family involvement on firm performance (e.g. Allouche et al., 2008; Barontini & Caprio, 2006; Sraer & Thesmar, 2007; Westhead & Howorth, 2006). Yet, their results appear rather diversified. As Mazzi (2011) argues in her review article, it is not possible to provide a definite answer concerning the kind of correlation that emerges between family businesses and the financial performance of these firms. Our intention is to go beyond the amount of family involvement, and assess the effect on performance based on business professionalization.

In Chapter 2 of this dissertation we presented an extensive and thorough review of the current literature regarding family business professionalization. The overall perception was that the bulk of the literature approaches the professionalization construct in an oversimplified manner. That is to say, the mere presence of an external, non-family manager suffices in order for the entire company to be labeled as a professional family business, and thereby disregarding possible other features (e.g. Bennedsen et al., 2007; Klein & Bell, 2007; Lin & Hu, 2007; Zhang & Ma, 2009). A consequence of this narrow approach is that these studies operationalize the entire concept of professionalization with a binary proxy variable being the presence or absence of a non-family manager, and use this to make diverse statements regarding firm behavior and/or outcome. In this manner, empirical studies have pointed out professionally managed family businesses to be

larger, older and more reliant on formal internal control systems, than the family managed businesses (Daily & Dollinger, 1992). They also indicate that professionally managed family businesses follow a reactor strategy, whereas the family managed businesses follow a defender strategy (Daily & Dollinger, 1993). Further, these professional family businesses are said to be more likely to adopt practices that increase flexibility (Gulbrandsen, 2005) and have a higher innovation capacity (Barth et al., 2005). Yet, the question is, whether this can all be attributed to the presence of an external, or whether other professionalization aspects are at play.

When the effect of professionalization on firm's performance is assessed, existing studies provide no consistent results. Some studies find no significant difference between the family managed and the professionally managed family businesses. Thus, performance does not appear to suffer when management stays in the hands of family (Daily & Dalton, 1992; Daily & Dollinger, 1992; Lin & Hu, 2007). A second group of studies indicate that professionally managed family businesses do have a higher performance level than their family managed counterparts (e.g. Barth et al., 2005; Duréndez et al., 2007; Sciascia & Mazzola, 2008). Non-family managers are said to bring in relevant expertise into the company, and also counterpart some of the agency hazards due to familial altruism and self-control issues of family firm owners (Dyer, 1989; Sciascia & Mazzola, 2008). These studies thus confirm a positive effect of family business professionalization on firm performance. Finally, a third group of studies posits that the effect of professionalization, through hiring a non-family manager, has a negative influence on business performance (e.g. Anderson & Reeb, 2003; McConaugby et al., 2001; Miller & Le Breton-Miller, 2006). In line with the agency theory, it is said that these non-family managers are driven by short-run motives and that their interests are divergent of those of the owning family (Jensen & Meckling, 1976), leading to increased agency problems which can be detrimental for professionalizing the family businesses and can negatively affect firm performance (Dyer, 2006). In this respect, results indicate that greater profitability stems from a

family member fulfilling the CEO position instead of a professional manager (Anderson & Reeb, 2003).

A general conclusion that can be drawn based on this overview, is that the existing evidence about the relationship between professionalization and family business' performance is inconsistent. We argue that this inconsistency in results might be caused by the simplified measure, that is the presence of a non-family manager, that is applied to assess professionalization. We contend that the inferences about family firm activity and performance are limited when the entire process of professionalization is reduced to a binary variable, namely as something that can 'happen overnight' within the firm.

As such, we believe that the insights generated by the factor analysis in Chapter 5 can help us to reevaluate the relation between firm performance and professionalization, yet this time from a multidimensional perspective of the construct. As such, it is possible that not all dimensions will significantly and/or equally contribute to the firm performance of the family business. In addition, there may also be a conjunctional effect between different professionalization dimensions which might amplify or reduce the singular effects on firm performance.

8.3 Research Hypotheses

The main objective of this chapter is to reevaluate the relation between professionalization and firm performance, using a multidimensional approach of the professionalization construct. With reference to the five different dimensions of professionalization which are extracted from the factor analysis (see Chapter 5), we formulate a hypothesis for each dimension and its relation to firm performance. The five derived dimensions of professionalization are: *Financial Control Systems* (F1); *Non-family Involvement in Governance Systems* (F2); *Human Resource Control Systems* (F3); *Decentralization of Authority* (F4); and *Top Level Activeness* (F5).

Literature regarding the use of formal financial control systems within family businesses has shown that these firms tend to rely less on these types of control systems compared to their non-family counterparts (Cromie et al., 1995; Daily & Dollinger, 1992; Jorissen et al., 2005). Even though all firms of a moderate size have some minimal level of accounting controls (Willingham & Wright, 1985), it is said that the main purpose for family firms to adopt accounting policies is for tax minimization instead of for strategic and performance decisions (Trostel & Nichols, 1982). Yet, when looking at the possible effect that the use of financial control systems can have on business performance, family business studies as well as general management literature have proven the significant positive impact on business performance (Bisbe & Otley, 2004; Chenhall, 2003; Kotey, 2005; Langfield-smith, 1997; Otley, 2003). These financial control systems, such as budget systems and performance evaluation systems, provide a useful and objective information resource for decision support and for financial planning within the business (Pérez de Lema & Duréndez, 2007). As such, this information is needed to control costs but also to create results (Drucker, 1995). This leads us to hypothesize that:

H1: Family business professionalization through increasing Financial Control Systems (F1) will positively affect firm performance.

As previously mentioned in section 8.2, past research regarding the professionalization issue within family businesses has often used the presence of a non-family manager to proxy business professionalization. However, these studies that relate to the effect of family involvement on business performance, did not always render similar findings. Empirical evidence has been found for a positive effect on firm performance (e.g. Allouche et al., 2008; Anderson & Reeb, 2003; Cronqvist & Nilsson, 2003; Sraer & Thesmar, 2007), as well as for a negative effect on firm performance (e.g. Barontini & Caprio, 2006; Cucculelli & Micucci, 2008; Oswald et al., 2009; Sciascia & Mazzola, 2008; Villalonga & Amit, 2006). Also from a theoretical perspective it is difficult to derive a conclusive effect. According to the

traditional agency theory, if a family firm would cede control to outside managers (agents), this could give rise to agency costs due to goal conflict and asymmetric information which can negatively affect firm performance. Regarding the owner-manager agency problems, strong involvement of family members in the family business potentially cushions the risk of opportunistic behaviors and favors the alignment of interests. Accordingly, Fama and Jensen (1983) assert that family controlled and managed businesses should operate more efficiently. Therefore, traditional agency theory implies that the greater the degree of family involvement, the stronger the organizational performance. Yet, Steier (2003) notes that family involvement should reduce agency costs, but because altruism is prevalent in family firms, a new level of complexity is introduced into the equation. When ownership and control are joint, family firms are exposed to an entrenchment problem, as these family owner-managers have the power to use the firm in the pursuit of their own interests (Bozec & Laurin, 2008). The potential for entrenchment could lead to self-serving decision making, and is detrimental to firm performance (Oswald et al., 2009). This implies that strong involvement of family in the organization would decrease firm performance.

Current review articles on the subject (Mazzi, 2011; Stewart & Hitt, 2012) have been able to categorize the effect of family involvement on firm performance by distinguishing between public and private firms. As regards financial performance, public family firms outperform non-family firms, especially when a family member serves as CEO. Among private firms, on the other hand, family involvement generally appears to have a negative effect on firm performance (Mazzi, 2011). Sciascia and Mazzola (2008) even indicate that family involvement in management has a negative quadratic relationship with performance, which implies that performance decreases as family involvement increases and that the decreases are more noticeable at higher levels of involvement. As our sample consists out of private family owned SMEs, we hypothesize that:

H2: Family business professionalization through increasing Non-family Involvement in Governance Systems (F2) will positively affect firm performance.

Besides the financial control systems, the control of human resources (HR) is also a critical element for business management. HR practices such as selectivity in recruiting, incentive pay, training, and skill development are just a few of the practices acknowledged as having great value to the organization (Pfeffer, 1994). Yet, few studies identify HR practices in SMEs and even fewer focus on the relationship between HR practices and performance. When this relationship is studied in large firms, results suggest a positive relation between HR practices and performance (Huselid, 1995). Recently, scholars have addressed this issue within a family business context. Results conclusively indicate a significant positive relation between different HR control systems and family business performance (Carlson et al., 2006; Kotey & Folker, 2007; Litz & Stewart, 2000). Through an agency perspective, these findings may not seem surprising as these formal HR controls provide counterbalance for possible agency problems in a family business. Formal recruiting systems can impede adverse selection and the hiring of family members merely based on kin, also known as the nepotism issue (Dyer, 2006; Kellermanns & Eddleston, 2004). Also, formal performance evaluation systems can counteract the effects of colored performance evaluation due to parental altruism, which can lead to exorbitant compensation for family members (Schulze et al., 2001). Based on these insights, we hypothesize that:

H3: Family business professionalization through increasing Human Resource Control Systems (F3) *will positively affect firm performance.*

The general management literature has addressed the issue of decentralizing authority and decision-making control in past research. When management is defined in simple terms as getting things accomplished through people, then this process involves assigning tasks to others (delegation), granting these individuals the right

to accomplish them (authority) and holding them accountable for accomplishing the tasks (Bushardt et al., 2010). The locus of authority is usually represented as a continuum, anchored on one end by completely autocratic decision making, and on the other end by processes that permit maximum influence by subordinates (Leana, 1986). Bakalis et al. (2007), argue that decision-making delegation is an important management process contributing to organizational effectiveness. According to their findings, delegation is positively associated with performance and job satisfaction. Similarly, Blanes i Vida (2007) posits that as interests become more aligned, delegation of decision-making rights motivates employees without causing severe disruption to the decision-making process.

Within the family business literature, the decentralization of authority is often mentioned as part of the process of professionalizing the business (Dyer, 1988; Flamholtz & Randle, 2007; Stewart & Hitt, 2012; Whisler, 1988), yet concrete studies on the effect of this decentralization on business performance are scarce. Daily and Dalton (1992) contend that if the entrepreneur fails to successfully share and delegate power, the firm is likely to falter and it may even lead to the firm's demise. Whisler (1988) asserts that when a family firm engages in the professionalization process, executives must learn and accept the new tasks and authority relationships, and the entrepreneur must yield some control to his subordinates. Also according to Gedajlovic et al. (2004), authority in professionally managed family firms is generally widely diffused across a managerial hierarchy and is vested in the position, or the function, not the individual. Given that decentralization of authority is part of business professionalization according to the family firm literature, and the positive association it has with performance according to general management literature, we hypothesize that:

H4: Family business professionalization through increasing Decentralization of Authority (F4) *will positively affect firm performance.*

Finally, when scrutinizing the literature regarding the top level activeness within a family business, authors have indicated that the presence of an active board influences the quality of decision-making in family firms (Gersick et al., 1997; Ward, 1991). Lipton and Lorsch (1992) suggest that the higher frequency of meetings is likely to result in superior performance. This intensity of board activeness – assessed through the amount of board meetings – is an important indicator (Jackling & Johl, 2009; Sharma & Nordqvist, 2008). When a board is only present in the company to meet legal requirements, in the literature referred to as rubber stamp boards, it will not lead to much actual board involvement (Pieper et al., 2008). Corbetta and Salvato (2004) propose that the positive effect of board activeness on firm performance is dependent on contextual conditions. Also Lane et al. (2006) argue that, although the board must be aware that its role in governance is an active one, its role should not carry over into the role of management. They further posit that having more than six meetings per year without a crisis probably means the board is operating in a managerial fashion, and not promoting accountability, while holding fewer than three meetings per year is probably promoting form over substance and not providing accountability. Boards that do not actively meet and discuss important strategic issues facing the company, even when times are good, are likely to have great difficulty spotting and understanding problems in a timely fashion (Gabrielsson, 2007). Finally, Jackling and Johl (2009) state that, even though other aspects such as the quality of board meetings might also be of interest, generally there is reason to believe board meetings may be an important resource and therefore frequency of board meetings may influence the business performance.

A similar reasoning is applied for the activeness of the management team. In order to effectively formulate and implement strategy, managers need to interact with each other (Raes et al., 2011). Studies have shown that high management team communication is related to higher team and subsequent firm performance (Barrick et al., 2007; Campion et al., 1993; Hyatt & Ruddy, 1997). Flamholtz and Randle (2007) posit that regular scheduled meetings will increase internal management communication. As such, management team activeness and

communication can be an important antecedent to team performance (Hyatt & Ruddy, 1997). Based on these insights regarding board and management team activeness, we hypothesize that:

> *H5: Family business professionalization through increasing Top Level Activeness* (F5) *will positively affect firm performance.*

8.4 Methodology

8.4.1 Data and method

In order to answer the related research question *"To what extent does professionalization affect firm performance?*, we will employ the five professionalization dimensions derived from the factor analysis and integrate them in an ordinary least square [OLS] regression. As such, we can assess the relationship between the different professionalization dimensions and family firm performance. The data set used for this study corresponds to the one discussed in Chapter 4, being 532 non-listed family owned SMEs located in the Flemish region of Belgium.

8.4.2 Measures

The dependent variable in the regression analysis is firm performance. In line with numerous previous studies (e.g. Anderson & Reeb, 2003; Cucculelli & Micucci, 2008; Sraer & Thesmar, 2007), we quantify firm performance as the annual ROA (return on assets), which is the most used accounting variable for business performance in private firms (Mazzi, 2011). This performance measure has some advantages over other measures like ROS (return on sales) or ROE (return on equity). Harris and Helfat (1997) argue that using ROS has the disadvantage that if sales decrease by the same percentage of the profit, return on sales would stay

equal. Regarding the ROE, the authors indicate that this is also less appropriate since firms have different degrees of total assets financed by equity.

In addition, we also assess the effect of business professionalization on firm productivity. As business professionalization through, for example, increasing human resource control systems or decentralizing authority, might influence business and employee efficiency or working procedures, we perform an additional regression analysis to evaluate the effect on productivity. We quantify business productivity by the measure of value added (e.g. Duh et al., 2009; Faems et al., 2005; Goldeng et al., 2008). Value added can be defined as the value created by the activities of a firm and its employees; that is sales less the cost of bought in goods and services. To control for company size, the measure is divided by the total number of full-time employees. An advantage of the value added over other generally used accounting measures, is that this measure is less susceptible for the effects of earnings management, making it a more objective indicator (Worthington & West, 2001). This is not unimportant given that our research group are privately held family firms which can have incentive to minimize reported taxable income (Schulze et al., 2001).

The independent variables used in the regression to explain firm performance and productivity are the five dimensions of professionalization which are extracted from the factor analysis: Financial Control Systems (F1); Non-family Involvement in Governance Systems (F2); Human Resource Control Systems (F3); Decentralization of Authority (F4); and Top Level Activeness (F5). For more details on how these factors are derived, we refer the reader to Chapter 5. These five dimensions are included in the OLS regression based on the derived factor scores.

Regarding the control variables in this regression, previous research has shown that size, age and industry affect firm's financial performance (Chrisman et al., 2009; Minichilli et al., 2010; Oswald et al., 2009; Sraer & Thesmar, 2007). In this study, firm size is measured in terms of full-time employees. We use the natural logarithm of employees to minimize skewness. We control for firm age, measured as the natural logarithm of the number of years the firm has been in

business. Finally, firm industry is measured through three dummy variables that allow us to differentiate four industry types: wholesale/retail, construction, industry and services.

8.5 Results of the Regression Analysis

The descriptive statistics and correlations for all variables are reported in Table 29. The mean and standard deviation are not reported for the five factors as they are standard scores. In the succeeding regression analyses, we use the natural log of both firm size and firm age, yet, for ease of interpretation, the raw values of both variables are presented in Table 29. The correlation between the independent variables is low, ranging from 0.01 to 0.37 (in absolute value). Therefore, we expect that multicollinearity is not a concern. We also assess the variance inflation factor (VIF) values, and find no multicollinearity problems (largest VIF = 1.24). Further, we use several regression diagnostics to assess whether modeling assumptions are satisfied.

Table 29. Descriptive statistics and correlations for all variables

Variables	*Mean*	*S.D.*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
1. Productivity[a]	64.24	31.68													
2. Performance[b]	4.05	10.28	0.49***												
3. Financial Control Systems (F1)			0.06	-0.08											
4. Non-family Involvement in Governance Systems (F2)			0.13**	0.12**	0.00										
5. Human Resource Control Systems (F3)			0.10*	0.10*	0.00	0.00									
6. Decentralization of Authority (F4)			0.07	0.09*	-0.01	0.00	0.00								
7. Top Level Activeness (F5)			0.10*	0.01	0.00	0.00	0.02	-0.01							
8. Firm age (years)	26.84	13.99	-0.02	-0.01	-0.02	0.00	-0.05	0.03	0.00						
9. Firm size (no. emp.)	28.65	28.30	-0.05	-0.00	0.15***	0.12**	0.13**	0.20***	0.05	0.16***					
10. Construction	0.24	0.43	-0.14**	-0.01	-0.04	-0.05	-0.15***	-0.02	0.03	-0.02	0.04				
11. Industry	0.28	0.45	0.05	-0.12***	0.00	0.05	0.01	0.05	0.00	0.07	0.08	-0.35***			
12. Service	0.22	0.42	-0.02	0.04	-0.02	0.03	0.11**	-0.05	0.07	-0.07	-0.06	-0.30***	-0.34***		
13. Wholesale/retail	0.26	0.44	0.11**	0.10*	0.06	-0.03	0.03	0.02	-0.09*	0.01	-0.06	-0.33***	-0.37***	-0.31***	

[a] Value added per employee (in € 1,000)
[b] ROA (%)
*$p < .05$, two-tailed test
**$p < .01$
***$p < .001$

Table 30. Hierarchical regression analysis of the professionalization dimensions on family firm performance (ROA) and productivity (value added/employee)

Variable	*Performance*		*Productivity*	
Model	*(1)*	*(2)*	*(3)*	*(4)*
Constant	10.71***	10.18**	68.11***	67.79***
Independent Variables: Professionalization				
Financial Control Systems (F1)	-0.33	-0.56	1.87†	1.16
Non-family Involvement in Governance Systems (F2)	1.33***	1.39***	4.64***	4.67***
Human Resource Control Systems (F3)	0.88*	0.75†	3.35***	3.17**
Decentralization of Authority (F4)	0.99*	1.00*	3.50***	3.32**
Top Level Activeness (F5)	-0.16	-0.20	1.30	1.44
Interaction Terms				
F1 x F2		-1.05*		-1.17
F1 x F3		-0.03		0.22
F1 x F4		-0.15		-0.68
F1 x F5		-0.79*		-2.61**
F2 x F3		0.14		0.82
F2 x F4		0.94*		1.50
F2 x F5		-0.49		-1.83†
F3 x F4		1.00*		2.10*
F3 x F5		-0.15		-1.05
F4 x F5		-0.15		-0.51
Control Variables				
Firm size (log)	-0.59	-0.54	-4.32**	-4.39**
Firm age (log)	-1.24	-1.13	0.79	0.95
Industry	-2.44*	2.27*	4.23	4.65†
Service	-0.51	-0.60	4.96†	4.90†
Wholesale/retail	0.35	0.24	11.26***	10.75***
F-value	3.31***	2.68***	6.93***	4.46***
R^2	0.06	0.10	0.12	0.16
Adjusted R^2	0.04	0.06	0.11	0.12
ΔF		2.00**		1.87*

†$p < .10$
*$p < .05$
**$p < .01$
***$p < .001$

8.5.1 Evaluating the main effects

The results of the hierarchical regression models are presented in Table 30. In the two base models (1) and (3), we assess the direct effect of the different professionalization dimensions on the dependent variable, being performance (1)

($R^2 = 0.06$, $F = 3.31$, $p < .001$) and productivity (3) ($R^2 = 0.12$, $F = 6.93$, $p < .001$), while controlling for firm size, firm age and firm industry.

In models (1) and (3) we only find a partial confirmation for H1. The regression output indicates that the presence of financial control *s*ystems seems to have a significant positive relation with family business productivity (3) ($\beta = 1.87$, $p < .10$), but not with the firm's performance (1). Further, non-family involvement in governance systems has a significant positive relation with family business performance (1) ($\beta = 3.33$, (3), $\beta = 4.64$, $p < .001$). This is in line with H2. Results seem to confirm that, as family involvement within the business decreases, and more non-family members enter the firm, this is positively related to business performance. Also H3 appears to be confirmed. Human resource control systems within the family business are significantly positive related with family business performance (1) ($\beta = 0.88$, $p < .05$) and productivity (3) ($\beta = 3.35$, $p < .001$). Regarding the decentralization of authority, we find a significant positive relation in the regression model with business performance (1) ($\beta = 0.99$, $p < .05$) and profitability (3) ($\beta = 3.50$, $p < .001$). As such, these results support H4. Finally, H5 cannot be confirmed as the model shows no significant relation between the amount of top level activeness and family business performance/productivity. These regression results support our initial concern that the concept of professionalization should not be studied unidimensional (being the presence of a non-family manager), as is often done in previous research. The construct encloses multiple sub-dimensions, of which each can have a different effect on firm outcome. In sum, H2, H3 and H4 are supported, H1 is partly supported and H5 is not supported[13].

[13] Both regressions have been rerun with a composed dependent variable, i.e. the average ROA of the last 3 years and the average added value per employee of the last three years. This is done as robustness check to see whether the values of the dependent variable used in the regression, might deviate from previous years. The regression models with the composed dependent variables, generate the same significant relations to the same independent variables as the models discussed in this dissertation based on the values of 2010.

8.5.2 Examining the interaction effects

As these different dimensions are all sub-segments of the professionalization construct, it is possible that one dimension reinforces or weakens the effect of the other dimension. Given that these professionalization dimensions employed in the regression are novel, we take a first step in this dissertation to explore for possible interactions between the dimensions. Therefore, to check for the existence of interaction effects between the different dimensions of professionalization on family business performance/productivity, we include all two-way interaction effects in a subsequent analysis (model (2) and (4)). We do not put any prior restraints on the analysis as we wish to explore all possible relations. These additional analyses might provide more in-depth perspectives on the relation between family business professionalization and performance which might fuel future research.

Regarding the regression model (2), the significant change in F ($F = 2.68$, $p < .001$) and an increased adjusted R^2 (model 1 adj. $R^2 = 0.04$, model 2 adj. $R^2 = 0.06$), indicate that, by including the interaction effects, the model is able to explain an amount of additional variance. With respect to the independent variables, the three professionalization dimensions that have a significant effect on firm performance in model 1, remain significant in model 2 (Non-family involvement in governance systems $\beta = 1.39$, $p < .001$; Human resource control systems $\beta = 0.75$, $p < .10$; and decentralization of authority $\beta = 1.00$, $p < .05$).

Similarly for model (4), the significant change in F ($F = 4.46$, $p < .001$) and an increased adjusted R^2 (model 3 adj. $R^2 = 0.11$, model 4 adj. $R^2 = 0.12$), also indicate that, by including the interaction effects, the model is able to explain an amount of additional variance. With respect to the independent variables in the base model (3), three of the four professionalization dimensions that have a significant effect on firm productivity in model 3, remain significant in model 4 (Non-family involvement in governance systems $\beta = 4.67$, $p < .001$; Human resource control systems $\beta = 3.17$, $p < .01$; and decentralization of authority $\beta = 3.32$, $p < .01$).

When reviewing the interaction terms in model (2) with performance as dependent variable, we find that there is a significant negative interaction effect between the amount of financial control systems (F1) and the amount of non-family involvement in governance systems (F2) (β = -1.05, $p < .05$), and between the amount of financial control systems (F1) and top level activeness (F5) (β = -0.79, $p < .05$). There is a significant positive interaction effect between the amount of non-family involvement in governance systems (F2) and decentralization of authority (F4) (β = 0.94, $p < .05$), and between the amount of human resource control systems (F3) and decentralization of authority (F4) (β = 1.00, $p < .05$).

When business productivity is the dependent variable (model 4), we find that there is a significant negative interaction effect between the amount of financial control systems (F1) and top level activeness (F5) (β = -2.61, $p < .01$) and between the amount of non-family involvement in governance systems (F2) and top level activeness (F5) (β = -1.83, $p < .10$).). There is a significant positive interaction effect between the amount of human resource control systems (F3) and decentralization of authority (F4) (β = 2.10, $p < .05$).

However, in order to correctly interpreted these coefficients, we must review the marginal effects of these professionalization dimensions on business performance(productivity), for the different values of the other professionalization dimension in the product term (Jaccard et al., 1990). Therefore, we calculate the marginal effects using derivates to describe the significant moderation effects signified in Table 30. Figure 7 to Figure 14 graphically present the marginal effect for each significant combination between the professionalization dimensions of regression model 2. Each combination is discussed with a 95% confidence interval (dotted lines), while keeping the other professionalization dimensions that influence the effect at a mean value[14]. The dotted lines around the marginal effect line (full line) represent the confidence intervals and allow us to determine the conditions under which the effect is significant. We note that, because the professionalization dimensions contain standard scores, the values on the axes only have a relative

[14] Mean equals to 0 and standard deviation equals to 1 as the five dimensions are standard scores.

meaning. A score of 0 refers to an average value of a firm on that specific dimension. Negative and positive values indicate, respectively, less than average and more than average values.

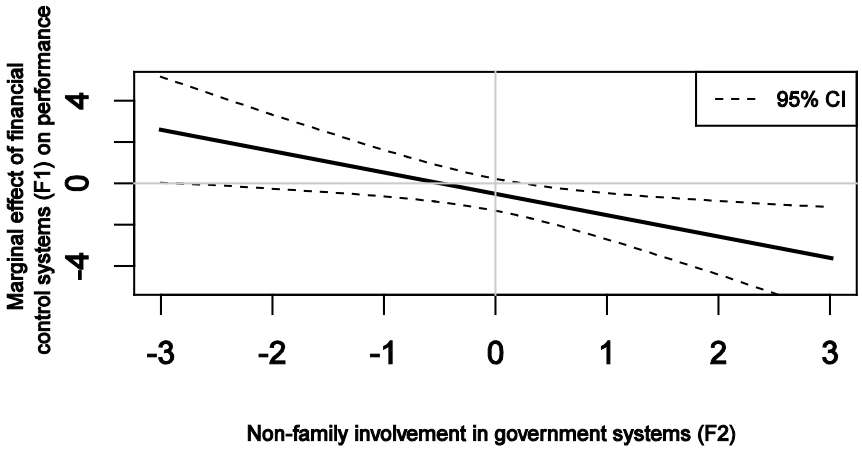


Figure 7. Marginal effect of financial control systems (F1) on performance as the amount of non-family involvement in governance systems (F2) changes

With respect to regression (2) in Table 30, Figure 7 graphically presents the marginal effect of financial control systems (F1) on performance as the amount of non-family involvement in governance systems (F2) changes. The line trend indicates that the effect of financial control systems on performance decreases as the amount of non-family involvement in governance systems increases. The effect of financial control systems on performance is significantly negative for firms having an average (equals to 0 on the X-axis) or more than average amount of non-family involvement in governance systems. When non-family involvement in governance systems is low, the full line indicates that financial control systems will positively affect business performance. However, this effect is not significant as the zero line is situated between the upper and lower bound of the confidence interval.

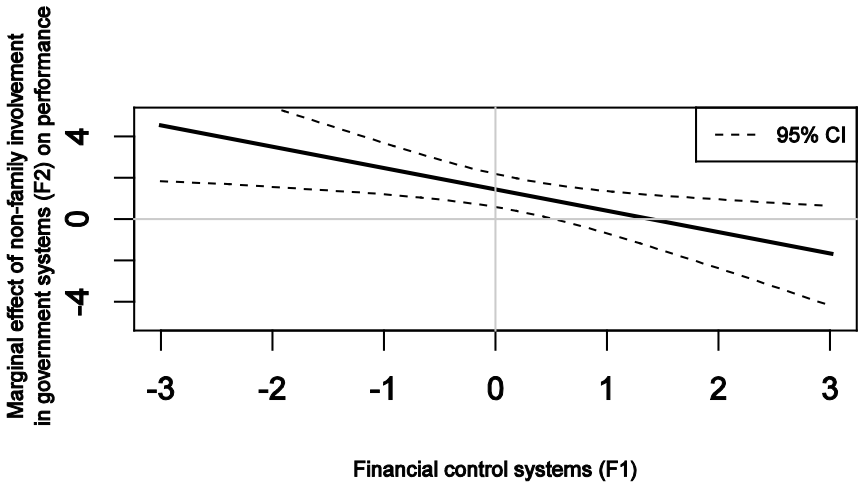


Figure 8. Marginal effect of non-family involvement in governance systems (F2) on performance as the amount of financial control systems (F1) changes

Figure 8 shows that the positive effect of non-family involvement in governance systems on performance is significant if the amount of financial control systems is average or less than average. As such, in firms which have an average amount of financial control systems present in their business, the involvement of non-family members tends to be positive on business performance.

The results based on Figure 7 and Figure 8 might appear in contrast with what we would initially expect based on theory. Namely, that an external non-family manager would bring in the necessary expertise to successfully implement formal control systems (Sciascia & Mazzola, 2008), which would positively affect business performance (Kotey, 2005) . As such, we would assume that if there is a high amount of non-family involvement in the family business, the effect of financial control systems on business performance would be positive. Yet, the preceding results seem to indicate the opposite, namely a negative effect of financial control systems on performance when there is high non-family involvement. A possible explanation can be that, when non-family members bring these formal

control systems within the family business, the costs initially outweigh the benefits, causing business performance to decrease. In this respect, the implementation of financial control systems would have a lagged positive effect on performance. Yet, as we do not know when these financial control systems have been implemented, additional research is required to provide a decisive answer on the matter.

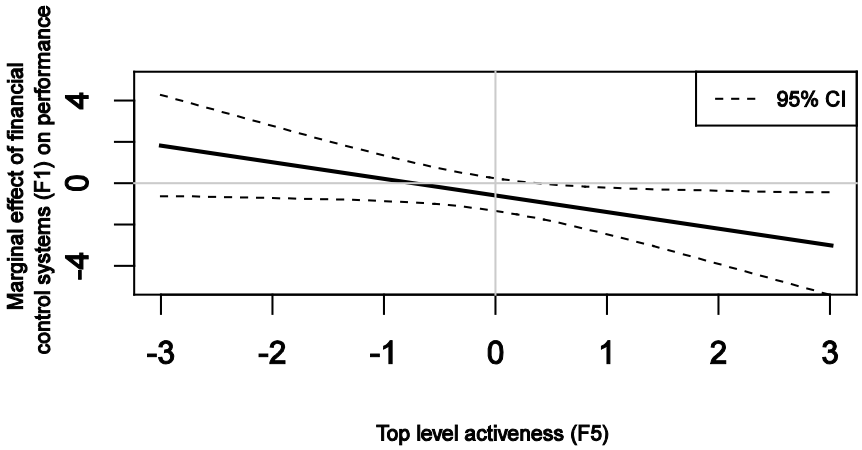


Figure 9. Marginal effect of financial control systems (F1) on performance as the amount of top level activeness (F5) changes

In Figure 9 the marginal effect of financial control systems (F1) on performance as the amount of top level activeness (F5) changes, is visualized. The graph shows that the marginal effect of financial control systems on performance is significantly negative when a firm has a higher than average amount of top level activeness. As the full line presents a downward trend, more higher amounts of top level activeness strengthen the negative effect of financial control systems on performance.

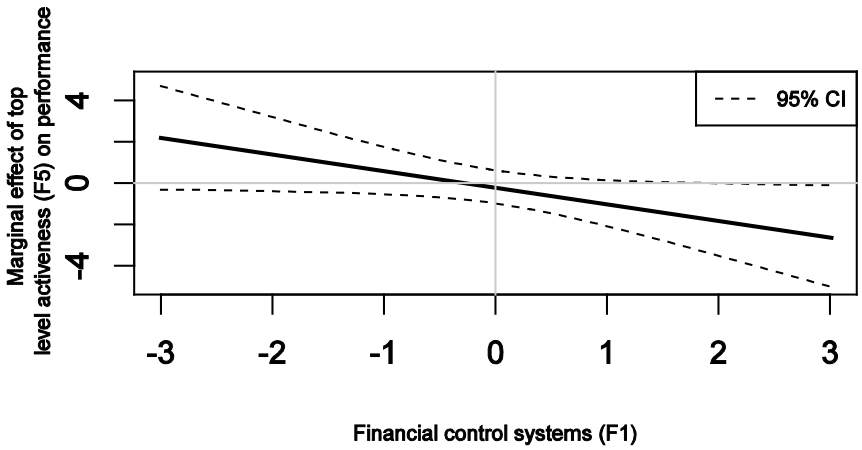


Figure 10. Marginal effect of top level activeness (F5) on performance as the amount of financial control systems (F1) changes

Figure 10 indicates we can only refer to a significant effect for high values of financial control systems. That is to say, the marginal effect of top level activeness on performance is significantly negative, when there are high amounts of financial control systems present in the business. For a smaller amount of financial control systems, we cannot state with certainty if the marginal effect of top level activeness on performance is positive or negative as confidence bounds are located at both sides of the null line.

Regarding the interpretation of Figure 9 and Figure 10, the negative effect of financial control systems on performance which only exists at high top level activeness might indicate a situation of excess regarding top level activeness. High activity with many board and management team meetings might be at the expense of the required time which should be invested in management control systems in order to effectively utilize them, causing a negative effect on performance. However, as we do not have a theoretical basis at this stage of the research which would cause us to expect that top level activeness and financial control systems would strengthen/weaken each other, other than because they are both part of the

professionalization construct, rendering an interpretation at this point is not apparent. Considering that this is an exploratory stage, future research needs to examine this interaction for further in-depth interpretation.

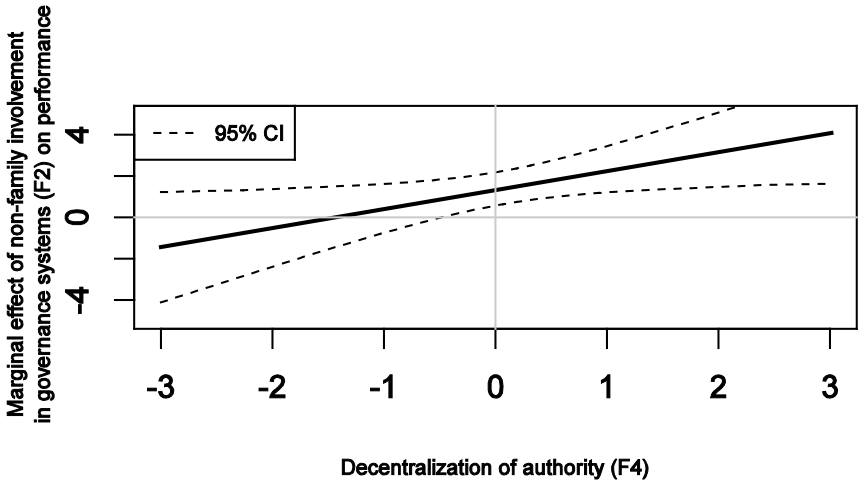


Figure 11. Marginal effect of non-family involvement in governance systems (F2) on performance as the amount of decentralization of authority (F4) changes

Based on Figure 11, the marginal effect of non-family involvement in governance systems on business performance has a positive effect as decentralization of authority increases. For firms having an average or higher than average amount of decentralization of authority, the marginal effect of non-family involvement in governance systems is significantly positive on business performance.

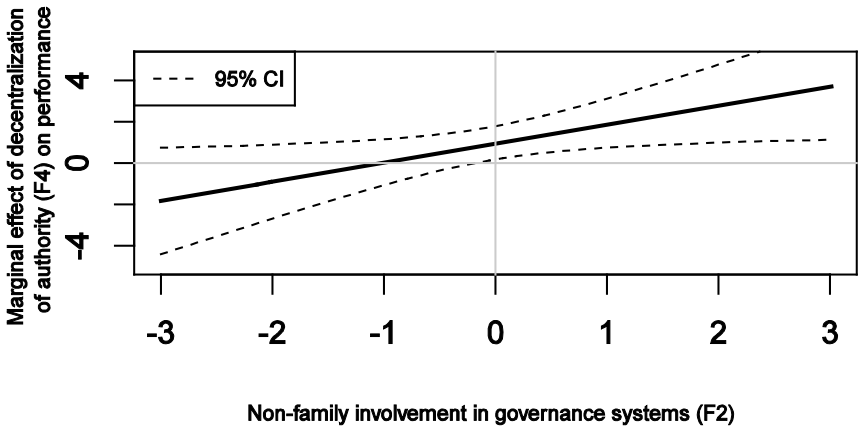


Figure 12. Marginal effect of decentralization of authority (F4) on performance as the amount of non-family involvement in governance systems (F2) changes

The evaluation of the marginal effect of decentralization of authority on performance as the amount of non-family involvement in governance systems changes based on Figure 12, indicates that we can only make a significant valid statement for firms having an average or above average amount of non-family involvement in governance systems. More precise, in these firms there is a significantly positive effect of decentralization on business performance. This positive effect will further increase when the amount of non-family involvement increases.

When interpreting both figures, we might assume that hiring non-family members into the top level of the company will be positive for firm performance when there is enough decentralization of authority. This means that these externals should be provided with sufficient amounts of control and decision-making authority in order for them to work effectively. If externals are hired into a family company, but are still bounded by an authoritarian family owner, the

professionalization process might not unfold to its full potential, or might even be harmful for business performance.

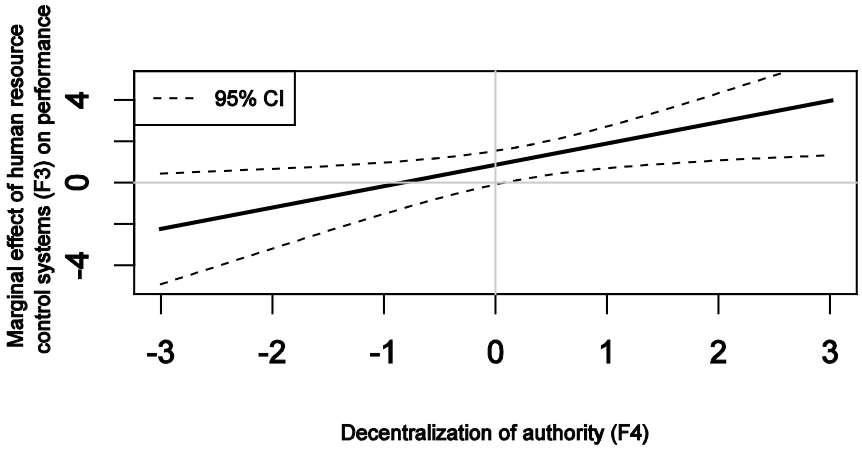


Figure 13. Marginal effect of human resource control systems (F3) on performance as the amount of decentralization of authority (F4) changes

Figure 13 signifies that the marginal effect of human resource control systems on performance is significantly positive for family firms that have a more than average amount of decentralization of authority. This positive effect has an increasing trend as authority becomes more decentralized throughout the business.

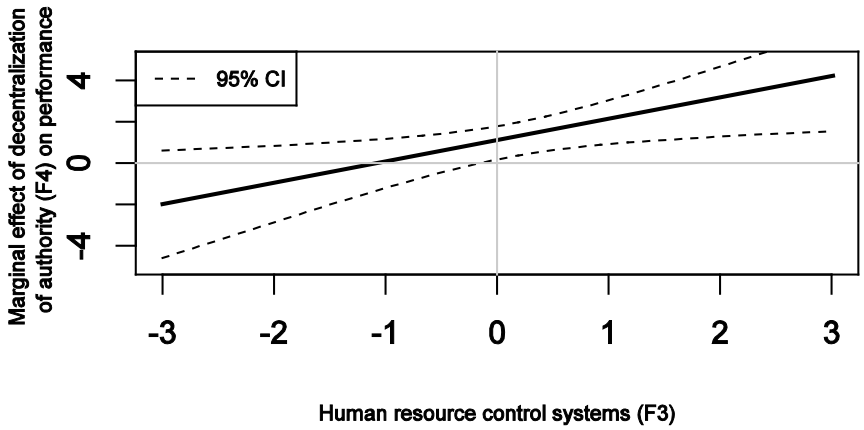


Figure 14. Marginal effect of decentralization of authority (F4) on performance as the amount of human resource control systems (F3) changes

A final marginal effect which we examine regarding business performance is presented in Figure 14. The marginal effect of decentralization of authority on business performance is significantly positive for family firms having an average or above average amount of human resource control systems present in their business. This positive effect also knows an increasing trend.

If we would explore a possible reasoning behind the results presented in Figure 13 and Figure 14, we might infer that in order to effectively use human resource control systems in the family business, there must be a certain amount of decentralization of authority. As such, supervising and utilizing these human resource control systems is diffused across several subordinates, making them more effective for business performance than when authority is centralized in one person. Also in the reversed direction, the positive effect of decentralization of authority on business performance is supported by a high amount of human resource control systems. The decentralization to subordinates can be effective as they are supported by the proper training, evaluation and rewarding systems of human resource control.

The graphical presentation of the significant moderation effects for Model 4, with productivity as dependent variable, is included in Appendix D.1 to Appendix D.6. Due to the similarity with the interaction effects indicated by regression Model 2, they do not render much additional insights. The lengthiness of the discussion of these extra results, also urged us to enclose the information in the appendices.

8.6 Discussion of the regression results

The primary objective of this chapter is to examine the relationship between professionalization and firm performance in privately held family businesses. The regression results show that, overall, increasing professionalization does have a positive effect on firm's performance and productivity. Yet, when we look at the level of the individual dimensions, the results indicate that this effect is not significant for each dimension separately. We find that, if a family business wants to positively affect its performance through professionalization, the company should concentrate on diminishing family involvement in governance systems, increase the usage of human resource control systems, and decentralize organizational authority. As such, empirical support is found for H2, H3 and H4. As such, these findings support earlier research which observed a positive effect on firm performance by decreasing family involvement (Bennedsen et al., 2007; Filatotchev et al., 2005; Oswald et al., 2009; Sonfield & Lussier, 2009; Songini, 2006), and hiring independent external board directors (Anderson & Reeb, 2004). They further solidify those studies that highlight the importance of human resource controls within the context of family businesses (de Kok et al., 2006; Kotey & Folker, 2007; Reid & Adams, 2001).

The effect of the implementation of financial control systems is only significant for firm's productivity. Therefore, H1 is only partially supported. For top level activeness, results show no direct effect at all, thus rendering no support for H5. This does not mean that they are irrelevant dimensions of professionalization, only that they do not significantly affect firm performance. They might be beneficial for other organizational activity such as internal

structure, information symmetry, goal alignment, and facilitating the entrance of non-family managers.

Beyond the direct effects, we also explored the possibility of joint effects. As such, we looked for a possible indication that the different dimensions of professionalization might amplify one another. The results indicate that some amount of interaction exists between several dimensions of professionalization, however, they appear to be moderate. Also, the significant interaction effects were assessed while keeping the other professionalization dimensions that influence the effect at a mean value. The significant ranges might alter for high or low values of these related professionalization dimensions. At this stage of the research, our main intention is to surface possible existing interaction effects. Yet, we do not have a theoretical basis at this point in order to formulate an expectation regarding possible interactions between different dimensions, other than because they are all part of the professionalization construct. Therefore, in a future research step, these interactions should be examined further. The rational of an interaction between two professionalization dimensions needs to be assessed based on previous literature. This will help to formulate an expectation regarding the interactions and will also provide a foundation for interpretation of the obtained results.

8.7 Summary

In this chapter we address the third research question, namely *"To what extent does professionalization affect firm performance?"*. Prior research provides no consistent results when the effect of professionalization on firm's performance is assessed. We posit that this might be due to the oversimplification of the professionalization measure that has been used, being the presence of a non-family manager. As such, we reassess the relation between professionalization and firm performance, however by using a multidimensional approach of the professionalization construct. For this, the factor scores of the five dimensions discovered in Chapter 5 are used as input variables for the OLS regression. In the model, we do not only check the direct effect of the individual professionalization

dimensions on business performance, but also search for possible conjunctional effects between the different professionalization dimensions which might amplify or reduce the singular effects.

In sum, these regression results signify the importance of approaching the professionalization concept multidimensionally and the effects that the underlying dimensions can have on business performance. Diminishing family involvement in governance systems, increasing the usage of human resource control systems, and decentralizing organizational authority all have a positive effect on firm performance. The other two remaining dimensions of professionalization, i.e. the implementation of financial control systems and top level activeness, only appear to have a partial or no direct effect on performance. The regression results have also shown that some of these effects are not isolated, as they can reinforce or weaken one another. Though, further research is required on the matter in order to provide a decisive answer.

We can therefore conclude that, regarding the third research question, the extent of the professionalization effect on firm performance is dependent on which dimension(s) is put into motion to professionalize the firm.

9. Discussion and Conclusions

9.1 Outline

The purpose of this dissertation is to advance the understanding of the professionalization construct when it is used in a family business context. We started with asserting that the tendency to equate professionalization with the presence of a non-family manager predominated in the research field. Based on the indications that this construct is in fact broader than the presence of a non-family manager, we formulated the following main research objective of this dissertation: "*How can we untangle the multidimensional professionalization construct within a family business context and to what extent does it affect firm performance?*". This main objective led us to extract three separate research questions which we address throughout the study:

- *What is the content of the professionalization construct within a family business context?*
- *How can we distinguish family businesses based on the professionalization construct?*
- *To what extent does professionalization affect firm performance?*

In this final concluding chapter of the dissertation, we summarize the main findings and formulate the proposed answers to these three questions (section 9.2). At the end of this chapter, we highlight the limitations related to the study and suggest concrete avenues for future research (section 9.4).

9.2 Answering the Research Questions

What is the content of the professionalization construct within a family business context?

By acknowledging that there is more to professionalization within a family business than hiring outside non-family managers, we explored the possibility of approaching professionalization in a multidimensional manner. This was done once based on insights derived from the literature, and once through an exploratory factor analysis. The theoretical approach of this first research question enabled us to identify multiple features that repeatedly return in the professionalization descriptions of the present literature. We thus ascertain that, when applied in the family business context, the concept of professionalization entails: (1) the entrance of non-family managers; (2) the establishment of effective governance structures such as boards and councils; (3) the professionalization of the board by the appointment of non-family and external board members; (4) a delegation of control and decentralization of authority; (5) the establishment of formal financial control mechanisms; and (6) the establishment of formal human resource control mechanisms.

As aforementioned, most empirical studies mainly focus on the unique aspect of professionalization when it is applied in a family business context, i.e. hiring non-family managers (e.g. Gulbrandsen, 2005; Klein & Bell, 2007; Lin & Hu, 2007). What can be said for these authors, is that they argue that these "professional" managers are more able to achieve the strategic goals of the firm due to their skills and abilities (Duréndez et al., 2007) and adequate management training (Chittoor & Das, 2007). They are also expected to contribute specialized technical knowledge which is lacking within the family (Corbetta, 1995). As such, it is argued that family management has certain boundaries, partly due to the restricted pool of potential talent to run the firm, rendering them to be inadequate to guide the family business to the next stage (Bloom & Van Reenen, 2007). Further, family managed firms are tended to disdain formal routine and resist delegation and decentralization of authority and responsibility, making them less

well suited to exploit opportunities in complex environments (Gulbrandsen, 2005). In this line of thought, family managers and professionalization become almost contradictory. Hall and Nordqvist (2008) also address this paradox by stating that family managers are often seen as inherently non-professional as manager regardless of their background and relations to the firm. They continue by saying that for non-family managers the opposite seems to be true; they are inherently professional whatever their previous background and understanding of the firm.

The results of the factor analysis, which is the empirical approach in order to answer the first research question, show that professionalizing the family business through hiring outside expertise is indeed possible, yet it is not the only way to do so. The family business, whilst retaining family management, can also professionalize through other dimensions, such as through the development of formal governance systems to supervise and guide corporate activity, or by implementing formal control systems to warrant objectivity and transparency. In this respect, we follow the literature stream which stresses that family members can also be professional managers. Family members may be as likely as non-family members to have formal managerial training and education (Dyer, 1989). Being a professional manager relates to having the formal and cultural competence in terms of managing the unique family business, and is indifferent to family membership (Hall & Nordqvist, 2008).

The factor analysis in Chapter 5 identified five underlying dimensions of the professionalization construct: *Financial Control Systems* (F1); *Non-family Involvement in Governance Systems* (F2); *Human Resource Control Systems* (F3); *Decentralization of Authority* (F4); and *Top Level Activeness* (F5). We can see that these empirically derived dimensions have a strong association with the six aforementioned features extracted from the literature. These six features, however, may not be viewed as independent dimensions, as different features can be related and/or constitute one dimension, therefore, the exploratory factor analysis was required. For example, the features (1) the entrance of non-family managers, and (3) the professionalization of the board by the appointment of non-family and

external board members, appear to be somewhat combined in the factor F2 *Non-family Involvement in Governance Systems*.

As to the first research question regarding the content of the professionalization, we can state that, based on the factor results, a family business can professionalize through five uncorrelated dimensions. First, a family business can implement formal control systems, both financial related controls (e.g. budget controls and performance evaluation), as well as human resource related controls (e.g. formal recruitment and incentive systems). The implementation and diffusions of financial controls have often been related to the professionalization process in other research (Flamholtz & Randle, 2007; Giovannoni et al., 2011; Songini, 2006). Family businesses are usually characterized by a lower diffusion of these mechanisms, but having a high reliance on informal management and control systems (Daily & Dollinger, 1993; Perren et al., 1998). Yet, these informal controls and structures tend to lose their original potency as firms grow, giving way to a greater level of formalization (Giovannoni et al., 2011; Quinn & Cameron, 1983). These formal mechanisms can help the family-owned businesses to cope with the interest and problems of both the company and the family (Schulze et al., 2003). Moores and Mula (2000) argue that as the family business passes through the development life cycle, firms adopt more formal financial control systems. This enables the firms to deal with the increased size and complexity of the organization (Craig & Moores, 2005). As such, as a family business professionalizes, it is assumed that the level of informality – which is typical for the entrepreneurial firms – decreases, and formal financial controls are being developed (Flamholtz & Randle, 2007). These controls can warrant transparency and objectivity within the business, but also amongst the family members. This has proven to be of importance when there is ownership dispersion among family members (Davis & Harveston, 1999). As family bonds become less strong, forces are unleashed that diminish trust (Steier, 2001). This can generate goal conflicts and self-interested behavior, and thus increase agency costs (Lubatkin et al., 2005). Formal financial control systems as part of the professionalization process can buffer the company for some of these pitfalls.

Besides the financial control systems, the factor analysis also revealed the importance of formal human resource control systems as part of the professionalization process. Only recently, authors have recognized the importance of these controls within the professionalization context of family businesses (Chua et al., 2009; de Kok et al., 2006; Kotey & Folker, 2007). These personnel related issues – similar to the financial controls – also have a history of being dealt with informally within the entrepreneurial firm (Flamholtz & Randle, 2007). Yet, the manner in which a business handles the recruitment of new personnel, assesses their performance, assigns possible rewards and provides suitable training programs can be important personnel controlling systems, especially in a family business environment. Family firms have often been criticized for hiring people because of their family status and not their qualifications (Kellermanns & Eddleston, 2004). A formalized manner for the selection and evaluation can therefore offer more transparency, and can prevent the family from engaging in particularism, meaning that irrelevant criteria such as kinship ties, are used when recruiting an employee, instead of universalistic criteria, such as competence (Dyer, 2006). Moreover, the performance evaluation of family members can be colored due to what is known as familial altruism, which treats people for who they are rather than what they do (Schulze et al., 2001). This can create a feeling of 'distributive injustice' amongst the non-family members within the business, who believe that they might be surpassed, neglected or disfavored (Van den Berghe & Carchon, 2003). Situations regarding familial altruism and nepotism are, according to Gedajlovic et al. (2004), not perceived as legitimate in the context of professionalized family businesses. It can give non-family agents the incentive to engage in shirking or other forms of opportunism (Lubatkin et al., 2005). Formalized systems of performance evaluation and compensation can be a resolution for firm's objectivity and transparency. Finally, the development of formal training programs, in the context of human resource control systems, is prominent for developing capabilities, growth and productivity. Often, the on-the-job training is replaced by high quality formal training programs during the critical growth stages of the family business (Kotey & Folker, 2007).

The factor analysis further revealed that, when a family business engages in firm professionalization, the amount of family involvement in firm's governance and management should be reduced. Simultaneously, the company should appoint external board members to ensure that the board is distinct enough from the management team to play a supervisory role and to bring a diversity of opinions to bear on issues facing the company (Lane et al., 2006). The linkage between professionalization and the entrance of non-family members in corporate management and board, has been the most profound feature in previous professionalization literature. This is probably due to the measurement convenience of measuring professionalization based on a dummy variable for non-family presence. By allowing externals within the company, the pool for selecting potential talent is no longer limited to family membership, which also increases competition for senior positions (Barth et al., 2005). As family businesses grow and become more complex, the organizational needs can, at a certain point, exceed the capabilities of family managers, and thus necessitate experienced outside managers (Chua et al., 2009; Flamholtz & Randle, 2007).

Finally, decentralization of authority around the owning family and an increased activity and involvement of the management team and board of directors were recognized as the last two components of business professionalization. As most family businesses are founded by an individual who creates and develops the company in accordance with his or her capabilities and needs, it is self-evident that, based on his or her power in the company, there is a centralization of decision-making, which also allows for the alignment of decisions. Yet, centralized management practice is difficult to sustain in the long run as it is highly dependent on the entrepreneur and his or her tacit knowledge (Sandig et al., 2006). Even though decentralizing authority is most beneficial for the company during the professionalization process, it can become a quite hazardous situation as family business owner-managers are proven to be reluctant to delegate control (Blumentritt et al., 2007; Gedajlovic et al., 2004; Gulbrandsen, 2005). When we turn to the literature related to the activity and involvement of the management team and board of directors, we find that active boards have a significant influence

on the quality of decision-making in the family business, contrary to the so-called rubber stamp boards (Gersick et al., 1997; Sharma & Nordqvist, 2008). These rubber stamp boards are often institutionalized only to meet legal requirements, which will not lead to much actual board involvement (Lane et al., 2006; Pieper et al., 2008). Therefore, mere board presence does not suffice when it comes to business professionalization. Both board and management team need to play an active role within the company through which the business can professionalize.

We can conclude for this research question that we have reason to believe that professionalization is in fact a multidimensional construct which is a more profound approach than solely focusing on the presence of a non-family manager as some previous studies tended to do (e.g. Bennedsen et al., 2007; Klein & Bell, 2007; Lin & Hu, 2007; Zhang & Ma, 2009). By isolating this one dimension, these authors might neglect the effect of studying different dimensions of professionalization that act simultaneously. These different dimensions exposed in this study are not novel in the sense that they have been linked to professionalization previously. Our contribution is then the empirical bundling of these different dimensions into a comprehensive construct. Further, it has the implication for academics that it broadens their interpretative scope of the professionalization construct. Even though it is not our intention at this point in time to develop a scale for professionalization – as this requires confirmatory analysis – we do believe to have provided the research field with a thorough assessment of the construct, which is something that has not been done up till now. We have clearly marked out the boundaries of the construct when it is approached multidimensionally. This approach could help prove that the narrow view of professionalization through hiring a non-family manager is not sufficient, as it neglects the coupling with other operative sub-dimensions.

How can we distinguish family businesses based on the professionalization construct?

Relating to the second research question, we also had two distinct approaches: one completely embedded in theory and one through the cluster results. The theoretical manner in which we made a distinction between family firms was based on the multidimensional understanding of the professionalization construct. By discriminating two higher level dimensions, each comprising several of the theoretically identified professionalization features, we differentiated between the amount of *Effective Openness* and *Internal Formalization*. Next, by combining the two continuums we were able to deduct four new conceptual types of family firms, namely the *Autocracy, Domestic Configuration, Clench Hybrid,* and *Administrative Hybrid.* Based on the arguments from the agency theory, organizational control theory, company growth theory and the institutional theory, family firms can perceive the need to and engage in the professionalization process of their business, enabling them to shift between the different "types". On the other hand, if personal control and the preserving of socioemotional wealth outweigh the perceived benefits of professionalization, firms may uphold their place in the *Autocracy* type – where professionalization is deemed low – for a considerable time.

The acknowledgment of the multidimensional essence of professionalization leads to a well-founded, discriminative tool to assess the heterogenic essence of family firms. In this respect, the developed typology is a prominent contribution to the family firm literature. At a time when we are experiencing a rapid increase in family firm research, the importance of finding effective ways to distinguish amongst these ubiquitous firms cannot be overemphasized (Sharma & Nordqvist, 2008). Another contribution is that we build on previously developed family firm typologies and extend them by adding extra dimensions (besides the family involvement) for differentiating family businesses. This multidimensional approach, which also takes firm operations into account, allows a much more dynamic perspective. This opposes most of the previous typologies which are limited to a static representation of how family businesses 'are' or how they are constituted. By taking the versatility of firm's operations, ability and practices into account, we

respond to the gap that is underlined by Melin and Nordqvist (2007), namely that an important limitation in the literature on family businesses is the assumption that all family businesses conduct their governance and management in the same way. Therefore, we take a step towards filling the knowledge gap related to family firm diversity.

When we position our typology in the existing typology literature, we can state that our typology is complementary as well as refining. As it is not possible to encompass all family firm related dimensions into a single, workable typology, the research field will benefit most from having different classification schemes which each focuses on a distinct issue. For example, to assess family firms regarding their culture, the typology of Dyer (1988) would be most appropriate. Relating to family firm performance on financial and family objects or regarding family/business orientation, we would suggest respectively Sharma (2004) and Basco and Pérez Rodríguez (2009). Yet, when it comes to an interpretation scheme for family business activity, the current literature falls short. Often using family involvement as sole discriminative basis, makes it difficult to infer various firm behaviors and outcomes. As such, we have refined these schemes so that the foundation for differentiation is broadened.

The empirical approach, where the family firm types (clusters) are derived based on the five factors of professionalization, identified an equal amount of family firms types. By assessing the relation between the four theoretical and four empirical family firm types, we found a high level of resemblance between the profile discretions. As such, we were able to use our theoretical types to identify the four derived clusters. Without the clustering, the five professionalization factors would allow already 32 firm types in case of dichotomous dimensions. This indicates the possible usability of our typology to produce a simplified version of the reality which enables further discussion and research on the matter.

By answering our second research question with the four constructed family firm types, we offer some counterbalance for those studies that tend to study family businesses as a homogeneous entity (e.g. Daily & Dollinger, 1993; Kotey & Folker, 2007; Morris et al., 2010). These studies examine the family businesses as a specific

category of organizations that differs from other categories of organizations – being the non-family firms – which wrongfully creates the notion that all businesses within this category show similar characteristics and face similar challenges (Melin & Nordqvist, 2007). Even though similarities exist, emphasizing them can cause the differences, which are probably even more profound, to be underestimated. As such, the research field is in need of adequate differentiating tools to distinguish between different types of family firms (Chrisman et al., 2007; Davis, 2009).

Our study provides the means to approach family firm diversity in a novel way which aids the current discussion in the research field and gives it a contextual setting, namely that of firm professionalization. It will allow academics to make sensible comparisons between family firms with references to their specific type and/or related professionalization dimensions. The typology can thus be used to discuss more in depth different types of family businesses and the impact that a specific type-membership has on, for example, firm outcome, importance of family values or other familial aspects. Finally, academics can use the typology to make certain presumptions about a family business. For example, given that a firm belongs to the *Autocracy* type where professionalization is low, it become very likely that informal controls play an important role. These firms might be more guided by shared values and norms, kinship ties, common interest and vision, rituals and ceremonies.

To what extent does professionalization affect firm performance?

As to our last research question, we wanted to revisit the link between firm performance and family business professionalization, when the latter is considered as a multidimensional construct. The literature review signifies that there is an inconsistency in the results of previous studies regarding the effect of professionalization on firm's performance. We posit that this might be caused by proxying professionalization with a binary variable, being the presence of a non-family manager. Given the insights generated by the factor analysis, we reassessed this relation by performing an OLS regression.

The regression results signified the importance of approaching the professionalization construct mutlidimensionally, as there was a significant positive effect on performance by some, but not all professionalization dimensions. By focusing on family business professionalization through diminishing family involvement in governance systems, increasing the usage of human resource control systems, and decentralizing organizational authority, a family business can positively affect its performance. Further, an exploratory analysis indicated that there are a few possible joint effects of different professionalization dimensions. This is an initial indication that effects might not be isolated, though further research is required.

These findings contribute to the family business domain as it provides valuable insights into the construct of professionalization and the effect it can have on business performance. This research topic has gained a considerable amount of interest in recent years and multiple academics have tackled the issue. Yet, by minimizing this multidimensional concept, we found there to be disputable and contrasting results, where some believe the effect of professionalization on performance to be positive, while others do not. As such, based on our findings, we have presented a more nuanced and extensive interpretation of the multiple dimensions of which professionalization is comprised and their effect on firm performance. In this way, our results have highlighted that non-family management is not synonymous for professional management, which is sometimes suggested in previous research, and that there are other ways through which a family business can professionalize and affect firm performance.

9.3 Practical Implications for Family Firms

The findings and conclusions of this dissertation can also be useful for family business practitioners. Our findings on the multidimensional essence of family firms professionalization have practical implications for family businesses, as they present the family business with different dimensions through which they can increase business professionalization. As such, a family firm can identify possible needs –

such as outside expertise which is lacking within the family, or control mechanisms to objectively evaluate family members' performance – and act accordingly. Also, for those family firms that wish to retain high family control and dislike outside non-family interference, our findings propose additional other ways on which the company can focus in order to increase business professionalization. Based on our results, the family CEO can, for example, decentralize authority to subordinates, improve the objectivity of performance evaluation or selection criteria by introducing formal systems of control, or encourage the board and management team to fulfill a more active role in the governance of the company.

Besides pointing out the different directions to practitioners in order to professionalize their family business, our findings also provide family businesses with insights on what the implications can be on their business performance when they adopt one or more professionalization dimensions. We recommend family firms that wish to positively affect their business performance through professionalization, to direct their focus on the following items:

(1) Professionalizing the family business by decreasing the amount of family involvement in their governance systems. Family firms can, for example, appoint outside non-family board members to counterbalance the family control. Moreover, in the daily operations of the business, non-family managers can be employed as a way to decrease family involvement within business management.

(2) Implementing formal human resource control systems is another way in which the family business can professionalize and positively affect business performance. This can be done in a variety of ways. Family firms can develop formal, objective and transparent recruiting instruments. This will prevent the family from engaging in paticularism, which is a situation in which irrelevant criteria such as kin can be used when recruiting new personnel. Also, the objectivity in performance evaluation of employees is an important aspect. Using unbiased standards for an objective performance evaluation can counteract some of the problems originating from familial altruism (i.e. colored evaluation of family members,

sometimes leading to exorbitant compensations). As to spur personnel performance, family firms can also opt to establish adequate incentive systems and reward methods. A final human resource control system that can be implemented is to provide formal training programs for employees. This is in addition to the on-the-job training they experience in the daily operations. Effective training programs can further develop the employee's skills and capabilities, which in turn is beneficial for the company.

(3) As a final professionalization alley for a business to explore, which also has a positive effect on business performance, we propose decentralizing business authority. We recommend family firms to increase the delegation of control and decision-making authority throughout the different sublevels of the company. Centralizing business authority, especially in larger firms, might make a firm quite inert. Yet, rendering subordinates some amount of autonomy and control along with accountability for their decisions, gives them the ability to respond quickly in situations where this is needed.

A final implication that our findings have for practitioners, is embedded in the proposed family business typology. As a family business is able to identify to which 'type' it belongs, the comparisons between their own business and that of others become more grounded. Because these comparisons are done at the same level, i.e. within a specific type, the matching of specific firm outcomes is more relevant and logical. For example, family firms can assess their financial performance by comparing their figures to those of inter-type companies, which have professionalized in a similar manner. Further, practitioners can determine possible future directions for their firm, based on the assessment of their current location in the typology. This will help them to specify specific professionalization features on which they need to focus.

9.4 Future Research

We conclude this dissertation by making a number of recommendations and suggestions for future research. First, we urge all future research related to family business professionalization, whether it is conceptual or empirical, to take into account the depth of the professionalization concept and its multidimensional nature. If we can work towards a generally accepted and applied definition, it would enhance the comparability of the generated empirical results which is crucial for further theory building. It is critical that academic's connotation to the concept is alike if there is any intention of building on co-researcher's work and strive toward an aggregative whole. In light of future research, the first step is to seek empirical validation of the professionalization construct as well as the conceptual framework with the resulting family firm types.

This study is one of the first in its domain to provide empirical evidence that professionalization indeed is a multidimensional construct. Yet, as this is grounded research, there is a definite need for a follow-up study to confirm the exploratory results. Scholars can direct their attention towards verifying the existing professionalization dimensions and assessing whether additional dimensions need to be included in the construct. In this manner, the presence of formalized horizontal and vertical information systems can be evaluated as part of Internal Formalization and as possible sub-dimension of professionalization (Galbraith, 1977). As such, researchers should assess the formalized information flow within a business and this in light of the professionalization process. After exploring possible additional dimensions of professionalization, a final and valid scale development of the professionalization construct, will require researchers to conduct confirmatory factor analysis. After further refinements, these research findings might also contribute to the development of a tool for practitioners who are seeking to assess or convert their firm operations through business professionalization.

Regarding the cluster analysis, future research can assess whether the cluster profiles which we were able to identify in our data set will hold when the data is collected in other countries. Are these professionalization profiles cross-

national? Or are professionalization types of family firms dependent on the national context in which the business is located? Further avenues to explore – in relation to the cluster analysis – are the possible affects that might occur if covariates, used to predict cluster membership, are included in the cluster model. We intentionally opted not to include any covariates in the model estimations as we did not wish to set any prior conditions or constraints on the allocation of the cases to the different clusters. Future research can assess if covariates such as firm size, firm age, generation, organizational development phase, or business performance will alter the cluster findings.

Further typology refinement is also a possible opportunity for future research. Scholarly research can explore further the profiles of the different types or other influential conditions which might be overlooked in this discussion. In this respect, qualitative research might offer some valuable in-depth perspectives concerning the how- and why-questions. As such, it would be interesting to monitor possible family firm movement over time across the conceptual types, uncovering the causes that can bring about a switch from one type to the other, or possible motives of family firms to initiate the professionalization process. These motives or "drivers" of professionalization are another additional interesting avenue for future research. One could determine the firm's conditions that might instigate the professionalization process. What causes a family firm to undertake these changes? Future research can clarify whether it is deliberately instigated by the family firms in order to obtain certain goals, or if it is more an act of despair caused by ill governance, distrust, or prior incompetence. Do these divergent motivations affect the actual success of executing the professionalization process?

Another interesting approach is to assess the progression of the family values or objectives within each company type. Scholars can research whether increased professionalization causes the importance of family values and objectives to decline. It might be assumed that professionalization instigates a more formal, possibly bureaucratic way of doing business, leaving less room to pursue familial goals of the owning family, such as family employment or financial security for family members.

With respect to family business professionalization and business performance, we have focused our attention in this dissertation on the professionalization present in a family business on a specific moment in time and the relation it has to business performance. Future research should consider a possible time span for the evaluation of performance, as professionalization can have a lagged effect on business performance. It might even be so that as professionalization measures are introduced in the family company, they initially lead to additional costs along with them due to implementation efforts or adjustments. It could take a few years before the positive effect on performance due to these professionalization changes becomes visible.

In addition, having multiple measurement moments over time, not only for business performance, but for the different professionalization dimensions, will allow an assessment of the effect that an increase (decrease) of a professionalization dimension can have on business performance. As means of example, the increase in the use of human resource control systems (as professionalization dimension) from one year to the next, might be related to an increase in business performance of the same time span. Future research should consider these different time spans, relating to both dependent and independent variables, as they can provide additional clarifications in the matter. Further, scholars should direct additional attention to the existence of interactions between different professionalization dimensions which might strengthen or weaken each other. Hypotheses should be formulated to indicate the expected interaction based on theory. A final suggestion we wish to make for future scholarly research is to assess a possible mediating effect. Researchers should examine the possibility of an indirect effect of professionalization on firm performance. In this manner, business professionalization might help to better implement a specific firm strategy, which in turn affects business performance.

We believe that this dissertation provides another stepping stone towards the comprehensive understanding of family business professionalization. By combining and integrating all scholarly insights on the matter, we can strive towards a commonly accepted content definition. Also, the related typology can aid

the understanding of family firm diversity. As such, we have paved part of the way in this research field, yet there are still many directions which remain under-researched.

Appendices

A. Questionnaire and descriptives

B. Factor analysis: additional results

C. Latent class cluster analysis: additional results

D. Regression analysis: significant interaction effects for Model 4

A. Questionnaire and descriptives

Appendix A.1: Questionnaire

Deze vragenlijst bevat enkele ja/nee vragen en korte multiple choice vragen en dient ingevuld te worden door de bedrijfsleider.
De door u verstrekte gegevens zullen strikt vertrouwelijk behandeld worden.
Uit de testfase is gebleken dat het invullen van deze vragenlijst maximaal 10 minuten in beslag neemt.

ALGEMEEN

Is minstens 50% van de aandelen in handen van één familie?
NB: Een familie wordt in dit onderzoek beschouwd als een groep mensen die door bloedverwantschap of het huwelijk met elkaar verbonden zijn
□ *Ja* □ *Nee*

Beschouwt u het bedrijf als zijnde een familiebedrijf?
□ *Ja* □ *Nee*

De hoeveelste generatie van de familie (geteld sinds de oprichting van het bedrijf) heeft momenteel de meeste aandelen in handen?
□ *Eerste generatie* □ *Tweede generatie* □ *Derde generatie*
□ *Vierde generatie* □ *Vijfde generatie of meer*

Maakt u, als bedrijfsleider, deel uit van de familie?
□ *Ja* □ *Nee*

[Indien ja] Tot welke generatie van de familie behoort u? Dropdown box 1-5
□ *Eerste generatie* □ *Tweede generatie* □ *Derde generatie*
□ *Vierde generatie* □ *Vijfde generatie of meer*

Wat is uw hoogst behaalde diploma?
□ *Lager secundair* □ *Hoger secundair* □ *Hoger kort type*
□ *Hoger lang type* □ *Universitair*

Wat is uw leeftijd?
___ *jaar*

Hoeveel jaar bent u reeds actief als bedrijfsleider van dit bedrijf?
___ *jaar*

Hoeveel eigenaars telt het bedrijf?
___ *eigenaars*

In welke ontwikkelingsfase zou u het bedrijf situeren?
□ *Startfase* □ *Groeifase* □ *Maturiteitsfase*

INTERNAL FORMALISATION

Bevat het ondernemingsplan van uw bedrijf een marktanalyse?
□ *Ja* □ *Nee*

[Indien ja] Werd het ondernemingsplan het voorbije jaar aangepast?
□ *Ja* □ *Nee*

Beslist het hoofd van de onderneming individueel over de te volgen bedrijfsstrategie?
□ *Ja* □ *Nee*

Bestaat er een verslag of document waarin de bedrijfsdoelstellingen met betrekking tot de omzet voor volgend jaar volledig en gedetailleerd worden uitgewerkt?
□ *Ja* □ *Nee*

Bezit het bedrijf verslagen waarin de vooropgestelde budgetten van het bedrijf vergeleken worden met de gerealiseerde cijfers?
□ *Ja* □ *Nee*

Worden de afwijkingen van de gebudgetteerde streefcijfers opgevolgd om eventueel toekomstige acties te ondernemen?
□ *Ja* □ *Nee*

Worden er kwartaalrapporten opgesteld door het management?
□ *Ja* □ *Nee*

Worden de vergaderingen van het management team doorgaans formeel voorbereid en op voorhand gepland?
□ *Ja* □ *Nee*

Worden financiële resultaten systematisch gecommuniceerd naar het leidinggevend personeel?
□ *Ja* □ *Nee*

Maakt het bedrijf gebruik van verloning naargelang de prestaties, bv via bonussen?
□ *Ja* □ *Nee*

Worden er verslagen gemaakt van de periodieke evaluatiegesprekken met de managers van het bedrijf?
□ *Ja* □ *Nee*

Zijn de procedures met betrekking tot de aanwerving van nieuw personeel neergeschreven in een document?
□ *Ja* □ *Nee*

Voorziet het bedrijf formele interne training of externe scholingsprogramma's voor zijn werknemers? □ *Ja* □ *Nee*

Gebeurt het vaak dat het bedrijf gebruik maakt van ad-hocoplossingen (eenmalige oplossingen, die niet als regel worden beschouwd)?
□ *Ja* □ *Nee*

EFFECTIVE OPENNESS

Hoeveel managers maken er in totaal deel uit van het managementteam?
___ *managers*

Hoeveel managers van dit managementteam zijn familieleden van elkaar?
___ *managers*

Wat is het hoogst behaalde diploma van de belangrijkste familiale managers naast de CEO?
Familiale manager 1:
□ *Lager secundair* □ *Hoger secundair* □ *Hoger kort type* □ *Hoger lang type* □ *Universitair*
Familiale manager 2:
□ *Lager secundair* □ *Hoger secundair* □ *Hoger kort type* □ *Hoger lang type* □ *Universitair*
Familiale manager 3:
□ *Lager secundair* □ *Hoger secundair* □ *Hoger kort type* □ *Hoger lang type* □ *Universitair*

Hoe vaak komt het managementteam officieel samen op jaarbasis?
___ *keer per jaar*

Hoeveel leden (=natuurlijke personen) telt de Raad van Bestuur in totaal?
___ *leden*

Hoeveel familieleden zitten er in deze Raad van Bestuur?
___ *familieleden*

Hoeveel externe bestuurders (= niet familieleden en niet werkzaam in het bedrijf) zitten er in deze Raad van Bestuur?
___ *externe bestuurders*

Hoe vaak komt de Raad van Bestuur samen op jaarbasis?
___ *keer per jaar*

Is er een officiële familieraad aanwezig binnen het bedrijf?
□ *Ja* □ *Nee*

[Indien ja] Hoe vaak komt deze familieraad samen op jaarbasis?
___ *keer per jaar*

Bestaat er buiten de Raad van Bestuur en/of de familieraad nog een andere raad, forum of commissie die advies verleent aan de onderneming en/of aan de familie?
□ *Ja* □ *Nee*

Komt de familie (of een deel van de familie) soms informeel samen om bedrijfsgerelateerde zaken te bespreken?
□ *Ja* □ *Nee*

Rapporteren alle werknemers binnen het bedrijf rechtstreeks aan de bedrijfsleider?
□ *Ja* □ *Nee*

Worden alle belangrijke beslissingen binnen het bedrijf autonoom door de bedrijfsleider genomen en vervolgens naar beneden gecommuniceerd?
□ *Ja* □ *Nee*

De door u verstrekte gegevens zullen strikt vertrouwelijk behandeld worden. We maken in ons onderzoek enkel gebruik van geaggregeerde gegevens, en zullen op geen enkel moment verwijzen naar een individueel bedrijf. Indien u wenst dat we u op de hoogte brengen van de resultaten van deze studie, dan kan u hieronder uw e-mail adres invullen.

Appendix A.2. Frequency table of effective openness variables

Var.	*Survey question*	*Answer*	*n*	*%*
EO_1	Are you, as CEO, part of the family?	Yes	476	*89.5*
		No	56	*10.5*
EO_2	Proportion of family in the management team?* (Grouped)	0	41	*7.7*
		1% - 49%	97	*18.2*
		50%	70	*13.2*
		51% - 99%	60	*13.0*
		100%	255	*47.9*
EO_3	What is the highest educational degree obtained by the main family managers (besides the CEO)?*	Lower secondary level	105	*6.6*
		Higher secondary level	296	*18.5*
		Higher education short term	243	*15.2*
		Higher education long term	218	*13.7*
		University	227	*14.2*
		Missing	507	*31.8*
EO_4	How often does the management team officially meet on an annual basis?	0	55	*10.3*
		1	81	*15.2*
		2	41	*7.7*
		3	18	*3.4*
		4	49	*9.2*
		5	5	*0.9*
		6	18	*3.4*
		7	1	*0.2*
		8	7	*1.3*
		9	0	*0.0*
		10	32	*6.0*
		11	5	*0.9*
		12 or more	220	*41.4*
EO_5	Proportion of family in board of directors?* (Grouped)	No BoD	28	*5.3*
		0%	22	*4.1*
		1% - 49%	28	*5.3*
		50%	31	*5.8*
		51% - 99%	79	*14.8*
		100%	344	*64.7*

EO_6	Proportion of externals in the board of directors?* (Grouped)	No BoD	28	*5.3*
		0%	408	*76.7*
		1% - 49%	59	*11.1*
		50%	22	*4.1*
		51% - 99%	11	*2.1*
		100%	4	*0.8*
EO_7	How often does the board of directors officially meet on an annual basis?	0	62	*11.7*
		1	224	*42.1*
		2	75	*14.1*
		3	18	*3.4*
		4	50	*9.4*
		5	2	*0.4*
		6	17	*3.2*
		7	0	*0.0*
		8	3	*0.6*
		9	2	*0.4*
		10	10	*1.9*
		11	2	*0.4*
		12 or more	67	*12.6*
EO_8	Is there an official family council present within the company?	Yes	35	*6.6*
		No	497	*93.4*
EO_9	Is there another formal board, forum or committee that gives advice to the company and/or the family, besides the board of directors and/or the family council?	Yes	99	*18.6*
		No	433	*81.4*
EO_10	Do all employees within the company directly report to the manager (without using an intermediary)?	Yes	243	*45.7*
		No	289	*54.3*
EO_11	Are all major decisions within the company autonomously made by the CEO, and then communicated downward?	Yes	229	*43.0*
		No	303	*57.0*

* Composed variable

Appendix A.3. Frequency table of internal formalization variables

Var.	*Survey question*	*Answer*	*n*	*%*
IF_1	Utility of business plan?*	No business plan	336	*63.2*
		Having business plan	53	*10.0*
		Using business plan	143	*26.9*
IF_2	Does the head of the company individually decide which organizational strategy must be followed?	Yes	278	*52.3*
		No	254	*47.7*
IF_3	Is there a report or document in which the company objectives with reference to next year's sales, are fully and accurately computed?	Yes	184	*34.6*
		No	348	*65.4*
IF_4	Does the company own reports in which the proposed budgets of the company are compared with the actual figures?	Yes	261	*49.1*
		No	271	*50.9*
IF_5	Are the deviations from the budgeted targets monitored to perhaps undertake future actions?	Yes	310	*58.3*
		No	222	*41.7*
IF_6	Does management prepare quarterly reports?	Yes	329	*61.8*
		No	203	*38.2*
IF_7	Are the staff meetings usually formally prepared and planned in advance?	Yes	249	*46.8*
		No	283	*53.2*
IF_8	Are the financial results systematically communicated to the executives?	Yes	338	*63.5*
		No	194	*36.5*
IF_9	Does the company use incentive payments based on performance, for example through bonuses?	Yes	179	*33.6*
		No	353	*66.4*
IF_10	Are the periodical performance reviews with the managers of the company drawn up in reports?	Yes	163	*30.6*
		No	369	*69.4*
IF_11	Are the procedures regarding the recruitment of new staff noted down in a document?	Yes	157	*29.5*
		No	375	*70.5*

IF_12	Does the company provide formal internal or external training programs for their employees?	Yes No	399 133	*75.0* *25.0*
IF_13	Does the company often rely on ad hoc solutions (one-time solutions, which are not considered as fixed rules)?	Yes No	272 260	*51.1* *48.9*
IF_14	Does the family (or part of the family) have informal meetings to discuss business related issues?	Yes No	237 295	*44.5* *55.5*

* Composed variable

Appendix A.4. Frequency table of descriptive variables

Var.	*Survey question*	*Answer*	*n*	*%*
D_1	Is at least 50% of the voting shares owned by members of a single family?	Yes	532	*77.33*
		No	156	*22.67*
D_2	Which generation of the family (counted since the establishment of the company) currently owns the majority of shares?	1st	209	*39.3*
		2nd	216	*40.6*
		3rd	77	*14.5*
		4th	22	*4.1*
		5th or more	8	*1.5*
D_3	Are you (=CEO) part of the owning family?	Yes	476	*89,5*
		No	56	*10,5*
D_4	To which family generation do you (=CEO) belong?	1st	169	*35.5*
		2nd	204	*42.9*
		3rd	75	*15.8*
		4th	19	*4.1*
		5th or more	9	*1.9*
D_5	What is your (=CEO) highest degree obtained?	Lower secondary level	34	*6.4*
		Higher secondary level	128	*24.1*
		Higher education short term	126	*23.7*
		Higher education long term	99	*18.6*
		University	145	*27.3*
D_6	What is your (=CEO) age? (Grouped)	< 30 years	12	*2.3*
		30 – 39 years	108	*20.3*
		40 – 49 years	203	*38.2*
		50 – 59 years	167	*31.4*
		60 – 69 years	37	*7.0*
		≥ 70 years	5	*0.9*
D_7	How many years have you (=CEO) been working as CEO of this company? (Grouped)	< 5 years	59	*11.1*
		5 – 9 years	84	*15.8*
		10 – 14 years	96	*18.1*
		15 – 19 years	91	*17.1*
		20 – 24 years	87	*16.4*
		25 – 29 years	62	*11.7*
		30 – 34 years	28	*5.3*
		≥ 35 years	24	*4.5*

D_8	How many owners does the company have?	1	181	*34.0*
		2	202	*38.0*
		3	72	*13.5*
		4	44	*8.3*
		5 or more	33	*6.2*
D_9	In which development phase would you situate the company?	Startup	2	*0.4*
		Expansion	254	*47.7*
		Maturity	276	*51.9*
D_10	How many managers are part of the management team (including CEO)?	1	74	*13.9*
		2	169	*31.8*
		3	130	*24.4*
		4	69	*13.0*
		5	41	*7.7*
		6	25	*4.7*
		7	11	*2.1*
		8	7	*1.3*
		9	3	*0.6*
		10 or more	3	*0.6*
D_11	How many people (= natural individuals) are part of the board of directors?	0	28	*5.3*
		1	37	*7.0*
		2	142	*26.7*
		3	182	*43.2*
		4	92	*17.3*
		5	28	*5.3*
		6	12	*2.3*
		7	5	*0.9*
		8	3	*0.6*
		9	2	*0.4*
		10 or more	1	*0.2*

Appendix A.5. Frequency table of Bel-First descriptive variables

Var.	*Bel-First data*	*Answer*	*n*	*%*
D_12	Number of years in business (= firm age) (Grouped)	< 10 years	18	*3.4*
		10 – 19 years	142	*26.7*
		20 – 29 years	169	*36.8*
		30 – 39 years	93	*17.5*
		40 – 49 years	46	*8.6*
		50 – 59 years	21	*3.9*
		60 – 69 years	7	*1.3*
		≥ 70 years	9	*1.7*
D_13	Full-time employees (= firm size) (Grouped)	10 – 14 employees	171	*32.1*
		15 – 19 employees	102	*19.2*
		20 – 24 employees	67	*12.6*
		25 – 29 employees	36	*6.8*
		30 – 34 employees	35	*6.6*
		35 – 39 employees	31	*5.8*
		40 – 44 employees	21	*3.9*
		45 – 49 employees	10	*1.9*
		50 – 99 employees	44	*8.3*
		100 – 199 employees	11	*2.1*
		200 – 250 employees	4	*0.8*
D_14	Return on total assets (= Financial performance) (Grouped)	< -10%	18	*3.4*
		-10% – -6%	14	*2.6*
		-5% – -1%	55	*10.3*
		0% – 4%	179	*33.6*
		5% – 9%	116	*21.8*
		10% – 14%	72	*13.5*
		15% – 19%	23	*4.3*
		20% – 24%	21	*3.9*
		≥ 25%	34	*6.4*
D_15	Firm sector	Construction	129	*23.6*
		Production	154	*28.2*
		Service	121	*22.1*
		Wholesale/retail	143	*26.1*

B. Factor analysis: additional results

Appendix B.1. Anti-image correlation matrix

	EO_1[R]	EO_2[R]	EO_4	EO_5[R]	EO_6	EO_7	EO_8	EO_9	EO_10[R]	EO_11[R]
EO_1[R]	.664[a]	-.501	.082	-.061	-.024	.008	-.020	.017	.152	-.016
EO_2[R]	-.501	.773[a]	-.116	-.198	.016	.119	.092	-.009	-.192	-.057
EO_4	.082	-.116	.798[a]	.045	.012	-.362	.042	.047	.008	.007
EO_5[R]	-.061	-.198	.045	.729[a]	-.542	-.118	.011	-.049	.022	.012
EO_6	-.024	.016	.012	-.542	.710[a]	-.064	.044	.059	-.052	.010
EO_7	.008	.119	-.362	-.118	-.064	.643[a]	-.038	-.079	-.027	-.007
EO_8	-.020	.092	.042	.011	.044	-.038	.654[a]	-.120	-.082	.094
EO_9	.017	-.009	.047	-.049	.059	-.079	-.120	.783[a]	.065	.020
EO_10[R]	.152	-.192	.008	.022	-.052	-.027	-.082	.065	.777[a]	-.239
EO_11[R]	-.016	-.057	.007	.012	.010	-.007	.094	.020	-.239	.769[a]
IF_1	-.005	.015	-.120	-.088	.053	.062	.044	-.128	-.127	-.022
IF_2[R]	-.099	.063	-.051	.013	-.064	-.071	-.078	-.059	-.036	-.339
IF_3	.067	-.201	-.068	-.006	.019	-.048	-.024	-.022	-.037	.023
IF_4	-.045	.040	.025	-.006	-.055	-.015	.005	.037	.033	.037
IF_5	-.034	-.030	-.040	.037	-.028	.056	-.074	-.068	.038	-.037
IF_6	.009	-.083	-.005	.044	-.039	-.069	-.022	-.074	.009	-.067
IF_7	.007	-.105	-.124	-.021	-.010	-.005	.019	-.009	-.032	.007
IF_8	.016	-.020	-.067	-.052	.025	-.041	-.021	.048	.044	-.046
IF_9	.030	-.101	.038	-.038	.006	-.013	-.064	.065	.004	-.023
IF_10	.075	-.040	-.010	.004	-.004	.016	-.045	-.030	-.041	-.111
IF_11	.025	-.015	-.091	-.036	-.010	.064	-.140	-.060	-.079	-.007
IF_12	.004	.015	-.026	-.037	-.011	-.013	.044	-.117	.002	.004
IF_13[R]	-.027	.095	-.045	-.007	.032	.083	-.046	-.064	.012	-.081
IF_14[R]	-.013	-.056	-.006	-.164	.008	.137	.093	.001	-.082	-.014

Continued on next page

	IF_1	IF_2[R]	IF_3	IF_4	IF_5	IF_6	IF_7
EO_1[R]	-.005	-.099	.067	-.045	-.034	.009	.007
EO_2[R]	.015	.063	-.201	.040	-.030	-.083	-.105
EO_4	-.120	-.051	-.068	.025	-.040	-.005	-.124
EO_5[R]	-.088	.013	-.006	-.006	.037	.044	-.021
EO_6	.053	-.064	.019	-.055	-.028	-.039	-.010
EO_7	.062	-.071	-.048	-.015	.056	-.069	-.005
EO_8	.044	-.078	-.024	.005	-.074	-.022	.019
EO_9	-.128	-.059	-.022	.037	-.068	-.074	-.009
EO_10[R]	-.127	-.036	-.037	.033	.038	.009	-.032
EO_11[R]	-.022	-.339	.023	.037	-.037	-.067	.007
IF_1	.899[a]	-.029	-.122	-.037	-.109	-.095	.013
IF_2[R]	-.029	.776[a]	-.060	.018	-.028	.033	-.080
IF_3	-.122	-.060	.904[a]	-.303	-.038	-.023	-.049
IF_4	-.037	.018	-.303	.774[a]	-.597	-.117	-.014
IF_5	-.109	-.028	-.038	-.597	.798[a]	-.038	-.056
IF_6	-.095	.033	-.023	-.117	-.038	.891[a]	-.156
IF_7	.013	-.080	-.049	-.014	-.056	-.156	.901[a]
IF_8	.045	-.007	.025	-.024	-.039	-.192	-.008
IF_9	-.141	-.013	-.055	-.020	.062	.026	.006
IF_10	-.039	-.005	-.040	-.096	.003	.003	-.265
IF_11	-.034	.005	-.085	.006	.007	.073	-.118
IF_12	-.042	.014	-.086	.124	-.088	-.005	-.098
IF_13[R]	.029	.004	-.020	-.062	.060	-.014	.046
IF_14[R]	.035	.166	-.015	.001	.055	-.047	-.013

Continued on next page

	IF_8	IF_9	IF_10	IF_11	IF_12	IF_13[R]	IF_14[R]
EO_1[R]	.016	.030	.075	.025	.004	-.027	-.013
EO_2[R]	-.020	-.101	-.040	-.015	.015	.095	-.056
EO_4	-.067	.038	-.010	-.091	-.026	-.045	-.006
EO_5[R]	-.052	-.038	.004	-.036	-.037	-.007	-.164
EO_6	.025	.006	-.004	-.010	-.011	.032	.008
EO_7	-.041	-.013	.016	.064	-.013	.083	.137
EO_8	-.021	-.064	-.045	-.140	.044	-.046	.093
EO_9	.048	.065	-.030	-.060	-.117	-.064	.001
EO_10[R]	.044	.004	-.041	-.079	.002	.012	-.082
EO_11[R]	-.046	-.023	-.111	-.007	.004	-.081	-.014
IF_1	.045	-.141	-.039	-.034	-.042	.029	.035
IF_2[R]	-.007	-.013	-.005	.005	.014	.004	.166
IF_3	.025	-.055	-.040	-.085	-.086	-.020	-.015
IF_4	-.024	-.020	-.096	.006	.124	-.062	.001
IF_5	-.039	.062	.003	.007	-.088	.060	.055
IF_6	-.192	.026	.003	.073	-.005	-.014	-.047
IF_7	-.008	.006	-.265	-.118	-.098	.046	-.013
IF_8	.843[a]	-.021	-.075	-.010	-.020	-.078	-.030
IF_9	-.021	.853[a]	-.132	-.022	-.102	.022	-.008
IF_10	-.075	-.132	.894[a]	-.084	-.004	-.032	-.014
IF_11	-.010	-.022	-.084	.871[a]	-.131	-.043	.038
IF_12	-.020	-.102	-.004	-.131	.831[a]	-.062	.022
IF_13[R]	-.078	.022	-.032	-.043	-.062	.519[a]	.025
IF_14[R]	-.030	-.008	-.014	.038	.022	.025	.657[a]

[a] Measures of Sampling Adequacy

Appendix B.2. Total variance explained

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	4.959	20.662	20.662
2	1.934	8.057	28.719
3	1.461	6.086	34.805
4	1.317	5.489	40.294
5	1.228	5.116	45.410
6	1.145	4.770	50.181
7	1.089	4.536	54.717
8	.982	4.090	58.807
9	.945	3.936	62.744
10	.910	3.793	66.536
11	.888	3.701	70.237
12	.844	3.516	73.753
13	.764	3.185	76.937
14	.698	2.907	79.844
15	.694	2.890	82.734
16	.630	2.624	85.358
17	.602	2.508	87.866
18	.545	2.272	90.139
19	.509	2.122	92.261
20	.490	2.040	94.301
21	.459	1.911	96.211
22	.363	1.514	97.725
23	.306	1.275	99.000
24	.240	1.000	100.000

Appendix B.3. Factor loadings for Varimax rotated 7 factor model (24 variables)

	Factor						
	1	2	3	4	5	6	7
IF_4	**.849**	.046	.098	.010	.029	.115	.064
IF_5	**.823**	.049	.082	.034	.027	.185	.030
IF_3	**.643**	.338	.140	.090	.099	.091	-.017
IF_6	**.525**	.072	.098	.069	.165	-.085	.376
IF_1	.459	.399	.063	.132	.079	.086	-.110
IF_11	.078	**.594**	.047	.049	.044	.300	.048
IF_12	.007	**.531**	.121	-.105	.105	.269	.129
IF_9	.120	**.523**	.080	.080	-.031	-.040	-.106
IF_10	.347	.498	-.025	.207	.071	-.017	.188
IF_7	.403	.465	.117	.157	.206	-.035	.145
EO_5^{R}	.050	.197	**.816**	-.019	.152	-.030	.054
EO_6	.035	.065	**.748**	.018	.230	.004	.018
EO_1^{R}	.266	-.114	**.611**	.182	-.275	-.002	-.047
EO_2^{R}	.375	.272	**.560**	.217	-.132	-.192	-.031
EO_11^{R}	.085	.150	.064	**.784**	.015	-.060	.173
IF_2^{R}	.130	-.022	.104	**.711**	.189	.289	-.015
EO_10^{R}	.024	.454	.048	**.507**	.020	-.176	-.059
EO_7	.030	-.030	.121	.073	**.818**	.117	-.001
EO_4	.236	.241	.014	.104	**.650**	-.041	.085
EO_8	.079	.104	-.107	.041	-.022	**.584**	.006
EO_9	.137	.184	.108	-.069	.034	**.568**	.094
IF_14^{R}	-.056	.238	.271	-.205	-.233	-.488	.205
IF_8	.227	.021	.045	.045	.199	-.131	**.672**
IF_13^{R}	-.100	.012	-.056	.086	-.193	.344	**.646**

Appendix B.4. Factor loadings for Oblimin rotated 7 factor model (24 variables)

	Factor						
	1	2	3	4	5	6	7
IF_4	**.891**	-.021	-.075	.018	-.089	.083	.020
IF_5	**.862**	-.012	-.051	.023	-.074	.159	-.005
IF_3	**.632**	-.063	.040	-.054	.217	.037	-.072
IF_6	**.509**	-.035	.030	-.142	-.057	-.151	.324
IF_1	.438	.003	.105	-.043	.307	.042	-.157
IF_7	.344	-.046	.145	-.178	.329	-.117	.080
EO_5^{R}	-.064	**-.822**	-.041	-.128	.145	-.059	.022
EO_6	-.073	**-.768**	-.012	-.209	.013	.003	-.005
EO_1^{R}	.228	**-.596**	.152	.314	-.209	.046	-.040
EO_2^{R}	.308	-.494	.208	.172	.123	-.204	-.080
EO_11^{R}	-.037	-.019	**.820**	.018	-.026	-.031	.164
IF_2^{R}	.018	-.105	**.697**	-.146	-.150	.358	.006
EO_10^{R}	-.075	.012	**.558**	.001	.329	-.186	-.099
EO_7	-.058	-.159	.025	**-.820**	-.076	.127	-.037
EO_4	.164	.011	.075	**-.644**	.145	-.086	.015
IF_11	.018	-.019	.056	-.017	**.615**	.195	.033
IF_12	-.051	-.110	-.102	-.088	**.582**	.150	.113
IF_9	.079	-.027	.102	.049	.485	-.100	-.147
IF_10	.297	.104	.215	-.044	.398	-.110	.135
IF_14^{R}	-.064	-.224	-.158	.217	.214	**-.561**	.156
EO_8	.076	.084	.009	.050	.175	**.555**	.053
EO_9	.115	-.129	-.111	-.002	.251	**.505**	.125
IF_13^{R}	-.134	.041	.101	.204	.069	.250	**.698**
IF_8	.184	-.008	.038	-.197	-.063	-.229	**.634**

Appendix B.5. Communalities of each variable

	Initial	Extraction
EO_1^{R}	1.000	.568
EO_2^{R}	1.000	.630
EO_4	1.000	.556
EO_5^{R}	1.000	.735
EO_6	1.000	.618
EO_7	1.000	.705
EO_8	1.000	.372
EO_9	1.000	.401
EO_10^{R}	1.000	.501
EO_11^{R}	1.000	.682
IF_1	1.000	.417
IF_2^{R}	1.000	.653
IF_3	1.000	.574
IF_4	1.000	.750
IF_5	1.000	.724
IF_6	1.000	.470
IF_7	1.000	.464
IF_8	1.000	.564
IF_9	1.000	.314
IF_10	1.000	.453
IF_11	1.000	.458
IF_12	1.000	.407
IF_13^{R}	1.000	.594
IF_14^{R}	1.000	.510

Appendix B.6. Total variance explained

Component	Initial Eigenvalues Total	% of Variance	Cumulative %
1	4.669	20.299	20.299
2	1.923	8.361	28.660
3	1.459	6.344	35.004
4	1.311	5.701	40.705
5	1.226	5.329	46.034
6	1.144	4.975	51.009
7	1.070	4.654	55.664
8	.975	4.241	59.905
9	.932	4.050	63.955
10	.905	3.936	67.891
11	.872	3.791	71.682
12	.812	3.532	75.214
13	.760	3.306	78.520
14	.693	3.015	81.535
15	.665	2.892	84.427
16	.624	2.711	87.139
17	.554	2.410	89.549
18	.519	2.257	91.806
19	.493	2.142	93.948
20	.462	2.009	95.957
21	.371	1.615	97.572
22	.317	1.379	98.951
23	.241	1.049	100.000

Appendix B.7. Factor loadings for Varimax rotated 7 factor model (23 variables)

	Factor						
	1	2	3	4	5	6	7
IF_4	**.852**	.096	.070	.015	.033	.122	.033
IF_5	**.821**	.082	.068	.039	.030	.194	.011
IF_3	**.632**	.145	.351	.094	.101	.105	-.028
IF_6	**.531**	.098	.073	.076	.176	-.096	.363
EO_5^{R}	.044	**.820**	.183	-.014	.152	-.033	.061
EO_6	.038	**.745**	.062	.022	.229	.002	.009
EO_1^{R}	.274	**.602**	-.101	.185	-.279	-.003	-.067
EO_2^{R}	.375	**.557**	.287	.220	-.132	-.185	-.057
IF_11	.077	.041	**.615**	.043	.045	.302	.022
IF_10	.355	-.035	**.530**	.205	.078	-.019	.133
IF_9	.101	.088	**.523**	.079	-.029	-.030	-.105
IF_12	-.007	.133	**.518**	-.102	.106	.271	.170
IF_7	.414	.107	.480	.156	.211	-.033	.085
EO_11^{R}	.081	.064	.147	**.787**	.019	-.064	.178
IF_2^{R}	.124	.100	-.020	**.712**	.187	.292	-.016
EO_10^{R}	.004	.056	.449	**.507**	.022	-.167	-.052
EO_7	.028	.123	-.033	.074	**.816**	.123	-.014
EO_4	.225	.021	.237	.106	**.654**	-.036	.072
EO_8	.091	-.125	.134	.033	-.024	**.579**	-.033
EO_9	.113	.129	.149	-.060	.034	**.571**	.181
IF_14^{R}	-.050	.274	.231	-.201	-.226	-.477	.209
IF_13^{R}	-.085	-.058	-.008	.093	-.180	.309	**.690**
IF_8	.260	.028	.035	.048	.216	-.166	**.619**

Appendix B.8. Factor loadings for Oblimin rotated 7 factor model (23 variables)

	Factor						
	1	2	3	4	5	6	7
IF_4	**.891**	-.016	-.070	.018	-.047	.090	-.018
IF_5	**.858**	-.011	-.048	.024	-.037	.167	-.025
IF_3	**.620**	-.065	.039	-.053	.249	.053	-.089
IF_6	**.515**	-.031	.043	-.153	-.055	-.182	.288
EO_5^{R}	-.058	**-.822**	-.036	-.128	.128	-.082	.028
EO_6	-.057	**-.762**	-.009	-.207	.008	-.011	-.015
EO_1^{R}	.244	**-.581**	.156	.321	-.188	.043	-.050
EO_2^{R}	.314	-.481	.210	.176	.150	-.194	-.116
EO_11^{R}	-.032	-.015	**.823**	.016	-.016	-.029	.170
IF_2^{R}	.025	-.104	**.692**	-.142	-.129	.374	.028
EO_10^{R}	-.090	.008	**.553**	.000	.339	-.160	-.099
EO_7	-.052	-.165	.024	**-.818**	-.075	.140	-.060
EO_4	.157	.004	.076	**-.647**	.149	-.075	-.021
IF_11	.025	-.009	.040	-.017	**.643**	.189	.019
IF_12	-.061	-.121	-.106	-.090	**.567**	.126	.165
IF_9	.061	-.032	.093	.049	.495	-.082	-.149
IF_10	.311	.123	.207	-.048	.439	-.112	.064
IF_7	.361	-.026	.139	-.178	.374	-.114	.001
EO_9	-.062	-.218	-.148	.210	.193	**-.589**	.128
EO_8	.097	.100	-.008	.052	.212	**.546**	.048
IF_14^{R}	.091	-.157	-.108	-.004	.218	.474	.250
IF_13^{R}	-.114	.044	.111	.186	.028	.156	**.760**
IF_8	.224	.018	.049	-.216	-.064	-.299	**.549**

Appendix B.9. Component correlation matrix (Oblimin rotation)

Component	1	2	3	4	5	6	7
1	1.000	-.223	.244	-.156	.246	.000	.125
2	-.223	1.000	-.121	.029	-.146	.086	-.016
3	.244	-.121	1.000	-.109	.175	-.041	-.009
4	-.156	.029	-.109	1.000	-.101	-.037	-.096
5	.246	-.146	.175	-.101	1.000	.023	.087
6	.000	.086	-.041	-.037	.023	1.000	.055
7	.125	-.016	-.009	-.096	.087	.055	1.000

Appendix B.10. Total variance explained

Component	Initial Eigenvalues Total	% of Variance	Cumulative %
1	4.667	21.212	21.212
2	1.774	8.066	29.278
3	1.457	6.623	35.902
4	1.295	5.884	41.786
5	1.218	5.536	47.322
6	1.090	4.956	52.278
7	1.057	4.803	57.081
8	.972	4.418	61.499
9	.913	4.150	65.648
10	.873	3.967	69.616
11	.867	3.943	73.558
12	.783	3.558	77.116
13	.759	3.451	80.568
14	.678	3.081	83.649
15	.625	2.839	86.488
16	.555	2.524	89.012
17	.523	2.376	91.389
18	.496	2.256	93.644
19	.464	2.109	95.753
20	.373	1.695	97.448
21	.320	1.455	98.903
22	.241	1.097	100.000

Appendix B.11. Factor loadings for Varimax rotated 7 factor model (22 variables)

	Factor						
	1	2	3	4	5	6	7
IF_4	**.855**	.098	.062	.021	.032	.131	.019
IF_5	**.824**	.082	.058	.043	.028	.197	.004
IF_3	**.633**	.145	.336	.116	.103	.122	-.047
IF_6	**.535**	.109	.071	.085	.180	-.079	.332
EO_5^{R}	.039	**.821**	.173	.003	.161	.018	.029
EO_6	.033	**.751**	.058	.026	.227	.029	-.011
EO_1^{R}	.255	**.610**	-.064	.139	-.298	-.047	.006
EO_2^{R}	.360	**.574**	.300	.216	-.146	-.186	-.043
IF_11	.076	.032	**.607**	.078	.050	.314	.002
IF_9	.083	.094	**.569**	.069	-.048	-.085	-.057
IF_12	-.018	.126	**.561**	-.101	.103	.234	.200
IF_10	.354	-.027	**.528**	.229	.075	-.016	.112
IF_7	.411	.115	.491	.177	.206	-.031	.069
EO_11^{R}	.088	.067	.098	**.800**	.021	-.049	.172
IF_2^{R}	.130	.087	-.058	**.702**	.183	.268	.024
EO_10^{R}	.017	.063	.368	**.571**	.035	-.082	-.137
EO_7	.037	.111	-.051	.082	**.821**	.118	-.019
EO_4	.230	.017	.229	.123	**.658**	-.038	.061
EO_9	.130	.099	.086	-.011	.071	**.653**	.120
EO_8	.108	-.154	.075	.073	.001	**.630**	-.073
IF_13^{R}	-.086	-.066	.020	.074	-.171	.284	**.712**
IF_8	.253	.044	.089	.021	.208	-.212	**.638**

Appendix B.12. Factor loadings for Oblimin rotated 7 factor model (22 variables)

	Factor						
	1	2	3	4	5	6	7
IF_4	**.890**	-.014	-.054	-.011	-.050	.099	-.014
IF_5	**.859**	-.003	-.027	-.014	-.051	.167	-.027
IF_3	**.613**	-.065	.050	.058	.242	.082	-.084
IF_6	.498	-.049	.036	.140	-.025	-.128	.305
EO_5^{R}	-.073	**-.836**	-.039	.115	.118	.013	.012
EO_6	-.066	**-.772**	-.010	.190	-.004	.031	-.028
EO_1^{R}	.217	**-.589**	.113	-.346	-.131	-.030	.008
EO_2^{R}	.282	**-.512**	.168	-.203	.214	-.198	-.064
EO_11^{R}	-.038	-.007	**.824**	-.020	-.025	-.067	.166
IF_2^{R}	.037	-.056	**.721**	.152	-.188	.264	.015
EO_10^{R}	-.084	-.006	**.578**	.008	.296	-.095	-.152
EO_7	-.033	-.130	.062	**.827**	-.129	.096	-.055
EO_4	.155	.016	.086	**.647**	.147	-.087	.017
IF_11	.014	-.004	.050	.021	**.607**	.271	-.015
IF_12	-.092	-.121	-.132	.075	**.584**	.182	.186
IF_9	.026	-.047	.041	-.074	**.568**	-.118	-.075
IF_10	.288	.106	.190	.036	.468	-.073	.083
IF_7	.339	-.041	.124	.165	.403	-.086	.031
EO_9	.116	-.119	-.028	.047	.068	**.634**	.119
EO_8	.130	.148	.071	-.006	.069	**.624**	-.071
IF_13^{R}	-.141	.050	.094	-.200	.032	.240	**.735**
IF_8	.181	-.009	-.006	.175	.036	-.277	**.622**

Appendix B.13 Factor loadings for Varimax rotated 6 factor model (21 variables)

	Factor					
	1	2	3	4	5	6
IF_4	**.837**	.126	.046	.015	-.004	.170
IF_5	**.802**	.105	.046	.040	-.012	.245
IF_3	**.611**	.176	.319	.121	.061	.152
IF_6	**.597**	.076	.071	.090	.211	-.078
IF_8	.390	-.042	.109	.027	.313	-.272
EO_5^{R}	.045	**.814**	.179	.002	.181	.001
EO_6	.030	**.751**	.062	.021	.238	.021
EO_1^{R}	.246	**.610**	-.071	.135	-.291	-.037
EO_2^{R}	.350	**.586**	.279	.227	-.164	-.164
IF_11	.074	.032	**.614**	.091	.045	.296
IF_12	.024	.090	**.584**	-.086	.141	.191
IF_9	.079	.105	**.558**	.089	-.068	-.086
IF_10	.378	-.029	**.516**	.245	.071	-.018
IF_7	.426	.116	.467	.194	.189	-.015
EO_11^{R}	.125	.048	.079	**.802**	.051	-.058
IF_2^{R}	.126	.084	-.071	**.698**	.181	.290
EO_10^{R}	-.003	.087	.338	**.583**	.003	-.065
EO_7	.037	.120	-.054	.080	**.801**	.141
EO_4	.249	.029	.216	.128	**.644**	-.031
EO_9	.132	.069	.116	-.014	.091	**.648**
EO_8	.071	-.150	.091	.069	-.019	**.645**

Appendix B.14. Factor loadings for Varimax rotated 6 factor model (20 variables)

	Factor					
	1	2	3	4	5	6
IF_4	**.861**	.096	.049	.004	.018	.103
IF_5	**.824**	.078	.049	.029	.006	.186
IF_3	**.646**	.140	.324	.105	.095	.068
IF_6	**.566**	.100	.060	.110	.161	-.002
EO_5^{R}	.049	**.822**	.178	.005	.162	.020
EO_6	.043	**.752**	.063	.021	.232	.022
EO_1^{R}	.246	**.611**	-.074	.134	-.305	-.025
EO_2^{R}	.359	**.577**	.278	.223	-.167	-.178
IF_11	.084	.027	**.618**	.083	.045	.282
IF_12	.027	.095	**.583**	-.086	.133	.199
IF_9	.075	.110	**.555**	.091	-.079	-.071
IF_10	.374	-.029	**.513**	.248	.058	-.010
IF_7	.438	.107	.466	.193	.192	-.034
EO_11^{R}	.117	.056	.079	**.807**	.030	-.031
IF_2^{R}	.134	.084	-.067	**.696**	.175	.293
EO_10^{R}	.013	.074	.344	**.574**	.018	-.100
EO_7	.058	.113	-.048	.080	**.817**	.110
EO_4	.276	.007	.224	.122	**.673**	-.096
EO_8	.057	-.128	.089	.073	-.054	**.705**
EO_9	.139	.079	.113	-.014	.078	**.672**

Appendix B.15. Factor loadings for Varimax rotated 6 factor model (19 variables)

	Factor					
	1	2	3	4	5	6
IF_4	**.873**	.090	.086	-.005	.041	-.006
IF_5	**.837**	.064	.056	.040	.017	.109
IF_3	**.641**	.149	.332	.087	.103	.096
IF_6	**.553**	.116	.050	.134	.138	.061
EO_5^{R}	.049	**.817**	.157	-.022	.188	.054
EO_6	.052	**.739**	.074	-.015	.273	-.035
EO_1^{R}	.226	**.627**	-.120	.181	-.338	.084
EO_2^{R}	.323	**.617**	.275	.216	-.189	-.004
IF_9	.065	.139	**.597**	.007	-.042	-.058
IF_11	.093	.014	**.575**	.046	.068	.335
IF_10	.362	-.007	**.558**	.190	.077	.019
IF_7	.413	.134	.455	.176	.174	.129
EO_11^{R}	.095	.057	.154	**.805**	.015	-.018
IF_2^{R}	.143	.047	-.046	**.728**	.174	.191
EO_10^{R}	-.003	.099	.450	.499	.052	-.175
EO_7	.066	.105	-.075	.096	**.820**	.078
EO_4	.253	.038	.209	.123	**.649**	.033
EO_9	.171	-.004	-.070	.092	.038	**.804**
IF_12	.009	.085	.427	-.046	.073	**.585**

Appendix B.16. Factor loadings for Varimax rotated 5 factor model (18 variables)

	Factor				
	1	2	3	4	5
IF_4	**.870**	.098	.074	.003	.036
IF_5	**.842**	.065	.082	.028	.032
IF_3	**.642**	.151	.336	.116	.093
IF_6	**.553**	.119	.051	.134	.142
EO_5^{R}	.040	**.816**	.174	-.003	.192
EO_6	.041	**.738**	.070	.002	.273
EO_2^{R}	.319	**.625**	.233	.243	-.192
EO_1^{R}	.238	**.623**	-.098	.134	-.287
IF_11	.109	.000	**.655**	.081	.073
IF_12	.046	.050	**.622**	-.070	.134
IF_9	.051	.152	**.532**	.101	-.100
IF_10	.355	.003	**.503**	.268	.031
IF_7	.416	.131	.459	.218	.162
EO_11^{R}	.104	.057	.065	**.813**	.017
IF_2^{R}	.167	.031	-.033	**.681**	.223
EO_10^{R}	-.018	.116	.307	**.584**	-.007
EO_7	.063	.090	-.027	.083	**.829**
EO_4	.250	.027	.221	.144	**.637**

Appendix B.17. Total variance explained

Component	Initial Eigenvalues Total	% of Variance	Cumulative %
1	4.500	25.000	25.000
2	1.614	8.969	33.969
3	1.453	8.072	42.041
4	1.273	7.073	49.114
5	1.180	6.558	55.673
6	.940	5.222	60.895
7	.880	4.891	65.786
8	.873	4.848	70.633
9	.811	4.508	75.141
10	.775	4.307	79.448
11	.651	3.617	83.065
12	.565	3.136	86.202
13	.555	3.083	89.284
14	.506	2.812	92.097
15	.472	2.623	94.720
16	.381	2.117	96.837
17	.325	1.804	98.641
18	.245	1.359	100.000

Appendix B.18. Factor loadings for Oblimin rotated 5 factor model (18 variables)

	Factor				
	1	2	3	4	5
IF_4	**.911**	-.002	-.096	-.015	-.034
IF_5	**.881**	-.035	-.065	-.018	-.023
IF_3	**.617**	.061	.027	.036	.246
IF_6	**.549**	.055	.075	.103	-.042
EO_5^{R}	-.067	**.843**	-.061	.145	.113
EO_6	-.052	**.773**	-.047	.235	.007
EO_1^{R}	.194	**.591**	.096	-.329	-.179
EO_2^{R}	.229	**.564**	.180	-.257	.139
EO_11^{R}	-.014	-.021	**.844**	-.021	-.051
IF_2^{R}	.075	-.026	**.703**	.193	-.150
EO_10^{R}	-.142	.059	**.594**	-.046	.242
EO_7	.012	.136	.071	**.824**	-.083
EO_4	.194	.018	.105	**.611**	.157
IF_11	.036	-.048	.029	.035	**.657**
IF_12	-.015	.029	-.125	.103	**.644**
IF_9	-.024	.109	.059	-.138	**.529**
IF_10	.290	-.084	.213	-.019	.448
IF_7	.348	.057	.149	.107	.387

Appendix B.19. Component correlation matrix (Oblimin rotation)

Component	1	2	3	4	5
1	1.000	.252	.286	.103	.261
2	.252	1.000	.190	.010	.171
3	.286	.190	1.000	.070	.242
4	.103	.010	.070	1.000	.096
5	.261	.171	.242	.096	1.000

Appendix B.20. Factor loadings for Varimax rotated 5 factor model on split sample (SAMPLE_1)

	Factor				
	1	2	3	4	5
IF_4	**.884**	.101	.058	.012	.042
IF_5	**.832**	.059	.089	.059	.043
IF_3	**.698**	.189	.286	.106	.096
IF_6	**.509**	.116	.046	.107	.143
EO_5^{R}	.042	**.795**	.187	-.024	.283
EO_6	.096	**.702**	.179	-.066	.289
EO_2^{R}	.276	**.686**	.151	.299	-.144
EO_1^{R}	.261	**.596**	-.179	.210	-.309
IF_11	.101	-.036	**.627**	.018	.016
IF_9	.092	.168	**.615**	.080	-.131
IF_12	-.026	.045	**.545**	.109	.189
IF_10	.363	.126	**.528**	.241	.047
IF_7	.320	.262	.483	.183	.192
EO_11^{R}	.120	-.004	.094	**.853**	.021
IF_2^{R}	.243	.074	.052	**.682**	.183
EO_10^{R}	-.091	.135	.302	**.572**	.039
EO_7	.082	.126	-.060	.088	**.823**
EO_4	.270	.052	.216	.146	**.635**

Appendix B.21. Factor loadings for Varimax rotated 5 factor model on split sample (SAMPLE_2)

	Factor				
	1	2	3	4	5
IF_4	**.852**	.164	.104	.027	.015
IF_5	**.835**	.199	.070	-.019	.009
IF_6	**.646**	.014	.143	.212	.118
IF_3	**.555**	.392	.140	.170	.117
IF_11	.023	**.705**	.034	.161	.173
IF_7	.422	**.554**	.055	.148	.177
IF_10	.336	**.492**	-.107	.273	.029
IF_12	.180	.469	.074	-.131	.045
IF_9	.064	.270	.134	.230	-.034
EO_5^{R}	.132	.031	**.806**	.131	.141
EO_6	.168	-.224	**.746**	.149	.202
EO_1^{R}	-.015	.322	**.625**	-.093	-.221
EO_2^{R}	.194	.473	**.613**	.159	-.131
EO_11^{R}	.089	.046	.081	**.768**	.025
EO_10^{R}	.157	.059	.108	**.722**	-.009
IF_2^{R}	-.030	.179	-.008	.454	.377
EO_7	.093	-.048	.059	.030	**.836**
EO_4	.118	.372	.013	.010	**.686**

C. Latent class cluster analysis: additional results

Appendix C.1. Parameter output 4-Cluster model with four indicator variables (F1, F2, F4, F5)

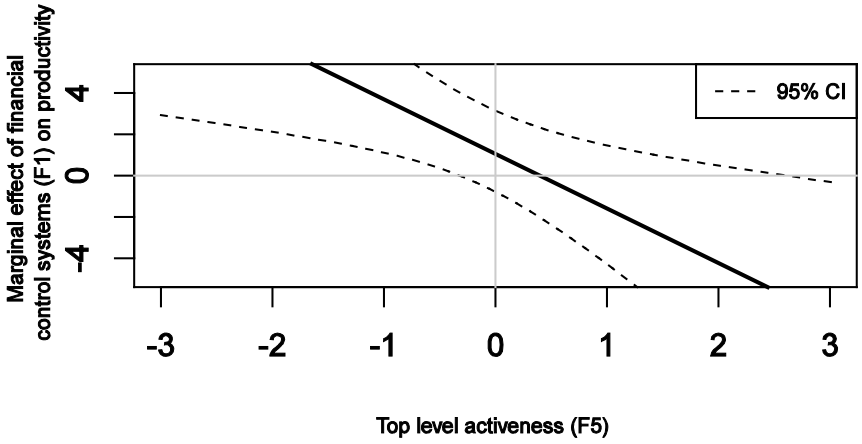
Indicator variables	*Overall intercept*	*Beta* **Cluster1**	**Cluster2**	**Cluster3**	**Cluster4**	Wald	p-value
F1	-0.1390	-0.7699	1.0381	0.8379	-1.1061	2256.7936	3.3e-489
F2	0.7410	-1.0391	-1.1866	1.2332	0.9925	1104.0329	4.8e-239
F4	-0.0601	0.1055	-0.0011	0.2850	-0.3916	7.9135	0.048
F5	0.0389	-0.0946	0.0444	-0.2757	0.3259	7.3181	0.062

Appendix C.2. Profile output 4-Cluster model with four indicator variables (F1, F2, F4, F5)

	Cluster1	*Cluster2*	*Cluster3*	*Cluster4*
Cluster Size	**42.82%**	**40.84%**	**11.58%**	**4.75%**
F1	-0.9088	0.8991	0.6989	-1.2451
F2	-0.2981	-0.4456	1.9742	1.7334
F4	0.0454	-0.0590	0.2249	-0.4517
F5	-0.0557	0.0833	-0.2368	0.3648

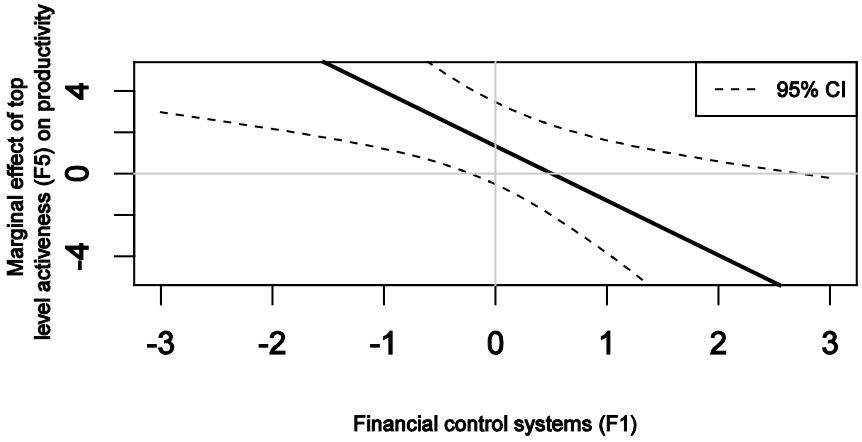
D. Regression analysis: significant interaction effects for Model 4

Appendix D.1. Marginal effect of financial control systems (F1) on productivity as the amount of top level activeness (F5) changes



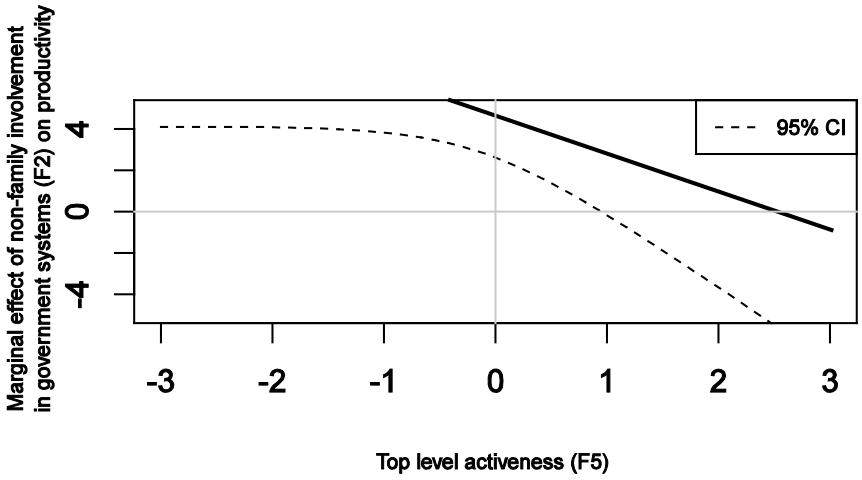
The marginal effect of financial control systems (F1) on productivity is significantly positive for firms having a less than average amount of top level activeness (F5). This positive effect decreases as the amount of top level activeness increases. For firms with an average or more than average amount of top level activeness the effect is not significant. It is not until top level activeness reaches a very high intensity, that the marginal effect of financial control systems on productivity becomes significant again, yet in this case the effect is negative.

Appendix D.2. Marginal effect of top level activeness (F5) on productivity as the amount of financial control systems (F1) changes



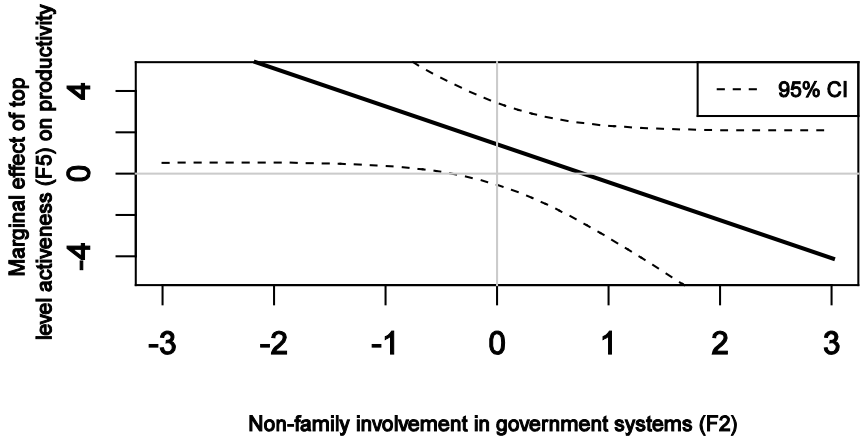
The marginal effect of top level activeness on productivity is significantly positive for family firms that have a less than average amount of financial control systems. This positive effect decreases as the amount of financial control systems increases. For firms with an average or more than average amount of financial control systems the effect is not significant. Only when the amount of financial control systems is very high, the marginal effect of top level activeness on productivity becomes significantly negative.

Appendix D.3. Marginal effect of non-family involvement in governance systems (F2) on productivity as the amount of top level activeness (F5) changes



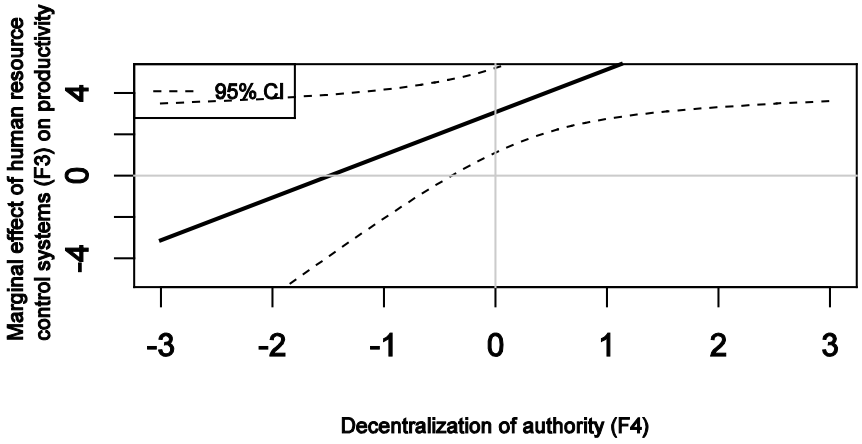
The marginal effect of non-family involvement of governance systems on productivity is significantly positive for family firms that have a fairly above average, average or less than average amount of top level activeness. This positive effect on productivity weakens as the amount of top level activeness increases.

Appendix D.4. Marginal effect of top level activeness (F5) on productivity as the amount of non-family involvement in governance systems (F2) changes



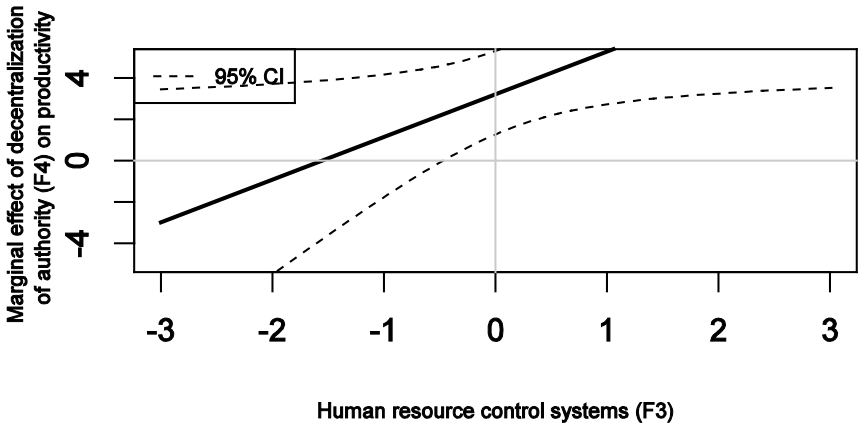
The marginal effect of top level activeness on productivity is significantly positive for family firms that have a less than average amount of non-family involvement in governance systems. This positive effect on productivity has a decreasing trend as the amount non-family involvement in governance systems increases. For firms having an average or higher than average amount of non-family involvement in governance systems, the effect is on productivity is not significant.

Appendix D.5. Marginal effect of human resource control systems (F3) on productivity as the amount of decentralization of authority (F4) changes



The marginal effect of human resource control systems on productivity is significantly positive for family firms having approximately an average or more than average amount of decentralization of authority. This positive effect on productivity enhances further as the amount of decentralization of authority increases within the family business.

Appendix D.6. Marginal effect of decentralization of authority (F4) on productivity as the amount of human resource control systems (F3) changes



The marginal effect of decentralization of authority on productivity is significantly positive for family firms having approximately an average or more than average amount of human resource control systems. This positive effect on productivity increases if there are higher amounts of human resource control systems within the family business.

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