Contingency Theory in Entrepreneurship research

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1. Introduction

Entrepreneurship is a phenomenon that has seen much publicity in recent years, from for instance publicity in media and the amount of events and awards that relate to entrepreneurship. In many parts of the world it is quite common to read news articles where entrepreneurs are featured as a mysterious breed of people that start businesses turning something insignificant into something valuable or makes the impossible possible (e.g. “Crazy diamonds,” 2013). These articles often portray entrepreneurship as important for boosting growth and creating jobs and there are even articles that inform parents about how to raise their children to become entrepreneurs (see e.g. Haislip, 2011). There are many events that focus on entrepreneurship, for example Global Entrepreneurship Week is ‘celebrated’ around the world and aims at exposing the benefits of entrepreneurship to people and also encourage people to explore their own ideas. Similarly Startup Weekend is a non-profit organization with a global presence in over 100 countries promoting entrepreneurship and networking. It organizes 54 hour weekends to people with different backgrounds to come and form teams that work throughout the weekend on developing a business idea (Schramm, 2012). In addition to events, there are also plenty of awards that are given to entrepreneurs, for example Ernst & Young Entrepreneur of the Year Awards, which reaches 50 countries worldwide. For researchers there are also awards, one of the more prominent is the Global Award for Entrepreneurship Research which was established in 1996 (Henrekson and Lundström, 2009).

In addition to publicity from awards and media, politicians often refer to entrepreneurs and start-ups as an instrument to create jobs and grow the economy. The president of the US, Barack Obama recently created a campaign to promote high-growth entrepreneurship called Startup America. Obama stated that entrepreneurs “play a critical role in expanding our economy and creating jobs. That’s why we’re launching Startup America, a national campaign to help win the future by knocking down barriers in the path of men and women in every corner of this country hoping to take a chance, follow a dream, and start a business” (“White House to Launch ‘Startup America’ Initiative | The White House,” 2011). According to

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1 For this half-way seminar two papers are appended to this extended summary. However, the manuscript is prepared with three separate research questions in mind which respond to three papers. One of these three papers has not yet been written.
Landström, Harirchi and Åström (2012) politicians interest in entrepreneurship and start-ups originates from a seminal study Landström et al., 2012) that was conducted by Birch (1979) who found that entrepreneurial activity and especially start-ups have high economic importance. This is one of the reasons why entrepreneurship is often seen as a ‘magic bullet’ that can turn the economy around and kick-start the economy when nations or regions are hit with depressed economic situations. With markets and environments becoming more and more complex and ever-changing, one fundamental challenge for both scholars and practitioners in the entrepreneurship field is a more informative understanding of entrepreneurial activity. Because of entrepreneurship’s relevance to economic output, social value, and job creation, more knowledge about entrepreneurship can speed up the development of entrepreneurial activity for individuals, firms, and societies (Busenitz et al., 2003).

Entrepreneurial activity is a central societal phenomenon that deserves attention for its (mainly) compelling outcomes. However, even though society mainly refers to start-ups when talking about entrepreneurship, research about entrepreneurship is about much more than only startups. Entrepreneurship can be applied to large corporations as a means for revitalizing established firms with entrepreneurial strategies (Ireland et al., 2009) and to handle hostile, turbulent and rapidly changing environments (Zahra and Covin, 1995). Entrepreneurship is not limited to creating personal or shareholder wealth within private business. Entrepreneurship can be about creating value for customers, wealth for stockholders, and creating benefits for other stakeholders and society in large (Hitt et al., 2011). For example, social entrepreneurship aims at solving problems in society and thus creating social value (Austin et al., 2006).

Even though entrepreneurship research has been conducted for a long time, it was only about 30-40 years ago that entrepreneurship field was established as a disciplinary research field (Cornelius et al., 2006; Landström et al., 2012), and emerged to a legitimate academic discipline in the 2000s (Meyer et al., 2014). Entrepreneurship has now also achieved extensive recognition with business schools (Zahra and Wright, 2011), this can be seen, for example, by the tremendous growth in entrepreneurship courses (Katz, 2003). A large portion of the research conducted in the entrepreneurship field has been strongly influenced by classical works by early economists, which can be referred to as the economic school of thought (Companys and McMullen, 2007). Four of the most influential
classical scholars that entrepreneurship researchers in the economic school of thought often refer to are (Henrekson and Stenkula, 2007; Höglund, 2013): Schumpeter (1934) who introduced the entrepreneur as an innovator that bring change; Kirzner (1973) who saw the entrepreneur as an alert arbitrageur that acts on opportunities in an uneven economic system; Knight (1921) who defined the entrepreneur as a decision-maker in pure uncertainty; and Say (1767-1832) who saw the entrepreneur as a coordinator. More recently the cognitive school of thought has developed that focuses more on the individual level of the entrepreneur as a subject and the entrepreneur’s cognition and behavior (e.g. Sarasvathy, 2001). This stream of literature is also fragmented; however, the basic underlying thought is that entrepreneurs create opportunities. That is, entrepreneurial opportunities for new business ideas do not necessarily exist previously in the existing industry or market (Alvarez and Barney, 2007). The cognitive school of thought also maintain that entrepreneurial opportunities exists as subjective phenomena which entrepreneurs acts upon by the means of interaction (Companys and McMullen, 2007). In contrast, the economic school of thought usually takes a firm level perspective and contends that entrepreneurial opportunities exist because of differences in economic information.

The entrepreneurship field can be seen as highly fragmented covering many different aspects of entrepreneurship (Low, 2001; Shane and Venkataraman, 2000; Zahra, 2005). In an effort to focus the research area of this thesis I will cover topics that align more with the economic school of thought and the firm-level perspective (e.g. Covin and Slevin, 1989; Hill and Birkinshaw, 2008; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005). Entrepreneurship is viewed as an organizational phenomenon, this perspective includes perceiving opportunities and the key tasks in creating organizations (Bygrave and Hofer, 1991).

**Firm level research**

Reading the entrepreneurship literature I have made three interesting observations. The first observation is that a wealth of different topics on creation and operation of organizations have been discussed. For example, Feeser and Willard (1990) examined how founding strategies affected growth of high tech firms. Venture capital and financing is another area that has been studied. For example, in an investigation of the impact of venture capital has on the development of new firms Hellmann and Puri (2002) found that venture capital backed firms professionalize faster than
firms with no venture capital financing. The amount of venture capital, the reputation of the venture capital firms, and a large network of strategic alliances has also been found to positively affect growth (Chang, 2004). Networks and external relationships is an area that has received attention from scholars within entrepreneurship research\(^2\), covering many different aspects such as the organizational characteristics of the involved parties (Ahuja, 2000; Alvarez and Barney, 2001), the nature of the relationship (Eisenhardt and Schoonhoven, 1996) and the formation of relationship networks (Hallen and Eisenhardt, 2012; Stuart and Sorenson, 2007).

Research within entrepreneurship has also covered how entrepreneurial firms use resources. For instance, (1989) found that fast growing entrepreneurial firms make more use of external resources compared to their competitors. Studies have also covered how qualities of the top management influence firms to success (Eisenhardt, 2013; Higgins and Gulati, 2006) and also how top management teams academic affiliation affect performance (Bonardo et al., 2011). Another stream of research that connects with top management in entrepreneurship research is the central theme of the importance of having an entrepreneurial posture. That is, being innovative, risk-taking, and proactive, also known as Entrepreneurial Orientation (EO) (Covin and Slevin, 1989; Miller, 1983). EO can be seen as a scale where people, business units, and firms can be plotted along a theoretical line going from conservative to entrepreneurial (Covin and Slevin, 1988). The concept has gained much attention and over 256 scholarly journal articles used the term “entrepreneurial orientation” by the end of 2010 (Covin and Lumpkin, 2011).

To sum up the reasoning thus far then, there has been a wide variety of topics researched in the entrepreneurship field. However, a second observation is that many entrepreneurship studies use theoretical models that are often conceptualized as additive models. An additive model examines the individual effects of one or more independent variables on a dependent variable. One of many examples is Delmar and Shane (2003) who find that planning is always positively related to development of new ventures and argue that entrepreneurs should always do rigorous planning and that it is one critical element to be successful. Some attempts have also been made to find specific success factors and “best practices”. For exam-

\(^2\) For literature reviews see (Street and Cameron, 2007) and (Hoang and Antoncic, 2003).
ple, Duchesneau and Gartner (1990) elaborated on a specific profile of success for entrepreneurs. They found that successful entrepreneurs spent more time planning, hired outside professionals more often to solve specific problems, and that these entrepreneurs also spent more time communicating. In a similar vein, Hormiga, Batista-Canino and Sánchez-Medina (2011) build and empirically test a conceptual model that assumes that high levels of relational capital leads to success of new business startups in an additive fashion. These studies thus theorize that one or several specific variables are directly related, in an additive fashion, to success or high performance. In support of such a view a recent literature review covering the EO concept concluded that it has mainly been conceptualized as having an additive-effect on performance (Rauch et al., 2009). That is to say, the higher the level of EO a firm achieves the higher the performance is to be expected from the firm.

However, when taking a closer look at these studies that use additive models it seems like researchers have found inconsistent results. The third observation is thus the inconsistency found in many additive models. Going back to the EO literature for example, we can see that some studies have failed to find a significant relationship between EO and performance (e.g. Andersén, 2010; Hughes and Morgan, 2007; Slater and Narver, 2000) while others have found significant and strong relationships (e.g. Kraus, 2013; Smart and Conant, 1994; Wiklund, 1999). Another example of a topic is the effect of gender on performance. Some entrepreneurship research has found that gender affects performance (e.g. Rosa et al., 1996), while others have not found gender to affect performance (e.g. Kalleberg and Leicht, 1991). The literature focusing on the effect of education on entrepreneurial performance has also shown inconsistent results. Some studies have found strong relationships between education and performance (e.g. Robinson and Sexton, 1994) while others are unable to find strong support for such relationships (e.g. Cooper et al., 1994).

A possible solution to the inconsistent results of additive-effect type of research may be found by investigating how key variables are properly aligned or matched (e.g. Naman and Slevin, 1993; Robinson and Phillips McDougall, 2001). Gartner was early to note the importance of investigating multiple dimensions simultaneously in entrepreneurship research and stated that “…researchers need to think in terms of combination of variables that make up each new venture creation. The creation of a new venture is a multidimensional phenomenon; each variable describes only a single dimension of the phenomenon and cannot be taken alone” (1985, p.
Gartner’s idea thus suggests that research approaches that only investigate the individual effect of a single variable in relation to, for example, performance will not be enough to fully capture entrepreneurial phenomena. This is because the effect a variable has on an outcome can be ‘dependent on’ contextual variables such as environment or firm size. This is in line with Rauch et al. (2009) that suggest in their meta study that entrepreneurship research should take account for several different types of contingencies such as industry dynamics, as well as size and structure of the firm. This is the underlying principle of contingency theory, which suggests that ‘fit’ between variables is important for achieving high performance (Lumpkin and Dess, 1996).

Going back to the EO literature, Wiklund and Shepherd (2003) suggest that the EO and performance relationship “is likely more complex than a simple main-effect-only” (p. 1313). Furthermore, it has been recognized that EO requires a significant amount of resources, and therefore EO might not always be beneficial for small firms that usually have limited resource slack (Parida, 2010). However, ‘depending on’ different contexts, the effect of EO on firm performance can be changed. For example, if small firms have information and communication technology capability as well as network capability, then a small firm can overcome resource restraints and instead gain from an EO (Wales et al., 2013). One could hence suggest that the effect of EO on firm performance is context specific. That is, EO does not always affect performance negatively or positively. This argument is the basic premise of contingency theory, which suggests that variables, such as EO need to fit with the context. With contingency theory we can therefore further the development of entrepreneurship theory by acknowledging the importance of fit and that variables, such as EO, might be best suited in certain contexts (Covin and Slevin, 1991; Wiklund and Shepherd, 2005).

Even though I have used the EO extensively as an example, there have been many studies conducted with contingency theory without EO as a variable. For example, Ensley, Pearce, and Hmieleski (2006) suggest that firms will achieve higher performance by choosing either a transactional or a transformational leadership ‘depending on’ the level of environmental dynamism. Similarly, Chandler, Honig, and Wiklund (2005) investigated the performance and team composition relationship and when the influence of the environment and firm stage development affected the relationship, and as well, how additions departures affected the relationship. Chandler and McEvoy (2000) investigated the relationship between total
quality management and human resource practices in small and medium sized firms, and found that a total quality management strategy was most effective if combined with substantial training and group-based incentives.

Key arguments thus far are that a wide array of topics has been discussed in the entrepreneurship literature. Many of these studies have taken use of additive models to investigate entrepreneurship which, at times, have resulted in inconsistent results. A possible solution is to investigate how key variables are appropriately aligned or matched with context, such as industry dynamics or size of the firm.

**Origins of Contingency theory**

As described earlier, contingency theory’s core concept of fit suggests that a proper alignment among internal and external organizational factors will positively affect organizational performance. To understand the basic assumptions about contingency theory, I will briefly cover the history and the origins of contingency theory.

Contingency theory stems from a criticism of the so called universal approach that had dominated the management science. That is, a number of scholars challenged the idea of the ‘one best way’. For example, Lawrence and Lorsch (1967) and Woodward (1965) showed that to organize and structure a firm efficiently there are contingencies that need to be accounted for, or in other words, that organizational structure’s effect on organizational performance ‘depends’ on contextual aspects that need to be taken into consideration. Woodward (1965) started her study on 100 small and medium sized manufactures by examining how organizational structure affected performance. She was puzzled that she could not find any effect of organizational structure. She then grouped the firms after their technology level which was done by dividing up technological complexity into three different categories: (1) unit and small batch production; (2) large batch and mass production; and (3) complex process production and continuous flow. Interestingly, when the firms were divided into these groups it was found that when the organizational structure matched the technology used in the firm, the firm also achieved higher performance. Thus, it was not organizational structure in itself that explained perfor-

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3 In 1958 Woodward presented the preliminary results of her study in a 40-page booklet published by the British Government’s Department of Scientific and Industrial research. This publication influenced scholars even before her book from 1965 was published, even though she is now best known for her 1965 book.
mance differences; it was rather how well the structure fit or aligned with the technology used.

Another study that is an important break from the ‘one best way’ of thinking was Burns and Stalker (1961) who came up with two ideal types, mechanistic and organic organizations. Mechanistic structures stress hierarchy, centralization and task specialization whereas organic structures stress flexibility and shared responsibility between tasks. They theorized that organizations facing rapidly changing environments as well as unpredictable changes in technology should adopt an organic structure in order to be able to quickly adjust to changes. In contrast, organizations facing stable environments and predictable technologies would benefit from adopting a mechanistic organizational structure where decision making is centralized and tasks stayed the same over time. Galbraith (1973) synthesized the early contingency theory research, and claimed that the basic underlying assumptions of contingency theory are that; (i) there is no one best way to organize; (ii) any way of organizing is not equally effective.

**Contingency theory in entrepreneurship research**

Contingency theory has a long and ongoing tradition in entrepreneurship research. For example, some of the earlier works include Miller and Toulouse (1986) who investigated the relationships between strategy, structure, decision making, and CEO personality on performance. When they investigated the interaction effects of the context, in this case dynamic or stable environments, they found for example that innovation strategies were more favorable in dynamic environments. In a similar vein, Covin and Slevin (1989) used a contingency approach when they studied how environment, structure, entrepreneurial orientation, and strategy affected performance outcomes of small firms. In hostile environments they found that organic structure, high EO, and a strategy that focused on long-term orientation and high product prices was related to high performance. In benign environments, in contrast, it was found that mechanistic structure, low EO and a strategy that focused on short-term orientation and the reliance of single customers. Along these lines, Zahra and Covin (1995) studied how EO affected performance in different environments; they found that EO was particularly effective in hostile environments.

Today, contingency theory is still extensively used in entrepreneurship research. For example Chowdhury’s (2011) study suggests that young firms need to align with appropriate structural compositions of the firm in response to the type of customer driven complexities. The study finds that
high formalization is most effective for firms with low customer complexities and that low formalization is more effective for firms with high customer complexity. In a similar manner Patel and Conklin (2012) take a contingency theory lens when they study how high performance work systems are affected by group culture and retention on labor productivity. When they introduce the contextual variable, group culture, they find significantly stronger effects in comparison to not using the contextual variable.

Entrepreneurship scholars have also compared the results of additive models with contingency models. Wiklund and Shepherd (2005) investigated the effects of EO on firm performance. They compared the results of an additive model with those of a contingency model and they found that by also adding the interaction effects of context (environment and access to capital) they were better able to explain the effect of EO on performance. Their results show that EO is most beneficial for firms that have limited access to capital and are situated in a stable environment.

Robinson and McDougall (2001) also compared an additive effects model with a contingency model and investigated the effects of entry barriers on performance. They found that when they applied an additive conceptual model they could only report limited support for entry barriers effect on startups performance. However, when they used a contingency model where entry barriers’ effect on startup performance would ‘depend on’ the industry life cycle they were able to find substantially stronger results. These results showed, for example, that the entry barriers’ effect on performance is weakened for firms acting in the early stages of the industry life cycle and amplified for firms acting in the later stages of the industry life cycle. In conclusion then, contingency theory offers a view that goes beyond the examination of additive relationships by also including possible interaction effects with different contextual variables. Contingency theory thus can be argued to allow for more fine-grained theory building as contingency theories also takes into consideration the context of firms.

In sum, I have found that many studies in the entrepreneurship literature draw on additive models and that these often show inconsistent results. As described above, several findings in the literature point to that the concept of fit in contingency theory can be a possible solution to some of these inconsistent results. I have also provided a brief review of the contingency theory research that has been conducted in the entrepreneurship field.
**Research Questions**

The following section will present the research questions of this thesis. The paper relating to the first research question has yet to be written for this half-time seminar. The papers related to research questions II and III are appended to this extended summary.

**Content of contingency research in entrepreneurship**

I have thus far given an account for contingency theory as a theoretical lens and that there is a body of knowledge developing around contingency theory in the entrepreneurship literature. I have shown that contingency theory has been used in entrepreneurship research for a long time, about 30 years (e.g. Miller and Toulouse, 1986). This theoretical lens has also used a diverse set of variables which have been used and combined in several different fashions. Nevertheless, while contingency theory has proven highly useful and used, there is no clear cumulative understanding of its wide array of application to entrepreneurship research. As I pointed to earlier, the entrepreneurship field is generally considered to be fragmented (Ireland et al., 2005; Landström et al., 2012) and Zahra even goes as far as describing the entrepreneurship field as “[r]esearchers pick and choose variables for analysis without attention to their theoretical relevance, leading to confusion about the causal chain that connects these variables... As a result, models sometimes appear to be a hodgepodge of variables that have been chosen more because of data availability than theoretical relevance” (p. 257, 2005). This statement by Zahra indicates a problematic situation in entrepreneurship literature. Reading the entrepreneurship literature I have made similar findings that point towards the field being fragmented. For example, Antoncic and Hisrich (2001) theorize that the external environment will affect the level of entrepreneurship in an organization, which in turn leads to high organizational performance. Other studies, such as Becherer and Maurer (1997), have instead theorized that the external environment will affect the relationship between the level of entrepreneurship in an organization and organizational performance. Even though these two studies use similar variables of environment, entrepreneurship, and performance, the causal direction and links between the three variables is quite different. A second type of fragmentation I have also noticed how some studies have only used firm level analysis (e.g. Liao et al., 2003; Zahra and Bogner, 2000) while others have used a mix be-

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4 Paper I, which responds to this research question, has not yet been written.
tween individual and firm level analysis (e.g. Brigham et al., 2007; Chandler and Hanks, 1994). The third type of fragmentation I have found is that variables at times can have the same name but have different meaning. For example, performance is sometimes theorized as a growth (e.g. Chandler and McEvoy, 2000) while other researchers have used return on investment and market share (e.g. McDougall et al., 1992).

It thus seems like the entrepreneurship field is unclear about some causal relationships, the level of analysis, and the meaning of variables. To synthesize and organize the contingency theory research a framework for content analysis is needed. Based on Luft and Shield’s (2003) framework we can synthesize and organize the content of contingency theory research around three questions: (I) What is researched? (II) What are the directions and shape of causal links? (III) What is the level of analysis?

Arguably, these questions form a framework that can help us identify the main content in the research reviewed. The first question can help us identify what is researched by looking closer at the variables used in research (Wennblom, 2012). As noted above, there is a large variety of variables available to entrepreneurship researchers and the choices may differ greatly between different studies. Even though the variables have the same name this does not mean that they have the same meaning. In contrast, variables with different names might capture similar meaning as variables with different names. Some variables can also be practice defined while other are theoretically designed.

The second question is about the direction and shape of the causal links, which investigates how variables are causally connected to each other. By once again going back to the example of the variable EO, we can review how the variable of EO has been theorized to affect, and be affected, by other variables. As I have earlier shown, some researchers have theorized a direct relationship of EO and performance while others have theorized that other variables such as the environment have an effect on the relationship between EO and performance. By investigating variables from this point of view, we can construct a map of how different variables have been connected to each other in previous research.

The third question relates to the level or levels of analysis that has been used in the literature. As indicated earlier, the contingency theory research in entrepreneurship has a strong hold in the firm-level analysis; however, sometimes the level of analysis are mixed and intertwined in entrepreneurship research (Davidsson and Wiklund, 2001). Even though most studies take a firm-level perspective there are also studies that take an individual-
perspective, team-perspective, business unit-perspective, and a combination of several levels.

By mapping out previous research it can help us to identify gaps in the literature as well as to guide us to less explored areas. This might also be one step in identifying variables that have theoretical relevance and also assess if there are variables with limited theoretical relevance for the entrepreneurship field, as indicated by Zahra (2005).

As one step to synthesize the entrepreneurship literature I will examine the content of empirical research which has used contingency theory. This leads us to the first research question:

1. **What are the variables, what are the causal relationships between variables, and at what level of analysis has the contingency theory research in the entrepreneurship field been conducted?**

**Different models of contingency theory**

As I described earlier, contingency theory in the entrepreneurship field has the fundamental idea that entrepreneurial action needs to be aligned with context for best results (e.g. Wiklund and Shepherd, 2005). Contingency fit can be seen as a simple concept a match between structure and context leads to organizational performance. However, when reading the entrepreneurship literature it seems like contingency fit has been conceptualized in many different ways.

For example, some researchers adopt a configuration logic which takes a holistic perspective over the firm and the theoretical models usually include several variables that in turn form a few specific configurations or also called ideal profiles (Venkatraman, 1989). Hill & Birkinshaw (2008) follow configuration logic when they study how several different strategic and organizational properties lead to higher performance if they adhere to an ideal profile. In a similar manner, Heirman and Clarysse (2004) research four ideal typologies built up around the internal aspects of technological, financial and human resources as well as the external environment. These both studies are examples of research that use configuration models.

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5 Paper II responds to this research question.
Instead of a configurational logic, some researchers adopt a Cartesian approach which take a reductionism perspective over the firm and the theoretical model usually focus on a context-structure pair of variables (Meyer et al., 1993). For example, Chandler (1996) investigated how previous entrepreneurial experience would affect performance, however the experience would have different effect on performance ‘depending on’ the similarity of the task and skill environment. In a similar manner, Bierly and Daly (2007) investigate how knowledge affects performance, ‘depending on’ the competitive environment. Taken together, it seems like there are two different streams within the contingency perspective in entrepreneurship research. Both of these streams take quite different perspectives on contingency fit. This is in line with other fields, such as the general management literature that has pointed out conceptual differences between the Cartesian approach and the configuration approach already in 1985 by Drazin and Van De Ven.

The configuration stream takes a view of the whole organization and their underlying themes and systematic features. These themes that configurations take might come from, for example, the CEO’s vision which embraces the whole organization. That is, an overarching theme that sets the agenda for all parts of the organization, such as strategies, control systems and information systems (Miller, 1996). For example, strategies may stress the importance of cost cutting and keeping prices low, while managerial control systems will reward cost cutting action, and information systems will report data that supports cost cutting initiatives. These alignments also take place within the specific parts of the organization. For example, within strategy there might be many different tactics that focus on cost cutting action. The benefit for firms having a central theme is that it gives a unifying direction. This makes coordination easier, focused efforts and complementarities between structure, systems, and strategy is enhanced. Certain synergies can be achieved by organizational parts complement one another, for example, cost leadership strategy is more effective when structures are shaped to execute the cost leadership strategies (Miller, 1993). Because of this thematic view only a few viable configurations is theorized to exist. It is therefore theorized that firms make ‘quantum jumps’, that is, change that is major and drastic when change is needed. Changing only one or two elements would disturb the harmony in the configuration and move it out of fit. For that reason, it is proposed that change of the variables or elements have to change together (Miller and Friesen, 1982).
The Cartesian stream sees firms as adapting over time and constantly adjusting their structure to different contingencies. Because researchers taking this perspective usually focus on two independent variables it is possible to be precise and explain this specific relationship with high specificity (Drazin and Van de Ven, 1985). These relationships are expected to be bivariate between a structural variable and its contingency factor and these relationships can be linear or curvilinear (Donaldson, 2001). The Cartesian stream takes a view that there are many fits along a continuum of variable and context. It is thus assumed that for each level of the contextual variable there is a structural variable that can match it in the Cartesian view. Even though both Cartesianism and Configurationalism investigates fit the underlying theoretical assumptions can, as shown above, be substantial. These differences between underlying assumptions between Cartesianism and Configurationalism are large and researchers have even been able to show that these two opposing view can results in contradictory outcomes (Gerdin and Greve, 2004).

Seen as a whole, there does not seem to be any explicit discussion in the entrepreneurship field about these different conceptualizations of fit and the underlying differences underpinning the choice of conceptualizing contingency fit. From overviewing the literature it seems like the entrepreneurship literature has utilized contingency theory in conceptually different ways without much discussion about the implications of such choices for the entrepreneurship field. In general, researchers have not been explicit when conceptualizing and defining fit. The area, as a whole, can be seen as a potpourri of definitions and conceptualizations of contingency fit. To date the discussion about how contingency fit should be applied in an entrepreneurship setting is missing and also what theoretical consequences different choices have.

Donaldson, Qiu, & Luo (2013) call for rigorous theory analysis that can identify incompatibility which in turn can refine theories and improve the overall research direction. In the entrepreneurship field this discussion about contingency theory is currently missing. An inquiry about what type of models that have been used, the theoretical consequences of these choices, as well as, future research avenues is currently missing. This brings us to the second research question of this thesis:

2. In what ways has the concept of fit been conceptualized in entrepreneurship research and what are the theoretical consequences of these choices?
Empirical Configurationalism in entrepreneurship research

As I showed above, contingency theory is has been established in the entrepreneurship literature. However, when reading the top-tier entrepreneurship literature it appears as the ‘standard way’ of using contingency theory in entrepreneurship research seems to be the Cartesian way of conceptualizing contingency theory. The use of Configurationalism is much less explored, however, there is a small but growing literature around configuration theory and entrepreneurship research (Harms et al., 2009). In a recent review of configuration theory, Short, Payne and Ketchen (2008) call for and encourage scholars to pursue more configurationalistic research in the entrepreneurship field. In a similar vein, Miles (2012) and Van de Ven, Ganco, and Hinings (2013) call for more research of organizational design from a configurational and holistic view-point that can handle the more and more complex, faster changing, and challenging environments for firms, which many entrepreneurial firms will find themselves in.

Even though there still is a need for configurational studies in the entrepreneurship field, there has been some research in the area. For example, Bantel (1998) takes a configuration approach when analyzing young firms patterns of different strategy dimensions along several different contextual factors. Hill and Birkinshaw (2008) also make us of a configuration approach and develop a typology for corporate ventures. Their study investigates exploration versus exploitation as well as the origin of the opportunity pursued.

In general, there has been a surge and excitement of configuration theory in business studies, as well as entrepreneurship studies in particular. This has been facilitated by advancement of theory such as equifinality (Boyd et al., 2012). Equifinality is an open systems view were the final state can be reached in several different ways independent of the initial conditions (Gresov and Drazin, 1997). For contingency theory it implies that more than ‘one best way of organizing’ for each context is theorized. That is, for each environmental setting for example, there can be several different solutions or paths to find fit. There is not only one single way to achieve fit; there could be several different paths that all achieve the same

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6 Paper III responds to this research question.
end result. The configurationalism approach opens up for the possibility to use equifinal solutions.

In addition to the need of configurationalism in entrepreneurship research there has been little research about how innovative startups form business relationships in combination with a contingency perspective (Street and Cameron, 2007). According to BarNir and Smith (2002) the ability to form business relations for entrepreneurial firms is a critical step to become competitive. Yet, the entrepreneurship field has not examined under what circumstances these business relationships take form. Wilkinson, Young, and Freytag (2005) theorize that it is not enough that firms are complementary to each other. In addition, firms also need to demonstrate similarities between partners, such as management style and technology. A study that investigates the specific combinations of internal fit between technology and management style in combination with fit with the external environment that leads to the formation of business relationships is currently missing.

Therefore it would be interesting to develop a set of configurations for entrepreneurial firms, in the context of startups, which have the greatest chance of forming business relationships. Nevertheless many configurations remain untested with empirical data and those that are tested often fail (Doty et al., 1993). Hence, to both develop and empirically test the configurations would be a fruitful avenue to pursue. This leads us to the third research question:

3. What configurations positively influence the formation of business relationships for startups?

Possible future research questions

For the final thesis one or two more research questions with corresponding papers should be developed. I have two different ideas to what these papers could entail. The first idea deal with that the literature on contingency fit has mainly used snapshots to explain fit. There is a general understanding that when internal elements are aligned and in fit will lead to performance increase (Drazin and Van de Ven, 1985). However, research explaining how firms align themselves toward fit is less explored (Miller, 1996). Currently, there are theories about why change occurs in contingency theory. But how this change takes place has not seen much research. That is, how entrepreneurial firms act to find fit and align their parts internally and externally. Especially in the context of newly started
firms that begin with a ‘clean-sheet’, that is, no matching or alignment has been ongoing. Therefore there might be plenty of change to empirically investigate before firms have found alignment. And even after initial alignment has been found, smaller firms usually have more turbulent and ever-changing structures and environments.

Several researchers have called for more entrepreneurship research to take use of configurational logic (Harms et al., 2009, e.g. 2007). A possibility is to use the theoretical framework developed by Siggelkow (2001) where he illustrates the framework with an example or his framework (2002) which was based on a single case-based study. I have empirical interview data collected over two years from five newly started innovative firms (20 interviews), which might be able to be used for this research. However, these interviews were not intended for this research question when they were conducted which might limit the usability of the data. Nevertheless, a possible research question could be:

4. How does change take place in entrepreneurial firms’ between or within configurations over time?

Another possible and interesting research avenue for the future is the further investigation of EO in combination with contingency theory. Miller (2011) highlights the possibility of EO not being a unidimensional construct, that is, a continuum between conservative and entrepreneurial firms, but a multidimensional construct. This entails that several different entrepreneurial configurations might exist. Miller (1983) conceptualized that EO consisted of three elements and that if any of them were missing entirely, then a firm might be classified as less than entrepreneurial. In certain context the component of risk might be more important than other, for example when starting a new business. Innovation might be more critical in high-tech context than other dimensions.

Wales, Gupta, and Mousa (2013) found in their review of the EO concept that few studies that have investigated EO from a multidimensional view and they also suggest that the multidimensional feature might be a fruitful avenue for future research. Therefore, investigating different configurations of EO in combination with the external context could advance the important construct of EO.
5. How does EO, as multidimensional construct, combine to form different configurations with internal and external context?

In table 1 a summary of the research questions are presented with its two parts. Part I is an extensive literature review while part II consists of empirical papers that aim to fill research gaps identified in part I.

Table 1.

<table>
<thead>
<tr>
<th>Paper</th>
<th>Research Question</th>
<th>Type</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>What are the variables, what are the causal relationships between variables, and at what level of analysis has the contingency theory research in the entrepreneurship field been conducted?</td>
<td>Content review</td>
<td>To be developed</td>
</tr>
<tr>
<td>II</td>
<td>In what ways has the concept of fit been conceptualized in entrepreneurship research and what are the theoretical consequences of these choices?</td>
<td>Conceptual model review</td>
<td>Completed and appended</td>
</tr>
<tr>
<td>III</td>
<td>What configurations positively influence the formation of business relationships for startups?</td>
<td>Empirical</td>
<td>Completed and appended</td>
</tr>
<tr>
<td>IV</td>
<td>How does change take place in entrepreneurial firms’ between or within configurations over time?</td>
<td>Empirical</td>
<td>Possible for future</td>
</tr>
<tr>
<td>V</td>
<td>How does EO, as multidimensional construct, combine to different configurations with internal and external environments?</td>
<td>Empirical</td>
<td>Possible for future</td>
</tr>
</tbody>
</table>
2. Methodological approach

When searching for ‘the right’ perspective to use in this thesis I had to make some difficult choices, such as what theories and methods to use. The choices I have made, such as aligning to a contingency theory perspective, should not be translated to that this is a superior theory and therefore it was my choice. Instead, my research strategy has been to identify top-tier entrepreneurship literature that has been influential in setting the stage for entrepreneurship research. In doing so, I have identified a contingency theory stream of research. No theory or perspective is perfect or can give us a complete understanding of a phenomenon. However, the contingency theory perspective has been influential and by aligning to this perspective I hope that my contributions can advance this stream of research. Still, this perspective will be far from perfect in advancing our knowledge about entrepreneurship activity. I believe that it is useful to investigate entrepreneurship from many different perspectives, theories, and methods. Every perspective has its advantages and disadvantages, but with more perspectives investigating the same phenomena we can get a combined understanding, on a higher level than any single perspective can achieve alone (see e.g. Wennblom, 2012).

As shown in table 1, the papers can be divided in two categories, the first two papers are systematic literature reviews, but each with a specific focus. The first paper investigates the content of contingency theory in entrepreneurship research while the second paper investigates the forms of fit used in entrepreneurship research. Both of these papers aim at synthesizing the entrepreneurship literature by sorting out, organizing, and interpreting the literature. The second category of the papers consists of two (or possibly three) papers with a focus on empirically tackle some of the research gaps identified in papers one and two.

Method category I

In the systematic review papers I and II a broad time horizon of 30 years was selected (1983-2012). This allowed us to include a long range of research which makes it possible to also see current and past trends. The two top journals in the entrepreneurship field was selected, specifically Journal of Business Venturing (JBV) and Entrepreneurship Theory & Practice (ETP). These two journals are limited to entrepreneurship research but at the same time they are wide enough for all different types of entrepreneurship research. Other top ranked entrepreneurship journals
have a more narrow type of entrepreneurship focus, for example, *Family Business Review* and *Strategic Entrepreneurship Journal*. A fair amount of entrepreneurship research is also published in non-entrepreneurship journals. However, by only including entrepreneurship journals the articles are already defined to entrepreneurship research which can at times be ambiguous to classify.

*JBV* and *ETP* are generally considered as the top ranked journals among entrepreneurship scholars (e.g. Stewart and Cotton, 2013). These two journals have also been top ranked by established journal ranking bodies such as Association of Business Schools, U.K., and Australian Business Deans Council. As these are top class journals they also have a major impact on the entrepreneurship field (Keupp and Gassmann, 2009; Podsakoff et al., 2000). In addition, by only including top-tier journals we assured that our (at times critical) judgement of the literature does not arise from poorly conducted research. Rather, from that we have adopted a holistic perspective investigating contingency theory research focusing on the overall patterns, which is typically a task that goes beyond the scope of any single article (but see e.g. the recent discussions in Edelman, 2005; Hill & Birkinshaw, 2008).

**Selection of papers**

The entrepreneurship literature includes a massive amount of empirical papers using ‘it-depends-hypotheses’⁷. Some of these adopt a ‘true’ contingency theory perspective as described in chapter 1 above, while many clearly do not. Nevertheless, some papers were difficult to classify and we therefore established some criteria that the papers needed to fulfill. One or both criteria needed to be fulfilled for inclusion in the sample. The two criteria were:

1. The papers are explicitly grounded in the principal idea that firms perform better if characteristics of the firm are adapted to its context than if they are not. That is, they openly refer to the notion of contingency fit although, indeed, authors may use other wordings such as ‘matched with’, aligned with’ and ‘consistent with’.

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⁷ See for example Boyd, Hanes, Hitt, Bergh, and Ketchen (2012) literature review of contingency theory in strategic management which includes all it-depends-hypothesis.
2. The papers are explicitly positioned in the contingency tradition either through referring to classical contingency theory studies, such as those developed by Woodward (1965), Galbraith (1973) and Miles and Snow (1978), or through referring to contingency frameworks such as the one developed by Dra- zin and Van de Ven (1985) and Venkatraman (1989).

Based on these criteria the selection of papers was conducted in three separate steps. In the first step I manually scanned through all published papers in the two journals that were within the 30 year time period. This manual scan was reckoned to be suitable to start with as entrepreneurship scholars have used quite different terminology when referring to contingency theory. In a second step the second author independently reviewed the selected articles based on the selection criteria. In the final step, articles that one or both of the authors had classified as borderline cases were discussed until agreement was reached whether the article should be included or not in the review sample. This resulted in a final list of 56 articles included in the review sample.

**Method category II**

In the empirical paper III a configurationalism approach was taken in combination with a case-based approach. Together with co-author Johan Kask (at the time also a fellow doctoral student, but has now earned his doctorate) we investigated firms that was started with a clear aim to commercialize an invention. The focus of the paper was on how internal and external elements fit together to make a startup attractive for partnerships. Internally we took into consideration the level of radicalness of the invention and the level of entrepreneurship of the manager/CEO. Externally we investigated the market situation that the product would be commercialized in, which constituted if the specific market was stable or turbulent.
Description and collection of empirical data

After we had developed the theorized model\(^8\) we set out to collect empirical data. We were able to use the Swedish Patent database which includes all patents awarded in Sweden. Because our theoretical model called for an invention we argue that inventions with patents would be a good measure for establishing that a product or service would meet a minimum standard of originality. By choosing a specific patent class we limited the variation between cases that was not accounted for in our theoretical model. We chose the international Patent Classification of A63 which is defined as “Sports, games and amusements”. We selected years 2005-2008 as it was distant enough from our data collection to be able to observe and allow for the outcome but yet not too distance that would limit the respondents ability to recall the episodes accurately (Huber and Power, 1985). Even though we had access to the database we needed to conduct desk-research on each patent to establish the status of the patent. We had three specific criteria that needed to be fulfilled:

1. Patents could not be granted to firms that were already established in the industry, because they would most likely already have established marketing relationships.
2. Patents could not be granted to individuals that already were involved in a firm that was established in the industry, because this would also be a huge advantage of already having marketing relationships close at hand.
3. Patents that never gave rise to a firm as the purpose of the patent would be unclear and would most likely not have been developed as far from a business point of view.

The patent database provided the initial application for the patent which includes a detailed description of the invention. The patentees’ addresses were found in the database from the time that the application was sent in. No records of the current addresses for the patentees’ were available. Therefore we searched white pages, census data and different search engines to locate current contact information. We were able to locate 22 cases in the specific patent category and the time range. Out of the 22

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\(^8\) The conceptual model was presented as “Business mating in stable and turbulent markets: Does the configuration fit?” at Global Business Conference, Sibenik, Croatia, September 2011, and winner of the Best Paper Award.
cases we were able to receive usable responses from 16 cases. We used an open semi-structured interview form for part of the questions and a second part with structured interview consisting of the EO questions. We used the most commonly used the questions based on Covin and Slevins (1989) with slight modifications to better fit for startups. This construct is the most commonly used construct according to Rauch et al. (2009). The questionnaire was set up with an online service. This allowed for respondents to answer either online or on the phone. Almost all respondents preferred to answer over the phone, where the researcher followed the exact questions and wrote down the answers directly to the online service. The phone interviews varied in length, most of the interviewees were very interested in our research project and wanted to give us detailed information about their invention and business. The shortest interview lasted about 15 min but most of them took 45-60 min. To be able to rate the level of radicalness of the invention we needed non-biased raters. Therefore we used a panel of expert scholars who answered a set of questions for every invention for all the cases.

**Qualitative Comparative Analysis**

Considering that the empirical data consisted of 16 startups based on an invention we chose to use Qualitative Comparative Analysis (QCA) which allows for systematic cross-case comparison. Scholars in the entrepreneurship literature that have chosen a configurationalism approach have earlier mainly used cluster analysis (e.g. Gartner et al., 1989; Hanks et al., 1993) or deviation score analysis (e.g. Bantel, 1998; Duchesneau and Gartner, 1990). In comparison to traditional quantitative methods, QCA (Ragin, 1987) offers a holistic and systematic view which is qualitative and comparative in nature, as well as, can handle small and medium sample sizes.

Charles Ragin developed QCA as a research approach that would combine the best features of the qualitative research with the best features of the quantitative approach (Ragin, 1987). In political science Ragin was not able to collect enough cases of different countries that would allow for a quantitative analysis. For example, the limited number of EU member states is not enough to perform traditional quantitative analysis. Therefore he searched for a methodological approach that could combine features of both the qualitative and quantitative methods. QCA has now been around for about 25 years but the usage has seen many recent developments and the number of publications utilizing QCA has increased tremendously over
the past 10 years. It has mainly been used within political science, which is the discipline where it was founded, but has been subject to interest in several other disciplines, such as sociology and management. In fact, the number of management studies that have utilized QCA has grown and for the past few years management studies have been the strongest growing discipline using QCA (Rihoux et al., 2013).

QCA is foremost a comparative approach aimed at analyzing multiple case studies. According to Rihoux and Marx (2013) QCA offers two ‘difficult to combine’ features: first it is able to gather insight and complexity of cases. Second, it is able to produce some parsimony to cases and therefore also allows for modest generalization. QCA can handle causation in a sophisticated manner that leaves room for complexity, that is, multiple conjunctural causation (Rihoux and Ragin, 2009). This implies: first, it is the combination of elements that eventually generates the phenomena of interest (the outcome); second, it is possible that different combinations of elements produce the same outcome; and third, the contextual situation can affect the elements to impact the outcome in very different ways (Rihoux and Marx, 2013). QCA can thus suggest more than a single causal model and determine how many and the characteristics of the different causal models that exists among cases.

QCA is different from traditional qualitative approaches in that it allows for analysis of more than a few cases, which is uncommon in case based studies. This opens up the possibility to find more parsimonious explanations. Logical statements based on Boolean algebra are used to systematically examine the different cases. QCA is unique because it allows for assessment of how different elements combine, rather than compete, and affect the related outcome (Fiss, 2007). QCA is an analytical approach that use formalized logic that enables other researchers to follow the analytical process as well as to replicate the research results (Berg-Schlosser et al., 2009). The use of Boolean algebra in combination with minimization algorithms allows the researcher to express solutions with the fewest possible elements (Rihoux and Marx, 2013).

**QCA exemplified**

To clarify how the QCA approach is carried out we can take Paper III as an example. Here I am able to expand our reasoning and explanation of QCA, which we were not able to in the paper, due to space limits. This is an example of so called crisp QCA which is the most basic form of QCA. In paper III, after building the theoretical model we constructed a
table called *truth table* (Ragin, 1987), of different configurations that could exist, see table 1⁹. Truth tables have as many rows as it is possible to combine the different casual conditions¹⁰. In our case we had three casual conditions which resulted in eight possible configurations.

It was theorized that two configurations named *Inheritor* and *Originator* would lead to positive outcome (business partnership formation). The *Inheritor* has an invention that is not radically new; instead it could be more of a slight improvement over an earlier version. Its management is not too entrepreneurial; instead it has more of a conservative management style. These two internal features go well with a market situation that is stable, where systems and procedures should be followed. *Originator*, on the other hand, has a radically new invention that is a clear break from earlier products or services. Its management is very entrepreneurial which entails being proactive, risk-taking, and innovative. These two internal features goes well with an external market situation that is unstable; that is, no current ‘standard way’ of doing things is clearly established in the market. Instead several different types of products or services are competing. *Inheritor* and *Originator* are thus two very different configurations; still, they both lead to become attractive for business partners to form partnerships with them. The outcome for our configurations is therefore business mating, which is the formation of a business relationship.

Each of the eight possible configurations consists of four conditions (variables), in our case Entrepreneurial Orientation (management style), Radical Invention, and Dominant Design (market situation). Business Mating is the fourth condition which is the outcome condition. In Boolean algebra conditions can have two states, true (or present) or false (or absent). The raw data is translated to either present or absent according to the specification of the conditions. Note that this example considers the most basic function of QCA called crisp set (csQCA) (Rihoux and Ragin, 2009). It is called crisp QCA because only ‘crisp’ conditions are used, that is binary values of 1 or 0 are used, nothing in-between. In table 1, these conditions have been assigned a binary value of 1 or 0, where 1 denotes that the condition is present and 0 denotes that the condition is absent.

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⁹ This table has been simplified for illustration purposes and is thus not identical to the actual table in paper II.

¹⁰ In accordance with QCA terminology, variables are called conditions.
Table 1
Configuration possibilities with outcome “business mating”

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Entrepreneurial Orientation</th>
<th>Radical Invention</th>
<th>Dominant Design</th>
<th>Business Mating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inheritor</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Originator</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Gambler</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Artist</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tourist</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Technician</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Intruder</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Copycat</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

The first configuration (Inheritor) that we theorized suggests that Entrepreneurial Orientation (EO) and Radical Invention (RI) would be absent while Dominant Design (DD) would be present which would result in the outcome Business Mating (BM). We can translate this statement to Boolean algebra terms:

\[ \neg EO \ast \neg RI \ast DD \rightarrow BM \]

Where the sign "\(\neg\)" denotes logical not and "\(\ast\)" denotes logical and while "\(\rightarrow\)" represents the logical implication operator. The second configuration (Originator) we theorized suggests that Entrepreneurial Orientation (EO) and Radical Invention (RI) would be present while Dominant Design (DD) would be absent which would result in the outcome Business Mating (BM). This can be written out in Boolean algebra terms:

\[ EO \ast RI \ast \neg DD \rightarrow BM \]

We now have two logical statements that lead to business mating (BM). These can now be combined with the logical "\(+\)" which denotes logical or. In plain English we can say that either configuration Inheritor or Originator would lead to business mating. This is expressed
To gain more insight of QCA we need to consider the nature of two central concepts of necessity and sufficiency (Ragin, 1987). These two concepts are compatible with the idea of multiple conjunctural causation, which I mentioned earlier in the chapter. These two concepts can be applied to the single conditions as well as to the configurations. We start with the configurations, a path that leads to the sought outcome usually are made up of a combination of conditions, for example Inheritor. This combination is then sufficient for producing the sought outcome, in our case business mating. However, this path might not be necessary as other paths for the sought outcome might also be available, for example Originator would be an alternative. In our case, we theorized two completely different paths to our outcome business mating, Inheritor and Originator. We thus saw Inheritor and Originator as sufficient paths to Business Mating. Now we will move on and take a look at specific conditions by themselves, let’s use the example of EO as a condition. If EO was to be present in all paths leading to business mating, then the condition of EO would be necessary. However, the condition would not be sufficient as other conditions are needed in combination with EO. A single condition would only be sufficient if the single condition by itself would be a path to the outcome (Rihoux and Ragin, 2009). Therefore, a condition would only be necessary and sufficient if it was a single condition that was the single only viable path to the outcome, not in combination with any other conditions.

To analyze if the two different configurations actually produce the sought outcome business mating Boolean logic is used to determine commonalties (Fiss, 2007). This reduction can be conveniently completed with software such as fs/QCA which uses the Quine-McCluskey algorithm for the reduction process. To illustrate the basics of how this works, we place the cases in the corresponding configuration in the truth table. First we can see if any condition is necessary, this would be the situation if the condition would be present in all configurations that lead to the outcome. In our study, we did not expect any condition to be necessary and we did not find any condition to be necessary in our analysis. A condition can also be unnecessary if it does not affect the outcome when it is present or absent. For example, consider the following two statements:

\[
EO \ast RI \ast \sim DD + \sim EO \ast \sim RI \ast DD \rightarrow BM
\]
These two statements indicate that when EO and RI are present, DD can either be present or absent, both leads to BM. Therefore DD can be considered as unnecessary in the combinations when EO and RI are present. These two logical statements could thus be reduced to the single statement of:

\[ EO \ast RI \ast DD \rightarrow BM \]

However, it is important to note that DD is insignificant in the combination when EO and RI is present but could be significant in other combinations. These reductions are completed until it is not possible to continue to reduce them. In our paper we found two final solutions sufficient for BM:

\[ (EO + RI) \ast \sim DD \rightarrow BM \]

\[ \sim EO \ast \sim RI \ast DD \rightarrow BM \]

These two statements are close to our theorized solutions. We found one solution completely in line with our theorized configuration Inheritor. However, we were not able to prove completely that the configuration Originator was an ideal configuration. The configuration Originator suggested that EO and RI were needed in absence of DD. However, our results supported that EO or RI was needed in absence of DD.

**Fuzzy sets**

The above example was demonstrated with the most basic form of QCA. Developments of the method have allowed for possible advancements. One of the shortcomings of employing Boolean algebra with binary values is that it can at times be difficult to assign a binary value to a condition. Categorical values, such as firm survival can be quite easy to assign, either a firm has survived or not. However, if a researcher want to use more fine-grained measures that vary by the degree, such as a performance measure it can become problematic to assign a binary value. If a case is, for example, a medium performer, than the researcher would need to ‘force-fit’ the case either into high performers or low performers. Thus, binary values can be problematic because too much information can be lost. As a re-
response to this short coming, fuzzy sets fsQCA has been developed to accommodate for scale measures (Ragin, 2009). Fuzzy sets allows for continuous scales, such as the degree of EO. Fuzzy sets aims at pinpointing qualitative states and not simply rank cases. Therefore the researcher needs to calibrate scores for what values would be consider as full membership, cross-over point, and full non-membership. This calibration should be completed with theoretical knowledge as well as substantive case knowledge (Ragin, 2009). As such, fuzzy sets can define at what level, for example EO, becomes fully entrepreneurial, completely non-entrepreneurial, and the half-way point between which would be defined as neither entrepreneurial nor non-entrepreneurial.

In fuzzy sets a case can therefore become split into several different configurations, depending on the fuzzy set values. A case could adhere to 80% to a specific configuration, and 10% in two other configurations. It would therefore better ‘fit’ in and analyse with more detail than if a case would be forced into a single configuration.

The choice to use QCA

The choice to use QCA as analytical method had several important benefits. First, we only had access to a limited number of cases. This would not allow for traditional statistical analysis. Because the nature of the information provided from the database it was difficult to identify firms that qualified to our criteria. It was also difficult to locate current contact information. Our study also differed from traditional survey research designs that often only rely on data from a single survey. Instead we used several different data sources which entailed entrepreneurs, expert panels, and secondary information from various sources. This enabled us to triangulate data as well as giving us deeper insight in the cases. Furthermore, QCA has been put forward as an attractive approach for understanding configurations with a limited set of cases (Rihoux and Marx, 2013). QCA allowed us to compare more cases than we would be able to with traditional qualitative techniques, this is because it helps to keep track of cases and systematically compare them. But at the same time QCA is able to handle causal complexity and the method is a good fit with configuration theory. In comparison to quantitative methods the logic of analysis is quite different. Traditional quantitative analysis take use of net effects thinking which implies that “[e]ach independent variable is assumed to be capable of influencing the level or probability of the outcome regardless of the values or levels of other variables (i.e., regardless of the
varied contexts defined by these variables)” (Ragin, 1987, pp. 177–178 emphasis in the original). In QCA context takes a central position, that is, a conditions effect can be completely different depending on the other variables in the combination.
3. Summary of articles

The thesis, at this point in time, includes two completed articles which are appended to this extended summary. Below follows short summaries of the two articles.

Contingency fit(s) in entrepreneurship research: Uses and usability\(^ {11} \)

Contingency theory has a long ongoing tradition in entrepreneurship research and is considered by many researchers as an important strand (e.g. Rauch et al., 2009; Short et al., 2008). These entrepreneurship researchers have tried to explain the influence of entrepreneurial activity by examining the level of fit with contextual factors, such as environment, strategy, and industry life cycle. The study provides a critical review of how the top-tier entrepreneurship research has used the idea of contingency fit over the past 30 years.

These studies have developed so called ‘it-depends-hypotheses’. That is, the effect of a particular dimension of entrepreneurship on firm performance depends on context. The review categorizes each study on two dimensions. The first dimension categorises the level of interaction effect that the study sets out to explain. Some studies predict a general interaction, while others are more specific with the form of interaction, for example symmetrical interaction (Donaldson, 2001; Schoonhoven, 1981). Assumptions of general interaction imply that particular firm characteristics are always positively associated with performance, although indeed their effect is more positive in some contexts compared to others. This stands in blunt contrast with assumptions of symmetrical interactions that imply that certain firm characteristics are highest-performing in one context, while others are highest-performing another context.

The second dimension categories the form of fit that is applied. A major difference between contingency theory research is that of the configuration perspective and the Cartesian perspective. The configuration perspective asserts that every organization falls into a limited number of system states and that change between states of fit is radical and quick to avoid middle ground positions (Meyer et al., 1993; Miller, 1996). The Cartesian perspective, on the other hand, maintain that contingency fit can be reached through incremental and frequent movements along continuous fit-lines.

\(^ {11} \) This article is co-authored with Professor Jonas Gerdin.
between structure and context variables (Donaldson, 2001). Within the second dimension we also distinguish between, for example, moderating and mediation forms of fit. In the *moderating* model, the impact that an independent variable has on an outcome variable is dependent on the value of a third variable, the moderating variable. In contingency terms, a typical model suggests that the effect that structure has on performance is determined by the value of context. In contrast, a *mediation* form of fit implies that a mediator variable intervenes between an independent variable and an outcome variable, specifying the existence of an indirect effect.

Our results conform with for example Rauch et al. (2009) that contingency theory hypothesis is a distinct and growing thread in entrepreneurship research. The forms of fit used in the entrepreneurship literature shows large variation in terms of how the central concept of fit has been conceptualized. Some articles use several different conceptualizations of fit in the scope of the article and some use mediation models that do not seem to test for the existence of contingency fit at all. Interestingly, we were also able to find all different levels of interaction effects. The differences between these levels suggest fundamentally different theoretical assumptions. We also argue that the field seen as a whole would benefit if future studies explicitly discuss and acknowledge these theoretical differences and position the research in a framework such as ours.

**Business mating: When start-ups get it right**¹²

The results from paper III (2013) show that it is crucial for start-up firms to find internal and external fit. The study investigates how management style, invention features, and the external market situation combine from a configuration perspective. The study aims at filling two gaps in the entrepreneurship literature. First, our literature review found that there is a need for further studies using a configurational perspective in entrepreneurship research. Second, our review found few studies investigating the formation of business partnerships in the entrepreneurship literature.

For startups that are formed to commercialize an invention, marketing partners are often critical and a first step in starting to sell the invention. Firms that show that they are well aligned internally and externally will be more attractive for potential partners. Our typology suggested two configurations that would result in business partnership formation. The configuration *Inheritor* is based on an invention that inherits much from previ-

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¹² This article is co-authored with (now) Assistant Professor Johan Kask.
ous versions of products. The product is therefore not radically new, more of a slight improvement of previous products. The management is conservative, not too entrepreneurial or innovative. These two internal features go with a market situation that is stable; there is a clear way of conducting business as well as clear standards for the product in the market. In difference, the Originator has an original invention, that is, an invention that is radically new, making a clear break from previous products. The management style is highly entrepreneurial which comprise of being proactive, innovative, and risk-taking. These internal features go well with a market situation that is unstable which takes place when no current standard way is set for the product in the market place.

Our results showed strong support Inheritor, this adds to the discussion that an entrepreneurial orientation is not always a positive feature. Our results also indicated support for Originator. However, our results showed that either a radical invention or an entrepreneurial management style was needed, not necessarily in combination with each other. Furthermore, our results also indicate that business relationship formation should not be taken for granted for startups, rather firms that are well aligned become attractive to business partners which enhances the chances for forming a business relationship.
4. Results and contributions

To be developed.
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