Entrepreneurial Orientation
To Holly and Lucy
Entrepreneurial Orientation
Reflections from a contingency perspective
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Abstract


Entrepreneurship has been argued to be a key driver of the economy by creating jobs, turning inventions to innovations, and also improving the overall standard of life. A firm’s entrepreneurial orientation (EO) indicates the degree to which a firm is entrepreneurial. However, there are several different approaches to conceptualizing the EO concept and its sub-dimensions, frequently described as innovativeness, risk taking, and proactivity. The role of the sub-dimensions is not quite clear in the EO literature. Furthermore, many studies claim that firms can increase their performance simply by increasing their EO, while this thesis draws upon contingency theory to argue that EO needs to be aligned with—‘fit’ the internal and external context, if the firm is to perform well. Thus, this thesis aims to advance the conceptualization of EO by problematizing the core construct and also discussing how EO can fit with context. The thesis consists of four papers in which the EO concept is elaborated on and contingency theory is applied to construct conceptual models of the interaction between EO and different contexts, which are also empirically investigated. Furthermore, the sub-dimensions of EO are discussed in terms of their meanings and measurement to point out their individual impact on the EO.

The overall findings indicate that EO is not as simple a concept as often portrayed in the EO literature. Rather, EO is more complex in the ways that it can fit with internal and external context and, on these bases, it is suggested that ideal types of EO and context is a way forward for research in the area. Additionally, it is argued that EO as a theoretical construct may not only be conceptualized as an overall entrepreneurial attribute (which is common in the extant literature), but also as a complex and granular attribute.

Keywords: Entrepreneurial orientation, contingency theory, configuration theory, firm-level entrepreneurship

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Örebro, January 10, 2016

Gabriel Linton
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1. Introduction

Entrepreneurship, which broadly involves efforts to bring about new economic, social, or cultural environments (Rindova et al., 2009), is a phenomenon that is afforded much exposure in society. Schumpeter (1911, 1942) argued early that entrepreneurship is a key driver of the economy. But it was not until Birch (1979) found that most jobs in the US were created by new and small firms and not by large corporations that entrepreneurship started to receive more attention. The report had great impact on researchers but also policy-makers and politicians who now had academic support for including and promoting new and small firms in their economic analyses (Landström et al., 2012). As a result, policy aimed at promoting entrepreneurship has increased since the 1980s with programs that aim at stimulating entrepreneurship in different ways (Gilbert et al., 2004). While entrepreneurship research has been conducted for a long time, it was only about 30-40 years ago that entrepreneurship was established as a disciplinary research field (Cornelius et al., 2006; Landström et al., 2012), and emerged as a legitimate academic discipline in the 2000s (Busenitz et al., 2014; Meyer et al., 2014). Also, entrepreneurship has now achieved extensive recognition in business schools (Zahra and Wright, 2011). This can be seen, for example, in the tremendous growth in entrepreneurship courses (Katz, 2003).

Entrepreneurship research seems to have been sparked by reports showing that small and new firms have a positive impact on the economy, by now entrepreneurship has emerged to become much larger in its scope and include many more areas than small businesses and new firms. One such area that has received much attention is corporate entrepreneurship (e.g. Miller, 1983). In this stream of research, the focus is usually on entrepreneurial behavior in terms of some type of opportunity seeking, irrespectively of organizational size (Audretsch, 2012). Another example is entrepreneurship and entrepreneurial learning (e.g. Politis, 2005), which has now become an important part of many education programs. In Sweden, for instance, even in preschool children are encouraged to develop entrepreneurial skills such as curiosity, initiative, and self-confidence. A further example is the area of social entrepreneurship which focuses on solving societal problems (Dacin et al., 2011; Short et al., 2009). Altogether, we can see that entrepreneurship appears to surround us in one way or another and that entrepreneurship also plays an important role in society.
Nonetheless, entrepreneurship can be a challenge, especially in today’s society which is becoming increasingly complex and ever-changing (Rauch et al., 2009). One fundamental task for both scholars and practitioners in the entrepreneurship field is a more informative understanding of entrepreneurial activity. Because of entrepreneurship’s relevance to both economic and social output, more knowledge about entrepreneurship can inform us about the development of entrepreneurial activity for individuals, firms, and societies (Busenitz et al., 2003). As a relatively young research field, entrepreneurship research has at times been criticized for being fragmented (Low, 2001; Shane and Venkataraman, 2000; Zahra, 2005). Nonetheless, one area within the entrepreneurship literature where a cumulative body of knowledge has emerged is that of entrepreneurial orientation (EO) (Rauch et al., 2009; Saeed et al., 2014; Wales, 2015; Wales, Gupta, et al., 2013).

**Entrepreneurial Orientation**

A firm with an EO (Covin and Slevin, 1989, 1991; Lumpkin and Dess, 1996; Miller, 1983) is referred to as a firm “that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with “proactive” innovations, beating competitors to the punch” (Miller, 1983). Miller was early in making an important distinction between entrepreneurship as the activity of firms, rather than focusing on the individual actor, or in other words, the entrepreneur. At the time, entrepreneurship research was mainly concerned with individuals, not firms (Gartner, 1988). This distinction raised the level of analysis from the entrepreneur to a firm or organizational level. This is important because it enables entrepreneurship to be connected with other management terminology and concepts such as strategy, structure, environment and performance² (Wiklund, 1998). With similar reasoning, entrepreneurship is not limited to entrepreneurs starting new ventures; rather entrepreneurship is applicable to any type of firm or organization.

Research on entrepreneurial orientation has grown rapidly and has covered many aspects. By the end of 2010, EO had been referenced in 256 scholarly journal articles (Covin and Lumpkin, 2011). Half way into 2015,

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² Performance is seen in the wide terms of how successfully a function is performed. For firms, this may be the results compared to their intended output or goals.
the same search reveals that 616 scholarly journals reference EO. This tells us that in less than five years, 360 new research articles have been published which refer to entrepreneurial orientation. This growth has rapidly expanded EO research in several ways. One observation that shows this growth is in terms of nations where empirical data has been collected. EO research has now been conducted with empirical data from at least 41 different nations (Saeed et al., 2014). Another observation reveals that EO research has been conducted in many different types of firms and organizations, for example large and small firm (cf. Andersén, 2012; Javalgi and Todd, 2011; Kraus, 2013; Tajeddini et al., 2013; Wang and Altinay, 2012). In addition, EO has been connected to different types of organizational performance and other outcomes, for example growth and profit (cf. Dada and Watson, 2013; Mickiewicz et al., 2014; Miller and Toulouse, 1986; Walter et al., 2006). On the whole, research on EO seems to be growing at a tremendous rate and it has been researched in a wide range of contexts and with different outcomes.

EO research may have grown for several different reasons. First, a reason Miller (2011) discusses is the previously described general importance of entrepreneurship to society. For example, the positive impact of entrepreneurship on economic growth and job creation may have spurred the interest in entrepreneurship research in general and especially EO. In addition, a second reason Miller discusses is the supposedly standardized way of conducting EO research, which might appeal to many researchers. More specifically, EO research can, as argued by Miller (2011), be quite standardized since it is a concept that has universal application. In other words, it is a one-size-fits-all approach, which means that EO is relevant to almost any type of organization that researchers can gain access to. In the same fashion, Gupta and Gupta (2015) note that EO research is published in a wide variety of journals and that it is an inclusive concept, since researchers can investigate EO in a wide arrange of contexts. Furthermore, the EO scale developed by Miller (1983) and Covin and Slevin (1989) is widely available for researchers and can easily be incorporated into mailed-out questionnaires, which can make collection of EO data straightforward. All in all, the importance of EO in society in combination with the ease and standardized way of carrying out EO research may largely explain its rapid growth.

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3 Both searches were conducted in the ABI/INFORM database using the term “entrepreneurial orientation”.

4 The measurement scale can be found in appendix B.
When reviewing the research on EO it can also be noticed that empirical work appears to be dominating the EO field. It is important to realize, as Covin and Lumpkin (2011) point out, that “taken as a whole, EO research tends to be phenomenon focused rather than theory based” (p.859). This phenomenon-based, or in other words empirically focused, research can be argued to be, to a certain extent, quite homogenous with at times only marginal differences between studies.

**The homogeneity of EO research**

The fact that EO research is quite homogenous can be demonstrated by several points. *First*, Covin and Lumpkin (2011) point out that some areas have been researched thoroughly and that additional research in these areas can only bring additional marginal value to EO research. One example they give is the moderating effects of the environment on the EO performance. They maintain that additional research into these foci will only bring additional marginal value. This is an indication that there are areas of research that have received enough attention, which suggests that there is a certain degree of homogeneity. A *second* point worth noting is that most empirical work has been of statistical nature, with only a few exceptions (but see Fayolle et al., 2008; Nordqvist et al., 2008; Riviezzo et al., 2013; Vora et al., 2012). One example that highlights this as the dominant perspective of EO is that several literature reviews have been conducted (Rauch et al., 2009; Saeed et al., 2014; Wales, Gupta, et al., 2013) and that none of these have included any qualitative research in the reviews. Along these lines, Miller (2011) remarks that “[t]he EO literature has shied away from qualitative studies” (p. 886). For these reasons, it can be argued that EO research is homogenous with respect to the overall adherence to quantitative and statistical perspectives. A *third* point is that conceptual development of EO seems to have been slower than the amount of empirical research (but see Anderson et al., 2015; Lumpkin and Dess, 1996; Wiklund and Shepherd, 2011). The literature reviews (Rauch et al., 2009; Wales, Gupta, et al., 2013) point toward most researchers using the same or very similar conceptualization and operationalization of EO. This, again, points toward the homogeneity that exists in the overall EO literature. With these three points in mind, it can thus be argued that EO research, seen as a whole, has been mainly empirical and that this empirical research work appears to be quite homogenous.
To sum up, the seemingly standardized way of conducting EO research has served the EO field exceptionally well and a plethora of insightful research has been conducted. The homogeneity has enabled a large body of EO research to be established and a cumulative body of knowledge has developed. Even though much success has been seen for EO research, a possible downside is that much research has taken similar approaches in the way that the research has been conducted. Without more diverse perspectives on EO, there is a risk that productive future development will be hampered.

From the outset, I want to emphasize that I am positively impressed with the development of EO research to date. The EO field has come a long way and I agree with the authors who say that “a cumulative body of knowledge is developing” (Rauch et al., 2009, p. 762), and that “much insightful work has been done on the topic of entrepreneurial orientation” (Miller, 2011, p. 873). Yet, I will critically highlight two theoretical areas in the EO literature in an attempt to enable further development on the topic of EO. For the EO field to make scientific advancements, it is important to highlight and discuss conceptual issues. This is done in an attempt to refine EO where previous works and ideas are extended, rather than redefining EO. Two specific theoretical matters of EO research will be discussed and are highlighted in this thesis.

**Conceptualizations of EO**

The first issue to be highlighted is how EO is conceptualized. Few researchers have been concerned with the inner workings of the concept of EO, except for the one issue which pertains to the number of dimensions that EO consists of, which has been debated back and forth. This debate was sparked when Lumpkin and Dess (1996) launched the idea that, in addition to innovativeness, risk-taking, and proactiveness, that competitive aggressiveness and autonomy should also be EO dimensions. A less debated issue is the relationship between EO and its sub-dimensions. EO consists of several sub-dimensions and will therefore be considered to be a multidimensional construct; nonetheless, there seem to be two main conceptualizations of EO. In the ‘reflective’ conceptualization, EO is seen as the simultaneous manifestation of the sub-dimensions, which are reflected in each of the sub-dimensions. Conversely, the construct can be conceptualized as a ‘formative construct’, which suggests that EO is created by combining the sub-dimensions (George and Marino, 2011). The reflective conceptualization has become the most common conceptualization (Wales, Gupta, et al., 2013).
where EO has been seen as a single aggregated variable that is reflected in the sub-dimensions (Rauch et al., 2009).

Nonetheless, few researchers have adopted the formative conceptualization (e.g. Kreiser and Davis, 2010; Lumpkin and Dess, 1996), which offers a more fine-grained view of EO. With a formative view, it is possible to investigate the relationships between the sub-dimensions that are being examined. Taking the two views into consideration, Covin and Lumpkin (2011) and Miller (2011) suggest that both views should be considered, depending on the goal of the research. At the same time, a great majority of EO researchers still see EO as a reflective construct and, thus, a single variable (Wales, Gupta, et al., 2013), without looking deeper into the sub-dimensions. By using a more fine-grained view of EO, a more nuanced understanding of the inner workings of EO can be developed.

The EO-performance relationship

The second point that will be highlighted in this thesis is how EO has been theoretically modeled to be connected with organizational performance. A central argument in the EO research is that organizations benefit from adopting an entrepreneurial orientation (Lumpkin and Dess, 1996; Rauch et al., 2009). When taking a closer look at studies investigating this relationship, we find that many are conceptualized as additive models. An additive model examines the individual effects of one or more independent variables on a dependent variable. This approach is also known as the universalistic approach as it does not take context into consideration. For example, Jantunen et al. (2005) investigated EO and dynamic capabilities relationships to international performance. They found that both EO and dynamic capabilities, in an additive fashion, have a positive relationship to performance. In the same fashion, Swierczek and Ha (2003) investigate the EO-performance relationship in Asian SMEs with an additive model. Yet another study, by Grande et al. (2011) examines the relationship of EO and resources to performance in farm-based ventures in Norway. The scholars of this study found that entrepreneurial efforts and unique resources, in an additive fashion, were connected to the performance of the firms.

The results from these studies can easily be interpreted as: the more you increase your entrepreneurial orientation, the higher the performance will be. In support of this universalistic view, a 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.

Even so, we can see that quite a few studies have failed to find a significant positive relationship between EO and performance (e.g. Andersén, 2010; Hughes and Morgan, 2007; Slater and Narver, 2000) while others have found significant and strong positive relationships (e.g. Kraus, 2013; Smart and Conant, 1994; Wiklund, 1999). A possible solution to the inconsistent results of the additive-effect type of research may be found by investigating whether key variables are properly aligned or matched (e.g. Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). Gartner was early in noting 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. 697). 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 the entrepreneurial orientation phenomena. This is because the effect a variable has on performance can be ‘dependent on’ contextual variables such as the external environment of firms or internal aspects, such as competitive strategy.

In much the same vein, 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 (Wiklund and Shepherd, 2011), and therefore EO might not always be beneficial for small firms, for example, which usually have limited resources (Parida, 2010; Wales, Patel, et al., 2013). 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 constraints and instead gain from an EO (Wales, Patel, et al., 2013). Hence, one could 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.
This is in line with Rauch et al. (2009), who suggest in their meta-study that EO research should take into account several different types of contingencies, such as industry dynamics, as well as the size and structure of the firm. The idea that variables need to ‘fit’ with context in order to achieve high performance is the underlying principle of contingency theory (Lumpkin and Dess, 1996). With contingency theory, we can therefore further the development of the theory around EO by acknowledging the importance of fit and that EO might be best suited in certain contexts (Covin and Slevin, 1991; Wiklund and Shepherd, 2005).

**The aim of the thesis**

Before the aim of the thesis is presented, the key arguments thus far are summarized as follows: (I) that, on a general level, research on EO is to a large extent homogenous, (II) that there is a need for more research taking a formative view of the EO concept to be able to gain a more nuanced understanding of EO, and (III) that more EO does not always affect performance positively; instead, the importance of fit with other variables and context needs to be further investigated to help us understand how EO functions.

Based on these arguments, the overarching aim of the thesis is to *advance the conceptualization of EO by problematizing and discussing the core construct and also discussing how EO can fit with context*. This aim will be achieved through advancing the core construct by discussing and problematizing different ways in which EO and its sub-dimensions can relate to each other. Moreover, by utilizing a contingency fit perspective, the relationships of EO to different contexts and other concepts, such as competitive strategy, will discussed.

In addition, the thesis will build on existing EO research, but at the same time, take somewhat novel approaches to investigating EO. Miller (1983), who is one of the founders of the EO concept, suggests in a recent publication (2011) researching EO from new perspectives; for example, he suggests sitting down and interviewing nascent ventures over time to acquire a deeper understanding of EO. Miller also states that “we appear to be at a point in the study of EO where it is time to take the next step and try some new or neglected paths” (p.888). This thesis will attempt to try some new paths in EO research, while at the same time building on the existing EO research.
The structure of the thesis

This thesis consists of an extended summary and four appended papers. The extended summary has six chapters and is structured as follows. Next follows Chapter 2, which, will further discuss the theoretical point of departure of the study. It begins with a brief historical development of EO followed by a discussion of different theoretical views of EO. Then follows the theoretical framing of the research question that is connected to each appended paper. Chapter 3, provides a picture of the method and research design is provided. The chapter discusses methodological fit and the methods and empirical data used in the thesis. Chapter 4 contains a summary of the appended papers and the main results from the papers. Chapter 5 includes a discussion of the most notable results from the papers and expands the results of the individual papers into a comprehensive framework. Chapter 6 consists of conclusions, contributions and suggestions for future research.
Figure 1. Structure of thesis
2. Theoretical framework

The introduction framed the research around the understanding of EO. In this thesis, it is argued that the knowledge about the EO concept can be advanced by discussing the EO sub-dimensions and their interrelations and also discussing how contingency theory can advance the understanding of EO’s relationships to other concepts and contexts. I will first start with a brief overview of the historical development of EO and the different stages of development that EO research has reached. By understanding the history of EO, it is possible to gain a more detailed understanding of the contributions of key scholars and how this has altered the direction of EO or created debates. Thereafter, four specific points about EO will be made, each of which relates to a research question. The first point is the different theoretical perspectives on EO and especially the contingency theory perspective. The second point is the conceptualization of the sub-dimensions and their interrelationships. The third point is the relationship of the EO sub-dimensions to competitive strategy. The fourth and last point is EO and its relationships to technology, environment and ability to form business relationships. The chapter is concluded by summing up the highlighted points and presenting the research questions corresponding to each point.

Entrepreneurial Orientation

Entrepreneurial orientation as it is known today can be seen as having developed in different phases. Most researchers acknowledge four main phases for the development of EO (see e.g. Anderson et al., 2015; Basso et al., 2009; Edmond and Wiklund, 2010; Miller, 2011; Wales, Gupta, et al., 2013). First, there is the pre-EO phase on which the EO research would be founded. Then, most researchers credited Miller (1983) for laying the foundation, thereafter came a refinement from Covin and Slevin (1989, 1991) and even later a reconceptualization by Lumpkin and Dess (1996). Because these phases have impacted the EO research in different ways, a brief overview of the development of EO is given below.

Pre-foundation

The conceptual roots of EO can be traced back as far as the Aston Group in the 1960s (Edmond and Wiklund, 2010). These researchers, led by Derek Pugh, systematically examined the structure and functions of organizations and related them to other organizational variables such as organizational
performance and context (see e.g. Pugh et al., 1968, 1969). The context of the firm was often considered to be the size of the firm, its environment, and technology. These variables were developed into standardized measures that could be used across a wide variety of organizations. Based on these measures, the researchers could develop empirically derived ideal types of organizations.

A different research group took a similar approach to the Aston Group. At McGill University in Montreal, Canada, a group was also especially interested in developing ideal types of organizations. Henry Mintzberg at McGill University started to take notice of the entrepreneurial aspects of firms. In his influential 1973 article, he developed three ideal types, or “modes” as Mintzberg called them, of strategy-making. One of these modes was the entrepreneurial mode, which emphasized the search for new opportunities, centralized power, dramatic leaps when met with uncertainty, and the goal of growth. Along the same lines, Pradip Khandwalla, also a McGill scholar, started to take an interest in the entrepreneurship dimension of firms; in one of his works (1976), he identifies several management styles, where one is entrepreneurial in nature, characterized by, for instance, high risk-taking.

**Danny Miller**

Danny Miller, also at McGill University, completed his Ph.D. in 1976 under the supervision of Henry Mintzberg. Miller, together with his colleague Peter Friesen, started to further develop the work by Mintzberg and Khandwalla and published several articles which featured an entrepreneurial dimension (e.g. Miller and Friesen, 1978, 1982a). In their article ‘Innovation in Conservative and Entrepreneurial Firms: Two Models of Strategic Momentum’, the scholars define an entrepreneurial firm as “firms that innovate boldly and regularly while taking considerable risks in their product market strategies” (Miller and Friesen, 1982a, p. 5). A year later, Miller goes on to publish another article, ‘The correlates of entrepreneurship in three types of firms’, where he defines an entrepreneurial firm as “one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with "proactive" innovations, beating competitors to the punch” (Miller, 1983, p. 771 emphasis in original). Similarly to the Miller and Friesen article one year earlier, this one also includes innovativeness and risk-taking in the entrepreneurial dimension, but in addition, it introduces the proactiveness dimension. It is worth noting that Miller never used the term entrepreneurial orientation; still, he has been credited by many for
introducing the EO concept. However, in addition to conceptualizing an entrepreneurial firm, which was not his main intent (Miller, 2011), he made important contributions in his 1983 article in that he did consider entrepreneurship to be a firm-level phenomenon and illustrated the importance of configurations and ideal types in entrepreneurship research.

**Covin and Slevin**

A refinement phase took place when Covin and Slevin (1988, e.g. 1989) expanded on the work by Miller (1983) and discussed different ‘postures’ that could be either entrepreneurial or conservative. Furthermore, Covin and Slevin suggested that entrepreneurial orientation was a continuum that ranged from conservative to entrepreneurial and that firms could be positioned anywhere on the continuum. This is different from Miller (1983), who seemed to envision a binary value, that is, a firm is either entrepreneurial or it is not. Furthermore, Miller (1983) had not included the measurement scale in the article, but mailed it to authors who requested it (Miller, 2011). Covin and Slevin (1989) included all their measurement scales in their article. This included the nine-item measurement scale of EO, which in turn was based on Miller’s (1983) conceptualization and actual measurements of EO. This made the scale accessible to many researchers wishing to investigate firm-level entrepreneurship. The scale can be found in Appendix B.

**Lumpkin and Dess**

In 1996, Lumpkin and Dess reconceptualized EO. Their use of the term ‘entrepreneurial orientation’ replaced Miller’s and Covin and Slevin’s earlier terms of ‘posture’ and ‘styles’. In addition, they argued that the two sub-dimensions of autonomy and competitive aggressiveness should be included in the construct. Lumpkin and Dess (1996) also make a clear distinction between entrepreneurship and the processes that lead to entrepreneurship. They conceptualize EO as the process that leads to the act of entrepreneurship, which they define as ‘new entry’, which is ‘the act of launching a new venture’ (p 136). This definition is considerably different from that in the earlier EO literature where EO, in itself, was considered to be entrepreneurship. Furthermore, they conceptualize that the now five dimensions may vary independently of each other, and thus, need not covary.
The phases and development of Entrepreneurial Orientation

The different phases have had an impact and developed the way other scholars have viewed EO and there are some conceptual differences between these different phases, with Lumpkin and Dess (1996) and Covin and Slevin (1989, 1991) thus partially altering the conceptual meaning of EO (Basso et al., 2009). Nonetheless, going back to Miller (1983), one can note that the core message of configurations and contingency fit that Miller was trying to convey seems to a large extent to have been lost in most EO research. Instead, what is today called EO was only a side note, and this side note is what researchers have grasped. The core message was to show the value of a configurational approach to studying organizations (Miller, 2011), but this important thought about configurational approach has more or less been forgotten in EO research.

In this thesis, as outlined in the introduction, I argue that we need to bring contingency fit, and especially a configurational view, back into EO research. To understand how contingency fit and a configurational view can enhance the understanding of EO and where the EO field is today, a brief overview EO in relation to contingency theory research is provided next.

Perspective on Entrepreneurial orientation

Causal mechanisms represent the foundation of theories. Some researchers argue that there is no overarching theoretical framework established for EO research (Miller, 2011; Wiklund and Shepherd, 2011). Like Zahra’s (2007) notions about the general entrepreneurship literature, I have similar notions that in the EO literature scholars rarely articulate their theories and assumptions, and even less so, question them. Instead, assumptions are often implicitly communicated with a reference to a theory or to a figure, but still not explicating the causal logic the theory contains (Sutton and Staw, 1995). By taking a contingency theory perspective the EO literature can be divided into two dominant modes of theorizing about EO, a universalistic view and a contingency view.

The universalistic view

Many researchers adopt a universalistic view, which can be seen as a "one size fits all" view, of EO (Andersén, 2010; Gupta and Gupta, 2015), as argued in the introduction. Universalistic perspectives can be seen as the most fundamental type of theoretical statement as they imply that a relationship between two variables is universal. That is, the relationship between an independent variable and a dependent variable is universal to all organizations.
across different contexts (Delery and Doty, 1996). In EO research, this can be translated into, for instance, the notion that there is a universal law that higher EO will always result in higher organizational performance. For example, Keh et al., (2007) state that “[h]igh EO is closely related to first-mover advantages and the tendency to take advantage of emerging opportunities, which ultimately has a positive influence on performance.” This indicates a fundamental relationship whereby the more EO, the better the result. Along similar lines, Wolff et al. (2015) state that “an EO allows SME firms to be more efficient in their activities, cater to customer needs in superior ways, or be faster to market than competitors, firms may be able to create competitive advantage and hence superior performance... [W]e anticipate a direct-effects relationship between the EO construct and small firm growth” (p 716). This is another example where the authors take a universalistic approach to EO: more EO results in better performance.

The universalistic approach has been largely accepted in EO studies, but it has been questioned, by Andersén (2010) for example. Not many researchers have critically examined the EO-performance relationship. Andersén examines the five core references which are often cited when referring to the EO-performance relationship. He identifies several potential weaknesses including several methodological flaws in these early studies which could contribute to finding a positive impact of EO on performance. Another important point Andersén makes is that the EO sub-dimension of risk-taking, by definition, not only has a positive impact but should also result in greater risk of failures. These failures can lead to firms ceasing to exist, although most studies do not account for survival bias, which leads to skewed results. This issue is later further highlighted by Wiklund and Shepherd (2011), who also argue that EO has mainly been seen as performance-enhancing. Instead, the scholars suggest that EO should be seen as increasing variance in performance, because it will lead some firms to more failures, due to higher risk-taking, for example, but other firms will improve performance from EO.

This thesis also questions the universalistic approach of EO as performance-enhancing; however, a different approach from that of Andersén (2010) and Wiklund and Shepherd (2011) is used. As mentioned in Chapter 1, this thesis agrees with these arguments and further argues that an EO can be beneficial in certain situations or contexts. That is, EO does not always affect performance in a universalistic and positive way. Instead, based on contingency theory and the concept of fit, it is suggested that EO needs to
fit with the context of the firm. This view of EO will be discussed in the section below.

The contingency fit view
As briefly described in Chapter 1, the fundamental idea behind contingency theory in the EO field is that entrepreneurship needs to be aligned with context for best results (e.g. Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). Lumpkin and Dess (1996) suggest that EO needs to be aligned with many different contextual factors and that these can be divided between environmental (external) and organizational (internal) factors. Organizational factors can be, for example, structure, strategy, processes, and resources, while environmental factors can be the characteristics of markets, industry, and the environment. Contingency fit can be seen as a simple concept: a match between entrepreneurship and context leads to increased organizational performance. However, when reading the EO literature, it seems that contingency fit has been conceptualized in many different ways.

Cartesian approach
Some researchers (e.g. Covin et al., 2006; Pearce II et al., 2010; Wang, 2008; Zahra and Garvis, 2000) adopt what can be termed a Cartesian approach (Gerdin and Greve, 2004). This approach takes a perspective over the firm where the focus is usually on a context-structure pair of variables (Meyer et al., 1993). For instance, Moreno and Casillas (2008) investigate how EO can relate to performance depending on the context of the environment in which the firm operates. In a similar manner, Walter et al. (2006) examine the relationship between EO and performance depending on the context of the firm’s different levels of network capabilities. They suggest that firms that increase their network capabilities will also increase the contribution of EO to firm performance. These are typical EO studies that take a Cartesian perspective.

The Cartesian stream of contingency fit 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 the 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.

Configuration approach
Another view of contingency fit is that of configurations. Similarly to the Cartesian view, the configurational approach also suggests that fit between variable(s) and context leads to fit. However, some of the theoretical arguments are fundamentally different. The configurational approach builds upon the notion that firms fall into a limited number of states of internal coherence among a collection of theoretical attributes. Since only a small number of states of fit exist, firms that wish to make changes need to make major changes at great speed (i.e. quantum jumps) to avoid in-between states (Drazin and Van de Ven, 1985; Meyer et al., 1993; Miller, 1996). In EO research, it seems that only a few studies have taken a configurational perspective. One such study is that of Kreiser and Davis (2010), who embrace a configurational approach when they conceptualize the EO sub-dimensions, organizational structure, and various environmental contexts into ideal types. Also with a configurational perspective, Andersén (2012) empirically derives six configurations of manufacturing firms based on a range of resources and capabilities and connects each configuration with their EO level. Both of these studies are rare examples of research that use configuration models in the EO field.

The configuration stream takes a view of the 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 and organizational culture (Miller, 1996). The benefit for firms in having a central theme is that it gives a unifying direction. This makes coordination easier, and focuses efforts and complementarities between, for example, strategies, leadership style, and product offerings. Certain synergies can be achieved by unique combinations of organizational parts that complement one another; for example, a specific strategy might be more effective in a firm with a conservative leadership style and which is situated in a particular context (Miller, 1993). Because of this thematic view, only a few viable configurations are theorized to exist. This is also why it is theorized that firms make ‘quantum jumps’, that is, changes that are major and drastic when change is needed. Changing only one element would disturb the harmony in the configuration and move
it out of fit. For that reason, it is proposed that the variables or elements have to change together (Miller and Friesen, 1982b).

Differences between Cartesian and configuration perspectives
Even though both Cartesian and configuration perspectives investigate fit, as shown above, the underlying theoretical assumptions may be substantial. For example, one important difference is how change occurs. In the Cartesian stream, change is seen to be incremental and continuous where a little change in context (e.g. environment) is always present, which in turn, can be matched with a little change in EO. In contrast, in the configuration perspective, change is theorized to be frame-breaking (quantum jumps), which only occurs during episodic bursts (Meyer et al., 1993). These differences in underlying assumptions between Cartesian and configuration perspectives are large and researchers have even been able to show that these two opposing view can results in contradictory outcomes (Gerdin and Greve, 2004).

Taken together, it seems that there are two different streams within the contingency perspective in EO research. Both of these streams take quite different perspectives on contingency fit. In addition, there seems to be no explicit discussion in the EO field about these different conceptualizations of fit and the underlying differences underpinning the choice of conceptualizing contingency fit. From an overview of the literature, it appears that the EO literature has utilized contingency theory in conceptually different ways without much discussion about the implications of such choices for the EO field. In general, researchers have not been explicit when conceptualizing and defining fit. To date, the discussion about how contingency fit should be applied in an EO 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 EO field, this discussion about contingency theory is currently missing. Also missing is an inquiry into what type of models have been used, the theoretical consequences of these choices, as well as future research avenues.

Entrepreneurial Orientation and the sub-dimensions
Earlier in the chapter, the fundamental idea and the historical development of EO was covered. Nonetheless, the sub-dimensions, which can be seen as
the building blocks of EO, received little attention. Therefore, the sub-di-

dimension will be given closer attention in this section. Entrepreneurial Ori-

etration was originally considered to have the three dimensions of innova-

tiveness, risk-taking, and proactiveness (Covin and Slevin, 1988; Miller,

1983), while Lumpkin and Dess (1996) later added the two further dimen-
sions of autonomy and competitive aggressiveness. These two additional
dimensions have been debated back and forth. Many authors use the three
original dimensions while others use different combinations of the five
(Wales, Gupta, et al., 2013).

In this thesis, autonomy, which is ‘the ability and will to be self-directed
in the pursuit of opportunities” (Lumpkin and Dess, 1996, p. 140), is not
considered. The empirical data in this thesis consists of startups and small
firms, and I argue that autonomy relates more to an individual-level char-
acteristic and might relate more to large firms. Startups and small firms usu-
ally only have a few employees with high levels of autonomy. Another point
that has been argue is that autonomy is not part of the EO construct, but is
instead an antecedent to EO (Edmond and Wiklund, 2010). Additionally, I
argue that competitive aggressiveness, which is a firm’s inclination to chal-
lenge and outrun its competitors, is not a specific feature of entrepreneur-
ship per se. Edmond and Wiklund (2010) argue that competitive aggressiv-
ness might be important for performance, but that it falls outside the entre-
preneurship domain. Therefore, the original sub-dimensions of innovative-
ness, risk-taking, and proactiveness of EO are consistently considered and,
hence, these three dimensions deserve more attention in detail below.

Innovativeness

Schumpeter (1942) was early in highlighting the importance of innovation
in entrepreneurial activity with the process of “creative destruction”, a pro-
cess that disrupts current market structures by means of new goods or ser-

vices. Innovation mainly refers to “an iterative process initiated by the per-
ception of a new market and/or new service opportunity for a technology-
based invention which leads to development, production, and marketing
tasks striving for the commercial success of the invention” (Garcia and Cal-
antone, 2002, p. 112). In contrast, innovativeness generally refers to ‘new-
ness’ (Garcia and Calantone, 2002). In the EO literature innovativeness has
been argued to reflect the firm’s tendency to embrace new technologies or
practices and go beyond the current state-of-the-art. This may be new and
creative ideas, novelty, and experimentation that might give rise to new
technology, products, or services (Lumpkin and Dess, 1996; Wiklund and
Innovativeness can take several different shapes, for example, technological innovativeness such as R&D and engineering, while product-market innovativeness may instead refer to a new market niche, product design, and advertising and promotion (Miller and Friesen, 1978), at the same time as innovativeness can be developing new processes (Kropp et al., 2008), such as new products or service processes (Vora et al., 2012) or the adoption thereof (Vora et al., 2012). Innovativeness in the EO literature takes in a broad range of innovativeness; this broadness makes it quite comparable to the wider literature on innovativeness and innovation.

The sub-dimension of innovativeness in EO seem to adhere to the general innovativeness discussion in the EO field (Vora et al., 2012) with one exception. In the wider innovation literature, there is often a distinction between different types of innovations or innovativeness (Garcia and Calantone, 2002). For example, radical, discontinuous, incremental, imitative, and disruptive innovation are a few labels used to describe different types of innovation. One specific type of innovativeness that is of particular interest to the EO literature is that the innovation literature distinguishes product innovativeness from organizational innovativeness. Garcia and Calantone clarifies this as “a highly innovative product does not automatically imply highly innovative firms” (2002, p. 117). This discussion of different types of innovation and innovativeness is missing in the EO literature.

**Risk-taking**

Cantillon (1755/1959) was one of the early entrepreneurship scholars who defined entrepreneurship as a non-fixed income earner who instead invests in the cost of production and then this entrepreneur earns uncertain incomes because of the unknown demand for the product. This early association of risk with entrepreneurship has thus a long tradition. Different types of business risks exist, for example, “venturing into the unknown” (personal, social, and psychological), “committing a relatively large portion of assets”, and “borrowing heavily” (Baird and Thomas, 1985). Risk can also be related to risk-return and trade-off, the probability of a loss. Miller and Friesen (1978) embrace this with their definition of risk-taking as “the degree to which managers are willing to make large and risky resource commitments – i.e., those which have a reasonable chance of costly failures” (1978, p. 923). Firms involved in new product development generally take some type of risk, since the new product has an unknown demand (Naldi et al., 2007). Other researchers have discussed affordable loss as an alternative to
risk-return calculations (Dew et al., 2009). In contrast to risk and return analysis, affordable loss suggests an upper bound on how much firms are willing to lose (Lechner and Gudmundsson, 2014). In the EO literature, risk-taking is generally referred to as engaging in risky ventures that require high resource commitments, as well as, borrowing heavily (Vora et al., 2012).

**Proactiveness**
Initiative has been pointed out as an important part of entrepreneurship (e.g. Penrose, 1959) and first-mover advantage was put forward as advantageous strategy by Lieberman and Montgomery (1988). By taking advantage of market imperfections (Kirzner, 1973), the entrepreneur can achieve unusually high profits and get a head start on competition. Proactiveness is achieved “by anticipating and pursuing new opportunities and by participating in emerging markets also has become associated with entrepreneurship” (Lumpkin and Dess, 1996, p. 146). Miller and Friesen (1978) suggest that proactiveness shapes the environment through, for example, new products, technology and administrative processes in contrast to reacting to the environment. This suggests a forward-looking perspective, being able to anticipate and being prepared for the future. Miller later suggested that proactiveness can be defined as “first to come up with ‘proactive’ innovations” (1983, p. 771) which thus suggests more the speed of innovating and introducing products and services. Proactiveness can thus be seen to have some different dimensions: speed of innovation and acting on opportunities.

**The role of the sub-dimensions**
The role of the sub-dimensions is not quite clear in the EO literature. Most authors see EO as a reflective construct where all the sub-dimensions co-vary. That is, if a firm scores high on one dimension, than it is also expected to score high on the other dimensions (Covin and Slevin, 1989, e.g. 1991). This view aggregates EO into a single variable where a firm can be plotted on a continuum between conservative and entrepreneurial. In contrast, Lumpkin and Dess (1996) argue that EO is to be seen as a formative construct where the sub-dimensions do not necessarily need to co-vary. Instead, they suggest that the sub-dimensions can take different forms and that the dimensions can act independently from each other depending on the context (e.g. Lechner and Gudmundsson, 2014; Naldi et al., 2007). For instance, in
certain contexts the component of risk might be more important than others, for example when starting a new business. In similar manner, innovativeness might be more critical in high-tech contexts than other the other sub-dimensions. This view thus highlights the notion that EO is not a single variable and attention should instead be directed to the sub-dimensions which can combine into different types of EO.

Going back to Miller (1983), he seems to envision a reflective construct, but it is not completely clear. For example, Miller considered that if any of the three sub-dimensions were missing entirely, then a firm might be classified as less than entrepreneurial. This indicates that he envisioned that the sub-dimension could vary independently to a certain degree. More recently, Miller (2011) highlights the possibility of EO not only being a reflective construct but also a formative construct. Miller suggests that a reflective or formative construct should be used depending on which best suits the research inquiry. Even so, it seems like most scholars have adopted a reflective view of EO (Edmond and Wiklund, 2010; Wales, Gupta, et al., 2013). All in all, there seems to be an ambiguity over the conceptualization of the sub-dimensions and the relationships among them.

Entrepreneurial orientation and competitive strategy

This thesis has highlighted how contingency theory and the concept of fit can benefit EO research. Earlier in this chapter, context was identified as being classified either as organizational or as environmental. Wales, Gupta, and Mousa (2013) found in their review of the EO concept that most studies have considered environmental context as contingencies. The scholars also argue that the organizational context has been less studied and therefore suggest that more studies focus on this area.

Competitive strategy can be considered as an internal contingency, and has thus not received much attention in EO research. EO can be seen as strategy-making and competitive strategy can be seen as the content that the strategy-making is trying to achieve. In other words, EO describes how the firm works with the strategy, while competitive strategy describes what the strategy consists of. Moreno and Casillas (2008) investigate the EO, strategy, and performance link in a mediation model; that is, strategy is an intermediate variable that acts as a link between EO and performance. A similar investigation was conducted by Lechner and Gudmundsson (2014).

Following earlier studies of Lechner and Gudmundsson (2014) and Fiss (2011), the two main dimensions of Porter’s (1980) competitive strategy
typology is used. The typology describes two key types of strategy, that is, differentiation which focuses on adding value to the customer while cost leadership focuses on lowering the costs structures. Porter (1980) suggests that firms properly aligned with a competitive strategy will achieve above-average profits.

Furthermore, Wales et al. (2013) note that most studies have adopted EO as a reflective construct. Wales et al. (2013) as well as Miller (2011) suggest that the formative view can be a way forward to give a more nuanced view of EO. By taking a formative view of EO, each sub-dimension can be scrutinized in more detail compared to a unidimensional view of EO, where EO is seen as an average between the sub-dimensions. By viewing EO as a formative construct, it is possible to investigate different configurations of the sub-dimension and competitive strategy. By utilizing a configuration fit perspective, it is possible to investigate firm performance based on ideal types.

The earlier studies of EO and strategy (e.g. Lechner and Gudmundsson, 2014; Moreno and Casillas, 2008) have used path models (mediation) where the combinational effect between EO and strategy may be lost. Thus, although these studies provide us with much needed knowledge about how EO influences strategy and how strategy in turn influences performance, it is not known how they act in unique combinations to affect performance. Building upon similar thoughts, Short, Payne and Ketchen (2008) call for more research with a configuration approach in the EO literature and state that “certain configurations of firms could be high on some elements of EO (e.g., autonomy, innovativeness) but low on others, and some of these patterns may better fit certain settings than others” (pg. 1072). Accordingly, they suggest that EO research should take a formative view of EO in combination with a configuration perspective.

**Configurations of EO leading to business formation**

In addition to organizational context as contingencies, as discussed above, a wider view of configurations can also include the external environment and other types of factors than competitive strategy. As suggested earlier, the ‘standard way’ of using contingency theory in EO research seems to be the Cartesian way of conceptualizing contingency theory. The use of the configuration fit approach is much less explored; however, there is a small but growing literature around configuration theory and EO research (e.g. Andersén, 2012; Kreiser and Davis, 2010).

In a recent review of configuration theory, Short, Payne and Ketchen (2008) call for and encourage scholars to pursue more research with the
configurational approach in the entrepreneurship field in general and especially for EO. In a similar vein, Miles (2012) and Van de Ven, Ganco, and Hinings (2013) call for more research on organizational design from a configurational viewpoint that can handle the more and more complex, faster changing, and challenging environments for firms that many entrepreneurial firms will find themselves in. Furthermore, Harms, Kraus and Schwarz (2009) argue that the configurational approach may be suitable for EO research.

In addition to the need of configurational perspectives in EO research, there has been little research on how EO affects the possibility to form business relationships (Street and Cameron, 2007). According to BarNir and Smith (2002), the ability for entrepreneurial firms to form business relationships is a critical step toward becoming competitive. Yet, the entrepreneurship field has not examined under what circumstances these business relationships take shape. 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 EO and technology. A study that investigates the specific combinations of organizational fit between technology and EO in combination with fit with the environment that leads to the formation of business relationships is currently missing.

Research questions

The chapter started by providing a historical background on EO research to give a deeper understanding of the different developments that have taken place in EO research over time. Thereafter, four important points in the EO literature were presented. These four points are all related to the overall aim of the thesis which is to advance the conceptualization of EO by problematizing and discussing the core construct and also discussing how EO can fit with context.

Each important point is also related to a specific research question. The first point argues that it seems like contingency theory has been used in several different ways, some fundamentally different from others in EO research.

Research question 1:

In what ways has the concept of fit been conceptualized in EO research and what are the theoretical consequences of these choices?
The second point is that the sub-dimensions of EO and their interrelationships are not fully understood.

**Research question 2:**
How can we conceptualize and sharpen the understanding of the EO sub-dimensions?

The third point is that the relationships of the sub-dimensions to competitive strategy needs further inquiry.

**Research question 3:**
In what ways can the EO sub-dimensions of innovativeness, risk-taking, and proactiveness combine with competitive strategy to form different configurations?

And the last and fourth point is that the relationships among EO, technology, the environment and the ability to form business relationships is currently unknown.

**Research question 4:**
How can EO combine with other attributes to produce configurations leading to business formation in a startup context?
Table 1. Appended papers and their connected research question

<table>
<thead>
<tr>
<th>#</th>
<th>Title</th>
<th>Research question</th>
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<tbody>
<tr>
<td>I</td>
<td>Contingency fit(s) in entrepreneurship research: uses and usability</td>
<td>In what ways has the concept of fit been conceptualized in EO research and what are the theoretical consequences of these choices?</td>
</tr>
<tr>
<td>II</td>
<td>Entrepreneurial orientation from a process and outcome view</td>
<td>How can we conceptualize and sharpen the understanding of the EO sub-dimensions?</td>
</tr>
<tr>
<td>III</td>
<td>Configurations of entrepreneurial orientation and competitive strategy for high performance</td>
<td>In what ways can the EO sub-dimensions of innovativeness, risk-taking and proactiveness combine with competitive strategy to form different configurations?</td>
</tr>
<tr>
<td>IV</td>
<td>Business mating: when startups get it right</td>
<td>How can EO combine with other attributes to produce configurations leading to business formation in a startup context?</td>
</tr>
</tbody>
</table>
3. Method and research design

This chapter will discuss the methods used as well as the research design. The chapter begins with a discussion on the methodological fit of the thesis and its parts. Thereafter follows a discussion about the research design of the papers, that is, the methods and empirical data used in each paper.

Methodology

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 studying EO from a contingency fit perspective, should not be automatically interpreted as implying that this is a superior theory and was therefore my choice.

The EO literature is considered to be one area that has emerged with a cumulative body of research (Wales, 2015)\(^5\). Even though EO research is well established and has a cumulative body of knowledge, I still believe there are areas of improvement and issues that will benefit from being highlighted for the continued positive development of EO. In reviewing the EO literature, I have identified two streams of research perspectives, a universalistic and a contingency theory stream, where I align this thesis with the contingency theory stream. Of course, no theory or perspective is perfect or can give us a complete understanding of a phenomenon. However, both EO and the contingency theory perspective have been influential and by aligning to these perspectives, I aim at contributing to this stream of research. Even though both EO and contingency theory are well established, I have attempted to conduct research that is unique, interesting, and that can add to the EO stream of research (Frank and Landström, 2015). For example, the research methods used in this thesis may not be the most traditional and mainstream methods for EO research, although they are well established in other areas and still, I argue, compatible with the more traditional methods used in EO research. Nonetheless, the methods used, such as a qualitative approach, in this thesis give a slightly different angle on EO, which has enabled additional insights into EO research.

I believe that it is useful to investigate EO from many different perspectives, theories, and methods. Every perspective has its advantages and disadvantages, but with more perspectives investigating the same phenomena we can gain a combined understanding, on a higher level than any single

\(^5\) See discussion in Chapter 1, starting on page seven.
perspective can achieve alone (see e.g. discussion about theoretical perspectives and EO in Covin and Lumpkin, 2011; Miller, 2011).

**Methodological fit**

Although, as stated above, I believe in a diversified approach to studying EO, it is still important to reflect upon comparability between the sub-parts in this thesis, in other words, the comparability between papers that this thesis is based upon. When conducting research, it is central that there is some type of internal consistency among the sub-parts of the research. This thesis consists of several different parts, four papers and the extended summary. In this section, I will discuss how the different papers achieve internal methodological consistency. Three papers are based on field research, where organizations are studied. Additionally, one paper provides a literature review and attempts to provide conceptual development.

In respect to field research, it has been argued that it provides great potential for management and entrepreneurship theory (Edmondson and McManus, 2007; McDonald et al., 2015). Although this may be true, field work can at the same time be messy and chaotic; still, it can make the research process dynamic and interesting. For instance, unexpected events happen which can result in alterations to the developed research design. Importantly, altering the research process can also change the direction of the theoretical contribution. Therefore, finding fit between the data and the theoretical contribution can be a demanding process. Edmondson and McManus (2007) discuss this issue as achieving methodological fit in research. In the sections below, methodological fit will be further discussed based on fit of theory, level of analysis, empirical data, and methods.

**Theoretical fit**

In Chapter 2, I give a historical account of EO. One point that was highlighted was the origin of EO. I argue that EO was originally developed from a contingency theory perspective. I also contend that Miller (1983) was trying to convey the usefulness of contingency theory and especially configurations in his seminal 1983 article. Instead of embracing a configuration approach, which was Miller’s (1983) main intent with the article, what we today call EO has been the article’s main contribution. Although I argue that much EO research has to a certain extent lost touch with the field of contingency theory, EO is still in the conceptual domain of contingency theory. This is an indication that both EO and contingency theory are within
the same theoretical paradigm. For this reason, it is argued that EO and contingency theory is a good theoretical fit.

**Fit of levels of analysis**

In the introduction of this thesis, I argued for the importance of entrepreneurship for the society and the economy. Entrepreneurship research can be conducted at many different levels of analysis. Davidsson and Wiklund (2001) highlight the different levels by suggesting that it is individuals that perform the entrepreneurial initiatives (Schumpeter, 1934). These entrepreneurial initiatives can occur in organizational contexts (Shane and Venkataraman, 2000) and result in the creation of new firms (Rauch and Frese, 2007) or renewal of established firms (Lumpkin and Dess, 1996; Rauch et al., 2009). The effect of these entrepreneurial actions is believed to lead to positive effects on employment and economic growth (Birch, 1979) and this is one of the reasons why there is such a great interest in entrepreneurship research (Davidsson and Wiklund, 2001). There are thus several different levels of analysis in entrepreneurship research, and, at times, these are integrated.

In this thesis and in the appended papers, EO is a central component which is applied at a firm level of analysis. EO is widely accepted as a firm-level construct (Covin and Lumpkin, 2011; Wales, Patel, et al., 2013) and at the business unit level (e.g. Wales et al., 2011). Although, EO has been used at an individual level of analysis (e.g. Bolton and Lane, 2012; Domke-Damonte et al., 2008) it has been argued that this is stretching the concept too far (Covin and Lumpkin, 2011; Slevin and Terjesen, 2011). The choice of EO as a firm-level analysis has guided my selection of theories and concepts that are utilized in the thesis.

Moreover, contingency theory is also a central component in this thesis in the form of a theoretical perspective. Contingency theory was developed, and has been widely accepted, for firm-level analysis (Drazin and Van de Ven, 1985). Therefore, the firm-level analysis is a good fit with EO and contingency theory as these are both well suited for firm-level analysis.

**Fit of empirical data**

Previous research on EO has been applied to startups (e.g. Stam and Elfring, 2008), small firms (e.g. Reijonen et al., 2014) and large firms (e.g. Hult et al., 2003). According to the meta-analysis by Rauch et al. (2009), EO has a positive effect on performance for all different sizes of firms; however, the positive effect is largest for small firms. These small firms are usually more
flexible, which allows for quicker response to, for instance, environmental changes. In smaller firms, the top management is also likely to have more direct influence on the whole organization. Therefore, startups and small firms are interesting to research as the effect of EO can be highly applicable and because these firms are also more flexible and adaptive. Furthermore, much EO research aligns with the small-firm perspective (Rauch et al., 2009). In this thesis data from startups and small firms have been collected in a variety of ways, including interviews, surveys, field visits, and various types of documents from different sources. At the firms, the respondents have been of similar position, usually CEO or owner. Even though data have been collected in different ways, the source of the data has been from startups or small firms.

Fit of methods
Several methods are used in the papers in this thesis. The first paper utilizes a systematic literature review (Frank and Hatak, 2014), the second paper takes a qualitative approach (Coviello, 2014; Eisenhardt and Graebner, 2007) and papers three and four utilize configurational comparative methods (QCA), which are of a comparative character and were originally intended for multiple case studies and small and medium sample sizes (Rihoux and Ragin, 2009). QCA is often seen as an approach that is in between qualitative research and quantitative research (Rihoux and Marx, 2013) and considered to be well suited for configurational studies (Fiss, 2007, 2011). This thesis is thus a multiple-method approach where different research questions and research goals have been matched with an appropriate method. This approach has enriched the understanding of EO and contributed to the body of knowledge of EO. By applying, for example, a qualitative approach a more nuanced and fine-grained view of EO and its subdimensions have been achieved. Moreover, by applying QCA it has been possible to identify combinations that share the same outcome, in this thesis referred to as ideal types. All in all, it may be argued that there is methodological fit in the thesis and its parts. Although there are some differences between, for example, the methods applied in the papers, I still maintain that they are of a compatible nature.

Reflections beyond methodological fit
As argued in the sections above, it can be concluded that there is an overall methodological fit of the thesis in terms of theory, level of analysis, empirical data, and methods. Beyond the methodological fit in the thesis, the thesis
has also served as a platform for learning. One of the learning aspects that I have attempted to achieve is to be able to practice different types of methods and analysis. In this thesis I have used a wide, but still compatible, set of methods, for an overview see table 2. I have been exposed to, for instance, both interview studies and survey studies. This has in turn enabled me to develop a larger toolbox and a degree of versatility which I hope will prepare me for a future research career, expanding the types of research questions that I can answer. This larger toolbox and wide understanding has also resulted in an appreciation of different types of research approaches.
Table 2. Details of the appended papers

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<td>Title</td>
<td>Contingency fit(s) in entrepreneurship research: Uses and usability</td>
<td>Entrepreneurial orientation from a process and outcome view: Investigating innovativeness, risk-taking, and proactiveness in a startup context</td>
<td>Configurations of entrepreneurial orientation and competitive strategy for high performance</td>
<td>Business mating: When start-ups get it right</td>
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<td>Author(s)</td>
<td>Jonas Gerdin Gabriel Linton*</td>
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<td>Gabriel Linton Johan Kask†</td>
<td>Johan Kask Gabriel Linton*</td>
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<td>Research design</td>
<td>Literature review of the use of conceptualizations of contingency fits in entrepreneurship research.</td>
<td>Qualitative research of two startup’s entrepreneurial orientation.</td>
<td>QCA survey study based on small firm’s entrepreneurial orientation and competitive strategy.</td>
<td>QCA study based on startups entrepreneurial orientation, invention, and the market environment.</td>
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*Authors listed in alphabetical order
† Authors listed in order of contribution
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<th><strong>Empirical data</strong></th>
<th>54 Journal articles published in Journal of Business Venturing or Entrepreneurship Theory and Practice.</th>
<th>Interviews with two startups over two years. Additional data sources. Documents provided by firms (e.g. presentations and business plans) and secondary data from firm’s websites, annual reports, patent descriptions, newspaper articles.</th>
<th>Survey data of 67 independent retailing firms and financial data from public reporting.</th>
<th>Multiple sources of data on 16 startups. Informants from startups completed survey. In addition, academic experts provided ratings on the invention based on information from patent database and desk research from archival material was also used.</th>
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Methods and empirical data

In the sections that follow, a more detailed account of the different methods and empirical data that are used in the appended papers are discussed.

Method and empirical data paper I

Paper I (Gerdin and Linton, 2015) is a systematic review paper which answers RQ 1. The two top journals in the entrepreneurship field were selected, specifically *Journal of Business Venturing (JBV)* and *Entrepreneurship Theory & Practice (ETP)*. 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 the Association of Business Schools, U.K., and the 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). These two journals are limited to entrepreneurship research but at the same time they are broad enough for all different types of entrepreneurship research. The goal of the review is not to achieve a complete sample of all studies: instead the goal was to review a sample of top-tier research to get a picture of how contingency theory has been utilized in different ways in the entrepreneurship literature. The papers considered in the review needed to apply a firm level perspective of entrepreneurship. Furthermore, the papers needed to treat entrepreneurship as either or both of the subsequent conditions:

- The papers focus on a specific organizational context, that is, small and medium sized firms and/or new or young firms (Audretsch, 2012).

- The papers focus on entrepreneurial behavior in terms of some type of opportunity seeking which is irrespective of organizational context (Audretsch, 2012).

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6 Top-tier entrepreneurship research has been published elsewhere, in leading management journals, for example. ETB and JBV provides us with a sufficient sample of high quality papers to get a picture of the different approaches.
In addition, by only including top-tier journals we assured that our (at times critical) judgement of the literature did 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).

The entrepreneurship literature includes a large number of empirical papers using ‘it-depends hypotheses’⁷. Some of these adopt a ‘true’ contingency theory perspective, as described in Chapter 2, while many clearly do not. Nevertheless, some papers were difficult to classify and we therefore established some criteria that the papers needed to fulfill regarding contingency theory. One or both criteria needed to be fulfilled for inclusion in the sample. The two criteria were:

- 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’.
- 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 Drazin 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. Entrepreneurship Theory and Practice was founded in 1976 and Journal of Business Venturing was founded in 1985, still, the first identified article suitable for the review was not published until 1986⁸. This manual scan was considered suitable to start with as entrepreneurship scholars have used quite different terminology when referring to

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⁷ See for example Boyd, Hanes, Hitt, Bergh, and Ketchen’s (2012) literature review of contingency theory in strategic management which includes all it-depends hypotheses.

⁸ This is an article by Miller and Toulouse (1986) published in American Journal of Small Business, which changed name to Entrepreneurship Theory and Practice in 1988.
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 on whether the article should be included or not in the review sample. This resulted in a final list of 54 articles included in the review sample.

**Method and empirical data paper II**

In paper II (Linton, 2015), a qualitative approach is used. In general, much of the entrepreneurship research is of a quantitative nature (Henry and Foss, 2015), and since there is too much homogeneity in entrepreneurship methods (McDonald et al., 2015), there is an additional need to examine entrepreneurship from a qualitative view (Henry and Foss, 2015; McDonald et al., 2015). Qualitative methods, in turn, allow for further conceptualization and can add richness in data (Galloway et al., 2015). Siggelkow (2007) proposes that case studies are a good choice since they can help to refine existing theories where there have been gaps in the theory. Furthermore, building theory from cases is presumably able to generate accurate, interesting, and testable theory (Eisenhardt and Graebner, 2007).

In EO research, Miller’s (2011) suggestions for qualitative methods resonate those of the general entrepreneurship literature. Miller suggests that researchers sit down with entrepreneurs to get a deeper understanding of the phenomena of EO rather than sending out a survey. Qualitative research in EO has been called for by many researchers (e.g. Covin and Miller, 2014; Lumpkin and Dess, 1996; Wales, 2015; Wiklund and Shepherd, 2011); still, only a few rare qualitative studies can be identified (but see Fayolle et al., 2008; Nordqvist et al., 2008; Riviezzo et al., 2013; Vora et al., 2012). As Wales (2015) suggests, qualitative research can provide deeper insights into the dimensions of EO and how they can be captured. The qualitative method, thus, allows for further conceptualization of EO and especially its sub-dimensions and adds important details to the EO concept. This is in line with Siggelkow’s (2007) and Eisenhardt and Graebner’s (2007) recommendations that case studies are an excellent choice for refining and further developing already established theories.

An opportunity to study and follow a group of about six startups over time was presented. Some of the firms ceased to exist and others were later added to the group. The two selected startups were covered for the full two years and agreed to my visits to their offices and let me interview them about
every six months. All the startups had some type of invention, usually patented or in the process of being patented.

The empirical data were mainly collected in the form of interviews, but additional sources were also supplied by the startups and even more secondary sources, such as databases and news articles were used to gain a more well-rounded understanding of the startups. The interviews were conducted with the CEO or owner, whoever was in charge of the overall day-to-day operations. The interviews lasted between 60-180 min; these were recorded and transcribed verbatim. The interviews were conducted in a semi-structured fashion. During the first interview, the respondent was asked about the history of the startup, what current processes and activities were undertaken, future plans, and descriptions of the product or service that the startup was in the process of commercializing.

Thanks to the ability to revisit and interview the respondents again, follow-up questions were asked. The ability to ask follow-up questions showed that plans were often changed and that things often did not turn out the way that was planned. However, had I not known about the future plans from the previous interviews, the respondent would probably not have remembered to mention these changes of plans. Therefore, the longitudinal data offered deep and interesting, and sometimes, hard to uncover data.

This qualitative approach allowed data to be obtained from many interviews and visits with the startups over time. Nonetheless, when the empirical data was to be analyzed, it was noticed that the EO concept did not seem to be specific enough and to be able to explain some of the inconsistencies in the data. The study therefore set out to expand on the EO concept based on the empirical data. The qualitative approach was thus able to uncover aspects that the traditional survey would not have been able to capture.

**Method and empirical data paper III**

In the empirical paper III (Linton and Kask, 2015), a configurational approach is used. Previously, scholars in the entrepreneurship literature that have chosen a configurational approach have 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). Even though configurational studies have contributed to important advances in business research (Doty et al., 1993; Miller, 1996), the potential of configurational studies has not been able to advance because of limits in the methods used (Fiss,
QCA allows for systematic cross-case comparison. In comparison to traditional quantitative methods, QCA (Ragin, 1987) offers a case-based systematic approach which is qualitative and comparative in nature, as well as being able to handle small and medium sample sizes. QCA is first and 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 provide 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 exist 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 of finding 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 uses formalized logic that enables other researchers to follow the analytical process and 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).

One unique feature of QCA is multiple conjunctural causation (Rihoux and Marx, 2013). This implies that it is (1) usually a combination of attributes that produces the outcome; (2) various combinations of the attributes may result in the same outcome; (3) depending on context, attributes can have different influence on the outcome. This results in the possibility of
many different causal paths leading to the same outcome. This is in contrast to standard statistical analysis, which usually specifies a single causal model that has the best fit with data. At the same time, QCA shares some characteristics of quantitative methods, such as being able to handle more than a handful of cases and that cases still needing to be reduced to attributes. See appendix A for a more detailed account of the use of QCA.

The researchers were presented with a unique opportunity to sample the sector of sporting goods retailing together with the assistance of the sporting goods retailing association Svenskt Sportforum and the sector’s magazine Sportfack. Together with these organizations and the researchers’ own research efforts, a total of 310 independent sporting goods retailers in Sweden were identified. We assume that this list is very near the absolute number of independent sporting goods retailers in Sweden. Paper III is based on data from 67 of the 310 firms. Some firms were excluded from the sample if they were primarily acting as rental firms, or wholesale or department stores. Eighteen firms had to be excluded due to these circumstances. The remaining 292 firms were approached by email, with the help of the above organizations. Although the stores are independent, about 50% belong to different types of purchasing groups. Nonetheless, these purchasing groups do not interfere with business decisions, such as, what products to sell, where they need to buy their products, how they market themselves, or what strategies to pursue.

The questionnaire was sent out to the CEO or top manager of the firms in April-June, 2014, and yielded a response rate of 31%. Ten responses were incomplete or obviously incorrectly filled out, for example, leaving the same response throughout the questionnaire. Moreover, the performance measure was collected with objective data instead of subjective performance data. When collecting the performance data, the sample had to be further reduced. Some firms did not have a legal status that requires public reporting; other firms had not yet reported their first full year.

**Method and Empirical data paper IV**

In paper IV (Kask and Linton, 2013), a configurational approach (Miller, 1996; Venkatraman, 1989) is used and for the same reasons as stated above, QCA was chosen as the method (Fiss, 2007, 2011). In the paper, firms are investigated that were started with a clear aim to commercialize an invention. The focus of the paper is on what 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 (Chandy and Tel-
lis, 1998) and the level of entrepreneurship in the firm (Covin and Slevin,
1989, 1991). Externally, we investigated the market situation that the prod-
uct would be commercialized in, which constituted the stability or turbu-
lence of the specific market (Henderson and Clark, 1990; Murmann and
Frenken, 2006).

Furthermore, after we had developed the theorized model 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 argued that inventions with patents would
be a good measure for establishing whether a product or service met a min-
umum 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 the years of 2005-
2008 as it was distant enough from our data collection to be able to observe
and still allow for the outcome to come about but yet not too distance that
it would limit the respondents’ ability to recall the episodes accurately (Hu-
ber 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 estab-
lished in the industry, because they would most likely already
have established marketing relationships.
2. Patents could not be granted to individuals that already were in-
volved in a firm or had been involved in a firm that was estab-
lished in the industry, because this would also be the huge ad-

gvantage of already having marketing relationships close at hand.
3. Patents that never gave rise to a firm were excluded as the pur-
pose of the patent might never have been to base a firm on the
patent. Rather, it could be patented with the aim of selling the
patent.

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9 The conceptual model was presented as “Business mating in stable and turbulent
markets: Does the configuration fit?” at Global Business Conference, Sibenik, Cro-
atia, September 2011, and winner of the Best Paper Award.
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 cases we were able to receive usable responses from managers/owners from 16 cases.

We used an open semi-structured interview form for some of the questions and a second part with structured interviews consisting of the EO questions. We used the most commonly used questions based on Miller (1983) and Covin and Slevin (1989) with slight modifications of a few wordings of the items to better fit startups. Slight modifications of this nature is quite common (see e.g. Pearce II et al., 2010) and has shown to still produce valid results (Rauch et al., 2009). The Miller/Covin and Slevin construct is the most commonly used construct according to Rauch et al. (2009) and Wales et al. (2013), as explained in the Chapter 2. The questionnaire was set up with an online service. This allowed 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 average interview lasted about 45-60 min.

To be able to rate the level of radicalness of the invention, we needed non-biased raters. After initially asking the managers/owners, we concluded that the managers/owners were too biased to be answer these questions. In hindsight not surprising, almost all managers/owners rated their invention as very radical. Therefore, we opted to use a panel of expert scholars who answered a set of questions for every invention for all the cases. A five item index was constructed to measure the radicalness of the invention. The construct was based on questions used in earlier research (e.g. Chandy and Tellis, 1998; Souder and Song, 1997, 1998). Each item had a five-point Likert-type scale that ranged from completely disagree to completely agree. Five academic experts, who all were in the field of product innovation, were supplied with a description of the product. Thereafter each expert rated all the 16 inventions according to the radicalness index. The index indicated reliability and internal consistency as the Cronbach’s alpha was 0.78.
4. Summary and results of articles

The appended papers can be seen as building blocks that together attempt to achieve the aim which is to advance the conceptualization of EO by problematizing and discussing the core construct and also discussing how EO can fit with context. The papers below answer the specific research questions presented in Chapter 2. Below, a brief summary of each paper and main results are presented.

Paper I: Contingency fit(s) in entrepreneurship research: Uses and usability\textsuperscript{10}

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 categorizes the level of interaction effect that the study sets out to explain. Some studies predict a general interaction, while others are more specific as to 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 than others. This stands in blunt contrast with assumptions of symmetrical interactions, which imply that certain firm characteristics are highest-performing in one context, while others are highest-performing in another context.

The second dimension categorizes the form of fit that is applied. A major difference within 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

\textsuperscript{10} In appendix C, the results of EO only studies are briefly reported.
positions (Meyer et al., 1993; Miller, 1996). The Cartesian perspective, on the other hand, maintains that contingency fit can be reached through incremental and frequent movements along continuous fit-lines 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 of structure on performance is determined by the value of the 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 suggest that the contingency theory hypothesis is a distinct and growing thread in entrepreneurship research. The forms of fit used in the entrepreneurship literature show 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 same 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.

**Paper II: Entrepreneurial orientation as a multidimensional construct: a process and outcome perspective**

The purpose of this paper was to study EO up-close with a focus on the sub-dimensions of innovativeness, risk-taking, and proactiveness. A qualitative approach enabled a fine-grained view of EO compared to most EO research, which has used surveys and statistical analysis to investigate EO. This paper expands on how EO and the sub-dimensions can be deconstructed to gain deeper understanding of the inner working of EO.

The research approach was influenced by both inductive and deductive approaches. When analyzing the qualitative data, it became clear that the current conceptualization of EO showed inconsistencies. For example, the sub-dimensions showed contradictions such as being innovative and not innovative at the same time. This was an indication that the current conceptualizations of the sub-dimensions might be too coarse. An emergent model
was developed from a close interplay between the empirical data and established theory. The emergent model eventually started to take form and seemed to be able to account for the contradictions in the data.

The final emergent model extends the current theory by offering a more fine-grained view of the sub-dimensions. The model proposes that the sub-dimensions be deconstructed between process and outcome. Indeed, previous research has pointed to a difference between process and outcome in the innovativeness dimensions (Covin and Miller, 2014), but the scholars argue that mixing process and outcome dimensions strengthens the EO construct. In contrast, this paper argues that the difference between outcome and process is distinctly different attributes and that process and outcome can be applied to all three sub-dimensions.

In addition, it is argued that the sub-dimensions do not necessarily have to covary (Lumpkin and Dess, 1996) nor do the attributes of process and outcome have to covary. The empirical results show that process and outcome can be considerably different from each other. For example, a firm can have a product (outcome) that is very innovative; still the firm’s processes can at the same time show low levels of innovativeness. It is argued that different combinations of the sub-dimensions and their process and outcome can constitute many different types of entrepreneurship. This is in contrast to the unidimensional view where firms can move on a single continuum from entrepreneurial to conservative.

**Paper III: Configurations of entrepreneurial orientation and competitive strategy for small firms**

In this paper, EO is viewed from the formative and multidimensional standpoint (Lumpkin and Dess, 1996) with the three dimensions of innovativeness, risk-taking, and proactiveness (Miller, 1983). A configuration perspective of contingency fit is used to examine the internal configurations of firms. EO is investigated with the context of competitive strategy in terms of differentiation and cost leadership (Porter, 1980). EO is seen as a strategy-making process which constitutes the behaviors of implementing a competitive strategy of choice. Competitive strategy is seen as the goal of a strategy. Thus, EO is seen as the behaviors of implementing the specific competitive strategy (Lechner and Gudmundsson, 2014).

A configurational perspective with the multidimensional view of EO together with competitive strategy is thus used in the paper. Three ideal types are theorized to exist assumingly leading to contingency fit, which in turn would lead to high performance: the configuration Originalizers focuses on
differentiation in combination with innovativeness and proactiveness. Systematizers focus on cost leadership in combination with reactiveness and low innovativeness. Finally, Evaluators focus on a mixed strategy with risk aversion, reactiveness, and low innovativeness. The analysis is carried out with QCA, and the empirical data provides support for the existence of Originalizers and Evaluators.

The paper shed some light on how the sub-dimensions can combine differently with each other and indicated that these dimensions can have varied relationships with organizational performance depending on the context. For example, a successful solution that consists of differentiation in combination with proactiveness and innovativeness, as well as another solution that consists of differentiation and proactiveness without risk-taking or cost leadership, indicate that unique EO sub-dimensions should be present at the same time as other EO dimensions are absent. This is an indication that the EO construct can be seen as a multidimensional construct and that this view can give us a more complete understanding of the EO construct.

**Paper IV: Business mating: When start-ups get it right**

The results from paper IV (2013) show that it is crucial for startup 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 previous 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 contrast, 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 comprises being proactive, innovative, and risk-taking. These internal features go well with a market situation that is unstable, which occurs when no current standard way is set for the product in the market place.

Our results showed strong support for *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 of forming a business relationship.
5. Discussion

This study aims to advance the conceptualization of EO by problematizing and discussing the core construct and also discussing how EO can fit with context for high performance. However, each paper has its own distinct focus and each paper answers a specific research question contributing to reaching the overall aim. The following section further develops some of the reasoning from the papers by focusing on two specific areas on an aggregated level. The first area is how a contingency fit approach can revitalize EO and deals with how EO can be theorized to interact with context. The second area is how EO as a construct can be conceptualized in different ways with apparently important underlying assumptions.

EO and contingency fit

This thesis starts with the argument that contingency fit is a useful theory for EO research. This argument has been backed up by the appended papers (paper I, III, and IV). Paper I elaborates on some of the theoretical aspects of contingency fit. For EO research, it is important to clearly conceptualize contingency fit, as there are many different and opposing ways of conceptualizing fit, as is argued in paper I. Paper III and paper IV applies a specific form of fit, namely configuration type of fit. This section will elaborate on different ways that contingency theory can be used to invigorate research on EO. These different theoretical approaches will also be related to the papers of this thesis.

The importance of fit between EO and context

A main point in this thesis is that EO can be conceptualized as increasing performance but also decreasing performance; that is, there might be contexts where an EO is not suitable. The importance is that EO needs to fit with the context. This argument should be seen as an addition to the universalistic view, and thereby giving us a more detailed understanding of EO.

As argued in Chapter 2, EO has mainly been treated as something inherently beneficial in the EO literature (see e.g. Rauch et al., 2009; Saeed et al., 2014). For example, the universalistic view takes this more or less for granted that EO is performance enhancing. In the contingency fit view, EO is often conceptualized to depend on the context, often the environment, for instance. Still, there are quite big differences in how contingency fit has been conceptualized. As paper I indicates (Gerdin and Linton, 2015), many EO studies seem to be conceptualized according to the general interaction (monotonic) model (see Figure 2, Table B).
For example, Covin and Slevin (1990) use an interaction model when examining EO. The scholars theorize that EO is ‘more positive’ in emerging industries than it would be for firms in mature industries. This indicates that EO is seen to be beneficial in both contexts; however, there is an interaction effect with the industry life cycle which increases the effect of EO in an emerging industry. Similarly, Pearce, Fritz, and Davis (2010) conceptualize a general interaction level of theory specification when they investigate EO for religious congregations which are situated in different environments. The scholars theorize that EO has more impact when the environmental munificence is low.

Interestingly, these general interaction (monotonic) level models of theory specification still take for granted that the effect of EO on performance is always positive. However, these studies suggest that the level of the (positive) effect of EO on performance can vary between different contexts. That is, a firm with high EO is always beneficial, but in certain contexts (e.g. environments with high turbulence) it is even more beneficial.

In contrast, some researchers theorize that EO can be negative in certain context and positive in others. In contingency theory terms this type of theory specification is called symmetrical interaction (Schoonhoven, 1981).

Figure 2. Illustration of a ‘no-interaction’ (additive) function (Table A), an interaction (monotonic) function (Table B), a symmetrical interaction (non-monotonic) function (Table C) and a crossover interaction function (i.e. both non-monotonic and disordinal function) (Table D) (adapted from Gerdin and Greve, 2008)
Symmetrical interaction goes beyond the general interaction level by not only suggesting that context matters, but also suggesting that misfit will affect firm performance negatively (see Figure 2, Table C).

The use of this level of theory specification seems less common within EO research. Even so, Covin, Green and Slevin (2006) conceptualize EO in a moderating model which use a symmetrical level of theory specification. For example, they argue that conservative firms may be benefitted by participative decision-making while entrepreneurial firms are more benefitted by less participative decisions-making. Thus, they suggest that low EO (conservative firms) and high EO respectively will each fit with a particular context, e.g. decision-making style, and thus suggest that misfit will affect performance negatively. In a similar way, Zahra (1993) uses the symmetrical level when investigating the effect of the environment on the relationship between EO and firm performance. That is, Zahra conceptualizes EO as fitting with environmental hostility and also suggests that EO is not suited to static environments. The interesting difference compared to EO research at the general interaction level is that these studies conceptualize EO as possibly having a negative impact on performance.

Some research conceptualize EO research as a crossover interaction (Gerdin and Greve, 2008). In this level of theory specification it is conceptualized that fit normally outperforms misfit (see Figure 2, Table D). In other words, crossover interaction assumes that fit is more important than context alone in explaining performance. This is in contrast to symmetrical interaction, where one context can be more beneficial for performance than fit in another context. Thus, it is assumed that in crossover interaction there are generally no contexts that are more efficient than any others; instead, contingency fit is more important than one context being more favorable no matter the level of EO. A study taking such an approach is that of De Clercq, Dimov and Thongpapanl (2010), who conceptualize the internal social context as having an interaction effect with EO; that is, the effect of EO will be most beneficial when it is in fit with the social contexts. No social context is, per se, more efficient than any other; rather, fit between social context and EO will lead to high performance.

Both papers III and IV in this thesis take a crossover interaction approach where fit between EO and context is conceptualized as being more important for performance than context alone. More specifically, in paper III, EO is seen from the sub-dimensions and it is argued that the context of competitive strategy can fit with the different EO sub-dimensions in several ways in terms of ideal profiles, all leading to contingency fit. That is, no
context is theorized to be inherently less suitable for EO, and instead it is the fit between competitive strategy and EO that can explain performance. Much the same in terms of level of theory specification, paper IV uses EO as an attribute in a configurational model that also takes the invention and the market situation into account. The theorized model builds on the notion that no context is fundamentally better than another; rather it is fit between the attributes that explains high performance. Rather, two ideal types that are more or less the opposite of each other are theorized to lead to high performance. One of the ideal types is named Originator; this type builds upon the idea of a highly entrepreneurial firm with a radical invention that will be launched in a market place without a dominant design. In contrast, an ideal type named Inheritor builds upon the idea of a more conservative firm with an incremental invention that is planned to be launched in a market place with a dominant design. However, although the two ideal types are virtually opposed to each other, fit between the attributes is most important, indicating a crossover interaction.

When discussing the different levels of theory specification, it is important to note that all levels of theory specifications have their own merits. The choice of theory specification ultimately depends on the goal of the research. In addition to the ‘no-interaction’ research, EO research seems to utilize all three levels of contingency theory interactions. However, it is seldom acknowledged that there is a difference between the levels and often no explicit discussion of the level of theory specification (see paper I). Nonetheless, as shown above, the implications of the level of theory specifications can greatly affect the conceptualization of EO. With general interaction, researchers are investigating the difference in (positive) effect of EO in different contexts. With symmetrical interaction, on the other hand, the researchers are occupied with examining under which contextual conditions EO is advantageous and when it is not. With crossover interaction, scholars are not concerned with which context per se is beneficial or not for EO, but rather how fit between EO and context is more important than any context alone.

As EO scholars have used different levels of theory specifications for EO, they might also have fundamentally different conceptual beliefs about EO. For example, studies using the general interaction approach assume that EO has some positive effect on firm performance in all contexts. This is vitally

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11 In paper IV performance is considered as the ability to form a business relationship with a marketing partner.
different from symmetrical interaction where EO can have a positive effect in some contexts and negative effects in other contexts. And again, this is in contrast to crossover interaction where fit between EO and context is more important than any context alone.

In this thesis, one argument is that EO is not always beneficial for performance; that is, EO should not always be conceptualized as an additive model or as a general interaction, although there may, of course, be particular instances where this still might be true. This depends on what context is chosen to study. More importantly, it is argued that EO can also be conceptualized as having a negative effect on performance.

In paper IV, this type of approach is taken, as noted above. The effects of EO in combination with the environment are conceptualized as a crossover interaction. That is, in stable markets, it is theorized that low EO would be superior while in turbulent markets it is theorized that high EO would be superior, which the empirical results also give support for. Thus, the environment in itself was not as important as fit between environment and EO. Our conceptualization that low EO, that is, conservative, is beneficial, can be seen as supported by Andersén’s (2010) study, for example, which does not find a significant positive direct relationship between EO and performance. However, when examining Andersén’s study in more detail, the contexts of all the sample firms were in a stable environment of manufacturing firms. This might be a context where EO is not beneficial since high EO is resource-consuming (Covin and Slevin, 1991; Wiklund and Shepherd, 2005) and stable industries might instead be benefited by efficiencies where, for example, noninnovative and risk-averse behavior is more valuable than risk-taking and innovate behavior (Zahra, 1993). Therefore, the context in Andersén’s study might explain why the EO-performance link was not supported.

In sum, there are several different levels of theory specification in contingency theory. EO research seems to have mainly occupied a direct effects thinking or a general interaction contingency fit approach. Nonetheless, there are compelling arguments for also investigating EO at symmetrical and crossover interaction theory specification levels. Previous research has concluded that EO matters (Rauch et al., 2009; Saeed et al., 2014); however, to extend the current EO state of research, it could also be beneficial to further investigate in what context high EO is beneficial and not, as well as how fit between EO and context can explain performance better than context or EO alone.
**EO as a configurational approach**

The foundation of EO was built upon an idea of configurations (Miller, 1983, 2011). However, this idea has been largely overlooked in EO research. Although EO has come a long way since Miller’s seminal (1983) article, some developments have neglected some fundamental ideas about EO. One such idea is the configurational approach of EO. A point worth highlighting is how Covin and Slevin’s (1988, 1989) work emphasized that EO was a continuum, and this idea has stuck with EO research to a large extent while the configurational idea of ideal types seems to be very much neglected.

As argued for in paper I (Gerdin and Linton, 2015), earlier research has classified contingency theory according to different forms of fit (Drazin and Van de Ven, 1985; Venkatraman, 1989). A fundamental distinction is made between a Cartesian and configuration approach (Gerdin and Greve, 2004; Meyer et al., 1993). The Cartesian approach claims that contingency fit can be preserved through incremental and frequent movements along continuous fit-lines. In contrast, the configuration approach claims that firms fall into a reduced number of system states where internal unity is reached between several theoretical attributes. Because there are only a few system states, change has to be frame-breaking with episodic bursts (i.e. quantum jumps) to avoid in-between states (Meyer et al., 1993; Miller, 1996).

It can be noted that both forms of fit have been used in EO research. For example, Brouthers, Nakos, and Dimitratos (2014) use a Cartesian approach with a conceptual model that investigates the EO-performance link as moderated by marketing alliances. In contrast, Kreiser and Davis (2010) take a configuration approach when they develop a typology of EO and structure for different environments. Kreiser and Davis theorize that there are four ideal profiles with which EO and structure should be aligned, and thus, these four ideal profiles have no intermediary positions. The Cartesian approach seems to be much more popular than the configuration approach in EO research, with many researchers employing moderation models (Wales, Gupta, et al., 2013). Nonetheless, a few scholars have exhibited an interest in researching EO from a configuration perspective.

In study III, EO is researched together with competitive strategy in a configurational model. Three ideal profiles are theorized to exist, and two of these are supported by the empirical data. In study IV, EO was investigated in combination with the startup’s invention and the market situation with a configuration approach. Two ideal types were theorized and these were more or less supported by the empirical data. These two studies (III & IV)
build upon the configurational approach of contingency fit where ideal types are developed and firms are expected to stay within the ideal types, and changes between ideal types are so called quantum jumps.

These configurational thoughts of EO can be credited to Miller (1983) who had already taken a configuration perspective when laying the foundation for the EO concept. Miller’s definition of what would become entrepreneurial orientation is ‘[a]n entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with “proactive” innovations, beating competitors to the punch’ (1983, p 771) whereas “[a] nonentrepreneurial firm is one that innovates very little, is highly risk-averse, and imitates the moves of competitors instead of leading the way’ (1983, p 771). Miller’s definition of these two ‘types’ of firms can be seen to adhere more to a configurational logic of contingency fit as Miller seem to be discussing a type of firm, not a level of entrepreneurship in a firm. For example, he (Miller, 1983) does not discuss the notion that firms could move along a continuum between entrepreneurial and non-entrepreneurial, which is something that Covin and Slevin (1988, 1989) claim. The idea that firms can move along a continuum between entrepreneurial and non-entrepreneurial can be seen to adhere much more closely to the Cartesian logic of contingency fit. The idea of entrepreneurial types, which Miller seemed to propose, quickly disappeared after Covin and Slevin (1989) conceptualized EO as a continuum. As argued above, the Cartesian and configuration types of contingency fit are quite different; by suggesting that EO is a continuum Covin and Slevin altered EO in a significant way. More recently, Miller (2011), in reflecting over his seminal 1983 EO article, states ‘[t]he true intent of the 1983 article was to show the merits of a configurational approach to the study of organizations’ (2011, p 874). It is, thus, not a surprise that Miller (2011) calls for EO research to advance the field by adopting a configurational approach, which, he claims, has the ability to describe the context of firms with great precision.

In sum, the foundation of EO was built upon an idea of configurations (Miller, 1983, 2011). However, this idea has been largely overlooked in EO research (Miller, 2011). Covin and Slevin’s (1988, 1989) work emphasized that EO was a continuum, and this idea has stuck with EO research to a large extent while the configurational idea of ideal types seems to be very

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12 Covin and Slevin (1989) termed nonentrepreneurial firms as ‘conservative’
much neglected. Papers III and IV in this thesis do not take the more common Cartesian view of EO, but instead take the more novel approach of configurational models. Because individual interactions between attributes can be many, complex, and nonlinear, it may be useful to distinguish instead between types of organizations that allow for reciprocal and nonlinear relationship among attributes (Meyer et al., 1993). This configurational approach can invigorate EO research, which has previously mainly taken a Cartesian view instead of a configuration approach.

The internal aspects of EO

In the section above, it was argued that it is important to consider how EO interacts with other factors. It was suggested that research can consider contingency theory in terms of the level of theory specification and also the form of contingency fit. More in line with paper II, the next section focuses more closely on the aspects internal to the EO construct. In paper II, the focus is narrowed to provide much more detail on the EO phenomena and the conceptualization of the core EO construct. This section will elaborate on the different possible conceptualizations of the EO construct and relate these to the papers in this thesis.

EO has been researched from different conceptual perspectives. As discussed in the theoretical framework, EO has been conceptualized as having five dimensions (Lumpkin and Dess, 1996) or three dimensions (Covin and Slevin, 1988, 1989; Miller, 1983). Some research uses a mixture in a range from two to all five dimensions, although most research has remained with the original three dimensions (Wales, Gupta, et al., 2013). According to George (2011), researchers should stay with the original three dimensions when researching the EO construct: even if the other dimensions can be interesting, they should not be confused with EO.

Another issue is the relationship between EO and its sub-dimensions (Covin and Lumpkin, 2011; Covin and Wales, 2012; George and Marino, 2011). For example, EO can be seen as a unidimensional construct, also labeled a reflective construct (MacKenzie et al., 2005). In a reflective construct, changes in EO result in changes in all the sub-dimensions, because the sub-dimensions reflect the higher order construct of EO. This also implies that change in only one sub-dimension, for example, innovativeness and not risk-taking and proactiveness, would not reflect a change in EO. Instead, EO is exhibited in the degree that a firm is innovative, risk-taking,
Entrepreneurial Orientation

Innovation

Risk-taking

Proactive

Figure 3. EO modeled as a reflective construct

and proactive simultaneously. The path diagram for EO modeled as a reflective construct is shown in Figure 2.

In contrast, EO can be seen as a multidimensional construct that is created by the sum of the addition of the sub-dimensions, also labeled a formative construct (MacKenzie et al., 2005). In this conceptualization, EO is formed by its sub-dimensions, and changes in EO are the result of changes in any of the sub-dimensions. That is, an increase of any of the sub-dimensions will result in an increase in the overall EO. In a formative construct, the sub-dimensions do not necessarily need to covary; instead, they can act independently of each other. However, as Anderson et al. (2015) insightfully note, it is not a requirement that the dimension cannot covary in a
In paper II, a formative view of EO is utilized and each individual sub-dimension is scrutinized. By conceptualizing EO to allow the sub-dimensions to vary, the concept allows for a wider scope of the phenomena captured. This wider scope enables different types of entrepreneurial orientation to qualify and recognizes that EO may come in different forms and shapes. These different forms and shapes can appear as ideal types. The different types of entrepreneurial action might be explained by the fact that the different situations that firms find themselves in may require different types of entrepreneurial action. For example, risk-taking might be more important for start-ups than for large firms. Moreover, for firms acting in a high tech industry innovativeness might be more important than for firms acting in low tech industries. Paper II shows that the EO sub-dimensions can be exhibited in several different ways and with different combinations.
In paper III, a formative view is also used to examine each individual sub-dimension of EO together with ideal types formed by competitive strategy. The ideal type Organizers is theorized to consist of innovativeness, proactiveness, and a differentiation strategy. Another ideal type named Evaluators is theorized to consist of noninnovativeness, risk-aversion, and reactivity in combination with a mixture between cost leadership and differentiation. Support for the existence of these two ideal types was found in paper III. A third ideal type named Systematizers is theorized to consist of reactivity and noninnovativeness with a focus on cost leadership strategy. However, the empirical results did not support the existence of Systematizers. Nonetheless, the paper advances the multidimensional view by showing that each sub-dimension has unique interactions with context. These more specific findings would not be possible if the EO construct were to be modeled as a reflective construct.

In paper IV, a reflective view of EO is used in a configuration model that also examined the type of invention and the market situation where the invention was aimed to be launched. In paper IV, EO is used in a more traditional manner, as a general variable with relationships with other variables. In paper IV the purpose is not to open up the black-box of EO and its sub-dimensions, but rather to investigate if firms are entrepreneurial or conservative in their general management style in combination with other factors. This aggregated view of EO is often an approach that is warranted if an overall EO factor is desired, whereas the EO sub-dimensions can be more telling in other research situations (Miller, 2011).

Notes on conceptualizing EO as a formative or reflective construct

Treating EO as a reflective or formative construct has some important issues that need to be considered. The first important note between reflective and formative EO constructs is the issue of number of dimensions. If EO is modeled as a reflective construct, then each sub-dimension is expected to covary, then it also becomes irrelevant if there are three or four sub-dimensions since they all reflect EO (MacKenzie et al., 2005). However, if EO is conceptualized as a formative construct, then the issue of the number of dimensions becomes more critical since each individual dimension forms EO, and if any dimension that is included in the theoretical domain is not included, then a vital part of the EO concept will be missing. In Figure 4, an illustration of EO as a formative construct is presented. For example, if any of the three dimensions are not included, then a piece of EO will be missing as each sub-dimension represents its own theoretical domain. This
is not an issue if EO is modeled as a reflective construct as the sub-dimensions only reflect the overall level of EO (George and Marino, 2011). The papers in this thesis have consistently considered the three original sub-dimensions of innovativeness, risk-taking, and proactiveness. George (2011) argues that the label of EO should be reserved for constructs consisting of the three original dimensions, which most research has conformed to (Wales, Gupta, et al., 2013).

![Diagram of EO as a formative construct](image)

*Figure 5. An example of EO as a formative construct*

Furthermore, the second issue for a formative or reflective construct is that of the weightings of the EO dimensions in the construct. If a formative construct is used, the sub-dimensions do not necessarily have the same weight for all of the sub-dimensions. As the example in Figure 4 illustrates, risk-taking might be the smallest part of EO, followed by proactiveness while innovativeness occupies a largest part. Again, this is not an issue if EO is modeled as a reflective construct as each dimension only reflects the level of the overall EO (MacKenzie et al., 2005). There does not seem to be much discussion in the EO research about the weighting of the sub-dimensions (George, 2011), perhaps because most studies have used reflective measures. Nonetheless, some discussions have indicated that certain sub-dimensions are more important than others. For example, Covin and Miles
(1999) argue that innovativeness can be seen as the most important sub-dimension and that all entrepreneurial firms need to be innovative. In this thesis, all the papers have followed previous research and conceptualized the sub-dimensions with the same weighting between the different sub-dimensions.

The third important issue when modeling EO as a reflective or formative construct is the nature of the relationships that EO has with other constructs (George, 2011). If EO is conceptualized as a formative construct, then the sub-dimensions represent their own distinct part of the EO concept and therefore each sub-dimension would not naturally have to have the same or similar antecedents and consequences (George and Marino, 2011). Instead, each sub-dimension would be expected to have a unique set of antecedents for each sub-dimension, see Figure 5.

In contrast, if EO is conceptualized as a reflective construct, then the antecedents are related to the overall EO and not the individual sub-dimensions (See Figure 6). In a reflective construct, there have to be commonalities between the components and antecedents that link to all components (MacKenzie et al., 2011).

Figure 6. EO as a formative construct with antecedents
Most studies seem to use a reflective conceptualization of EO, although there is a stream of formative studies as well (Wales, Gupta, et al., 2013). Nevertheless, many studies seem to refer to the sub-dimensions, for example, when building up a hypothesis. As the sub-dimensions only reflect the EO, it is not these individual dimensions that contribute to an EO; rather, it is the combination of these in the form of an EO that should be discussed. For example, Wang (2008) uses a reflective model of EO and explicitly discusses how the sub-dimensions are individually related to learning orientation when developing a hypothesis. In a similar manner, Wiklund and Shepherd (2005) discuss how each of the sub-dimensions would relate to performance. Although these are excellent studies and they advance our knowledge of EO, this type of theorizing would be more suited to a formative conceptualization as the meaning of EO in a reflective model is the co-existence of the sub-dimensions and not the individual dimensions effect on the outcome, for example. The conceptual meaning of EO in a reflective model is the simultaneous effect of the innovativeness, risk-taking, and pro-activeness. Therefore, it is not relevant to discuss how any single sub-dimension affects an outcome. Instead, this type of reasoning and conceptualization would fit better with formative models of EO. This is because in formative models each sub-dimension is considered to be a unique and distinct part of the construct (MacKenzie et al., 2005). The choice of formative or
reflective model has been suggested by Miller (2011) to depend upon the goal of the research. In paper II, the two start-ups investigated in the study would most definitely be considered entrepreneurial in a general sense: starting a business to commercialize an invention would be considered entrepreneurial by many scholars. Nonetheless, the qualitative case study gives fine-grained insights into the EO sub-dimensions and how they may act independently. In paper II, the focus was to understand the inner workings of EO, and a reflective model would not allow such an investigation to the same extent.

In sum, the EO construct can be conceptualized in different ways. Theoretical constructs can be theorized to be formative or reflective (MacKenzie et al., 2005). The above section has highlighted some important differences in the conceptualization of EO as a formative or reflective construct. George (2011) suggests that EO should be considered to be a reflective construct while Anderson et al. (2015) argue for a formative view. Both views seem to have their own merits and therefore I suggest, like Miller (2011), that EO be conceptualized depending on the research objective. Of course, caution should be used when relating two constructs with each other, as they have, to a certain extent, different conceptual meaning.
6. Conclusions and contributions

This study aims to enhance the understanding of different types of entrepreneurial action and activities by means of a contingency fit approach. The entrepreneurial orientation construct (Covin and Slevin, 1989; Miller, 1983) is utilized to investigate the entrepreneurial actions and activities. In addition, contingency fit theory (Drazin and Van de Ven, 1985; Venkatraman, 1989) is applied to construct conceptual models of the interaction between EO and different contexts.

To assist in reaching the overall aim of the thesis, four specific research questions were posed and each one was answered with one paper; see the summaries of each paper in Chapter 4 and contributions from each paper in table 3. In addition, an aggregated discussion in this summary provided additional insights into how entrepreneurial orientation can interact with different contexts and how entrepreneurial orientation can be conceptualized in different ways. The comprehensive contribution is that EO is not as simple concept as often portrayed in the EO literature. Rather, EO is more complex in the ways that it can fit with internal and external context and, on these bases, it is suggested that ideal types of EO and context is a way forward for research in the area. Additionally, it is argued that EO as a theoretical construct may not only be conceptualized as an overall entrepreneurial attribute (which is common in the extant literature), but also as a more complex and granular attribute.

More specifically, this thesis makes important contributions to theory and methods, and also by providing unique empirical data to the EO literature. Four overall contributions are discussed in the section below.
<table>
<thead>
<tr>
<th>Paper</th>
<th>Title</th>
<th>Contributions</th>
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| I     | Contingency fit(s) in entrepreneurship research: uses and usability  | • Highlighting conceptual differences in contingency theory, some of which are incompatible  
• Provides an overview of the use of contingency theory in entrepreneurship research |
| II    | Entrepreneurial orientation as a multidimensional construct: a process and outcome perspective | • Underlining that the EO sub-dimensions have two attributes of process and outcome  
• The sub-dimensions, as well as, outcome and process can vary independently of each other  
• Longitudinal data of startups                                                     |
| III   | Configurations of entrepreneurial orientation and competitive strategy for small firms | • Extending configurational theory with a fine-grained view of the EO sub-dimensions  
• Highlighting the interplay between EO and competitive strategy  
• Emphasizing the importance of individual sub-dimensions as distinct entrepreneurial features |
| IV    | Business mating: When startups get it right                         | • Typology of invention centric startups  
• Contingency fit more important than high EO  
• Empirical data of startups from multiple sources  
• Expand the use of QCA as a method                                                  |
Contributions to the entrepreneurial orientation literature

As mentioned above, this thesis makes important contributions to the EO literature which includes contributions to theory, methods and empirical data.

First, in this thesis EO is researched from a crossover interaction conceptualization, which implies that what is most important in terms of performance is how EO fits with context and other attributes. This thesis thus suggests that EO can be beneficial for firms if it fits with the context, e.g. market situation (paper IV) or strategy (paper III). However, if EO is in misfit with context or attributes, than it can be disadvantageous for a firm to adopt an EO. A limited number of prior studies have taken this approach when studying EO (e.g. De Clercq et al., 2010). Nonetheless, the insights from this type of conceptualization have not attracted much attention in the mainstream EO literature. In contrast, EO is often conceptualized as ‘a magic bullet’ able to solve all problems for firms and increase organizational performance. Highlighting that EO is beneficial when in fit with context might also explain why a few studies have been unable to find a significant positive relationship between EO and performance (e.g. Andersén, 2010).

Second, this thesis has shown how configurational models can be applied to investigate EO (e.g. paper III & IV). Even though the foundation of EO was built on the configurational idea of ideal types (Miller, 1983), this idea has largely been overlooked in EO research (Miller, 2011). Most EO research has taken a more traditional Cartesian approach, where EO is seen as a continuum (Covin and Slevin, 1989, e.g. 1991) ranging from entrepreneurial to conservative. This is further theorized as being adjusted by firms depending on the changes of context; these changes are therefore small and frequent movements. In contrast, a configurational approach suggests that there may be several different system states that allow for fit. However, there is no intermediary positions between the system states, and therefore, change is theorized as consisting of so called quantum jumps. For EO, the configurational approach is rarely used (Short et al., 2008); nonetheless, a configurational approach can invigorate EO research as this approach has the ability, for example, to take into account the context with great accuracy (Miller, 2011). The conceptualization of EO with configuration theory constitutes an important contribution to EO in particular, but also to the general entrepreneurship literature.

Third, a novel and fine-grained view of EO has been utilized to emphasize the internal aspects of the EO construct (e.g. paper II & III). With a formative and multidimensional perspective, a more in depth and fine-grained
view of EO can be established. By deconstructing the EO concept to its sub-dimensions, entrepreneurship is not reduced to a single variable which contains the averages of the sub-dimensions. Instead, a wider and more complex view of EO is opened up where different types of entrepreneurial action and activities can exist. For example, established firms acting in a high tech industry might need more innovativeness than risk-taking, whereas for startups acting in a low tech industry risk-taking might be more important than innovativeness. As Gartner (2008) insightfully notes, there is not a single entrepreneurial type. Instead, entrepreneurship can be many different types of action and activities. The formative and multidimensional view opens up for conceptualizations of EO where all three dimensions do not necessarily have to covary and allows a richer understanding of entrepreneurial activities. This thesis shows that the sub-dimensions of EO are distinct and meaningful both empirically and theoretically.

Fourth, this thesis employs methods that are somewhat novel for EO research. Almost all research on EO has used traditional statistical analysis (Nordqvist et al., 2008; Vora et al., 2012) and scholars have been urged to broaden the types of methods used, especially to also include qualitative studies (Miller, 2011; Wales, 2015). This sentiment has been echoed by Henry and Foss (2015) who argue that the general entrepreneurship literature needs more methods other than quantitative. In a similar vein, the entrepreneurship field has also been urged to be more open to new and innovative methods (McDonald et al., 2015). A method-wise contribution is thus made to the EO literature by utilizing new and novel methods in the EO field, which can capture findings that traditional statistical methods would not be able to obtain.

More specifically, two studies (paper III & IV) employ qualitative comparison analysis (QCA). Papers III and IV are among the first that employ QCA in entrepreneurship research. QCA is a rather new method of a comparative nature initially developed by Ragin (1987) in the field of political science. QCA can capture the depth and complexity of cases and at the same time offer consolidation among cases, which thereby allows for “modest generalization” (Ragin, 1987). QCA is an approach which in particular can assess configurations in excellent ways (Fiss, 2007, 2011). Fiss (2007) argues that traditional statistics have an inability to capture the multidimensionality and interdependencies of configurations, which QCA can account for. This position is in line with Dess et al.’s (1993) claim that additional methods are needed for configurational research. In addition, an in-depth
A qualitative approach is used to investigate EO (paper II). Although the literature reviews (Edmond and Wiklund, 2010; Rauch et al., 2009; Wales, 2015; Wales, Gupta, et al., 2013) indicate that almost all EO studies have used surveys to collect data, the use of qualitative approaches is rare. Therefore, the qualitative approach taken in paper II sheds light on the EO phenomena in new and interesting ways. This particular study also takes a longitudinal approach by following the startups over time. EO research has been urged to take longitudinal approaches since it offers rich and deep understanding of the cases.

**Managerial and policy implications**

This thesis also has valuable implications for managers, practitioners and policy makers. First, managers need to reflect on their context before blindly adopting an entrepreneurial orientation as this thesis shows that fit between the context and EO is more important. An EO allows firms to be more flexible and adaptive to changes in the market. However, if EO is adopted in an unfavorable context, for example in a stable market place, the cost of adopting an EO might be higher than the possible advantages. That is because an EO is resource-consuming and if an EO is not necessarily needed, then a conservative orientation would be more appropriate which instead can focus on efficiencies. In addition, managers can benefit when taking a holistic approach of the firm and try to adopt an overall ideal type. By uniting the many different parts of a firm, which may consist of, for example, EO, strategy, and new product development, they can be combined into a unifying overall theme. When different parts of the firm, and even with external context, can reinforce each other, then the firm can operate in coherent ways and the various parts reap benefits from each other, leading to synergy effects.

Moreover, the fine-grained view of EO and the deconstruction of the concept offers a perspective of EO where it becomes more tangible for managers in contrast to an overall EO which might be more difficult to grasp. This deconstruction and multidimensional view of EO also suggests that managers should not necessarily aim at becoming more entrepreneurial overall. Instead, different types or a combination of innovativeness, risk-taking and proactiveness that fit the particular context should be developed. Of course, this requires that the top managers have extensive awareness, analytical skills, and the ability to develop a shared vision. This involves awareness and deep understanding of the different parts of the firm as well.
as its environment to be able to gain a holistic perspective of the firm. Advanced analytical skills are then needed to make informed decisions affecting the different parts so that these decisions will lead to synergies between the different parts. In addition, top managers need to be able to develop a shared vision so that middle managers can buy into the overall direction of the firm.

Policy makers should be aware that entrepreneurial action and activities can lead to very favorable results; however, this thesis highlight the fact that these entrepreneurial actions and activities do not always fit with every situation or context, and when mismatched, entrepreneurial action might have adverse effects. Therefore policy aimed at increasing entrepreneurial action should be carefully considered and aimed at specific directions which have been carefully considered and analyzed to benefit from entrepreneurial action. This includes, for example, developing entrepreneurship programs aimed at firms and other organizations that will benefit most from being able to take more entrepreneurial action. This is in contrast to the ‘magic bullet’ approach, which implies that entrepreneurial action is a magical solution that should be embraced by all firms and organizations.

**Future research**

This thesis has only scratched the surface of some novel approaches to researching EO. There are many avenues to continue researching EO that can supplement as well as extend and build on the current thesis. First and foremost, I would like to encourage future EO studies to break away from the traditional approach to EO research. As reported in Chapter 1 of this thesis, over 600 scholarly publications reference entrepreneurial orientation; still, most studies have been conducted with maybe too much coherence. For example, it is difficult to find EO studies that have not used a survey based on the items from Miller (1983) and Covin and Slevin (1989). The survey items have most definitely served the EO literature well over the past 30 years. However, it might be time to collect data in new ways, for the EO field. This would enable research to see EO from new and interesting viewpoints.

EO data can be collected in many different ways, and this is why it is surprising that so many researchers still adhere to one survey construct, including myself! If a qualitative approach is taken, then EO data can be collected by interviewing managers and entrepreneurs. Research based on observations, which can for example be of internal meetings or meetings when entrepreneurs meet external parties such as financiers, customers or suppliers would also supply researchers with interesting and informative data.
(Miller, 2011). Also, more in line with action research, researchers could gain rich data from being actively involved in, for example, a startup process. Data on EO can also be accessed from communication, such as emails, press releases, or annual reports. There are many more options; however, few have been used in EO research.

Although most EO research has been of a quantitative nature, there are many ways to move from the common way of conducting quantitative EO research. Often EO research has used a single informant even though an organizational level is assessed. Using multiple respondents can increase validity through inter-rater agreement. This approach could also open up for research on EO at different hierarchy levels and functional areas. New surveys can be developed that can capture the EO phenomena in new and interesting ways. Longitudinal data is seldom used in EO research, even though it could help to determine the direction of causality.

Most research on EO has been conducted on firms of many different types. However, EO may be applicable to many other types of organizations, such as universities, charities, and governmental agencies. One excellent example that can be used as inspiration is that of Pearce et al. (2010) who investigate EO in religious congregations. EO researchers are thus encouraged to widen the view of where EO might be applicable.

EO can also benefit from new theoretical perspectives. This thesis has argued that configurational theory can be one such theory that the field should embrace more. However, there are many other theories that would provide new perspectives on EO. Miller (2011) suggests that institutional theory, institutional logics, as well as network approaches can be fruitful ways forward.

As most research has been directed towards the unidimensional view of EO, it might be time to invest more research effort in deconstructing EO and its sub-dimensions to be able to obtain a more nuanced view of EO. In this thesis, the multidimensional view is taken in several papers and the multidimensional view is even further deconstructed. More research taking a fine-grained view and deconstructing the EO concept in different ways would also be beneficial for our comprehensive understanding of the construct.
Appendix A. QCA exemplified

To clarify how the QCA approach is carried out, we can take Paper IV 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 IV, after building the theoretical model, we constructed a table called a truth table (Ragin, 1987) of different configurations that could exist; see table 4\textsuperscript{13}. Truth tables have as many rows as it is possible to combine the different casual conditions\textsuperscript{14}. In our study, we had three casual conditions which resulted in eight possible configurations.

It was theorized that two configurations named Inheritor and Originator would lead to a 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 go 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, 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 into either present or absent according to the specification of the conditions. Note that this example considers the most basic function of QCA

\textsuperscript{13} This table has been simplified for illustration purposes and is thus not identical to the actual table in paper II.

\textsuperscript{14} In accordance with QCA terminology, variables are called conditions.
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 4, 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.

<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:

$$\sim EO \ast \sim RI \ast DD \rightarrow BM$$

Where the sign "\~" 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 as:
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 as

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

To gain more insight into QCA, we need to consider the nature of the 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 Chapter 3. 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 is usually 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 us use the example of EO as a condition. If EO were 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 (Rihouix 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 commonalities (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, which would be the situation if the condition were 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:

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

These two statements indicate that when EO and RI are present, DD can either be present or absent: both lead 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:

\[
EO \ast RI \rightarrow BM
\]

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 the absence of DD. However, our results supported the theory that EO or RI was needed in the 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, whether a firm has survived or not. However, if a researcher wants to use more fine-grained measures that vary in degree, such as a performance measure, it can become
problematic to assign a binary value. If a case is, for example, a medium performer, then 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 response to this shortcoming, fuzzy sets fsQCA have been developed to accommodate scale measures (Ragin, 2009). Fuzzy sets allow for continuous scales, such as the degree of EO. Fuzzy sets aim at pinpointing qualitative states and not simply ranking cases. Therefore, the researcher needs to calibrate scores for what values would be considered 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 it 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 80% to a specific configuration, and 20% to other configurations. It would therefore better ‘fit’ in and analyze with more detail than if a case were forced into a single configuration.
## Appendix B. EO measurement scale

Table 5. The Miller/Covin and Slevin (1989) entrepreneurial orientation scale

<table>
<thead>
<tr>
<th>Innovativeness items</th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>In general, the top managers of my firm favor…</td>
<td>1234567</td>
<td>Strong emphasis on R&amp;D, technological leadership, and innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- A strong emphasis on the marketing of tried-and-true products or services</td>
<td>1234567</td>
<td>- Strong emphasis on R&amp;D, technological leadership, and innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many new lines of products or services has your firm marketed in the past five years (or since establishment)?</td>
<td>1234567</td>
<td>Very many new lines of products and services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- No new lines of products or services</td>
<td>1234567</td>
<td>Changes in product or service lines have usually been quite dramatic</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>- Changes in product or service lines have been mostly of a minor nature</td>
<td>1234567</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Proactiveness items</th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>In dealing with its competitors, my firm…</td>
<td>1234567</td>
<td>Typically initiates actions to which competitors then respond</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Typically responds to actions which competitors initiate</td>
<td>1234567</td>
<td></td>
<td></td>
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<tr>
<td>- Is seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.</td>
<td>1234567</td>
<td>Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.</td>
<td></td>
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<tr>
<td>- Typically seeks to avoid competitive clashes, preferring a &quot;live-and-let-live&quot; posture</td>
<td>1234567</td>
<td>Typically adopts a very competitive, &quot;undo-the-competitors&quot; posture</td>
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<table>
<thead>
<tr>
<th>Risk-taking items</th>
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<tbody>
<tr>
<td>In general, the top managers of my firm have…</td>
<td>1234567</td>
<td>A strong proclivity for high-risk projects (with chances of very high return)</td>
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<tr>
<td>- A strong proclivity for low-risk projects (with normal and certain rates of return)</td>
<td>1234567</td>
<td>A strong proclivity for high-risk projects (with chances of very high return)</td>
<td></td>
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<td></td>
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<tr>
<td>In general, the top managers of my firm believe that…</td>
<td>1234567</td>
<td>Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm’s objectives</td>
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<tr>
<td>- Owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior</td>
<td>1234567</td>
<td>Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm’s objectives</td>
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<td></td>
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<tr>
<td>When confronted with decision-making situations involving uncertainty, my firm…</td>
<td>1234567</td>
<td>Typically adopts a cautious, “wait-and-see” posture in order to minimize the probability of making costly decisions</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>- Typically adopts a cautious, “wait-and-see” posture in order to minimize the probability of making costly decisions</td>
<td>1234567</td>
<td>Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities</td>
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</table>
Appendix C. EO results from paper I

In paper I the use of contingency fit is examined in the entrepreneurship literature. In the paper a review is conducted which includes articles that use contingency theory in the entrepreneurship field. However, this sample is wider than only EO studies. The total number of articles in the review in paper I came to 54. By only including articles that clearly include EO the sample was reduced to 20.

Out of these 20 top-tier EO articles, the form of fits and level of theory specification used are shown in table 6. In general the pattern reassembles to full sample of entrepreneurship articles. In terms of forms of fit used, it is found that many different forms of fit have also been used in the EO literature. This includes matching, moderation, mediation and gestalts. However, the most noteworthy difference is that there is only one article applying a configuration perspective. In addition, it seems like the EO literature also has a dominant design of moderation, 16 articles include, at least partially, moderation. Similarly to the wider entrepreneurship literature several studies also include different types of fit within the scope of the same article.

It is also revealed that the EO literature use different levels of theory specification. These studies includes testing for basic interaction effects in general, to more precise crossover interaction effects. This is interesting because EO here is seen fundamentally different in a general interaction compared to e.g. a symmetrical interaction. Many articles seems to take a view of EO that it is always positive, but more positive in certain environments.

Altogether, the contingency theory based EO literature seems to be similar to that of the general entrepreneurship with the most noteworthy difference being that configuration studies seem quite rare.
Table 6. Principle forms of contingency fit for EO studies

<table>
<thead>
<tr>
<th>Level of theory specification</th>
<th>Cartesian Selection</th>
<th>Cartesian Interaction</th>
<th>Configuration Selection</th>
<th>Configuration Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossover interaction</td>
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<tr>
<td></td>
<td>Green et al., 2008*</td>
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<tr>
<td>Symmetrical interaction</td>
<td>Covin et al., 1990</td>
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<tr>
<td></td>
<td>Covin &amp; Slevin, 1990</td>
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<td>Zahra, 1993¤</td>
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<td></td>
<td>Tan, 1996</td>
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<td></td>
<td>Tan, 2007</td>
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<tr>
<td></td>
<td>Green et al., 2008</td>
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<tr>
<td>General interaction</td>
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</tr>
<tr>
<td>No interaction</td>
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* These papers report different interaction levels in the hypotheses development section and/or between hypotheses and results. In the table, the highest level of theory specification is marked, typically found in the results.

¤ These papers also develop ‘no-interaction’ hypotheses, suggesting a positive direct (main) effect of entrepreneurial dispositions and efforts on organizational performance. For the sake of simplicity, they are not included in the list.
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