

Corporate Entrepreneurship: A Rising Field of Research

**by
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Declaration

I, Arndt Schulze, hereby declare that this PhD thesis, titled “*Corporate Entrepreneurship: A Rising Field of Research*”, is my own piece of development and has not been submitted in the same form elsewhere (unless where relevant to fulfill the requirements of the PhD degree). This thesis by alternative format (papers) has been framed within the postgraduate research regulations for the award of the Doctor of Philosophy (PhD) in Entrepreneurship and Strategy and under the guidance of Prof. Dr. Olufunmilola (Lola) Dada in the Department of Entrepreneurship and Strategy, Lancaster University Management School, UK.

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Abstract

Corporate entrepreneurship (CE) involves strategic entrepreneurship (SE) and corporate venturing (CV). This research centers on three topics, exploring SE and CV, via three related papers. The first paper focuses on exploring SE through a systematic literature review, thereby evaluating its dynamic micro-foundations and the interlinked exploration and exploitation processes while unveiling future research avenues. The second paper examines how CV affects knowledge acquisition (KA) and performance, and investigates how this relationship is influenced by the external environment and transformational leadership. The third paper examines how SE relates to employee retention and recruitment, and tests how competition and corporate reputation moderate the aforementioned relationship. Novel data of small and medium sized enterprises (SMEs) in the United Kingdom and Germany are used to address the research questions. The study reveals that CV positively influences KA and performance. Furthermore, the study shows that technological turbulence and transformational leadership positively moderate the relationship between CV and performance. The study also confirms a strong effect of SE on both employee retention and recruitment. It further affirms that the relationship between SE and employee retention is strengthened when firms operate in competitively intensive environments. In all, this thesis contributes to extant research by developing and validating direct reflective measurement scales for CV and SE thereby also paving the way to further explore the domain of CE.

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Chapter 1

Introduction

Corporate entrepreneurship (CE) is widely accepted as a viable and sustainable means for strengthening firm competitiveness by improving competitive positioning, firm performance and enhancing transformation of corporations and their related markets through value-creating innovations (Miller, 1983; Guth & Ginsberg, 1990; Covin & Miles, 1999; Bierweth et al., 2015). The birth of new businesses and renewal of key ideas on which the firm is built are paramount on the path to firm survival, regardless of its size (Guth & Ginsberg, 1990). CE is an effective method for small and large firms alike to revitalize their businesses and to appropriately respond to challenges in a changing environment (Bierweth et al., 2015). Guth & Ginsberg, (1990, p. 5) defined “corporate entrepreneurship [as] encompass[ing] two types of phenomena and the processes surrounding them: (1) the birth of new businesses within existing organizations, i.e. [...] [corporate] venturing [CV]; and (2) the transformation of organizations through renewal of the key ideas on which they are built, i.e. strategic [entrepreneurship] (SE)”. The understanding of this typology of CE is widely shared within extant literature (Sharma & Chrisman, 1999; Kuratko & Audretsch, 2009; Phan et al., 2009; Dunlap-Hincker et al., 2010; Corbett et al., 2013; Hornsby et al., 2013; Kuratko & Audretsch, 2013; Kuratko et al., 2014; Kearney & Morris, 2015; Glinyanova et al., 2021). Although, CE, CV, and strategic entrepreneurship (SE) share commonalities within a broader nomological network, they have their distinct differences. As outlined previously, CE is understood as the overarching framework that hosts the domains of CV and SE.

While CV is concerned with “various methods for creating, adding to, or investing in new businesses [i.e., new product–market combinations]” (Morris, Kuratko & Covin, 2010, p. 86), SE, on the other hand, refers to “organizationally consequential innovations ... [adopted] in the

pursuit of competitive advantage” (Audretsch et al. 2009, p. 149; see also Morris et al. 2010). The central difference between the two domains of CV and SE is that SE is concerned with its focus on innovation inside an *existing organization* igniting entrepreneurial activities (Ireland et al. 2003; Morris et al. 2010). Within the domain of SE, researchers discuss two different conceptualizations. The broader view is understood as simultaneously capturing opportunity- and advantage-seeking behaviors (Ireland, Hitt & Sirmon, 2003), while the narrower perspective considers SE as composed of strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation, and business model reconstruction (Morris et al. 2010). The narrower conceptualization specifically defines in which areas organizationally consequential innovations can take place, while the broader conceptualization is wider in scope, leaving room for interpretation on the scope of content. In comparison to SE, CV is associated with the entrepreneurial efforts that lead to the creation of new businesses catered for through the development of *new organizational units* (Burgelman 1983; Kuratko & Audretsch 2009), while SE is focused on innovations inside an existing firm.

SE is also different from the concept recognized as entrepreneurial orientation (EO). EO is understood as a multifaceted organizational attribute, which can manifest as top management style, organizational orientation, and new entry initiative in the firm (Wales et al. 2020). The domain of EO recognizes two different conceptualizations. The first, known as *strategic posture*, determining the firm’s competitive orientation on a continuum from strategic to entrepreneurial, is defined with the individual dimensions of *innovativeness*, *risk-taking* and *proactiveness* (Monsen & Boss 2009; Wales et al. 2020). The second conceptualization is associated with the firm’s *new entry initiatives*, adding two additional dimensions – autonomy and competitive aggressiveness (Lumpkin & Dess 1996; McKenny et al. 2018). While commonalities between the two conceptualizations of EO exist, research in the field argues that “these two conceptualizations may capture different phenomena” (McKenny et al. 2018 p. 505).

Leveraging Simsek et al. (2017, p. 514), who concluded that in comparison to SE, “corporate entrepreneurship and entrepreneurial orientation often exist outside a firm’s competitive advantage, they do not necessarily always entail a strategic dimension. Most critically, neither concept involves the integration or fusion of strategic and entrepreneurial dimensions.” Therefore, it can be epitomized that CE, CV, EO, and SE are related and share some commonalities; however, all are distinct individual concepts. Concepts, which encompass and measure different phenomena.

This thesis utilizes the framework of CE to shed new light on the two domains of SE and CV, thereby illuminating on pressing research questions. Especially, the two empirical papers focus on operationalizing SE and CV in line with the definitions of Morris et al.’s (2010) definitions which have not been previously explored empirically in extant research. Extant research predominantly uses proxies or related conceptualization to engage in the measurement of SE and CV. This thesis strives to occupy a strong position in the field of SE and CV as it is the first research, to the best of my knowledge, that engages in the direct measurement of SE and CV, thereby substantially advancing the field of research. The chosen moderator pairs are the first ones exploring the relationship of the selected independent variables on their dependent counterparts. Going beyond the individual parts of the thesis, this study contributes to the field of CE as it provides novel answers to its two core domains (CV, SE) and how they affect specific outcome variables. This research strives to provide measures of CV and SE that, when combined, can strive to measure unified CE activities at a higher aggregated level.

The first paper, the systematic literature review (SLR), starts with shedding light on the status quo of SE, then developing fresh avenues for future research, with differentiations from other reviews in the field (e.g. Mazzei et al., 2017; Mazzei 2018; Simsek et al., 2017; Cristo-Andrade & Ferreira 2020). There have been substantial developments within the last two decades on SE. Today, extant theoretical and empirical research on SE has advanced our

understanding of its underlying process models (Ireland et al., 2003; Kyrgidou & Hughes, 2010; Hitt et al., 2011), its different operationalizations (Sirén et al., 2012; Shirokova et al., 2013; Anderson et al., 2019), and its positive effects on different outcomes, which can include innovation (Ireland et al., 2003; Wright & Hitt, 2017), competitive advantage (Hitt et al., 2001; Luke & Verreynne, 2006), growth (Steffens et al., 2009; Obeng et al., 2014), performance (Liu et al., 2010; Sirén et al., 2012) and value creation (Wright & Hitt, 2017).

Despite the advancements made in the SE literature, some considerable gaps need to be closed. Extant literature has focused largely on the resource-based view (RBV), organizational learning and knowledge spillover theory to explain research findings. At present, there remains a substantial gap on how other perspectives might influence SE. Although theoretical and empirical research exploring the SE process has advanced over time (Ireland et al., 2003; Kyrgidou & Hughes, 2010; Hitt et al., 2011), there still remains a substantial gap on how SE can achieve balance of explorative and exploitative activities in general and on the micro level. Also, how SE materializes on different levels of the firm remains a mystery. Although a direct measure of SE has been created by focusing on product-market combinations only (Anderson et al., 2019), no other direct measurement instrument has been designed to cover the complete domain of SE.

Therefore, this research will address within the systematic literature review in Chapter 2, the following research questions:

RQ1: What theoretical perspectives can advance SE research?

RQ2: What alternative models, foundations, and process conceptualizations might inform SE research?

RQ3: How can research at different levels of analysis expand SE?

RQ4: What research directions would be the most fruitful in terms of developing a better understanding of SE contexts, content, methodologies, and measures?

This research will contribute in at least four ways to extant SE research. First, this research will propose new avenues of theoretical perspectives, which have the potential to advance SE research. Second, this study will contribute by proposing a new, dynamic view of the SE process, thereby shedding new light on the micro-foundations of SE. Third, the study will provide a fresh perspective on how SE materializes on different levels within the firm, as a continuous flow of behavioral actions. Fourth, this research will provide future research opportunities with regard to the SE context, SE content and methodologies applied in SE research.

With regards to the second paper relating to CV, this study adopts Morris et al.'s (2010) definition of CV, which suggests three sub-dimensions – internal corporate venturing (ICV), cooperative corporate venturing (CCV) and external corporate venturing (ECV). “With ICV, new businesses are created and owned by the corporation”, different to CCV which “refers to entrepreneurial activity in which new businesses are created and owned by the corporation together with one or more external development partners” (e.g. joint venture) (Morris et al., 2010, p. 83). The third domain, ECV, “refers to entrepreneurial activity in which new businesses are created by parties outside the corporation and subsequently invested in or acquired by the corporation” (Morris et al., 2010, p. 83).

Extant research enriched our understanding on what we consider CV. Today, we have an increased understanding of the effect of CV on performance (Covin et al., 2015; Garrett & Covin, 2015; Wadhwa et al., 2016; Wadhwa et al., 2017) and how knowledge is incorporated by firms during CV activities (Schildt et al., 2005; Wadhwa & Kotha, 2006; Keil et al., 2008). We also have a heightened understanding that CV is associated with corporate vitalization (McGrath et al., 1992), acquiring new skills, competencies, capabilities or technologies (Tsai et al., 1991; Burgers et al., 2009; Narayanan et al., 2009; Dushnitsky & Birkinshaw, 2016), and

is linked to penetrating new markets, enhancing firm performance, growth and survival (Thornhill & Amit, 2001; Schildt et al., 2005; Narayanan et al., 2009) as well as innovation (Schildt et al., 2005).

Despite the pioneering work of previous scholars, there remains substantial gaps in order to make progress in the CV field of research. To a large extent, the research field of CV applies proxy measurement instruments to study the phenomenon. In general, the field of research lacks a direct measure to support generalizability of research findings on CV (Schildt et al., 2005; Narayanan et al., 2009). Additionally, research analyzing the complete domain of CV (i.e. ICV, CCV and ECV) are quite limited. Moreover, not much research on the direct effects of CV on knowledge acquisition exists. Besides, there is ample need to further understand the environmental, leadership and technology-related effects moderating the relationship of CV and KA and performance. In addition, extant research could benefit from additional research exploring CV within the SME context examining the aforementioned relationships.

This research will therefore address the following research questions within paper 2 in Chapter 3:

RQ1: How does CV influence KA and performance in small and medium enterprises?

RQ2: How does transformational leadership and technological turbulence affect the CV-KA and performance relationship?

This study makes several contributions to CV research. First, this study validates and operationalizes a direct measure of CV, spanning its whole domain. Second, this research explicitly focuses on the three forms of CV, which are internal-, cooperative-, and external corporate venturing. Third, this is the first known study to examine the three forms of CV and the direct effect of these on KA. Fourth, this study sheds additional light on how

transformational leadership and technological turbulence moderate the aforementioned relationship.

Turning now to the third paper of this thesis, the empirical SE research, which focuses on the importance of avoiding knowledge losses in order to maintain and further build competitive advantages (Gjerlov-Juel & Guenther, 2019; Haesli & Boxall, 2005). Monsen & Boss (2009) significantly enriched our understanding of how SE relates to employee retention. However, today, there remains still open gaps with regard to how SE relates to employee retention and recruitment in small and medium-sized (SEMs) firms, which is measured directly and not with proxy operations. Also, theoretical and empirical literature would benefit from an increased understanding of how environmental factors moderate the relationship between SE and employee retention as well as employee recruitment. Moreover, extant research predominantly applies proxies to study SE. Where direct measures are available, they only study one form of SE and not SE holistically (Anderson et al., 2019). Therefore, there is a pressing need for substantially far more insights to understand the mechanics of how SE affects employee retention and recruitment, assessed with direct measures spanning the whole domain of SE.

Therefore, this research will address within paper 3 in Chapter 4 the following research questions:

RQ1: How does SE influence employee retention and recruitment in small and medium enterprises (SMEs)?

RQ2: How do firm-level and environmental factors moderate the relationship between SE and employee retention and recruitment in SMEs?

This study makes several important contributions. First, this research develops a ten-item reflective one-factor scale, covering the complete domain of SE, thereby transcending simple proxy measurement, which solely measure product-market combinations. Second, this study

enhances our awareness of the effect of SE on employee retention and recruitment, thereby increasing our knowledge on how SE helps to avoid knowledge loss and aids the development of a human capital pool specific to the firm. Third, this study also contributes to extant SE research by studying how firm-level and environmental factors moderate the relationship between SE and employee retention and recruitment. Fourth, the research helps to increase our awareness of how the aforementioned relations materialize in the SME context, in this case, in the United Kingdom.

In the following Chapter 2, this study presents a systematic literature review (SLR) on SE, followed by a quantitative article exploring the effect of CV on KA and performance in Chapter 3, and additionally a quantitative research article which focuses on analyzing how SE affects employee retention and recruitment in Chapter 4. Both empirical articles examine several moderation relationships. After this, the study explains in the discussion section within Chapter 5 the theoretical and practical implications, limitations and future research directions. The final section, Chapter 6, closes with the conclusion of the study.

Chapter 2

Managing the Temporariness of Competitive Advantage for Your Survival: A Systematic Review, Model, and Research Agenda

Arndt Schulze

Abstract

This systematic review of the strategic entrepreneurship (SE) literature relates that emergent field – which is diverse and fragmented – to a wide range of topics that include innovation, performance, wealth creation, and organizational survival. I review 75 theoretical and empirical SE articles, published during 2000–2020, to address four questions and thereby outline fruitful avenues of future research. (1) What theoretical perspectives can advance SE research? (2) What alternative models, foundations, and process conceptualizations might inform SE research? (3) How can research at different levels of analysis expand SE? (4) What advances can be made in the areas of SE context, content, methodologies, and measures? Most scholars will attest that SE is helpful for young ventures and established firms alike because it provides mechanisms for firm survival and for overcoming the temporary nature of competitive advantages. This study combines answers to the preceding four questions in order to develop a comprehensive research agenda that focuses on the aspects of SE. I leverage complexity theory to develop a novel conceptualization of SE processes, thus delivering an adapted processes model. The findings presented here should encourage entrepreneurially minded managers to allocate resources both to opportunity-seeking and advantage-seeking activities.

Keywords: strategic entrepreneurship, systematic literature review, opportunity-seeking behavior, advantage-seeking behavior, innovation, resource orchestration, complexity theory

JEL Classification: D83, L26, O30

1. Strategic entrepreneurship: A research field on the rise

“Innovative activity ... [is] a life-and-death matter for the firm” (Baumol 2002, p. 1). A firm needs to develop sustainable innovations in order to achieve competitive advantages, although they are subject to rapid alterations over time (Lengnick-Hall, 1992). For every firm – whether young or old, an experienced incumbent or a learning start-up – the path of survival includes investments in the exploration of new opportunities while harnessing existing competitive advantages (Ireland et al., 2003; Agarwal et al., 2010; Hitt et al., 2011). Strategic entrepreneurship (SE) is widely considered to be a viable means of operating in environments characterized by constant change. In the modern economy, neither an exploratory nor an exploitive strategy will survive long without the other; a firm that focuses on just one of these activities does so at its peril.

It is therefore vital for practice to appreciate SE mechanisms in order to gain an adequate understanding of firms’ opportunity- and advantage-seeking behaviors and to orchestrate them in concert for purposes of value creation. Moreover, it is crucial for theory to support the further development of answers – Especially, since SE remains a concept whose foundations, conceptualizations of processes, contextual influences, and outcomes have yet to be thoroughly tested and verified.

The literature on SE has grown extensively since the pioneering articles of Hitt et al. (2001) and Ireland et al. (2001). This increased attention has expanded not only in conceptual ways (e.g., with respect to semantics, definitions, conceptual domains, frameworks, and models) but also empirically (e.g., as regards industry implementation, exploring relationships and themes, identifying countries of research, and assessing outcomes). The literature has established that small firms are more likely to be capable of exploration activities – although the ‘knowledge stocks’ of such firms are evidently insufficient, in themselves, for developing and securing a competitive advantage. At the same time, mature companies are often so attuned

to harnessing extant competitive advantages that they lose their capacity to identify and seize market opportunities (Ireland et al., 2003; Ketchen et al., 2007). It follows that the optimal balance between exploration and exploitation is described by a reciprocal relationship that companies must explore for tomorrow's opportunities; in this way, the groundwork for future competitive advantages can be laid while the firm exploits its current advantages (Hitt et al., 2011).

SE is a multifaceted construct (Ireland et al., 2003; Kyrgidou & Hughes, 2010; Hitt et al., 2011; Simsek, Heavey & Fox, 2017; Withers, Ireland, Miller, Harrison & Boss, 2018) that manifests as organizational traits and competitive actions at and across multiple levels of analysis (Simsek et al., 2017; Mazzei, 2018; Zhao, Ishihara, & Jennings, 2020; see also Wales, Covin & Monsen, 2020) whereby resources that are valuable, rare, inimitable, and non-substitutable are critical for the creation of value and wealth (Barney, 1991). Hence it is not surprising that the resource-based view has strongly influenced SE studies devoted to explaining how specific firm resources lead to a sustained competitive advantage (Barney 1991). Two decades of research have yielded several SE models whose essentially comparable components have proved to be fundamental (Ireland et al., 2003; Kyrgidou & Hughes, 2010; Hitt et al., 2011; Wright & Hitt, 2017). Although substantial progress has been made, there are still many 'blind spots'. Thus our understanding of how the overall SE process is organized is currently of the 'black box' type. Also, little is known about precisely how exploration and exploitation activities interact with each other or about what differentiates SE configurations that create value from those that do not. Yet firm survival depends on illuminating these blind spots and reducing the incompleteness of theoretical foundations and recommendations for practice. Absent a complete picture, SE's potential benefits in the creation of value and wealth will remain a hidden treasure.

The most recent reviews of SE are those offered by Mazzei et al. (2017), Simsek et al. (2017), Cristo-Andrade and Ferreira (2020), and Mazzei (2018). However, the *systematic literature review* (SLR) presented here differs from those previous studies and thus contributes to the extant literature in several ways, as described next.

First, I focus on SE research as a whole; hence this paper is not limited to a definitional or meta-framing analysis of the field (as in Simsek et al., 2017) or to focusing solely on a ‘theoretical toolbox’ approach (cf. Mazzei et al., 2017). Second, in order to meet high quality standards and to distinguish my study from previous work (e.g., Simsek et al., 2017; Cristo-Andrade & Ferreira, 2020), I undertake a ‘systematic’ literature review – which is to say, I follow the strict quality guidelines detailed in Section 2 (cf. Tranfield et al., 2003; Thorpe et al., 2005). Third, my work attempts to summarize theoretical perspectives that have influenced current SE research. Thus I contribute to the literature by offering fresh theoretical perspectives that have seldom been presented previously (in Mazzei et al., 2017, e.g.), which should advance research in the field of SE. My discussion in this particular area should also help to explain the micro dynamics of SE from a different viewpoint. Fourth, whereas SE is today conceptualized in a linear and quasi-static manner, I develop an ‘adapted processes’ model – one that addresses the micro-foundational connections between the exploration and exploitation processes and so lends itself to future research along these lines. Fifth, I contribute to the literature focusing on the level of analysis as well as on the entrepreneurial context and content; this contribution, too, leads to identifying areas of future research. Finally, I analyze the themes, variables, and key findings of quantitative empirical articles. In order to present a consolidated view on the present state of SE and a map for future research, my review addresses four research questions (cf. Wiewiora et al., 2019) that are specific to SE research.

RQ1: What theoretical perspectives can advance SE research?

RQ2: What alternative models, foundations, and process conceptualizations might inform SE research?

RQ3: How can research at different levels of analysis expand SE?

RQ4: What research directions would be the most fruitful in terms of developing a better understanding of SE contexts, content, methodologies, and measures?

In Section 2, I describe the methodological rationale underlying this review. Section 3 then summarizes the theoretical perspectives and levels of analysis of SE as well as its context and content; it also examines the variables used by – and main findings of – empirical quantitative studies. The review proper is wrapped up in Section 4, which identifies research gaps and the resulting avenues for future study. I conclude in Section 5 with a brief summary of my SLR approach and of this study’s strengths and limitations.

2. Strategic entrepreneurship: Definition and review methods

Recent years have seen rapid development in the research on strategic entrepreneurship (SE). As a result, positioning any systematic review within the extant literature requires that the conceptual boundaries be precisely defined. The foundations of this review incorporate both broad and narrow views of the definitions appearing in SE research. Starting off with the broader view of SE, I focus on SE in the sense of “simultaneous opportunity-seeking and advantage-seeking behaviors ... [that result] in superior firm performance” (Ireland et al., 2003, p. 963) or of “entrepreneurial action with a strategic perspective” (Hitt et al., 2001, p. 480; see also Ireland et al., 2001). Studies published in the 21st century (Hitt et al., 2001; Ireland et al., 2001) and also before then (Mintzberg, 1973; Covin & Slevin, 1989; Lumpkin & Dess, 1996; Meyer & Heppard, 2000) identify a close and reciprocal relationship between strategy and entrepreneurship. The complementary concepts of exploitation (strategy) and exploration (entrepreneurship) are so inseparable (March, 1991; Meyer & Heppard, 2000; Ireland et al.,

2003) that, as mentioned previously, neither one is viable without the other (Ireland et al., 2003). This theoretical viewpoint has been described as the “identification [exploration] and exploitation of previously unexploited opportunities” while the firm creates and seeks to sustain a competitive advantage (Hitt et al., 2001, p. 480; see also Ireland et al., 2003).

SE is characterized most notably by its pervasiveness; in particular, SE applies – through innovation – to new ventures and existing organizations both, regardless of their size or age (Hitt et al., 2011). Another related viewpoint is that SE consists of entrepreneurial action, within an existing organization, that manifests itself in “organizationally consequential innovations ... [adopted] in the pursuit of competitive advantage” (Audretsch et al., 2009, p. 149; see also Morris et al., 2010).

Other authors (Covin & Miles, 1999; Kuratko & Audretsch, 2009; Morris et al., 2010) adopt a narrower view of the scope of SE and thus argue, for instance, that SE “can take one of five forms – strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation, and business model reconstruction” (Kuratko et al., 2015, p. 248; see also Corbett et al., 2013).

At first glance it would seem that these two takes on SE have little in common and are contradictory in nature and scope. However, a closer look reveals that all definitions involve *an actor engaging in concurrent strategic and/or entrepreneurial activities that consist of harnessing existing advantages and developing innovative resource combinations toward the end of creating positive (performance) outcomes*. The major difference between the broader and narrower views amounts to Morris et al.’s (2010) limiting SE to five specific forms. But all these definitions share a similar foundation: they include innovation and positive outcomes as well as strategic and entrepreneurial behaviors that are carried out simultaneously. These various definitions of SE have become cornerstones that are relied upon when sketching boundaries and when distinguishing SE from such adjacent concepts as corporate

entrepreneurship, entrepreneurial orientation (EO), and corporate venturing (CV) (Webb et al., 2010).

In what follows, I shall distinguish SE from these other constructs. Corporate entrepreneurship and SE are related but not synonymous (Simsek et al., 2017); the former involves both SE and CV (Kuratko & Audretsch, 2009; Morris et al. 2010; Hornsby et al., 2013). In contrast to the definitions of SE provided here, CV refers to “various methods for creating, adding to, or investing in new businesses [i.e., new product–market combinations]” (Morris et al., 2010, p. 86). The primary distinction between SE and CV is that the former refers to organizationally consequential innovations whereas the latter focuses on the creation of new businesses for the firm. The two categories combined constitute corporate entrepreneurship. SE differs also from entrepreneurial orientation, which is a multi-dimensional notion (Monsen & Boss, 2009; Covin & Wales, 2012): a three-dimensional (Miller, 1983; Covin & Slevin, 1989) or five-dimensional (Lumpkin & Dess, 1996) concept that differs from other constructs in that it focuses on the firm’s ‘strategic posture’ – as captured by the dimensions of risk taking, innovativeness, and proactiveness (and also, in the five-dimensional version, by autonomy and competitive aggressiveness). I agree with Simsek et al. (2017, p. 514), who point out that

the overlap between corporate entrepreneurship or entrepreneurial orientation and strategic entrepreneurship exists only to the extent to which these phenomena are focused on creating and/or maintaining competitive advantage through exploiting opportunities for new means–ends relationships. Because corporate entrepreneurship and entrepreneurial orientation often exist outside a firm’s competitive advantage, they do not necessarily always entail a strategic dimension. Most critically, neither concept involves the integration or fusion of strategic and entrepreneurial dimensions.

Although the overall concept of SE needs further development, it is distinct from other, related notions because it encompasses the *simultaneous* aspect of marshalling resources for the purpose of value creation.

I follow previous studies (Wang & Chugh, 2014; Dada, 2016; Danese et al., 2018; Fitz-Koch et al., 2018) in conducting an SLR (Tranfield et al., 2003; Denyer & Neely, 2004) of SE. Systematic reviews help ensure that the analyses and findings are transparent, reproducible, and minimally biased (Tranfield et al., 2003). I operationalize a wide set of Boolean search strings that reflect basic definitions used in SE research (see Exhibit 1). I focus on electronic databases – namely, ABI/Inform Complete, Business Source Complete, ScienceDirect,¹ Web of Science, and Scopus – when searching the titles and abstracts of journal articles published during 2000–2020. The initial search yielded 11,897 results, which were then refined based on exclusion criteria. In particular, I exclude essays, book reviews, books, opinion pieces, non-academic articles, articles not published in journals listed by the Association of Business Schools *Academic Journal Quality Guide* (for short, ABS; Yang & Driffield, 2012), and articles that did not contain any substantive discussion of SE; this procedure follows a similar approach to that used by previous authors (Wang & Chugh, 2014; Dada, 2016). The filtering process is detailed in Exhibit 1. The resulting 113 articles were reduced to 75 following analysis of the full text.

3. Literature analysis: State of strategic entrepreneurship research

3.1. Theoretical perspectives

Here I analyze the “theoretical perspectives” coding variable (after Danese et al., 2018); see Exhibits 1 and 4. Strong “[t]heory is about the connections among phenomena, a story about why acts, events, structure, and thoughts occur. ... Theory emphasizes the nature of causal relationships [and] ... delves into underlying processes so as to understand the systematic reasons for a particular occurrence or non-occurrence” (Sutton & Staw, 1995, p. 378). This section of my review is informed only by theories (as in Suddaby, 2006) and does not address

¹ Period covered: 2000–2015.

concepts, constructs, or phenomena. Results are ‘cross-triangulated’ and compared with the theoretical approaches evidenced by articles published in leading journals (ABS grade 4*/4, and occasionally grade 3). I included only those perspectives that were applied as a theoretical lens through which the respective research was conducted. Table 1. Fields and theories in SE research presents the broad areas of SE inquiry and lists the theoretical perspectives that were most often adopted.

Table 1. Fields and theories in SE research

Overarching field of management inquiry	Theory (number of applications)
Strategic management	Resource-based view (14); knowledge-based view (3); real options theory (5)
Organizational and system theories	Organizational learning (9); population ecology (4); contingency theory (3); configuration theory (3)
Sociology	Agency theory (6); social capital theory (6); network theory (5); institutional theory (4)
Entrepreneurship	Knowledge spillovers (8)

Source: Based on Danese et al. (2018).

Three theoretical perspectives in particular are frequently employed by SE scholars. First, a large number of articles ($n = 14$; e.g., Ketchen et al., 2007; Audretsch et al., 2009) build on the *resource-based view* (RBV) of the firm (Penrose, 1959; Barney, 1991). The RBV argues that both achieving competitive advantage and creating wealth require the firm to possess and control heterogeneous sets of resources and “capabilities that are valuable, rare, imperfectly imitable and not substitutable” (Barney, 1991, p. 99; see also Peteraf, 1993). So within SE, the attainment, control, and management of resources is a central aspect of advantage-seeking behavior (Ireland et al., 2003; Audretsch et al., 2009). Although the importance for SE of individual, organizational, and environmental resources is widely acknowledged (Hitt et al., 2011; Wright & Hitt, 2017), assessing the creation of value and wealth requires more than attending to the resources a firm holds. Not until recently has research integrated resource ‘orchestration’ as a means of gaining a more holistic view of resources and their management within SE (Hitt et al., 2011; Wright et al., 2012; Amit & Han, 2017). *Resource orchestration*

is the process by which leaders manage the (usually) most valuable and rare resources that will be structured, recombined, and bundled – that is, transformed into efficiency improvements that can be leveraged to create value for the firm and its customers (Peteraf, 1993; Hitt et al., 2011).

The second most frequently utilized theory is that of *organizational learning* (OL) ($n = 9$; e.g., Monsen & Boss, 2009; Agarwal et al., 2010). This theory addresses the acquisition and processing of potentially useful knowledge by organizations (Huber, 1991). The chief concern of organizational learning is to understand “the relation between the exploration of possibilities and the exploitation of old certainties” (March, 1991, p. 71). Thus OL argues that, within SE, opportunity-seeking behavior (exploration) is a learning process whereby firms focus on acquiring new information from the environment in order to enhance their own respective knowledge stocks and to renew their resources, capabilities, competencies, and resulting strategies (Ketchen et al., 2007; Sirén et al., 2012). Some scholars (e.g., Teece et al., 1997; Mathews, 2010) argue that the greater the competencies acquired by a firm through its entrepreneurial creativity and recombination of resources, the greater its dynamic capabilities.

Research on SE also benefits greatly from the third most frequent theoretical lens: knowledge spillover theory, or “the transfer of economic benefits between parties without compensating payment ... [and that] relate specifically to the external benefits from the creation of knowledge that accrue to parties *other* than the creator” (Agarwal et al., 2007, p. 272; emphasis added). Knowledge spillover theory touches on RBV and OL aspects both. It is similar to the RBV in that the unexploited knowledge and opportunities that ‘spill over’ to other firms can function as innovation activities; in this dynamic, spilled-over knowledge and the knowledge already possessed by recipient firms are recombined and unified to generate new sets of knowledge resources – which in turn establish the foundation of new capabilities and competitive advantage. Knowledge spillovers not only benefit firms of virtually any size

and industry, they also spur the economic development of countries (Agarwal et al., 2007; Agarwal et al., 2010).

Studying knowledge spillovers from the perspective of organizational learning amounts to the exploration of new possibilities for acquired knowledge being used for “experimentation with new alternatives” (March, 1991, p. 85), alternatives that will eventually be incorporated and structured for the purpose of exploiting known certainties and/or supporting the exploration of new opportunities. Thus the resource-based view, organizational learning, and knowledge spillover theory are mutually reinforcing. Section 4 discusses several less frequently employed theories that could have profound effects on SE research.

3.2. *Level of analysis*

The number of authors who view SE as a multi-level, boundary-crossing concept is increasing (Mathews, 2010; Kraus et al., 2011; Mazzei et al., 2017; Simsek et al., 2017; Wright & Hitt, 2017; Mazzei, 2018), from which it follows that the level of analysis is of particular interest. My research identifies four basic levels of analysis: individual/group, organization,² industry, and nations/society. The level of analysis used to derive my findings is comparable to those adopted by other authors (e.g., Low & MacMillan, 1988; Schindehutte & Morris, 2009). Thus SE outcomes can manifest in individuals or in the groups they constitute (Monsen & Boss, 2009), in organizations (Steffens et al., 2009; Lumpkin et al., 2011), in industry (Burgelman & Grove, 2007), and at the societal level (Hitt et al., 2011; Wright & Hitt, 2017). This study establishes that the vast majority of SE research ($n = 62$; 77%) employs the organization as unit of analysis, followed by the individual/group ($n = 8$; 10%). A more thorough discussion of this topic is reserved for Section 4.

² Includes references to firms and public organizations (as unit of analysis).

3.3. Entrepreneurial context

I next analyze each empirical study in terms of the research sector, and of that sector's particular focus, and in terms of the country of investigation. I follow Danese et al. (2018) in my evaluation of the coding variables for the 'research' and 'focus' sectors and for single-versus multi-country perspectives. Results are reported in Table 2. Entrepreneurial context. Country perspectives are augmented by identifying the *region* of research.

Table 2. Entrepreneurial context

Type of article	Number of articles	Proportion of articles	Country	Total #	Region of research ^{a,b}	Total #
Single/multi-country			United States	6	Europe	31
Single-country	30 of 36	83%	China	3	Asia	13
Multi-country	5 of 36	12%	Germany	3	North America	7
			New Zealand	3	Australasia	5
Research sector			Sweden	3	World ^c	3
Production	10 of 36	28%	United Kingdom	3	Africa	2
Services	6 of 36	17%	Australia, Finland, Greece, Japan, Korea, the Netherlands, Portugal, Taiwan	2 (each)	Latin America	1
Production & Services	16 of 36	45%	Austria, Belgium, Canada, Denmark, France, Ghana, Hungary, Iceland, India, Indonesia, Italy, Mexico, Norway, Pakistan, Poland, Russia, South Africa, Spain, Switzerland	1 (each)		
Focused sector						
ICT	16 of 81	20%				
Life sciences	12 of 81	15%				
Wholesale/retail	6 of 81	7%				
Electronics	5 of 81	6%				
Agriculture	3 of 81	4%				

^a One article with limited specification.

^b Every country counted individually.

^c Levie and Autio (2011) and McKenny (2018) did not specify countries examined; included under "World".

Notes: Multiple entries are possible under the "Region of research" column. ICT = information and communications technology.

Sources: Short et al. (2009), Danese et al. (2018).

I begin by analyzing the research sector and the focused sector; the former, which subsumes the latter, is clustered into production, services, or some combination thereof. First,

nearly half of the empirical studies ($n = 16$; 45%) conduct SE research involving evaluation of the manufacturing and services sector in concert. Fewer studies are devoted solely to the production sector ($n = 10$; 28%) or services sector ($n = 6$; 17%). Second, with regard to the particular sectors on which research was focused, the raw data reveal widespread use of industry classifications ($n = 81$). Presenting a meaningful analysis requires that I group homogeneous industries (where $n \geq 3$) into appropriate clusters. After grouping similar industries in this manner, five clusters stand out: information and communications technology ($n = 16$; 20%), life sciences ($n = 12$; 15%), wholesale/retail ($n = 6$; 7%), electronics ($n = 5$; 6%), and agriculture ($n = 3$; 4%).

Third, values reported for the ‘single/multi-country’ variable document that most SE research is conducted from the perspective of a single country ($n = 30$; 83%). Only five studies adopt the multi-country approach. Finally, I follow an adapted version of the United Nations’ Geoscheme (United Nations, 2019) to cluster the countries of SE research into regions and thereby present a more agglomerated picture. It is interesting that, although authors from American institutions dominate SE research with regard to the number of articles and the impact of citations by other scholars (see Exhibit 2), a closer look at the regions of research ($n = 62$) shows that Europe ($n = 31$) and then Asia ($n = 13$) are the leaders in terms of the former criterion.

3.4. Content analysis

“Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (Krippendorff, 2004, p. 18). I have structured this SLR’s content analysis in terms of (i) defining and conceptualizing SE, (ii) exploring how SE is related to other topics and disciplines, and (iii) studying the outcomes of SE (see Exhibit 3) (cf. Danese et al., 2018). The first of these subgroups has been the subject of intense debate for more than two decades; during this time, various components, domains,

and models have been conceived and subsequently refined (Hitt et al., 2001; Ireland et al., 2001; Ireland et al., 2003; Kuratko & Audretsch, 2009; Kyrgidou & Hughes, 2010; Hitt et al., 2011; Kraus et al., 2011; Luke et al., 2011; Lumpkin et al., 2011; Simsek et al., 2017; Mazzei, 2018). Yet even today there is nothing like universal agreement on what constitutes SE, although most acknowledge that it comprises specific resources that are *processed* – via actions that are exploratory (opportunity discovery) and/or exploitive (management of existing valuable and rare resources) – to create value and benefits (Hitt et al., 2011; Lumpkin et al., 2011; Wright & Hitt, 2017). That said, there are also scholars who regard the content of SE as being specific to a combination of action, cognition, and capabilities (Simsek et al., 2017) or to particular behaviors geared toward the exploitation of product–market opportunities (Anderson et al., 2019). Yet most researchers now accept the view that SE consists of a process (Ireland et al., 2003; Ireland & Webb, 2009; Monsen & Boss, 2009; Kyrgidou & Hughes, 2010; Hitt et al., 2011; Lumpkin et al., 2011; Bruton et al., 2013; Mazzei, 2018; Withers et al., 2018), and this orientation is one of the few constants in what is an otherwise rather splintered perspective.

Another intensively researched area is that of finding the right balance between the activities of exploration (opportunity-seeking) and exploitation (advantage-seeking) (see e.g. Ireland & Webb, 2007; Ketchen et al., 2007; Ireland & Webb, 2009; Kotha, 2010; Kyrgidou & Hughes, 2010; Kyrgidou & Petridou, 2011; Sirén et al., 2012; Mazzei et al., 2017; Höglund et al., 2018; Keyhani, 2019). Scholars have acknowledged that companies must excel at *both* processes in order to achieve the superior performance needed to create value and wealth. The two processes are inherently different, of course, and strategy focuses more on efficiency whereas entrepreneurship is driven by creativity (March, 1991; Webb et al., 2010). Thus firms face the ever-present challenge of organizing internally to facilitate both processes and thus to

accommodate the reality that – in today’s competitive environment – niches arise, are developed, evolve, and disappear at a rapid pace.

Delving into the second topic of this content analysis – the relationship between SE and other disciplines and topics – reveals a relatively fragmented landscape. Among the 34 topics to which SE is thematically related, only two stand out: knowledge spillovers ($n = 8$) and innovation ($n = 4$). Research on spillovers has investigated the relation between SE and knowledge spillovers (Agarwal et al., 2007; Agarwal et al., 2010; Kotha, 2010; Liu et al., 2010; Ferreira et al., 2017; Cristo-Andrade & Ferreira, 2020), ‘spillbacks’ (Kotha, 2010), and ‘spillins’ (Agarwal et al., 2007; Agarwal et al., 2010; Kotha, 2010; Liu et al., 2010). A long-standing tenet in the literature is that knowledge spillovers are external benefits, derived from the formation of knowledge, that contribute to parties *other* than the knowledge originator (Arrow, 1962; Agarwal et al., 2010). Yet the findings reported here establish that the various forms of spillovers benefit both the originators and recipients of knowledge (Kotha, 2010), which underscores the reciprocity of knowledge spillover benefits for both parties.

The theme of innovation is indispensable to SE research, since innovations “are focal points of SE initiatives [that] represent the means through which opportunity is capitalized upon” (Morris et al., 2010, p. 99). Authors are motivated to investigate the equilibrium between exploration and exploitation activities because characterizing it might create sustained innovation streams that could serve as the foundation for competitive advantage (Ireland & Webb, 2007; Liu et al., 2010). Other scholars examine how firms can succeed at innovation collaboratively – for instance, a young firm’s deficiency (weak exploitation) compensating for the deficiency (weak exploration) of a mature firm (Ketchen et al., 2007) when both are seeking strategic renewal (Agarwal et al., 2010).

The third aspect of my content analysis involves examining theoretical and empirical articles for their explicit references to the outcomes of SE. The four attributes that emerge most

conspicuously from that analysis are competitive advantage ($n = 43$), performance ($n = 42$), value creation or capture ($n = 34$), and wealth creation ($n = 30$). There is agreement in the literature that competitive advantage, value, performance, and wealth creation are interdependent attributes (Ireland et al., 2003; Agarwal et al., 2007; Hitt et al., 2011). Firms must seize the value inherent to opportunities arising from sustained or disruptive new innovations, in perhaps a new competitive space, and thereby attain a competitive advantage that leads to above-average performance and wealth creation (Ireland et al., 2001; Kuratko & Audretsch, 2009).

3.5. Variables and key findings

In this section, I focus on rigorously evaluating (i) the variables used in quantitatively oriented studies ($n = 22$) of SE and (ii) the principal findings derived from those variables (see Exhibit 6). The articles included in this SLR were screened for exogenous and endogenous variables as well as for mediators and moderators; the resulting analysis is summarized in Table 3. Analysis of variables; key findings. Given the abundance of theoretical and empirical studies that describe a heterogeneous SE landscape, it is surprising how little published research has sought to develop and explore further the *measurement* of SE (but see Kantur, 2016; Anderson et al., 2019).

Table 3. Analysis of variables; key findings

Article	Independent variable	Moderator / mediator	Dependent variable	Key findings
Audretsch et al. (2009)	<ul style="list-style-type: none"> ▪ Number of patents owned by the CEO (proxy) ▪ Number of patents owned by the firm (proxy) 		<ul style="list-style-type: none"> ▪ Share of equity ownership (as a percentage of firm assets) 	<ul style="list-style-type: none"> ▪ The number of patents held by the CEO is positively related to the share of equity ownership held by the CEO. ▪ The share of manager ownership increases with the company's age.
Meuleman et al. (2009)	<ul style="list-style-type: none"> ▪ Divisional buyout / other buyout ▪ Private equity (PE) experience (cumulative number of buyouts per investor); value adding and 		<ul style="list-style-type: none"> ▪ Profitability (return on capital employed) ▪ Efficiency (sales per employee) ▪ Sales growth (average sales) 	<ul style="list-style-type: none"> ▪ Divisional buyouts do not lead to significant changes in profitability. ▪ Divisional buyouts do increase efficiency (sales / employee and employee growth).

	monitoring (measured by investment to executive ratio)		<ul style="list-style-type: none"> Employee growth (average) 	<ul style="list-style-type: none"> A firm's PE experience affects neither its profitability nor its efficiency.
Monsen & Boss (2009)	<ul style="list-style-type: none"> Strategic entrepreneurship (entrepreneurial orientation) 		<ul style="list-style-type: none"> Job stress (role ambiguity) Employee retention (intention to quit) 	<ul style="list-style-type: none"> The effects of strategic entrepreneurship on management differ from those on staff and so different approaches are required. Entrepreneurial strategies must reflect the managerial level involved.
Steffens et al. (2009)		<ul style="list-style-type: none"> Firm age 	<ul style="list-style-type: none"> Sales growth Profitability (ROA) 	<ul style="list-style-type: none"> Firms that focus first on profitability and second on a growth strategy are more likely than other firms to achieve above-average performance. A young firm should not only strive for growth but also first identify the possible sources of its growth and profitability.
Liu et al. (2010)	<ul style="list-style-type: none"> Returnee-owned firms Multi-national enterprise Returnee spillover 1 (interaction w/ returnee) Returnee spillover 2 (returnee density) 	<ul style="list-style-type: none"> Technology gap 1 (time to catch up) Technology gap 2 (average labor productivity of returnee firms) 	<ul style="list-style-type: none"> Innovation performance 	<ul style="list-style-type: none"> Firms founded by returnee entrepreneurs are more innovative than those founded by domestic entrepreneurs. Returnee entrepreneur firms have an indirect spillover effect on non-returnee firms' innovation performance. Technology gaps positively moderate the relationship between returnee spillovers on non-returnee firms' innovation performance.
Sirén et al. (2012)	<ul style="list-style-type: none"> Exploitation strategy Exploration strategy 	<ul style="list-style-type: none"> Strategic learning 	<ul style="list-style-type: none"> Profits 	<ul style="list-style-type: none"> Strategic learning acts as a mediator between exploration vs. exploitation and profits. The effect of exploration on strategic learning is moderated by the extent of exploitation.
Bjørnskov & Foss (2013)	<ul style="list-style-type: none"> Entrepreneurship 	<ul style="list-style-type: none"> Institutions 	<ul style="list-style-type: none"> Total factor productivity (TFP) 	<ul style="list-style-type: none"> Government final consumption is negatively related to TFP. Openness to trade is positively related to TFP. Entrepreneurship has a strong effect on TFP. The more that a government intervenes (i.e., the lower the <i>government size index</i>),

Shirokova et al. (2013)	<ul style="list-style-type: none"> ▪ Entrepreneurial orientation ▪ Entrepreneurial values ▪ Investment in internal resources ▪ Knowledge-based resources ▪ Organizational learning ▪ Developmental and transitional changes 		<ul style="list-style-type: none"> ▪ Growth of sales ▪ Perceived non-financial performance 	<p>the greater the effect of entrepreneurship.</p> <ul style="list-style-type: none"> ▪ Both exploration and exploitation have a positive effect on firm performance. ▪ SE does not exhibit significant effects on firm performance.
Obeng et al. (2014)	<ul style="list-style-type: none"> ▪ Entrepreneur characteristics ▪ Firm resources ▪ Firm strategy 		<ul style="list-style-type: none"> ▪ Firm growth (# of employees) 	<ul style="list-style-type: none"> ▪ In Ghana, medium-sized businesses grow more rapidly than do small and “micro” businesses. ▪ In Ghana, there is a positive relationship between family ownership and employment growth in the manufacturing sector. ▪ Firms led by younger (resp. older) entrepreneurs tend to grow faster (resp. slower).
Yiu et al. (2014)	<ul style="list-style-type: none"> ▪ Government-induced administrative heritage ▪ State-owned legacy ▪ Formal control by business group ▪ Informal control by business group 		<ul style="list-style-type: none"> ▪ Strategic corporate entrepreneurship (R&D, capital expenditures on plants and equipment, new products introduced to markets, development of new markets) 	<ul style="list-style-type: none"> ▪ Institutional state logic and ownership remain strong influences; market logic supports SE operating while formally or informally controlled by business groups. ▪ Companies are more likely to change their institutional logic when the prevailing regime's leaders are more powerful.
Kantur (2016)	<ul style="list-style-type: none"> ▪ Entrepreneurial orientation 	<ul style="list-style-type: none"> ▪ Strategic entrepreneurship 	<ul style="list-style-type: none"> ▪ Firm performance ▪ Non-financial performance 	<ul style="list-style-type: none"> ▪ The author finds that strategic entrepreneurship mediates the entrepreneurial orientation–performance relationship.
Kim (2018)	<ul style="list-style-type: none"> ▪ Entrepreneurial orientation 	<ul style="list-style-type: none"> ▪ Firm age ▪ Firm size ▪ Market dynamism ▪ Product innovation radicalness 	<ul style="list-style-type: none"> ▪ Firm performance 	<ul style="list-style-type: none"> ▪ When assessing the SE–performance relationship, moderating effects of dynamic capabilities are more important for incumbent firms than for small firms.
Tipu & Fantasy (2018)	<ul style="list-style-type: none"> ▪ Social capital ▪ Strategic entrepreneurship (entrepreneurial orientation) 	<ul style="list-style-type: none"> ▪ Sustainable supply chain management 	<ul style="list-style-type: none"> ▪ Organizational performance 	<ul style="list-style-type: none"> ▪ The authors find support for the hypothesis that social capital and strategic entrepreneurship are positively related to organizational performance.

Boudreaux (2019)	<ul style="list-style-type: none"> ▪ Education ▪ Work experience ▪ Age ▪ Gender ▪ Race ▪ Home base ▪ Sole proprietorship ▪ Have intellectual property ▪ Credit risk ▪ Assets (logged) ▪ Income 		<ul style="list-style-type: none"> ▪ Firm survival ▪ Profit ▪ Profit quartile ▪ Sales revenue ▪ Perceptions of competitive advantage 	<ul style="list-style-type: none"> ▪ Service industries in general have higher profits and survival rates than do all other industries. ▪ The categories of retail and manufacturing account for the lowest profit and survival rates.
Utoyo et al. (2019)	<ul style="list-style-type: none"> ▪ Entrepreneurial mindset ▪ Entrepreneurial culture ▪ Entrepreneurial leadership 	<ul style="list-style-type: none"> ▪ Capability-driven strategy ▪ Configuration core innovation capabilities 	<ul style="list-style-type: none"> ▪ Innovation performance ▪ Collaborative innovation 	<ul style="list-style-type: none"> ▪ Exploration strongly affects capability-driven strategy and subsequently innovation performance.
Zhao et al. (2020)	<ul style="list-style-type: none"> ▪ Relevant experience ▪ First-order embeddedness ▪ Second-order embeddedness 		<ul style="list-style-type: none"> ▪ Timing of entry into a new market space ▪ Entrant performance 	<ul style="list-style-type: none"> ▪ Resources can have convergent effects on opportunity- and advantage-seeking activities and are not always mutually supporting.
Patzelt & Shepherd (2009)	<ul style="list-style-type: none"> ▪ Access to non-financial resources ▪ Reduction of administrative burdens ▪ Tax incentives 	<ul style="list-style-type: none"> ▪ Access to finance 	<ul style="list-style-type: none"> ▪ Academic entrepreneurs' assessment of policy programs' usefulness 	<ul style="list-style-type: none"> ▪ Access to financial capital, as provided by a policy program, is fundamental and leads to entrepreneurs perceiving more benefits of the program.
Kyrgidou & Petridou (2011)	<ul style="list-style-type: none"> ▪ Competence in exploration ▪ Competence in exploitation 		<ul style="list-style-type: none"> ▪ Strategic entrepreneurship (entrepreneurial mindset, creating innovation, managing resources, exploiting competitive advantage) 	<ul style="list-style-type: none"> ▪ Competence exploration positively and significantly affects innovation and the entrepreneurial mindset. ▪ Competence exploitation has a positive and significant effect on the strategic management of resources and on the exploitation of competitive advantage.
Levie & Autio (2011)	<ul style="list-style-type: none"> ▪ Regulatory burden index ▪ Rule-of-law index 	<ul style="list-style-type: none"> ▪ Rule-of-law index 	<ul style="list-style-type: none"> ▪ Total early-stage entrepreneurial activity ▪ Strategic entrepreneurial activity ▪ Non-strategic entrepreneurial activity 	<ul style="list-style-type: none"> ▪ There is a "lighter burden of regulation associated with a higher rate and relative prevalence of strategic entrepreneurial entry" (p. 1392). ▪ "[R]egulation has a significant effect on strategic entry only when [the] rule of law is strong" (p. 1392).
Johanna de Villiers-Scheepers (2012)	<ul style="list-style-type: none"> ▪ Organizational antecedents (management support, autonomy, rewards, time, boundaries) 		<ul style="list-style-type: none"> ▪ Entrepreneurial intensity 	<ul style="list-style-type: none"> ▪ In emerging economies, "organizational climate" has a strong influence on entrepreneurial firms. ▪ Entrepreneurial intensity is positively associated with organizational

	<ul style="list-style-type: none"> External / environmental antecedents (munificence, hostility) 			<p>antecedents and perceptions of environmental opportunity.</p>
Boone et al. (2013)	<ul style="list-style-type: none"> Industry-level product homogeneity 		<ul style="list-style-type: none"> Product portfolio overlap at entry Exit rates 	<ul style="list-style-type: none"> High industry-level product diversity encourages new entrants to imitate incumbents. Increasing industry-level product homogeneity makes it less likely that differentiating entrants will survive. The general pattern of entries and exits in an industry leads to the homogenization of its products and services.
Mihalache et al. (2014)	<ul style="list-style-type: none"> Top management team (TMT) shared leadership 	<ul style="list-style-type: none"> Centralization Connectedness TMT “cooperative conflict” style of management TMT decision-making comprehensiveness 	<ul style="list-style-type: none"> Organizational ambidexterity (exploration / exploitation) 	<ul style="list-style-type: none"> Shared leadership can influence organizational ambidexterity.

Note: The articles are ordered by performance/non-performance dependent variable and then by year.

Source: Developed exclusively for this study (based on Calabrò et al. 2019).

The literature argues that SE has a positive effect on firm performance, a critical indicator of the firm’s overall development and a factor that can be measured in either financial or non-financial terms (Baker & Sinkula, 2005; Keh et al., 2007). Nearly three fourths ($n = 16$; 73%) of the sample articles assess endogenous variables related to performance. Financial metrics include the assessment of profit, profitability, productivity, innovation performance, efficiency, sales growth, return on assets (ROA), and equity share (Audretsch et al., 2009; Meuleman et al., 2009; Steffens et al., 2009; Liu et al., 2010; Sirén et al., 2012; Bjørnskov & Foss, 2013; Shirokova et al., 2013; Boudreaux, 2019; Utoyo et al., 2019); their non-financial counterparts are the evaluation of employee growth, perceived non-financial performance, job stress, employee retention, and the development of products and markets (Meuleman et al., 2009; Monsen & Boss, 2009; Shirokova et al., 2013; Obeng et al., 2014; Yiu et al., 2014). The remaining studies focus on endogenous variables specific to their research context.

No clear pattern of groups or categories is evident even after a closer examination of the exogenous variables. Several articles (Monsen & Boss, 2009; Kyrgidou & Petridou, 2011; Sirén et al., 2012; Shirokova et al., 2013) operationalize exploration (opportunity-seeking) and exploitation (advantage-seeking) constructs to assess how SE affects measures of them. The other exogenous variables, like all the endogenous variables, are highly context specific. In what follows, I shall condense the findings reported in Table 3. Analysis of variables; key findings to present a synthesized interdisciplinary picture that incorporates the main results.

The exogenous and endogenous variables adopted by these articles are diverse and heterogeneous, which complicates the task of identifying thematic groups. Hence I summarize all findings from the quantitative studies, listed in Table 3. Analysis of variables; key findings, in terms of performance-related dependent variables. Given that “strategic entrepreneurship ... involves simultaneous opportunity-seeking and advantage-seeking behaviors and results in superior firm performance” (Ireland et al., 2003, p. 963), it is interesting that no studies report any direct evidence of a pattern whereby the application of SE necessarily leads to improved firm performance. SE is evidently a complex phenomenon that depends to a large extent on the specific factors analyzed in quantitative research settings.

First, SE quantitative performance outcomes ($n = 16$) differ by context; that is, SE performance outcomes vary among specific *groups*. Monsen and Boss (2009) find that SE activities are especially efficient when tailored to the right ‘audience’ group; this result is in line with Liu et al. (2010), who find that SE is much more closely tied to innovation among returnee entrepreneurs than among domestic entrepreneurs. Meulemann et al. (2009) report mixed performance results when analyzing SE in the setting of divisional buyouts; these authors find that such buyouts have no effect on profitability but do increase efficiency. Contextual factors play a leading role also in the study of Obeng et al. (2014), who report that – in Ghana – the effect on performance is driven by the *size* of the company: medium-sized

companies grow at a faster pace. A study in the Russian context reveals that the individual effect of SE on performance is not meaningful but that the combined effect of exploration and exploitation is substantial (Shirokova et al., 2013, p. 191). There are also different conclusions regarding focus. According to Steffens et al. (2009), firms adopting SE should focus first on profitability and only then on growth.

Second, some research addresses how SE is involved in mediating performance. Two studies report positive effects on performance variables – either with SE mediating the relationship with performance (Kantur, 2016) or treating strategic learning as a mediator in the positive relationship between SE and performance (Sirén et al., 2012). My summary amounts to a close-up with a narrow lens, which means that the reported findings may well change over time.

Within the group of articles that employ non-financial-related dependent variables ($n = 6$), thematic clustering was unattainable because no two dependent variables turned out to be sufficiently similar. However, there were many articles in which innovative research designs serve as path-defining dependent variables. Patzelt and Shepherd (2009) use goal-setting theory in their study of the perceived usefulness of government policy programs aimed at supporting academic venture development. These authors show that the financial access offered by such programs increases their benefit as perceived by the entrepreneur. Mihalache et al. (2014) study the effect of top management team (TMT) shared leadership on organizational ambidexterity (OA), where the latter is operationalized as a multiplicative exploration–exploitation score. The authors report that the positive relationship between TMT shared leadership and OA stems from the firm’s fostering of a cooperative style of conflict management and from decision-making comprehensiveness among top management teams. In one of the rare SE country studies, Levie and Autio (2011) deploy signaling theory and ‘employment choice’ theory to examine the effect of business regulations and the rule of law on strategic entrepreneurial entry.

4. Discussion and future research: Where do we go from here?

This study evaluates 75 theoretical and empirical articles in order to assess the state of research on strategic entrepreneurship (SE) and to analyze the field's theories, levels of analysis, context and content, variables, and findings. I shall now address in Table 4. Analysis of research gaps – the five distinct topics and its related gaps. Additional research gaps that are not listed here, such as specific areas of opportunities and sample questions, are given in Exhibit 5 (see also Nicholls-Nixon et al., 2011; Goel & Jones, 2016; Danese et al., 2018).

Table 4. Analysis of research gaps

Gaps	Evidence
<i>Theoretical perspectives, concepts, and foundations</i>	
Gap 1: Heterogeneity in the theories applied. Applying theories other than RBV (14) to study SE: complexity theory (i.e. complex adaptive systems), competitive dynamics theory, social capital theory, leadership theory, knowledge-based view.	<ul style="list-style-type: none"> ▪ Most theories relate to RBV (14), organizational learning (9), agency theory (6), real options theory (5), or network theory (5).
Gap 2: Absence of in-depth <i>theoretical</i> SE studies addressing resources, processes, and the exploration–exploitation balance. Exploring the adoption of a cyclic process view of SE, where opportunity- and advantage-seeking behaviors simultaneously and mutually reinforce each – rather than sequentially balancing the behaviors step by step against actual resource settings.	<ul style="list-style-type: none"> ▪ This gap is identified by several studies as a future research avenue (see Exhibit 5). ▪ Only a few studies explore the within- and across-boundary conditions of SE
<i>Levels of analysis</i>	
Gap 3: Research studies could focus on different levels of analysis.	<ul style="list-style-type: none"> ▪ The prevailing unit of analysis is the firm (in 57 of 75 studies) followed by the individual (8 of 75).
<i>Context of research</i>	
Gap 4: Far fewer empirical studies exploring the services sector than exploring either the manufacturing sector or their combination.	<ul style="list-style-type: none"> ▪ Only 17% of the studies focus solely on the services sector.
Gap 5: Paucity of research from the multi-country perspective	<ul style="list-style-type: none"> ▪ The empirical SE research is dominated by single-country research studies (83%).
Gap 6: Not enough empirical research based on data from the Americas, Australasia, Africa, or the world.	<ul style="list-style-type: none"> ▪ Most of the empirical articles reviewed here are based either in Europe (31) or in Asia (13).
Gap 7: Lack of studies that address emerging economies.	<ul style="list-style-type: none"> ▪ The majority of SE research is conducted in developed economies.
<i>Content of research</i>	
Gap 8: Conceptual lacunae that could be filled by further exploring SE frameworks, process models, and components.	<ul style="list-style-type: none"> ▪ Despite the existence of several SE frameworks and process models, there is no consensus on which are the most accurate or on the underlying resource orchestration process.
Gap 9: Qualitative and quantitative empirical studies whose results would enable a more developed understanding of the trade-offs between exploration and exploitation (i.e., the balance between opportunity-seeking and advantage-seeking activities).	<ul style="list-style-type: none"> ▪ Lack of empirical evidence: the content analysis revealed that only one of the articles explored the optimal balance empirically.

Gap 10: Studies of SE implementation within a wider range of industries and sectors.

Gap 11: More in-depth research on how strategic entrepreneurship relates to other fields, theories, and constructs.

Gap 12: Substantial research is necessary to investigate the effect of SE on outcome variables other than performance.

- Most of the reviewed articles involved implementation in just a few industries (i.e., life sciences, ICT, or wholesale/retail).
- Current approaches – most of which relate SE to agency theory, knowledge spillovers, or family businesses – could be expanded to include other areas.
- This gap is identified by several studies as a future research avenue (see Exhibit 5).

Techniques, methodologies, and measures

Gap 13: Absence of studies providing a longitudinal perspective on strategic entrepreneurship issues.

Gap 14: Homogeneity among the research methods used to study strategic entrepreneurship.

Gap 15: The use of SE outcome variables *other* than the creation of value and wealth creation – for example, financial and non-financial performance, organizational innovation, knowledge, general benefits.

Gap 16: Lack of metrics for assessing strategic entrepreneurship

- This gap is identified by several studies as a future research avenue (see Exhibit 5).
- 72% of all the included articles are conceptual in nature or focus on survey research methods.
- This gap is identified by several studies as a future research avenue (see Exhibit 5).
- Only one measurement scale has been developed for measuring strategic entrepreneurship.

Source: Developed exclusively for this study (adapted from Danese et al. 2018).

4.1. Theoretical perspectives, foundations, process conceptualizations, and model

This section covers the fundamental components that define a starting point for future research in SE. I begin by explaining the importance of complexity theory for SE research – that is, of a complex adaptive system capable of clarifying ‘how actions are orchestrated’ over different levels. I continue to address the significance of competitive dynamics theory, which can shed light on how rivals react to competitive moves such as combining resources in new ways and to altered SE configurations (Livengood & Reger, 2010; Withers et al., 2018). I shall conclude this section by discussing theories of knowledge, social capital, and leadership while focusing on how future research could be advanced by studying more closely the relationships between essential resources and SE.

4.1.1. Heterogeneity of theories: Gap 1

The theories applied in SE research are heterogeneous, although a somewhat smaller homogeneous group of theories accounts for most applications. Thus further advances are needed in operationalizing the relevant but underdeveloped theoretical perspectives that inform SE and could boost its prominence. My research findings (see Exhibit 4) reveal a plethora of

strongly similar theoretical approaches (i.e., agency theory, real options theory, institutional theory, population ecology, strategic choice, upper echelons theory, and social identity theory), as worked out by Mazzei et al. (2017). In this section I go beyond existing research to propose additional theoretical perspectives that are crucial for future SE research, thereby addressing Section 1's RQ1: What theoretical perspectives can advance SE research?

Complexity theory and complex adaptive systems. Continuously dynamic environments, nonlinearity of expected process outcomes, market instability, and dealing with constant change at both the macro and micro level are considered to be the “new normal” for firms (Schindehutte & Morris, 2009, p. 241). Complexity theory and complex adaptive systems (CAS) offer a theoretical perspective that can help “order creation in open, uncertain, nonlinear and dynamic systems” (Galkina & Atkova, 2020, p. 965), circumstances that clearly apply to entrepreneurial firms. A complex organization is viewed as an array of individual “parts-within-parts structure[s]” (Simon, 1962, p. 469), “which together make up a whole that is interdependent with some larger environment” (Anderson, 1999, p. 216). Complexity itself is defined as the number of different aspects or components that the firm must manage simultaneously (Anderson, 1999).

Present conceptualizations and interpretations of the SE model (Ireland et al., 2009; Hitt et al., 2011) are rather static and quasi-linear in nature (Schindehutte & Morris, 2009; Kyrgidou & Hughes, 2010). In contrast, CAS offers a perspective from which to describe how SE within different systems emerges, shapes, changes, and advances as well as how processes can unravel under conditions of complexity and uncertainty (Galkina & Atkova, 2020). Thus CAS can explain how novelty develops within SE by allowing for the dynamic behavior that the RBV is unable to accommodate (Schindehutte & Morris, 2009; Galkina & Atkova, 2020). It is critical for the explorative (entrepreneurship) component of a SE setting to identify or create disequilibrium conditions where rents can be captured under realistic settings

characterized by uncertainty, where firms in dynamic environments can invest and mobilize resources to reconfigure activities (Mathews, 2010). As such, CAS is one way to bridge the dual nature of two inherently different processes (March, 1991) that are undertaken simultaneously to create value, and hence wealth, by integrating feedback loops. The CAS approach adopts an integral perspective that caters to dynamic factors within a complex system while spanning different levels of analysis (Anderson 1999; McKelvey, 2004; Galkina & Atkova, 2020) – in line with the view of SE as a multi-level construct (Hitt et al., 2011; Wright & Hitt, 2017). These considerations lead to the following research questions.

Research question 1: Why is SE usually conceptualized as a linear and sequential process, rather than a cyclically adaptive one?

Research question 2: How is exploitive behavior organized when exploratory behavior focuses on the creation and discovery of opportunities in disequilibrium?

Research question 3: When do learning and feedback loops occur, and how can they be integrated into SE when spanning multiple levels of analysis?

Research question 4: How do the individual components of SE work together?

Research question 5: How can disequilibrium-driven exploratory and equilibrium-driven exploitive philosophies co-exist in a single linear or cyclic process?

Competitive dynamics. “The field of competitive dynamics attempts to explore the actions and reactions that firms take in the marketplace ... [where] an action is defined as a specific and detectable competitive move” (Livengood & Reger, 2010, p. 51). Whether examined from a relatively constricted viewpoint (as in Covin & Miles, 1999; Kuratko & Audretsch, 2009; Morris et al., 2010) or approached from a broader perspective (Hitt et al., 2001; Ireland et al., 2003; Wright & Hitt, 2017), SE involves “organizationally consequential innovations that are adopted in pursuit of competitive advantage” (Morris et al., 2010, p. 99). The five forms of SE illustrated by Morris and colleagues can function as indicators of where innovative actions and competitive moves can occur. Competitive dynamics is well suited to bridging adjacent fields

of research, such as entrepreneurship and the study of temporary competitive advantages (D'Aveni et al., 2010; Chen & Miller, 2015). Competitive dynamics helps explain how and why competitive advantages vanish, whereas SE accounts for how and why competitive advantages are built through the discovery or creation of new opportunities while exploiting extant “certainties” (March, 1991, p. 71; see also Alvarez & Barney, 2007). Competitive dynamics and SE share the characteristic of a multi-level perspective (Chen & Miller, 2015; Wright & Hitt, 2017), which facilitates a fine-grained micro-to-macro analysis (Chen & Miller, 2015). Hence competitive dynamics serves as a lens through which one can examine the loss of a firm’s competitive advantages. In sum, three research questions arise.

Research question 1: What reactions do various SE configurations induce in competitors?

Research question 2: How does successful implementation of opportunity- and/or advantage-seeking strategies trigger competitors’ reactions?

Research question 3: How can SE be configured to protect against rivals’ competitive moves at different levels of analysis?

Social capital theory. Similarly to competitive adaptive systems and competitive dynamics, social capital theory analyzes phenomena across levels of analysis (Gedajlovic et al., 2013). Within the SE literature, social capital is widely acknowledged to be a central aspect of SE research (Ireland et al., 2003; Hitt et al. 2011); however, surprisingly few scholars argue for its utilization in future studies (but see Ireland et al., 2003; Liu et al., 2010; Lumpkin et al., 2011). This oversight is curious because social capital is an idiosyncratic resource that is valuable, rare, difficult to imitate, and not substitutable; hence it could well underpin a competitive advantage (Barney, 1991; Arregele et al., 2007). Social capital is defined as the goodwill and resources made available to the actor via reciprocal, trusting relationships (Arregele et al., 2007; Lumpkin et al., 2011). The *outcomes* due to social capital reflect the benefits of information, influence, and solidarity, whereas the *sources* of capital are the social relations among

actors – as distinguished from market interrelations and hierarchical authority (Kwon & Adler, 2014). There is a need for in-depth examination of how social capital influences SE outcomes and of how changes in the environment affect the extent of social capital in SE, or the role played by social capital in achieving a sustained competitive advantage in SE. This topic is a salient one because the entrepreneurial ecosystem depends on socially situated and embedded entrepreneurs and organizations that drive opportunity creation and discovery (Gedajlovic et al., 2013). I am therefore motivated to posit the following questions.

Research question 1: How does social capital affect overall SE outcomes?

Research question 2: What characteristics are most closely associated with social capital in the SE process of resource orchestration?

Research question 3: Why are social capital resources a differentiator in terms of the “input function” for SE resources?

Leadership. Organizations tend to mirror their top management teams (Carpenter et al., 2004), from which it follows that a firm’s leadership is inescapably related to the achievement of high levels of performance (Peterson et al., 2003; Avolio et al., 2009; Wang et al., 2011). Avolio and colleagues report that measured leadership exhibits a 66% probability of affecting outcomes in a positive way. This result is groundbreaking because scholars have long assumed that leadership plays only a ‘diminutive’ role in overall firm performance (Peterson et al., 2003). Entrepreneurial leadership is vital to SE research, where such leadership is defined as “the ability to influence others to manage resources strategically in order to emphasize both opportunity-seeking and advantage-seeking behaviors” (Ireland et al., 2003, p. 971). Note also that “[t]op leadership [is] perhaps the resource ... most idiosyncratic to a specific organization” (Hitt et al., 2011, p. 61; see also Hitt et al., 2001; Covin & Slevin, 2002). Leadership as a resource necessary to successful SE outcomes is highlighted throughout the literature (Hitt et al., 2001; Ireland et al., 2001; Ireland et al., 2003; Hitt et al., 2011; Mihalache et al., 2014). Yet despite leadership’s importance for SE, only a few studies (viz., Monsen & Boss, 2009;

Kyrgidou & Hughes, 2010; Kraus et al., 2011; Mihalache et al., 2014; Höglund et al., 2018; Mazzei, 2018) treat it as a major concern. The SE literature would therefore benefit greatly from more research that focuses on the impact of leadership. Here are several relevant questions.

Research question 1: What leadership style is best suited to drive SE performance outcomes?

Research question 2: What leadership styles advance or impede successful SE implementation?

Research question 3: How does the entrepreneurial context affect leaders' decision making in SE?

Research question 4: How are resource configuration and selection affected by particular leadership styles?

Research question 5: Do leaders exhibit different behavior when managing exploratory versus exploitive activities?

Knowledge-based view. Knowledge is considered to be among the most indispensable of all resources held by the firm, and the firm's competitive advantage is developed by generating and using privately owned tacit knowledge (Grant, 1996; Agarwal et al., 2007). "Idiosyncratic knowledge of management and entrepreneurs represents a key resource for firms, especially for opportunity recognition" (Kuratko & Audretsch, 2009, p. 13). In SE, entrepreneurs and leaders view strategic and entrepreneurial knowledge as two unique but complementary and mutually reinforcing knowledge stocks (Wright & Hitt, 2017). Both mature and young firms need to identify unique opportunities, create new competitive advantages, and harness old certainties if they hope to secure value and wealth (Hitt et al., 2011; Wright & Hitt, 2017). Both types of knowledge stocks are needed to develop differentiated products and service offerings, to capture new and/or previously unserved markets, to apply strategies in new ways that will provide enhanced benefits for the customer, or to create business models that define new ways of catering to customers through novel value propositions. Learning and knowledge are

prerequisite to innovation and the creation of new business opportunities, and it is exactly these learning- and knowledge-based innovations that define SE's pursuit of creating value and wealth (Morris et al., 2010).

Strategic and entrepreneurial knowledge stocks are the performance differentiators in SE, and they underlie firm-driven innovations that are orchestrated in parallel and in a cyclic manner. Thus strategic and entrepreneurial actions inform and reinforce each other instead of being applied in sequence. The knowledge of "individual employees [that] cannot be readily transferred" (Grant, 1996, p. 119) resides in the firm's entrepreneurs and the leaders who combine resources in novel ways to explore new opportunities even as they exploit existing certainties (March, 1991). Yet because the processes and knowledge stocks of exploration and exploitation are inherently different, the firm must steer both processes simultaneously in order to ensure a pipeline of exploitable 'future certainties' – a topic that I next examine more thoroughly (Section 4.1.2). This section can be summarized thusly: the creation of new knowledge from the firm's learning and knowledge acquisition activities reduces the likelihood that its competencies, routines, and focus of activities will become outdated (Ireland et al., 2001; Mathews, 2010). Hence I pose three research questions, as follow.

Research question 1: How is knowledge integrated into the overall SE process? Do exploration and exploitation benefit from newly acquired knowledge to the same degree?

Research question 2: How does knowledge simultaneously inform exploration and exploitation behaviors?

Research question 3: Does knowledge acquisition in SE come in "waves", or do firms acquire knowledge at a fairly constant pace?

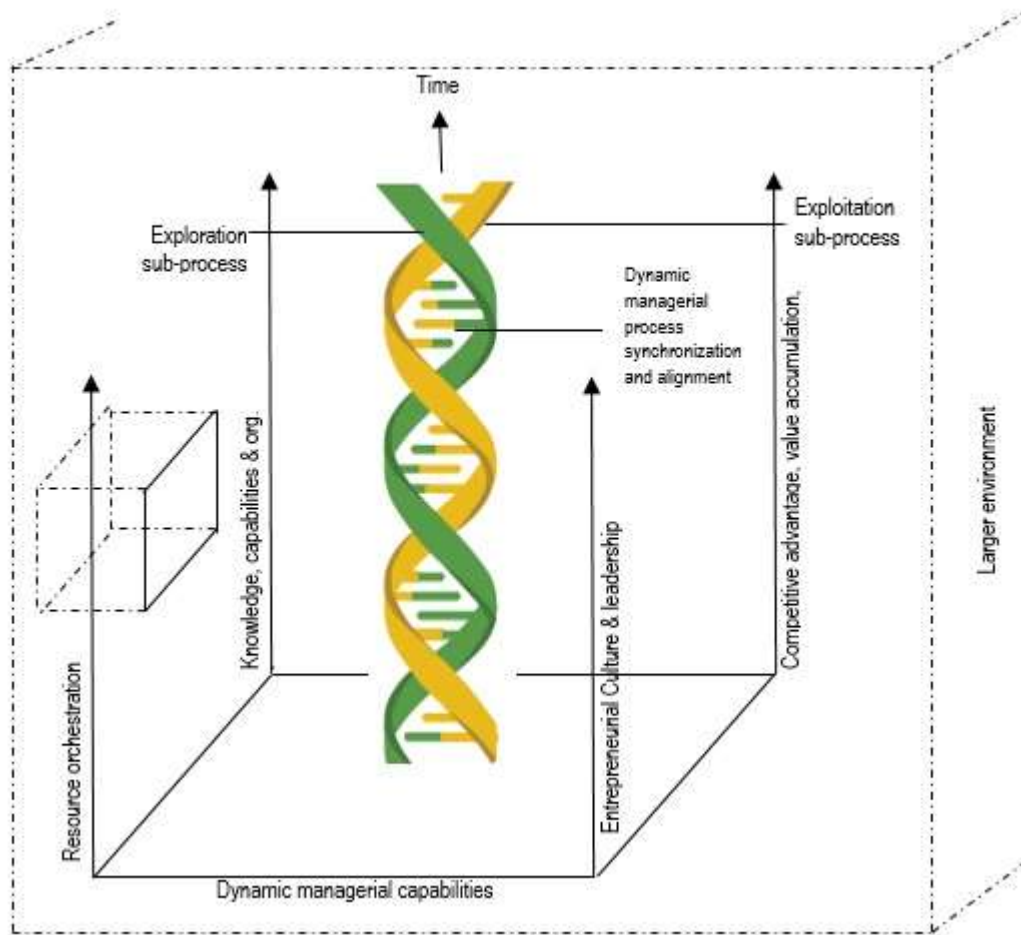
4.1.2. Foundations, process conceptualizations, and models: Gap 2

In this section, which addresses RQ2, I present an extended conceptualization of existing SE process models (Ireland et al., 2003; Kyrgidou & Hughes, 2010; Hitt et al., 2011) – thereby reassessing the micro foundations of and interlinkages among exploration and exploitation.

This conceptualization addresses the gaps singled out by other authors: fundamental process dynamics (Schindehutte & Morris, 2009), SE as a cyclic adaptive process (author of this study), how opportunity and strategy are linked (Simsek et al., 2017), the search for successful configurations (Kyrgidou & Hughes, 2010; Kraus et al., 2011), and the question of whether SE is linear and sequential or rather ‘spiral’ and self-informing over time (Kyrgidou & Hughes, 2010; Mazzei, 2018; Zhao et al., 2020).

Current SE process conceptualizations present steps in the process as a relatively static sequence of foundational activities – a view adopted by many authors (e.g., Schindehutte & Morris, 2009; Kyrgidou & Hughes, 2010). Despite their influential contributions, Hitt et al. (2001), Ireland et al. (2003), and Hitt et al. (2011) fail to explain how the processes of exploration and exploitation can be managed simultaneously (cf. March, 1991). Scholars have emphasized that firms must be able to transition between these processes (Ireland & Webb, 2007; Ireland & Webb, 2009). “The actions taken to transition from exploration to exploitation (and from exploitation to exploration, as well), poses significant challenges” (Ireland & Webb, 2007, p. 51). Yet I argue that constantly shifting between the two processes is costly, time-consuming, and cumbersome for firms seeking to maintain their competitive advantage. It takes ambidextrous capabilities to manage dissipating advantages while building up new advantages (Sirmon et al., 2011; Wales et al., 2013; Carnes et al., 2017), one form of which is represented by ‘*contextual*’ ambidexterity (Gibson & Birkinshaw, 2004). This section offers a different view, which I believe should be studied in future research: *firms that successfully apply SE handle both processes simultaneously (i.e., not sequentially) while informing and synchronizing each other (e.g., via feedback), thus invoking a mutual exchange of resources.* Figure 1 illustrates this extended process model. My proposal can be seen as answering the call of Wales et al. (2020) for further study of feedback loops in SE.

Figure 1. Extended process model of strategic entrepreneurship – A CAS perspective



Source: Author extrapolation based on Ireland et al. (2003), Kyrgidou and Hughes (2010), and Hitt et al. (2011).

SE can be examined through the lens of complexity theory – in particular, via CAS – toward the end of explaining (a) how the distinctive processes of exploration and exploitation are embedded in firms and (b) how the firm itself is a system “of interdependent parts, which together make up a whole that is interdependent with some larger environment” (Anderson, 1999, p. 216). Thus the framework of complex adaptive systems helps describe how systems arise, are shaped through learning, change, and develop their processes under complex and uncertain conditions (Galkina & Atkova, 2020). Relying on the ‘integral learning’ aspect of CAS, I link dynamic managerial behavior in the firm’s system (Adner & Helfat, 2003; Sirmon et al., 2011) to an interconnected exchange of information and knowledge between two

inherently different processes within the larger environment. Hence I explain, across different levels of analysis, how the firm achieves a competitive advantage while creating the benefits of value and wealth.

Although scholars stress that SE “rests on a number of assumptions which have yet to be tested” (Schindehutte & Morris, 2009, p. 243), the individually beneficial *outcomes* of strategy and entrepreneurship are widely acknowledged (Ireland et al., 2001; Kuratko & Audretsch, 2009; Westgren & Wuebker, 2019). There is likewise little dispute that resource *inputs* of a valuable, rare, inimitable, and non-substitutable nature (e.g., entrepreneurial leadership, entrepreneurial culture, knowledge, social capital; Barney, 1991) are at least partly responsible for observed performance differentials among firms. I extend these notions by arguing that crucial roles are played by the resource *orchestration* process and by the way that process is designed, managed, and administered.

The topic of resource orchestration has exhibited impressive advancements over the past two decades as authors have focused on resource management (Sirmon & Hitt, 2003; Sirmon et al., 2007; Sirmon et al., 2011), nonlinearity and boundary-spanning conditions (Wales et al., 2013), and exploring the orchestration of resources across venture portfolios (Baert et al., 2016). Research on SE cannot be complete without a closer look at the management of resource orchestration. The reason is that a firm’s survival (or decline) depends to a great extent on how well it orchestrates resources in the service of SE.

Sirmon et al. (2011) describe in detail how the top-down, bottom-up, or bidirectional synchronization of resource orchestration activities occurs. I argue that, in addition to those activities, firms synchronize knowledge and know-how across different processes (i.e., exploration and exploitation) by empowering dynamic managerial actors. Firm processes and knowledge exchange are boundary-crossing activities, with respect to the firm’s hierarchy (Sirmon et al., 2011), that lead different actors to maneuver on different levels. These dynamic

managerial actors focus on the micro interconnections between exploration and exploitation and keep the representatives of both processes mutually informed and reinforced. That is, actors at different levels of the firm/system (viz., top management, middle management, and operational managers) harness the knowledge and information from exploration and exploitation activities to create competitive advantage and value. This view is a pronounced extension of the papers by Sirmon and colleagues (Sirmon et al., 2003; Sirmon et al., 2007; Sirmon et al., 2011), who describe the “who” and the “how”, since I augment their approach by discussing “why” and “with what information”. Thus I showcase the interconnectedness among micro processes by viewing exploration and exploitation as *parallel* processes.

I posit that it is by mutual information exchange and interpretation (“with what”) that actors interpret information from both processes through communication and mutual exchange (O’Reilly & Tushman, 2013) in order to steer their decision making and their resource allocation activities (“why”); also, these micro-foundational process interactions contribute to the overall success of SE. Horizontal flows and boundary-spanning activities are mentioned in the literature but not discussed with reference to resource orchestration (Sirmon et al., 2011) within the SE process model. It is my view that micro interconnections – in an iterative manner – facilitate alignment across process dynamics, enable a cyclic dynamic process in turbulent environments, link exploration and exploitation process knowledge, and help distinguish successful from unsuccessful configurations. Thus these particular micro-foundational connections, between exploration and exploitation processes, make it possible to balance the allocation of resources for the purpose of creating a competitive advantage and hence value for the firm. Dynamic managerial capabilities, as epitomized by communication and calibration, play a major role in filtering, aligning, and harmonizing the information related to both processes. A similar view is shared by Zhao et al. (2020, p. 18), who state that “the

relationship between opportunity- and advantage-seeking activities ... appears to be one of mutual reinforcement without any tension or trade-off.”

Other authors address resource orchestration from the firm’s own perspective (Sirmon et al., 2007; Sirmon et al., 2011), venture portfolio view (Baert et al., 2016), the boundary-spanning view (Sirmon et al., 2011; Wales et al., 2013), and in the context of start-ups (Symeonidou & Nicolaou, 2018). So far, studies have not discussed horizontal flows and boundary-spanning activities as they apply to resource orchestration activities with interlinkages in the SE process model.

Research on SE could be profitably extended in the direction of Baert et al. (2016, p. 348), who argue that “firms engage in resource orchestration ... [and] in the constant trade-off between the exploration of new possibilities and the exploitation of existing activities, which entails complications in allocating scarce resources across activities.” Firms engage in SE – and in the resource orchestration process – because resources are scarce and so the firm must deal with ongoing tension as regards how best to structure, bundle, and leverage resources for exploration and exploitation activities. The extension I propose is that dynamic managerial capabilities allow for the synchronization of knowledge pertinent to these activities and thereby enable the most efficient use of scarce resources. Thus the ideal is not a “balance of processes”, as argued previously (see e.g. Ireland & Webb, 2007; Ireland & Webb, 2009), but rather a balance of how resources are designed, configured, and allocated to both processes toward the end of generating value.

Exploration involves the attributes of experimentation, innovation, play, and flexibility; in contrast, exploitation is concerned with efficiency, refinement, and execution (March, 1991; Baert et al., 2016). The actors responsible for each process are in the same predicament: resources are scarce and finite. It is often argued (see Gibson & Birkinshaw, 2004; O’Reilly & Tushman, 2013) that constraints on exploration or exploitation can be overcome by means of

contextual ambidexterity, or by simultaneously exhibiting the “behavioral” competency needed to achieve alignment and adaptability vis-à-vis the two processes and across individual business units. O’Reilly and Tushman (2013, p. 332) suggest that both exploration and exploitation rely on strong support from senior leadership, on communication, and on “the construction of an interface” to align resource allocation between the two processes. Hence process actors can learn and study from each other in order to efficiently guide the firm toward high performance and away from pitfalls while simultaneously dealing with the uncertainty inherent to both processes.

Long-term success and survival depends on the successful application of both processes and on the appropriate organization of interlinkages between learning and knowledge exchange as well as of behavioral and contextual adaptation concerning these two processes – in other words, on the micro-foundational interfaces of exploration and exploitation. Contrary to Ireland and Webb (2009), who argue for a transition from exploration to exploitation activities, my thesis is that both processes transpire in parallel: mutually informing each other while balancing the management of scarce resource inputs for both activities and aligning actors’ strategic behaviors. The following research questions are therefore suitable topics for SE research.

Research question 1: Do SE outcomes differ as a function of the particular resources being orchestrated?

Research question 2: How do micro interlinkages between exploration and exploitation change and adapt over the time frame?

Research question 3: How do the components of SE change when it is applied in different contexts?

4.2. Levels of analysis: Gap 3

I now address RQ3 by discussing the levels of analysis. Some authors (e.g., Simsek et al., 2017, pp. 506, 513) ask whether SE should be studied “as a firm-level phenomena or as micro-phenomena within the firm” and “whether strategic entrepreneurship is a single action”. In

general, SE does not amount to a single action and should rather be viewed as a continuous flow of a coordinated set of behavioral activities that are related to both exploration and exploitation and are subject to multiple levels of analysis (Hitt et al., 2011; Wright & Hitt, 2017). Hence SE exists on the levels discussed previously: it consists of dynamic behavioral action undertaken to orchestrate specific sets of resources in the service of developing a competitive advantage and creating value. Thus managers act as agents working on behalf of the groups that constitute societies or organizations, and dynamic management drives the firm's success at continuously interpreting a variety of information and knowledge while recombining resources to create new sets of (temporary) competitive advantages. This interpretation points to some intriguing avenues for future research – such as a more in-depth exploration, at different levels of analysis, of the role that individual actors play when undertaking SE or that groups of actors play at the macro level. In particular, the following research questions are relevant.

Research question 1: What role does an individual's exploratory and exploitive behavior play in the context of different levels of analysis?

Research question 2: How are SE outcomes affected depending on the level of analysis?

Research question 3: How do countries apply SE at the macro level?

4.3. SE context, content, methodologies, and measures: Gaps 5, 6, 7, 12, 13, 16

Finally, I address RQ4 by focusing on the further development of SE content and context and by identifying research topics involving methodologies and measures that could be applied. This section therefore tackles those topics, raised by research Gaps 5, 6, 7, 12, 13, and 16 that I consider to be the most promising for future research from Table 4. Analysis of research gaps.

Gap 5 stands out in particular. An overwhelming majority (83%) of studies take the single-country perspective. Given that much of this research reflects a cross-sectional design, it would be of considerable interest to see what the results reveal when more countries are

included in a single project. Research conducted from a multi-country perspective, either through integrated data sets or as a comparative study, would increase our understanding of a given SE setting as it manifests in different countries – especially since findings would be strengthened if different countries exhibited similar SE outcomes.

Gap 6 reflects the values derived for the ‘region of research’ variable. Recall from Table 2. Entrepreneurial context (in Section 3.3) that, whereas the lion’s share of empirical research is conducted in Europe or Asia, the North American cluster accounts for relatively few empirical studies. If the research domain of SE seeks to generalize its findings, then scholars would do well to explore SE research questions not only in Europe and Asia but also in the Americas, Australasia, Africa, and other parts of the world. Leaving out the Americas in particular ignores vast regions from which research findings could be garnered, and relying so heavily on Europe and Asia cannot tell the complete story.

With regard to Gap 7, which concerns the extent of research conducted in emerging economies, several authors (Agarwal et al., 2010; Bruton et al., 2013; Shirokova et al., 2013) have called for additional studies of such economies. Bruton and colleagues note that emerging economies, despite their impact on the global economy, tend to remain outside the focus of entrepreneurship studies. Of course, theories developed in the context of established economies might not adequately explain the same phenomena in emerging economies. This distinction is critical because it is, in fact, seldom appropriate to apply results derived from firms in mature economies to those in emerging economies – that is, given the unique characteristics of each (Ahlstrom & Bruton, 2006; Zahra & Wright, 2011). Thus econometric research could help resolve whether (or not) SE mechanics and processes operate in the same way, and with comparable results, in emerging economies as in their more mature counterparts.

Since SE is a multifaceted construct, it would be a substantial advancement if SE were studied not only on the basis of financial or non-financial performance but also in terms of

other dependent variables; doing so would address Gap 12. For example, it would be instructive to evaluate SE outcomes also with regard to knowledge acquisition, cultural dynamics, corporate reputation, alliance formation, and innovation ecosystems. Hitt et al. (2011, p. 68) mention that SE could lead to “societal benefits” and might “improve the quality of life and increase human development over time.” Future research could attempt to measure these propositions empirically.

As for Gap 13, many authors have called for more research that adopts a longitudinal perspective of SE (Liu et al., 2010; Sirén et al., 2012; Bjørnskov & Foss, 2013; Yiu et al., 2014). The advantage of longitudinal data sets is that they enable examining how variables affect a particular construct over time – unlike cross-sectional data, which can be misleading because the information against which a firm is benchmarked might well be outdated (Bernhardt et al., 2000). “Entrepreneurship is a process that evolves with time. ... If we do only cross-sectional studies, [then] we lose much of the richness that comes from longitudinal studies” (Churchill & Bygrave, 1989, p. 21). The economy (and society as a whole) will benefit from SE only when its process is truly understood, which requires studying SE over time. Hence I, too, advocate for increased longitudinal research.

Another promising avenue stems from Gap 16 and involves the devising of alternate SE measures. Anderson et al. (2019) develop what remains the only viable measurement construct for assessing SE empirically – although that measure has yet to be applied in any empirical study. These authors “explicitly encourage the development of alternate measures” (p. 217) to assess SE as a construct. The development and application of quantitative measures is essential to SE improving the viability and generalizability of its research findings. Five research questions applicable in this context are listed as follows.

Research question 1: What effect does knowledge acquisition have on SE outcomes?

Research question 2: How do individual behavioral components influence SE?

Research question 3: What effect does a unified value chain (ecosystem) have on SE outcomes?

Research question 4: Do empirical longitudinal research results confirm the SE outcomes predicted by cross-sectional studies?

Research question 5: Do alternative measures of SE support the claim of positive SE outcomes?

5. Conclusion and limitations

This systematic review of the literature identifies and analyzes 75 studies in the field of SE, all of them published in ABS-ranked journals during the period 2000–2020, for the purpose of evaluating the evidence in this field. Notwithstanding the strengths of this study, it does have some limitations. For instance, I consider only those articles whose main theme is related to SE; articles that merely reference SE (and so do not focus on its evaluation) are excluded (cf. Wang & Chugh, 2014; Dada, 2016). My sample is restricted also to English-language studies published in ABS-ranked journals, criteria that exclude such forms of discourse as essays and book reviews. A limitation characteristic of SLRs in general is that they can suffer from an overly rigorous application of inclusion criteria, which in this case could have resulted in the inadvertent exclusion of potentially relevant articles (i.e., in sampling bias).

The strengths of this SLR are its contributions to both theoretical and empirical research. Among these, the first is that I have improved our grasp of the extant literature by employing a rigorous and systematic approach to shed light on the latest SE findings. Thus the transparent methodological setup of my systematic literature review ensures the existence of suitable boundary conditions for a qualitative inquiry (cf. Tranfield et al., 2003). A second major contribution is my identifying a multitude of future research avenues in the areas of theories, foundations and process conceptualizations, levels of analysis, and the broader SE context. This contribution serves as both anchor and compass in the sense of answering the question: “Where do we go from here?” Finally, I contribute to the SE literature by examining

its micro foundations and process conceptualizations in a new way: proposing an SE process model that is cyclic, adaptive, and includes feedback loops. I therefore believe that this review is a valuable first step toward what could be decades of fruitful theorizing and research advances in the field of SE.

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SUPPLEMENTAL EXHIBITS

Managing the Temporariness of Competitive Advantage for Your Survival: A Systematic Review, Model, and Research Agenda

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EXHIBIT 1

Inclusion / Exclusion Criteria and Data Extraction

This exhibit presents three types of information: first, the rationale for *including* articles in my systematic literature review; second, the rationale for *excluding* articles. Third, the exhibit describes the coding and extraction principles used for obtaining the specific information needed from sample articles to determine their inclusion in (or exclusion from) the review.

1. Inclusion criteria

1.1. Academic journal articles

This study includes only those articles published in academic journals.

1.2. ABS Academic Journal Guide

Inclusion requires that the focal article be listed in the 2015 Academic Journal Quality (ABS), which should ensure that the included articles met threshold levels of value and quality. I opt for ABS because it is broadly accepted as a transparent benchmark of journal performance (Morris et al., 2009; Mingers & Willmott, 2013; Sunder M. et al., 2018; Burgess et al., 2017). In addition, it “provides wide journal coverage and has high levels of internal and external reliability” (Morris et al., 2009, p. 1441). Besides indicating a journal’s quality, the ABS set-up is useful for limiting one’s attention to the most “attractive” academic articles in the research field. Yet another benefit is that ABS groups business and management research areas into subfields that include those known for publishing research on entrepreneurship (Wang & Chugh, 2014).

1.3. Business and management focus

1.3.1. Primary subject areas

From 22 ABS-listed categories that include a total of 1,401 journals, 146 are selected in the primary and secondary subject areas summarized by (respectively) Table 5. Primary subject areas and Table 6. Secondary subject areas.

Table 5. Primary subject areas

Entrepreneurship and small business management	20
General management (incl. ethics and social responsibility)	44
Strategy	13
<i>Subtotal</i>	<i>77</i>

Source: Developed exclusively for this research.

1.3.2. Secondary subject areas

Table 6. Secondary subject areas

Innovation	29
International business and area studies	40
<i>Subtotal</i>	<i>69</i>
Total (primary and secondary)	146

Source: Developed exclusively for this research.

The categories and journals listed here as primary or secondary tend to publish most of the strategic entrepreneurship literature. I include all journals from the categories of “general management, ethics, and social responsibility” and “international business and area studies”. The strategy employed is to remove non-relevant articles from the sample via the second step of the extraction process (see Section 2).

1.4. Electronic databases

An article could be included only if it is identified by my searching at least one of the databases listed in Table 7. Data sources^a.

Table 7. Data sources^a

ABI/Inform
 Business Source Complete
 Science Direct^b
 Web of Science
 Scopus

^aArticles published before 29 February 2020

^bArticles published during 2000–2015

1.5. Time frame

The time frame for this research is the period 2000–2020 (inclusive, up until 29 February 2020).

1.6. Boolean search and truncation

Both truncation and Boolean techniques are applied so that my search strings could accommodate various word endings and spellings (Spencer, 2003). I search the databases listed in Table 7. Data sources^a for keywords in their respective article titles and abstracts (Wang & Chugh, 2014), although Scopus searches cover the title field only (Dada, 2016). I deliberately use fairly broad keywords in order to minimize any unwanted filtering (Müller-Seitz, 2012). Moreover, I expand the initial search results by incorporating all the major definitions of strategic entrepreneurship; see Table 8. Truncation and Boolean search strings.

Table 8. Truncation and Boolean search strings

Criteria	SE definition for choosing criteria	Exemplary evidence
- strateg* AND (entrepreneur* OR renew*) sustain* AND regener* domain* AND redef* organ* AND rejuven* business* AND model* AND reconstr*	“Strategic entrepreneurship can take one of five forms – strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation and business model reconstruction.”	Kuratko and Audretsch (2009, p. 8), Morris et al. (2010, p. 100); see also Covin and Miles (1999, pp. 51–54)
- (opport* OR advant*) AND seek*	“Strategic entrepreneurship refers to firms’ pursuit of superior performance via simultaneous opportunity-seeking and advantage-seeking activities.”	Ketchen et al. (2007, p. 372); see also Hitt et al. (2001, p. 481), Ireland (2003, p. 963)
- entrep* AND act* AND (strat* OR advant* OR innov*)	“Strategic entrepreneurship is entrepreneurial action with a strategic perspective.” “Strategic entrepreneurship refers to entrepreneurial action within an existing	Hitt et al. (2001, p. 480); see also Ireland et al. (2003, p. 966)

	organization that manifests itself in organizational innovations ... adopted in the pursuit of competitive advantage.”	Verbeke et al. (2007, p. 587), Audretsch et al. (2009, p. 149), Morris et al. (2010, p. 99)
- ident* AND explo* AND (advant* OR opport*)	“Strategic entrepreneurship has been defined as involving the identification and exploitation of opportunities, while simultaneously creating and sustaining a competitive advantage.”	Phan et al. (2009, p. 199); see also Ireland (2003, p. 965)

Sources: Adapted from Pittaway and Cope (2007, p. 508) and Müller-Seitz (2012, p. 431).

1.7. Paper selection

Table 9. Criteria for article inclusion in the review spells out my inclusion criterion related to the *type* of study included in the systematic literature review.

Table 9. Criteria for article inclusion in the review

Criteria	Reason for adoption	SLRs that cite example applications
Theoretical and conceptual studies	Provide a broad theoretical foundation for the field of strategic entrepreneurship research.	Podsakoff et al. (2000), Breton-Miller et al. (2004), Wang and Chugh (2014), Ollier-Malaterre and Foucreault (2017), Danese et al. (2018)
Empirical studies	Summarize the evidence and key findings in SE research.	

Source: Developed exclusively for this research.

2. Exclusion criteria

2.1. Languages other than English

First, the research focuses solely on articles published in the English language, “the common language of academic publications” (Claus & Briscoe, 2009, p. 177).

2.2. Literature other than journal articles

Second, academic journal articles can be reasonably viewed as “certified” (Ramos-Rodríguez & Ruíz-Navarro, 2004, p. 982) and robust sources of knowledge. Hence other forms of literature – including essays, book reviews, books, book chapters, interviews, commentaries, abstracts, letters, editorials, opinion pieces, and non-academic journalistic articles (in newspapers, e.g.) – are excluded from the search.

2.3. Articles not focused on strategic entrepreneurship

Finally, I exclude articles – even when their title and abstract meet the inclusion criteria – that contain neither any sustained discussion of nor a deliberate focus on strategic entrepreneurship (cf. Wang & Chugh, 2014; see also Dada, 2016). Thus articles are excluded *unless* they address strategic entrepreneurship as a specific field of research.

3. Data extraction

Table 10. Data extraction: Variables, descriptions, and values describes the extraction and coding of data assembled to create the database on which this study relies. The table lists and describes each extracted variable and gives some possible values for many of them.

Table 10. Data extraction: Variables, descriptions, and values

Variable	Description	Possible values
Author name(s)	Authors of the academic article	Names
Authors' university appointment	Name of the university to which each author was appointed when the academic article was published	Names and descriptions of institutes
Country at time of publication	The country in which the focal author's appointed university is located	– Germany – United Kingdom – United States
Authors' / university team evaluation	Assessing whether the research was performed at one university or by authors organized through a network of universities	– Country based – Regionally based – Internationally based
Study title	The title of the academic article	
Journal title	The journal in which the article was published	
Journal volume	Volume of the journal in which the article was published	
Journal issue	Issue in the volume of the journal in which the article was published	
Year of publication	The year during which the article was published	
Research topic	Principal focus of the academic article	
Research type	Purpose of the research “Exploratory research is the investigation of a problem absent any prior knowledge about the phenomenon. Data collection tends to be flexible, unstructured, and	– Exploratory research

	<p>qualitative” (Aaker et al. 2007, p. 61).</p> <p>Articles are categorized as theory building when the “researchers sought to make sense of the observable world by conceptualizing, categorizing and ordering relationships among observed elements” (Andersen & Kragh 2010, p. 50).</p> <p>The theory-testing category includes studies that investigate the direction (positive or negative) and significance of a quantitative parameter estimate (Grewal et al. 2004, p. 523).</p>	<ul style="list-style-type: none"> – Theory building – Theory testing
Research questions	<p>Defined as “an outline of the information required to answer the management problem” (Aaker et al. 2007, p. 40).</p> <p>According to Tranfield et al. (2003, p. 215), “the research question is critical to systematic review as other aspects of the process flow from it.”</p>	
Research methods	<p>The tools applied to conduct research (Walliman 2011, p. 7; see also Johnson et al. 2017).</p> <p>Examples include case studies, conceptual approaches, the delphi-method, mathematical models, using secondary data (Williams & Shepherd 2017), and surveys.</p>	<ul style="list-style-type: none"> – Survey – Conceptual paper – Case study – Interview – Literature review – Secondary data – Mathematical model – Mixed
Type of data collected	<p>Defined in terms of the characteristics of data to be obtained: either <i>qualitative</i> (e.g., interviews, focus groups, case studies, expert opinions) or <i>quantitative</i> (e.g., mathematical models, confirmatory factor analysis, correlations, regression models, structural equation modeling). Fuzzy-set qualitative comparable analysis would reflect mixed types of data collection.</p>	<ul style="list-style-type: none"> – Qualitative – Quantitative – Mixed
Empirical/theoretical research	<p>Distinguishes research methods according to the distinct categories of empirical and theoretical (although <i>mixed</i> studies involve both aspects)</p>	<p><i>Empirical</i></p> <p>Case study Survey</p> <p><i>Theoretical</i></p> <p>Conceptual paper Literature review Mathematical model</p>

		<i>Mixed</i>
Unit of analysis	The entity being analyzed (Zheng 2010; Babbie 2013)	<ul style="list-style-type: none"> – Firm – Organization – Public organization – Individual – Industry – Country – Other forms (business model, opportunity-space, government)
Independent variable	The “cause” variable in a “cause and effect” relationship (Walliman 2011)	
Dependent variable	The “affected” variable in a “cause and effect” relationship (Walliman 2011)	
Moderator/mediator	A variable that influences a “cause and effect” relationship	
Single/multi-country	Indicates whether the research was implemented in one country or more than one country	<ul style="list-style-type: none"> – Single-country – Multi-country
Country of research	Country (or countries) in which the research was conducted	– Listing one or more countries
Region of research	Subject area of the articles as classified by (an adapted version of) the United Nations Geoscheme (United Nations 2019)	<ul style="list-style-type: none"> – World – Africa – Americas (North/Central/South) – Asia – Europe – Australasia (Oceania, Australia, New Zealand)
Sector of research	General sector in which the research was conducted	<ul style="list-style-type: none"> – Production† – Services – Production/services
Focus of research	Subsector of the article’s general research sector	<ul style="list-style-type: none"> – Textiles – Pharmaceuticals – Chemicals – Software industry – Dining – Automotive

		<ul style="list-style-type: none"> – Public administration – Mixed
Definition of strategic entrepreneurship	How the research paper defines SE	
Entrepreneurial context	Framework in which SE research is conducted	<ul style="list-style-type: none"> – Strategic entrepreneurship – Corporate entrepreneurship – Corporate venturing – Exploration/exploitation
Theoretical perspectives	<p>Theories that are applied in – and that serve as foundations for – the sample research papers.</p> <p>Section 3.1.3 of the main text gives explicit references to existing theories and describes their application. I followed Glaser and Strauss (1967), Sutton and Staw (1995), Suddaby (2006), Walsh et al. (2015), Nolan and Garavan (2016), and Danese et al. (2018) in “exploring the what, why, who, when, where and how questions” (Nolan & Garavan 2016, p. 89) when developing that section on theoretical perspectives.</p> <p>Theories that were in line with the definition (Glaser & Strauss 1967; Suddaby 2006; Walsh et al. 2015; Sheppard & Suddaby 2017) were considered for inclusion. A second inclusion prerequisite was that the respective theory was utilized as a “theoretical lens” for studying the article under investigation (Danese et al. 2018).</p>	<ul style="list-style-type: none"> – Resource-based view – Knowledge-based view – Behavioral theory of the firm – Transaction cost economics – Evolutionary economics – Contingency theory – Resource dependence theory – Population ecology
Key findings	Central outcomes of the research conducted	
Future research area	Location of research gaps that could be addressed to advance the field	<ul style="list-style-type: none"> – Theoretical perspective – Context of research – Countries of research – Sector of focus
Research gap	Specific content of a research gap to be filled	
Supporting evidence	Synthesis of findings in SE articles that confirm the existence of a particular research gap	

† Includes agriculture (e.g., Obeng et al., 2014).

Source: Adapted from Danese et al. (2018).

3.1. List of excluded articles

Table 11. List of excluded articles

No.	No.*	Reference	Rationale for exclusion
1	2	Folta, T. (2014). A Model Scholar and Preeminent Contributor to Our Understanding of Strategic Entrepreneurship: Arnold C. Cooper (1933–2012). <i>Strategic Entrepreneurship Journal</i> , 8(4), 349-360.	No substantial discussion on strategic entrepreneurship
2	7	Meyer, G. (2009). Commentary: On the Integration of Strategic Management and Entrepreneurship: Views of a Contrarian. <i>Entrepreneurship Theory and Practice</i> , 33(1), 341-351.	Commentary
3	8	Siegel, D. (2007). Comments on Entrepreneurial pursuits of self and collective interests and Strategic entrepreneurship, collaborative innovation, and wealth creation. <i>Strategic Entrepreneurship Journal</i> , 1(3-4), 387-389.	Comments
4	13	Kansikas, J., Laakkonen, A., Sarpo, V., & Kontinen, T. (2012). Entrepreneurial leadership and familiness as resources for strategic entrepreneurship. <i>International Journal of Entrepreneurial Behaviour & Research</i> , 18(2), 141-158.	No substantial discussion on strategic entrepreneurship
5	14	Dhliwayo, S. (2014). Entrepreneurship and competitive strategy: An integrative approach. <i>Journal of Entrepreneurship</i> , 23(1), 115-135.	No substantial discussion on strategic entrepreneurship
6	19	Dushnitsky, G., & Lavie, D. (2010). How alliance formation shapes corporate venture capital investment in the software industry: A resource-based perspective. <i>Strategic Entrepreneurship Journal</i> , 4(1), 22-48.	No substantial discussion on strategic entrepreneurship (once referenced in the abstract).
7	25	Hellmann, T., & Stern, S. (2009). Introduction to the Special Issue on Economics and Strategy of Entrepreneurship. <i>Journal of Economics & Management Strategy</i> , 18(3), 615-621.	Despite meeting all inclusion criteria, this discussion is on strategy and entrepreneurship, <i>not</i> on strategic entrepreneurship; also does not address exploration vs. exploitation or opportunity- vs. advantage-seeking behaviors
8	28	Baker, T., & Pollock, T. (2007). Making the marriage work: The benefits of strategy's takeover of entrepreneurship for strategic organization. <i>Strategic Organization</i> , 5(3), 297-312.	Essay
9	29	Schulze, W. (2007). Networks and strategic entrepreneurship: Comments on Comparing alliance network structure across industries: Observations and explanations and Strategic networks and entrepreneurial ventures. <i>Strategic Entrepreneurship Journal</i> , 1(3-4), 229-231.	Commentary

10	32	Anderson, B., Kreiser, P., Kuratko, D., Hornsby, J., & Eshima, Y. (2015). Reconceptualizing entrepreneurial orientation. <i>Strategic Management Journal</i> , 36(10), 1579-1596.	SE was referenced only in the abstract and once in the body of the article; thus, no substantive discussion of SE
11	34	Short, J., Moss, T., & Lumpkin, G. (2009). Research in social entrepreneurship: Past contributions and future opportunities. <i>Strategic Entrepreneurship Journal</i> , 3(2), 161-194.	Literature review focused on social entrepreneurship; strategic entrepreneurship not a key topic
12	37	Companys, Y., & McMullen, E. (2007). Strategic Entrepreneurs at Work: The Nature, Discovery, and Exploitation of Entrepreneurial Opportunities. <i>Small Business Economics</i> , 28(4), 301-322.	No relevant discussion of strategic entrepreneurship; main discussion concerns “entrepreneurial opportunities”
13	38	Messeghem, K. (2003). Strategic Entrepreneurship and Managerial Activities in SMEs. <i>International Small Business Journal</i> , 21(2), 197-212.	Strategic entrepreneurship mentioned only in the title; hence excluded owing to lack of substantial discussion
14	40	Chiang, C., & Yan, H.D. (2011). Entrepreneurship, Competitive Advantages, and the Growth of the Firm: The Case of Taiwan's Radio Control Model Corporation - Thunder Tiger. <i>Journal of Small Business & Entrepreneurship</i> , 24(4), 513-530.	Search term is present in abstract, but no discussion of strategic entrepreneurship (which is not mentioned even once)
15	42	Lumpkin, G., Steier, L., Wright, M., Lumpkin, Tom, & Wright, Michael. (2011). Strategic entrepreneurship in family business. <i>Strategic Entrepreneurship Journal</i> , 5(4), 285-306.	Excluded because it is the same article as no. 36 in Table 15
16	46	Greve, H., Hitt, M., Ireland, R., Camp, S., & Sexton, D. (2003). Strategic Entrepreneurship: Creating a New Mindset. <i>Administrative Science Quarterly</i> , 48(2), 348.	Book review
17	51	Shanley, M. (2007). Strategy versus entrepreneurship. <i>Strategic Entrepreneurship Journal</i> , 1(1-2), 49-51.	Comments
18	52	Ireland, R. D. (2007). Strategy vs. entrepreneurship. <i>Strategic Entrepreneurship Journal</i> , 1(1-2), 7-10.	Comments
19	57	Ketchen, D.J., Ireland, R.D., & Webb, J.W. (2014). Toward a Research Agenda for the Informal Economy: A Survey of the Strategic Entrepreneurship Journal's Editorial Board. <i>Strategic Entrepreneurship Journal</i> , 8(1), 95-100.	Meets all inclusion criteria but contains no substantive discussion of strategic entrepreneurship
20	60	Schendel, D., & Hitt, M. (2010). A note from the founding editors. <i>Strategic Entrepreneurship Journal</i> , 4(4), 269-270.	Note from the editors
21	61	Sharma, P. (2011). Strategic entrepreneurial behaviours in family businesses. <i>International Journal of Entrepreneurship & Innovation Management</i> , 13(1), 4-11.	No discussion of strategic entrepreneurship

22	68	Adams, P., Fontana, R., & Malerba, F. (2017). Bridging Knowledge Resources: The Location Choices of Spinouts. <i>Strategic Entrepreneurship Journal</i> , 11(2), 93-121.	Includes search terms but contains no discussion of strategic entrepreneurship
23	69	Agarwal, R, Dushnitsky, G, Lumpin, G T, Wright, M and Zott, C (2017) Strategic Entrepreneurship Journal at 10: retrospect and prospect. <i>Strategic Entrepreneurship Journal</i> , 11 (3). pp. 197-199.	Includes search terms but contains no substantive discussion of SE; article simply introduces “special issue” articles.
24	70	Agha M.H, & Gafforova E.B. (2019). Strategic entrepreneurship: A management method for improving the performance of small and medium-sized tourism enterprises (SMTEs). <i>Upravlenets</i> , 10(3), 25-35.	Not an ABS-ranked journal
25	71	Amankwah-Amoah, J. (2018). Revitalising serial entrepreneurship in sub-Saharan Africa: Insights from a newly emerging economy. <i>Technology Analysis & Strategic Management</i> , 30(5), 499-511.	Includes search terms but contains no discussion of strategic entrepreneurship
26	74	Ching, K. (2019). A test of strategic optimality theory: Evidence from the social networking industry. <i>Innovation</i> , 21(2), 359-378.	Includes search terms but contains no discussion of strategic entrepreneurship
27	75	Datta, A., Sahaym, A., & Brooks, S. (2019). Unpacking the antecedents of crowdfunding campaign’s success: The effects of social media and innovation orientation. <i>Journal of Small Business Management</i> , 57(S2), 462-488.	Includes search terms but contains no discussion of strategic entrepreneurship
28	77	Linda Höglund, & Maria Mårtensson. (2019). Entrepreneurship as a Strategic Management Tool for Renewal—The Case of the Swedish Public Employment Service. <i>Administrative Sciences</i> , 9(4), 76.	Not an ABS-ranked journal
29	78	Iyortsuun, A. (2017). An empirical analysis of the effect of business incubation process on firm performance in Nigeria. <i>Journal of Small Business & Entrepreneurship</i> , 29(6), 433-459.	Includes search terms but contains no discussion of strategic entrepreneurship
30	80	Lin, D., Zheng, W., Lu, J., Liu, X., & Wright, M. (2019). Forgotten or not? Home country embeddedness and returnee entrepreneurship. <i>Journal of World Business</i> , 54(1), 1-13.	Includes search terms but contains no discussion of SE, to which the main text refers only twice
31	84	Renato, P., & Naguib, O. (2016). Strategic entrepreneurship and dynamic flexibility: Towards an integrative framework. <i>International Journal of Organizational Leadership</i> , 5(4), 307-312.	Not an ABS-ranked journal.
32	85	Singh, R. (2017). Strategic entrepreneurial finance: From value creation to realization. <i>Delhi Business Review</i> , 18(1), 123-124.	Book review

33	86	Sun, S., Xiao, J., Zhang, Y., & Zhao, X. (2018). Building business models through simple rules. <i>Multinational Business Review</i> , 26(4), 361-378.	Includes search terms but contains no discussion of SE, to which the main text refers only twice
34	92	Alvi, F., & Carsrud, A. (2017). Strategic entrepreneurial agency in emerging markets. <i>The Journal of Entrepreneurship</i> , 26(1), 77-101.	Includes search terms but contains no discussion of SE; the focus is on strategic entrepreneurial agency exploring “individual agency of entrepreneurial managers ... responding to institutional context” (p. 79)
35	93	Bosma, N., Content, J., Sanders, M., & Stam, E. (2018). Institutions, entrepreneurship, and economic growth in Europe. <i>Small Business Economics</i> , 51(2), 483-499.	Includes search terms but contains no discussion of SE, to which the main text refers only twice
36	96	Khraisha, T. (2020). Complex economic problems and fitness landscapes: Assessment and methodological perspectives. <i>Structural Change and Economic Dynamics</i> , 52, 390-407.	Includes search terms but contains no discussion of SE; refers (once) to the “SEJ”
37	98	Sahaym, A., Datta, A., & Brooks, S. (2019). Crowdfunding success through social media: Going beyond entrepreneurial orientation in the context of small and medium-sized enterprises. <i>Journal of Business Research</i> , 2019.	Includes search terms but contains no discussion of SE; main topic is “crowdfunding”
38	109	Kibeshi Kiyabo, & Nsubili Isaga. (2019). Strategic entrepreneurship, competitive advantage, and SMEs’ performance in the welding industry in Tanzania. <i>Journal of Global Entrepreneurship Research</i> , 9(1), 1-23.	Not an ABS-ranked journal in 2015
39	110	Siddiqui, S., & Jan, S. (2019). Developing and Validating a Scale to Assess Strategic Entrepreneurship Among Women: A Case of Jammu and Kashmir in India. <i>Global Business Review</i> , 20(2), 387-404.	Not an ABS-ranked journal in 2015
40	111	Shirokova, G., Ivvonen, L., & Gafforova, E. (2019). Strategic entrepreneurship in Russia during economic crisis. <i>Foresight and STI Governance</i> , 13(3), 62-76.	Not an ABS-ranked journal
41	112	Asheghi-Oskooee, H., & Mazloomi, N. (2018). A strategic entrepreneurship model based on corporate governance in the Iranian manufacturing enterprises. <i>International Journal of Economics, Management and Accounting</i> , 26(1), 25-56.	Not an ABS-ranked journal
42	113	Bayon, M., Lafuente, E., & Vaillant, Y. (2016). Human capital and the decision to exploit innovative opportunity. <i>Management Decision</i> , 54(7), 1615-1632.	Includes search terms but contains no discussion of SE, to which the main text refers only once

43	114	Minniti, M. (2016). The foundational contribution to entrepreneurship research of William J. Baumol. <i>Strategic Entrepreneurship Journal</i> , 10(2), 214-228.	Includes search terms but contains no discussion of strategic entrepreneurship
44	115	Stokvik, H., Adriaenssen, J.D., & Johannessen, J.A. (2016). Strategic entrepreneurship and intrapreneurial intensity. <i>Problems and Perspectives in Management</i> , 14(2), 348-359.	Not an ABS-ranked journal

* Numbering in the second column references the list of all articles (Table 15. List of all articles).

Source: Developed for this research.

3.2. List of articles meeting exclusion criteria but with substantial discussion of SE

Table 12. Articles with substantial discussion of SE that would otherwise have been excluded

	Reference	Rationale for inclusion
1	Lumpkin, G., Steier, L., Wright, M., Lumpkin, Tom, & Wright, Michael. (2011). Strategic entrepreneurship in family business. <i>Strategic Entrepreneurship Journal</i> , 5(4), 285-306.	On page 286, the authors describe their publication as an “essay”. However, the research article includes substantial discussion of SE and family business, developing a new framework and establishing a research agenda.
2	Miller, D., & Le Breton–Miller, I. (2017). Sources of Entrepreneurial Courage and Imagination: Three Perspectives, Three Contexts. <i>Entrepreneurship Theory and Practice</i> , 41(5), 667-675.	On page 2, the authors describe their publication as an “essay”. However, the research article includes substantial discussion of SE in mature companies with complex bureaucracies. They also distinguish between implementation in start-ups, entrepreneurial orientation in high-tech companies, and SE in complex bureaucracies.
3	Simsek, Z., Heavey, C., & Fox, B. (2017). (Meta-)framing strategic entrepreneurship. <i>Strategic Organization</i> , 15(4), 504-518.	The abstract describes this publication as an “essay”. However, the article displays all the qualitative characteristics of a conceptual paper and includes substantial discussion of strategic entrepreneurship.

Source: Developed for this research.

3.3. Additional articles considered after checking references

Table 13. Articles considered after references check

	Article	Referenced article considered for inclusion	Description and determination/criterion
1	Chiang, C., & Yan, H. (2011). Entrepreneurship, Competitive Advantages, and the Growth of the Firm: The Case of Taiwan's Radio Control Model Corporation - Thunder Tiger. <i>Journal of Small Business and Entrepreneurship</i> , 24(4), 513-530,603-604.	Yan, H.D., and Hu, M.C. (2008). "Strategic Entrepreneurship and the Growth of the Firm: The Case of Taiwan's Bicycle Industry." <i>Global Business and Economics Review</i> 10(1), 11-34.	Included in the SLR
2	Kyrgidou, L., & Petridou, E. (2011). The effect of competence exploration and competence exploitation on strategic entrepreneurship. <i>Technology Analysis & Strategic Management</i> , 23(6), 697-713.	Luke, B., & Verreyne, M.L. (2006). Exploring strategic entrepreneurship in the public sector. <i>Qualitative Research in Accounting & Management</i> , 3(1), 4-26.	Included in the SLR
3	Kraus, S. H., Kauranen, I., & Reschke, C. (2011). Identification of domains for a new conceptual model of strategic entrepreneurship using the configuration approach. <i>Management Research Review</i> , 34(1), 58-74.	Grand, S., & Fust, A. (2011). „Unternehmerische Strategien“ versus „Strategic Entrepreneurship“: Zukunftsperspektiven für die unternehmerisch-strategische Forschung und Praxis. <i>ZfKE – Zeitschrift für KMU und Entrepreneurship</i> 59(3), 185-202.	Excluded because journal is not listed in ABS
4	Shirokova, G., Vega, G., & Sokolova, L. (2013). Performance of Russian SMEs: Exploration, exploitation and strategic entrepreneurship. <i>Critical Perspectives on International Business</i> , 9(1/2), 173-203.	Foss, N.J. and Lyngsie, J. (2011), The emerging strategic entrepreneurship field: origins, key tenets and research gaps. <i>SMG Working Paper No. 7/2011</i> , Copenhagen Business School, available at: www.cbs.dk/smg .	Excluded because article is a working paper
5	Webb, Ketchen, & Ireland. (2010). Strategic entrepreneurship within family-controlled firms: Opportunities and challenges. <i>Journal of Family Business Strategy</i> , 1(2), 67-77.	He, Z.L., & Wong, P.K. (2004). Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis. <i>Organization Science</i> (Providence, R.I.), 15(4), 481-494.	Contains no substantive discussion of SE

6	Kyrgidou, L., & Petridou, E. (2011). The effect of competence exploration and competence exploitation on strategic entrepreneurship. <i>Technology Analysis & Strategic Management</i> , 23(6), 697-713.	Lavie, D., and L. Rosenkopf. (2006). Balancing exploration and exploitation in alliance formation. <i>Academy of Management Journal</i> , 49, (4), 797–818.	Contains no substantive discussion of SE
7	Hitt, M., Ireland, R., Camp, S., & Sexton, D. (2001). Strategic entrepreneurship: Entrepreneurial strategies for wealth creation. <i>Strategic Management Journal</i> , 22(6-7), 479-491.	Ireland R.D., Hitt M.A., Camp S.M., Sexton D.L. (2001). Integrating entrepreneurship actions and strategic management actions to create firm wealth. <i>Academy of Management Executive</i> 15(1): 49–63.	Included in the SLR (followed by Academy of Management Perspectives)

Source: Developed for this research.

3.4. Additional articles included after Google Scholar check

Table 14. Articles included after Google Scholar check

	Google Scholar article	Rationale for inclusion
1	Mathews, J. A. (2010). Lachmannian Insights into Strategic Entrepreneurship: Resources, Activities and Routines in a Disequilibrium World. <i>Organization Studies</i> , 31(2), 219-244.	Matching inclusion criteria
2	Carlbäck, M. (2012). Strategic Entrepreneurship in the Hotel Industry: The Role of Chain Affiliation. <i>Scandinavian Journal of Hospitality and Tourism</i> , 12(4), 349-372.	Matching inclusion criteria
3	Madhok, A., & Keyhani, M. (2012). Acquisitions as entrepreneurship: Asymmetries, opportunities, and the internationalization of multinationals from emerging economies. <i>Global Strategy Journal</i> , 2(1), 26-40.	Matching inclusion criteria

Note: The 2000–2015 time frame was searched on 1 July 2019; the 2016–2020 time frame was searched between 29 February and 23 March 2020.

Source: Developed for this study.

3.5. List of all articles

Table 15. List of all articles

No.	In	Out	Reference
1 (check)	✓		Ireland, R.D., Hitt, M., & Sirmon, D. (2003). A model of strategic entrepreneurship: The construct and its dimensions. <i>Journal of Management</i> , 29(6), 963-989.
2		✓	Folta, T. (2014). A model scholar and preeminent contributor to our understanding of strategic entrepreneurship: Arnold C. Cooper (1933–2012). <i>Strategic Entrepreneurship Journal</i> , 8(4), 349-360.
3	✓		Schindehutte, M., & Morris, M. H. (2009). Advancing strategic entrepreneurship research: The role of complexity science in shifting the paradigm. <i>Entrepreneurship: Theory and Practice</i> , 33(1), 241-276.
4	✓		Audretsch, D., Lehmann, E., & Plummer, L. (2009). Agency and governance in strategic entrepreneurship. <i>Entrepreneurship Theory and Practice</i> , 33(1), 149-166.
5	✓		Meuleman, M., Amess, K., Wright, M., & Scholes, L. (2009). Agency, strategic entrepreneurship, and the performance of private equity-backed buyouts. <i>Entrepreneurship Theory and Practice</i> , 33(1), 213-239.
6	✓		Klein, P., Mahoney, J., McGahan, A., & Pitelis, C. (2013). Capabilities and strategic entrepreneurship in public organizations. <i>Strategic Entrepreneurship Journal</i> , 7(1), 70-91.
7		✓	Meyer, G. (2009). Commentary: On the integration of strategic management and entrepreneurship: Views of a contrarian. <i>Entrepreneurship Theory and Practice</i> , 33(1), 341-351.
8		✓	Siegel, D. (2007). Comments on entrepreneurial pursuits of self and collective interests and strategic entrepreneurship, collaborative innovation, and wealth creation. <i>Strategic Entrepreneurship Journal</i> , 1(3-4), 387-389.
9 (check)	✓		Burgelman, Robert A, & Grove, Andrew S. (2007). Cross-boundary disruptors: Powerful interindustry entrepreneurial change agents. <i>Strategic Entrepreneurship Journal</i> , 1(3-4), 315-327.
10	✓		Ireland, R.D.& Webb, J.W. (2009). Crossing the great divide of strategic entrepreneurship: Transitioning between exploration and exploitation. <i>Business Horizons</i> , 52(5), 469-479.
11	✓		Luke, B., & Kearins, K. (2011). Developing a conceptual framework of strategic entrepreneurship. <i>International Journal of Entrepreneurial Behaviour & Research</i> , 17(3), 314-337.
12	✓		Yiu, D., Hoskisson, R., Bruton, G., & Lu, Y. (2014). Dueling institutional logics and the effect on strategic entrepreneurship in Chinese business groups. <i>Strategic Entrepreneurship Journal</i> , 8(3), 195-213.
13		✓	Kansikas, J., Laakkonen, A., Sarpo, V., & Kontinen, T. (2012). Entrepreneurial leadership and familiness as resources for strategic entrepreneurship. <i>International Journal of Entrepreneurial Behaviour & Research</i> , 18(2), 141-158.

14		✓	Dhliwayo, S. (2014). Entrepreneurship and competitive strategy: An integrative approach. <i>The Journal of Entrepreneurship</i> , 23(1), 115-135.
15	✓		Bruton, G., Filatotchev, I., Si, S., & Wright, M. (2013). Entrepreneurship and strategy in emerging economies. <i>Strategic Entrepreneurship Journal</i> , 7(3), 169-180.
16	✓		Cunha, M. (2007). Entrepreneurship as Decision Making: Rational, intuitive and improvisational approaches. <i>Journal of Enterprising Culture</i> , 15(1), 1-20.
17 (check)	✓		Sirén, C., Kohtamäki, M., & Kuckertz, A. (2012). Exploration and exploitation strategies, profit performance, and the mediating role of strategic learning: Escaping the exploitation trap. <i>Strategic Entrepreneurship Journal</i> , 6(1), 18-41.
18 (check)	✓		Hitt, M., Ireland, R.D., Camp, S., & Sexton, D. (2001). Strategic entrepreneurship: Entrepreneurial strategies for wealth creation. <i>Strategic Management Journal</i> , 22(6-7), 479-491.
19		✓	Dushnitsky, G., & Lavie, D. (2010). How alliance formation shapes corporate venture capital investment in the software industry: A resource-based perspective. <i>Strategic Entrepreneurship Journal</i> , 4(1), 22-48.
20	✓		Bjørnskov, C., & Foss, N. (2013). How strategic entrepreneurship and the institutional context drive economic growth. <i>Strategic Entrepreneurship Journal</i> , 7(1), 50-69.
21	✓		Liu, X., Wright, M., Filatotchev, I., Dai, O., & Lu, J. (2010). Human mobility and international knowledge spillovers: Evidence from high-tech small and medium enterprises in an emerging market. <i>Strategic Entrepreneurship Journal</i> , 4(4), 340-355.
22	✓		Kraus, S. H., Kauranen, I., & Reschke, C. (2011). Identification of domains for a new conceptual model of strategic entrepreneurship using the configuration approach. <i>Management Research Review</i> , 34(1), 58-74.
23	✓		Pearce, A., & Quan, R. (2015). International staff mobility in higher education: To what extent could an intra-European entrepreneurial approach be applied to Sino-CEE initiatives? <i>Journal of East European Management Studies</i> , 20(2), 226-254.
24	✓		Demil, B., Lecocq, X., Ricart, J., & Zott, C. (2015). Introduction to the SEJ special issue on business models: Business models within the domain of strategic entrepreneurship. <i>Strategic Entrepreneurship Journal</i> , 9(1), 1-11.
25		✓	Hellmann, T., & Stern, S. (2009). Introduction to the special issue on economics and strategy of entrepreneurship. <i>Journal of Economics & Management Strategy</i> , 18(3), 615-621.
26 (check)	✓		Boone, C., Wezel, F., & Witteloostuijn, A. (2013). Joining the pack or going solo? A dynamic theory at new firm positioning. <i>Journal of Business Venturing</i> , 28(4), 511-527.
27	✓		Agarwal, R., Audretsch, D., & Sarkar, M. (2010). Knowledge spillovers and strategic entrepreneurship. <i>Strategic Entrepreneurship Journal</i> , 4(4), 271-283.
28		✓	Baker, T., & Pollock, T. (2007). Making the marriage work: The benefits of strategy's takeover of entrepreneurship for strategic organization. <i>Strategic Organization</i> , 5(3), 297-312.

29		✓	Schulze, W. (2007). Networks and strategic entrepreneurship: Comments on comparing alliance network structure across industries: Observations and explanations and strategic networks and entrepreneurial ventures. <i>Strategic Entrepreneurship Journal</i> , 1(3-4), 229-231.
30	✓		Steffens, P., Davidsson, P., & Fitzsimmons, J. (2009). Performance configurations over time: Implications for growth- and profit-oriented strategies. <i>Entrepreneurship Theory and Practice</i> , 33(1), 125-148.
31	✓		Shirokova, G., Vega, G., & Sokolova, L. (2013). Performance of Russian SMEs: Exploration, exploitation and strategic entrepreneurship. <i>Critical Perspectives on International Business</i> , 9(1/2), 173-203.
32		✓	Anderson, B., Kreiser, P., Kuratko, D., Hornsby, J., & Eshima, Y. (2015). Reconceptualizing entrepreneurial orientation. <i>Strategic Management Journal</i> , 36(10), 1579-1596.
33	✓		Levie, J., & Autio, E. (2011). Regulatory burden, rule of law, and entry of strategic entrepreneurs: An international panel study. <i>Journal of Management Studies</i> , 48(6), 1392-1419.
34		✓	Short, J., Moss, T., & Lumpkin, G. (2009). Research in social entrepreneurship: Past contributions and future opportunities. <i>Strategic Entrepreneurship Journal</i> , 3(2), 161-194.
35 (check)	✓		Kotha, S. (2010). Spillovers, spill-ins, and strategic entrepreneurship: America's first commercial jet airplane and Boeing's ascendancy in commercial aviation. <i>Strategic Entrepreneurship Journal</i> , 4(4), 284-306.
36	✓		Lumpkin, G., Steier, L., Wright, M., Lumpkin, Tom, & Wright, Michael. (2011). Strategic entrepreneurship in family business. <i>Strategic Entrepreneurship Journal</i> , 5(4), 285-306.
37		✓	Companys, Y., & McMullen, E. (2007). Strategic entrepreneurs at work: The nature, discovery, and exploitation of entrepreneurial opportunities. <i>Small Business Economics</i> , 28(4), 301-322.
38		✓	Messeghem, K. (2003). Strategic entrepreneurship and managerial activities in SMEs. <i>International Small Business Journal</i> , 21(2), 197-212.
39	✓		Obeng, B., Robson, P., & Haugh, H. (2014). Strategic entrepreneurship and small firm growth in Ghana. <i>International Small Business Journal</i> , 32(5), 501-524.
40		✓	Chiang, C., & Yan, H. (2011). Entrepreneurship, competitive advantages, and the growth of the firm: The case of Taiwan's radio control model corporation - Thunder Tiger. <i>Journal of Small Business and Entrepreneurship</i> , 24(4), 513-530,603-604.
41	✓		Patzelt, H., & Shepherd, D. (2009). Strategic entrepreneurship at universities: academic entrepreneurs' assessment of policy programs. <i>Entrepreneurship Theory and Practice</i> , 33(1), 319-340.
42		✓	Lumpkin, G., Steier, L., Wright, M., Lumpkin, Tom, & Wright, Michael. (2011). Strategic entrepreneurship in family business. <i>Strategic Entrepreneurship Journal</i> , 5(4), 285-306.
43	✓		Webb, J.W., Ketchen, D.J., & Ireland, R.D. (2010). Strategic entrepreneurship within family-controlled firms: Opportunities and challenges. <i>Journal of Family Business Strategy</i> , 1(2), 67-77.

44	✓		Ketchen, D., Ireland, R.D., & Snow, C. (2007). Strategic entrepreneurship, collaborative innovation, and wealth creation. <i>Strategic Entrepreneurship Journal</i> , 1(3-4), 371-385.
45	✓		Wright, M., Clarysse, B., & Mosey, S. (2012). Strategic entrepreneurship, resource orchestration and growing spin-offs from universities. <i>Technology Analysis & Strategic Management</i> , 24(9), 911-927.
46		✓	Greve, H. (2003). Strategic Entrepreneurship: Creating a new mindset. <i>Administrative Science Quarterly</i> , 48(2), 348-351.
47 (check)	✓		Ireland, R.D., & Webb, J.W. (2007). Strategic entrepreneurship: Creating competitive advantage through streams of innovation. <i>Business Horizons</i> , 50(1), 49-59.
48 (check)	✓		Hitt, M., Ireland, R., Sirmon, D., & Trahms, C. (2011). Strategic entrepreneurship: creating value for individuals, organizations, and society. <i>The Academy of Management Perspectives</i> , 25(2), 57-75.
49 (check)	✓		Kuratko, D., & Audretsch, D. (2009). Strategic entrepreneurship: Exploring different perspectives of an emerging concept. <i>Entrepreneurship Theory and Practice</i> , 33(1), 1-17.
50 (check)	✓		Kyrgidou, L. P., & Hughes, M. (2010). Strategic entrepreneurship: Origins, core elements and research directions. <i>European Business Review</i> , 22(1), 43-63.
51		✓	Shanley, M. (2007). Strategy versus entrepreneurship. <i>Strategic Entrepreneurship Journal</i> , 1(1-2), 49-51.
52		✓	Ireland, R. (2007). Strategy vs. entrepreneurship. <i>Strategic Entrepreneurship Journal</i> , 1(1-2), 7-10.
53	✓		Sun, Z. (2015). Technology innovation and entrepreneurial state: The development of China's high-speed rail industry. <i>Technology Analysis & Strategic Management</i> , 27(6), 1-14.
54	✓		Kyrgidou, L., & Petridou, E. (2011). The effect of competence exploration and competence exploitation on strategic entrepreneurship. <i>Technology Analysis & Strategic Management</i> , 23(6), 697-713.
55 (check)	✓		Monsen, E., & Boss, W.R. (2009). The impact of strategic entrepreneurship inside the organization: Examining job stress and employee retention. <i>Entrepreneurship Theory and Practice</i> , 33(1), 71-104.
56	✓		Mihalache, O., Jansen, J., Van den Bosch, F., & Volberda, H. (2014). Top management team shared leadership and organizational ambidexterity: A moderated mediation framework. <i>Strategic Entrepreneurship Journal</i> , 8(2), 128-148.
57		✓	Ketchen, D., Ireland, R.D., & Webb, J. (2014). Toward a research agenda for the informal economy: A survey of the Strategic Entrepreneurship Journal's editorial board. <i>Strategic Entrepreneurship Journal</i> , 8(1), 95-100.
58	✓		Margarietha Johanna de Villiers-Scheepers. (2012). Antecedents of strategic corporate entrepreneurship. <i>European Business Review</i> , 24(5), 400-424.
59	✓		Agarwal, R., Audretsch, D., & Sarkar, M. (2007). The process of creative construction: Knowledge spillovers, entrepreneurship, and economic growth. <i>Strategic Entrepreneurship Journal</i> , 1(3-4), 263-286.
60		✓	Schendel, D., & Hitt, M. (2010). A note from the founding editors. <i>Strategic Entrepreneurship Journal</i> , 4(4), 269-270.

61		✓	Sharma P. (2011). Strategic entrepreneurial behaviours in family businesses. <i>International Journal of Entrepreneurship & Innovation Management</i> , 13(1), 4-11.
62 (check)	✓		Yan, H.D., and Hu, M.C. (2008). Strategic entrepreneurship and the growth of the firm: The case of Taiwan's bicycle industry. <i>Global Business and Economics Review</i> , 10(1), 11-34.
63	✓		Luke, B., & Verreynne, M.L. (2006). Exploring strategic entrepreneurship in the public sector. <i>Qualitative Research in Accounting & Management</i> , 3(1), 4-26.
64	✓		Ireland R.D., Hitt M.A., Camp S.M., Sexton D.L. 2001. Integrating entrepreneurship actions and strategic management actions to create firm wealth. <i>Academy of Management Executive</i> 15(1), 49–63.
65 (check)	✓		Mathews, J.A. Lachmannian insights into strategic entrepreneurship: Resources, activities and routines in a disequilibrium world. <i>Organization Studies</i> , 31(2) (2010), 219-244.
66	✓		Carlbäck, M. (2012). Strategic Entrepreneurship in the Hotel Industry: The Role of Chain Affiliation. <i>Scandinavian Journal of Hospitality and Tourism</i> , 12(4), 349-372.
67	✓		Madhok, A. & Keyhani, M. (2012). Acquisitions as entrepreneurship: asymmetries, opportunities, and the internationalization of multinationals from emerging economies. <i>Global Strategy Journal</i> 2(1), 26-40.
68		✓	Adams, P., Fontana, R., & Malerba, F. (2017). Bridging Knowledge Resources: The Location Choices of Spinouts. <i>Strategic Entrepreneurship Journal</i> , 11(2), 93-121.
69		✓	Agarwal, R., Dushnitsky, G., Lumpkin, G., Wright, M., & Zott, C. (2017). Strategic Entrepreneurship Journal at 10: Retrospect and Prospect. <i>Strategic Entrepreneurship Journal</i> , 11(3), 197-199.
70		✓	Agha M.H, & Gafforova E.B. (2019). Strategic entrepreneurship: A management method for improving the performance of small and medium-sized tourism enterprises (SMTEs). <i>Upravlenets</i> , 10(3), 25-35.
71		✓	Amankwah-Amoah, J. (2018). Revitalising serial entrepreneurship in sub-Saharan Africa: Insights from a newly emerging economy. <i>Technology Analysis & Strategic Management</i> , 30(5), 499-511.
72	✓		Autio, E. (2017). Strategic Entrepreneurial Internationalization: A Normative Framework. <i>Strategic Entrepreneurship Journal</i> , 11(3), 211-227.
73	✓		Boudreaux, C. J. (2019). The importance of industry to strategic entrepreneurship: Evidence from the Kauffman firm survey. <i>Journal of Industry, Competition and Trade</i> , 20(1), 93-114.
74		✓	Ching, K. (2019). A test of strategic optimality theory: Evidence from the social networking industry. <i>Innovation</i> , 21(2), 359-378.
75		✓	Datta, A., Sahaym, A., & Brooks, S. (2019). Unpacking the antecedents of crowdfunding campaign's success: The effects of social media and innovation orientation. <i>Journal of Small Business Management</i> , 57(S2), 462-488.
76	✓		Höglund, L., Holmgren Caicedo, M., & Mårtensson, M. (2018). A balance of strategic management and entrepreneurship practices—The renewal journey of the Swedish Public Employment Service. <i>Financial Accountability & Management</i> , 34(4), 354-366.

77		✓	Höglund, L., & Mårtensson, M. (2019). Entrepreneurship as a Strategic Management Tool for Renewal—The Case of the Swedish Public Employment Service. <i>Administrative Sciences</i> , 9(4), 76.
78		✓	Iyortsuun, A. (2017). An empirical analysis of the effect of business incubation process on firm performance in Nigeria. <i>Journal of Small Business & Entrepreneurship</i> , 29(6), 433-459.
79 (check)	✓		Keyhani, M. (2019). Computational modeling of entrepreneurship grounded in Austrian economics: Insights for strategic entrepreneurship and the opportunity debate. <i>Strategic Entrepreneurship Journal</i> , 13(2), 221-240.
80		✓	Lin, D., Zheng, W., Lu, J., Liu, X., & Wright, M. (2019). Forgotten or not? Home country embeddedness and returnee entrepreneurship. <i>Journal of World Business</i> , 54(1), 1-13.
81	✓		Liu, T., Lo, S., & Dai, C. (2018). Expanding the two wings of social capital for value creation: Strategic entrepreneurship of HTC, 1997-2008. <i>Technology Analysis & Strategic Management</i> , 30(5), 512-523.
82 (check)	✓		McKenny, A., Short, J., Ketchen, D., Payne, G., & Moss, T. (2018). Strategic entrepreneurial orientation: Configurations, performance, and the effects of industry and time. <i>Strategic Entrepreneurship Journal</i> , 12(4), 504-521.
83	✓		Miller, D., & Le Breton–Miller, I. (2017). Sources of Entrepreneurial Courage and Imagination: Three Perspectives, Three Contexts. <i>Entrepreneurship Theory and Practice</i> , 41(5), 667-675.
84		✓	Renato, P., & Naguib, O. (2016). Strategic entrepreneurship and dynamic flexibility: Towards an integrative framework. <i>International Journal of Organizational Leadership</i> , 5(4), 307-312.
85		✓	Singh, R. (2017). Strategic entrepreneurial finance: From value creation to realization. <i>Delhi Business Review</i> , 18(1), 123-124.
86		✓	Sun, S., Xiao, J., Zhang, Y., & Zhao, X. (2018). Building business models through simple rules. <i>Multinational Business Review</i> , 26(4), 361-378.
87	✓		Tipu, S., & Fantazy, K. (2018). Exploring the relationships of strategic entrepreneurship and social capital to sustainable supply chain management and organizational performance. <i>International Journal of Productivity and Performance Management</i> , 67(9), 2046-2070.
88 (check)	✓		Westgren, R., & Wuebker, R. (2019). An economic model of strategic entrepreneurship. <i>Strategic Entrepreneurship Journal</i> , 13(4), 507-528.
89	✓		Withers, M., Ireland, R., Miller, D., Harrison, J., & Boss, D. (2018). Competitive landscape shifts: The influence of strategic entrepreneurship on shifts in market commonality. <i>Academy of Management Review</i> , 43(3), 349-370.
90 (check)	✓		Mazzei, M. (2018). Strategic entrepreneurship: Content, process, context, and outcomes. <i>International Entrepreneurship and Management Journal</i> , 14(3), 657-670.
91	✓		Tavassoli, S., Bengtsson, L., & Karlsson, C. (2017). Strategic entrepreneurship and knowledge spillovers: Spatial and aspatial perspectives. <i>International Entrepreneurship and Management Journal</i> , 13(1), 233-249.
92		✓	Alvi, F., & Carsrud, A. (2017). Strategic entrepreneurial agency in emerging markets. <i>The Journal of Entrepreneurship</i> , 26(1), 77-101.

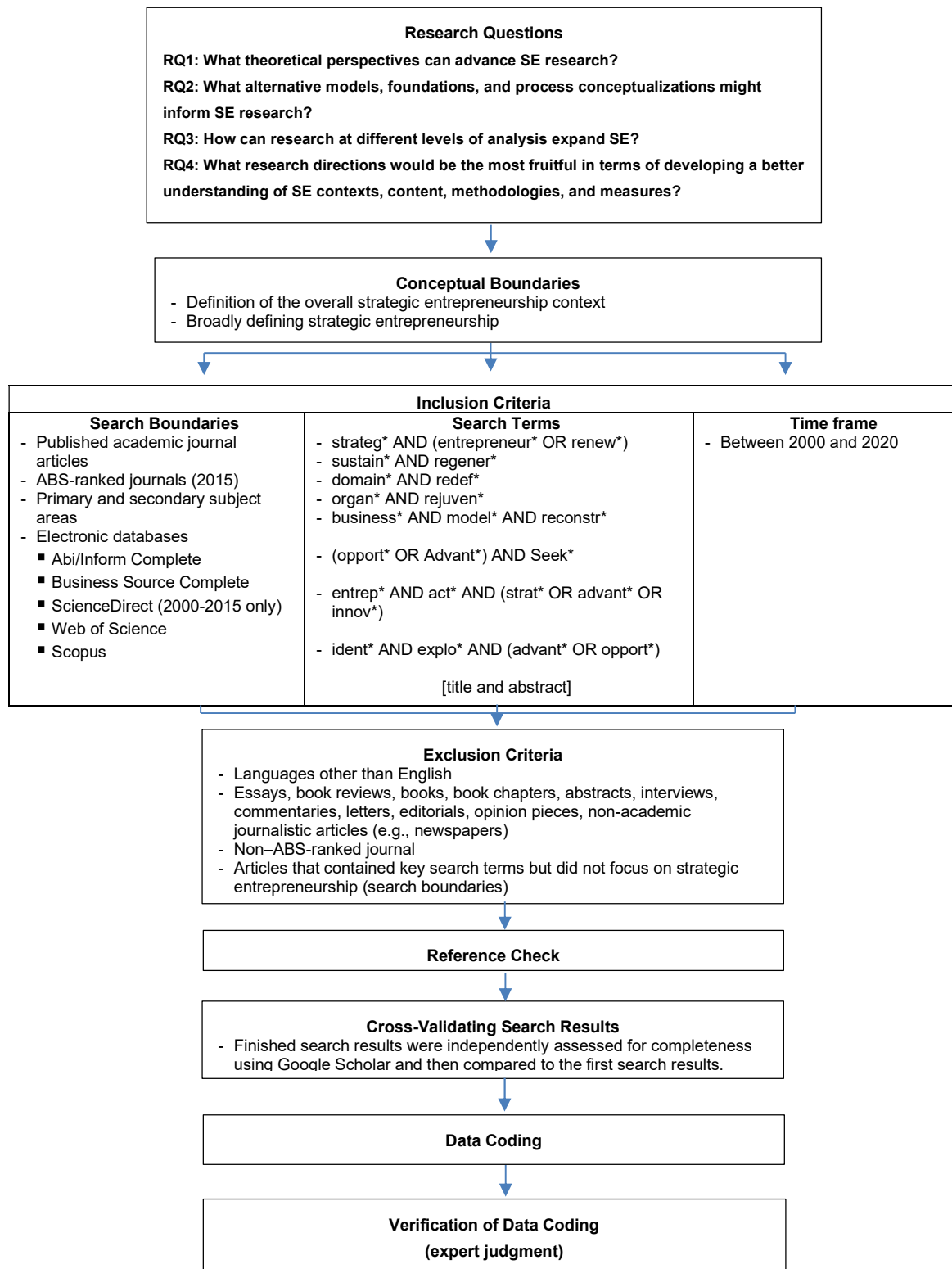
93		✓	Bosma, N., Content, J., Sanders, M., & Stam, E. (2018). Institutions, entrepreneurship, and economic growth in Europe. <i>Small Business Economics</i> , 51(2), 483-499.
94	✓		Ferreira, J., Fernandes, J., & Ratten, M. (2016). A co-citation bibliometric analysis of strategic management research. <i>Scientometrics</i> , 109(1), 1-32.
95	✓		Gölgeci, I., Larimo, J., & Arslan, A. (2017). Institutions and dynamic capabilities: Theoretical insights and research agenda for strategic entrepreneurship. <i>Scandinavian Journal of Management</i> , 33(4), 243-252.
96		✓	Khraisha, T. (2020). Complex economic problems and fitness landscapes: Assessment and methodological perspectives. <i>Structural Change and Economic Dynamics</i> , 52, 390-407.
97 (check)	✓		Mazzei, M., Ketchen, J., & Shook, D. (2017). Understanding strategic entrepreneurship: A “theoretical toolbox” approach. <i>International Entrepreneurship and Management Journal</i> , 13(2), 631-663.
98		✓	Sahaym, A., Datta, A., & Brooks, S. (2019). Crowdfunding success through social media: Going beyond entrepreneurial orientation in the context of small and medium-sized enterprises. <i>Journal of Business Research</i> , 2019.
99	✓		Sarkar, S. (2017). Uncorking knowledge- purposeful spillovers as a strategic tool for capability enhancement in the cork industry. <i>International Entrepreneurship and Management Journal</i> , 13(1), 251-275.
100	✓		Utoyo, I., Fontana, A. & Satrya, A. (2019). The role of entrepreneurial leadership and configuring core innovation capabilities to enhance innovation performance in a disruptive environment. <i>International Journal of Innovation Management</i> , 2019
101	✓		Zhao, E. Y., Ishihara, M. D., & Jennings, P. (2020). Strategic entrepreneurship's dynamic tensions: Converging (diverging) effects of experience and networks on market entry timing and entrant performance. <i>Journal of Business Venturing</i> , 35(2),1-23.
102	✓		Anderson, B., Eshima, Y., & Hornsby, J. (2019). Strategic entrepreneurial behaviors: Construct and scale development. <i>Strategic Entrepreneurship Journal</i> , 13(2), 199-220.
103	✓		Paek, B., & Lee, H. (2018). Strategic entrepreneurship and competitive advantage of established firms: Evidence from the digital TV industry. <i>The International Entrepreneurship and Management Journal</i> , 14(4), 883-925.
104 (check)	✓		Cristo-Andrade, S. J., & Ferreira, J. (2020). Knowledge spillovers and strategic entrepreneurship: What researches and approaches? <i>International Entrepreneurship and Management Journal</i> , 16(1), 263-286.
105	✓		Kim, H. (2018). Reconciling entrepreneurial orientation and dynamic capabilities: A strategic entrepreneurship perspective. <i>The Journal of Entrepreneurship</i> , 27(2), 180-208.
106 (check)	✓		Wright, M., & Hitt, M. (2017). Strategic Entrepreneurship and SEJ: Development and Current Progress. <i>Strategic Entrepreneurship Journal</i> , 11(3), 200-210.
107 (check)	✓		Ferreira, J., Ratten, J., & Dana, V. (2017). Knowledge spillover-based strategic entrepreneurship. <i>International Entrepreneurship and Management Journal</i> , 13(1), 161-167.
108	✓		Kantur, D. (2016). Strategic entrepreneurship: Mediating the entrepreneurial orientation-performance link. <i>Management Decision</i> , 54(1), 24-43.

109		✓	Kiyabo, K., & Isaga, N. (2019). Strategic entrepreneurship, competitive advantage, and SMEs' performance in the welding industry in Tanzania. <i>Journal of Global Entrepreneurship Research</i> , 9(1), 1-23.
110		✓	Siddiqui, S., & Jan, S. (2019). Developing and Validating a Scale to Assess Strategic Entrepreneurship Among Women: A Case of Jammu and Kashmir in India. <i>Global Business Review</i> , 20(2), 387-404.
111		✓	Shirokova, G., Ivvonen, L., & Gafforova, E. (2019). Strategic entrepreneurship in Russia during economic crisis. <i>Foresight and STI Governance</i> , 13(3), 62-76.
112		✓	Asheghi-Oskooee, H., & Mazloomib, N. (2018). A strategic entrepreneurship model based on corporate governance in the Iranian manufacturing enterprises. <i>International Journal of Economics, Management and Accounting</i> , 26(1), 25-56.
113		✓	Bayon, M., Lafuente, E., & Vaillant, Y. (2016). Human capital and the decision to exploit innovative opportunity. <i>Management Decision</i> , 54(7), 1615-1632.
114		✓	Minniti, M. (2016). The foundational contribution to entrepreneurship research of William J. Baumol. <i>Strategic Entrepreneurship Journal</i> , 10(2), 214-228.
115		✓	Stokvik, H., Adriaenssen, D.J., & Johannessen, J.A. (2016). Strategic entrepreneurship and intrapreneurial intensity. <i>Problems and Perspectives in Management</i> , 14(2), 348-359.
116	✓		Bendickson, J., Muldoon, J., Liguori, E., & Davis, P. (2016). Agency theory: The times, they are a-changin'. <i>Management Decision</i> , 54(1), 174-193.
117 (check)	✓		Simsek, Z., Heavey, C., & Fox, B. (2017). (Meta-)framing strategic entrepreneurship. <i>Strategic Organization</i> , 15(4), 504-518.
118	✓		Amit, R., & Han, X. (2017). Value creation through novel resource configurations in a digitally enabled world. <i>Strategic Entrepreneurship Journal</i> , 11(3), 228-242.
119	✓		Subramaniam, R., & Shankar, R.K. (2020). Three Mindsets of Entrepreneurial Leaders. <i>The Journal of Entrepreneurship</i> , 29(1), 7-37.
Total	75	44	

Notes: For the articles marked "(check)", the corresponding MS Excel file coding was checked via the expert judgment of a fellow university lecturer. Overall, nearly 30% of the articles included in the SLR were checked using this method.

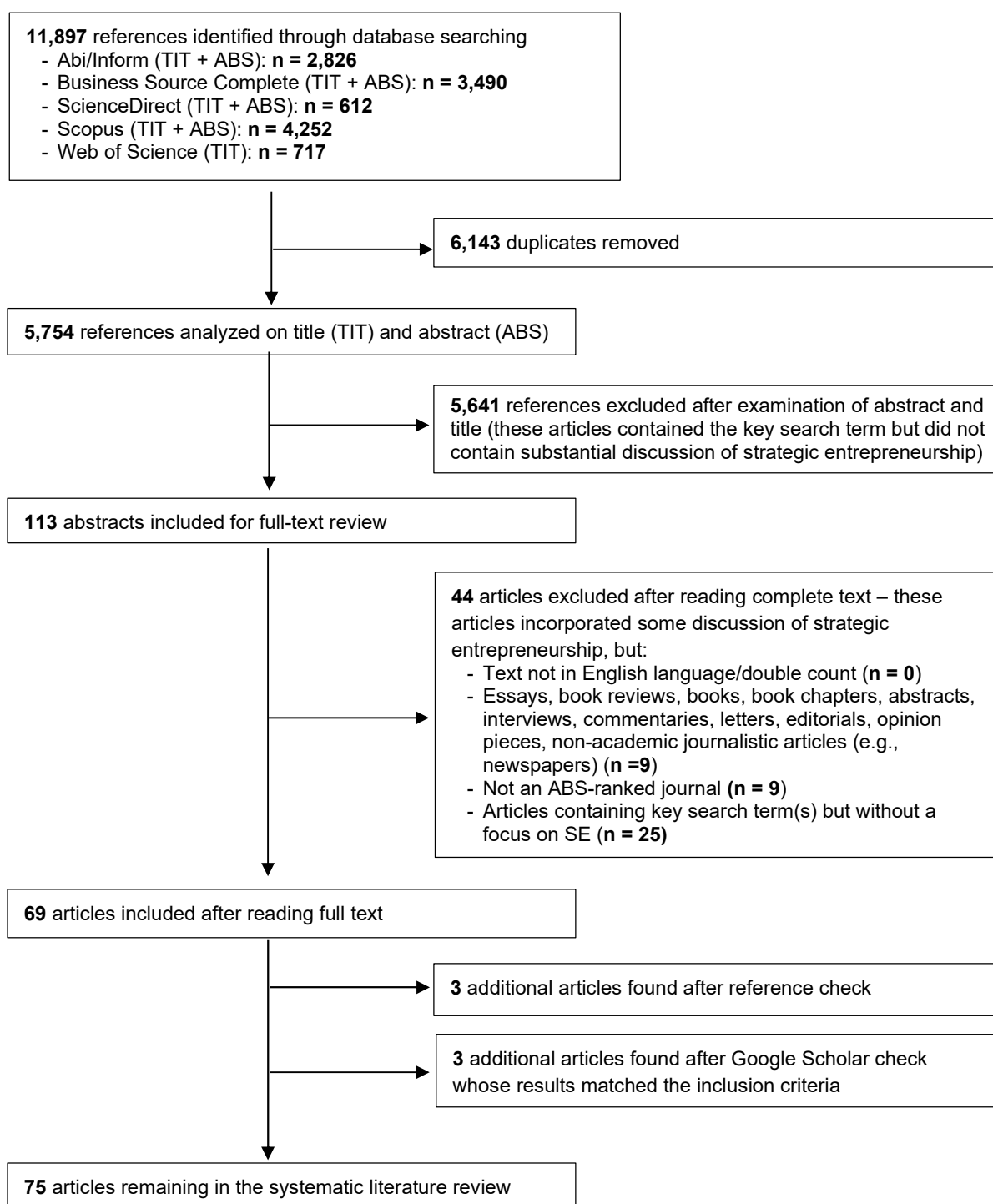
Source: Developed for this research.

Figure 2. SLR methodology



Sources: Wang and Chugh (2014), Nolan and Garavan (2016).

Figure 3. Article selection process



Note: The 2000–2015 publication time frame was searched during April–June 2017; the 2016–2020 publication time frame was searched on 29 February 2020.

Sources: Nijmeijer et al. (2014), Roy et al. (2014), Boiral et al. (2018), Wiewiora et al. (2019).

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EXHIBIT 2

Methods and Descriptive Statistics

1. Methods

I follow previous studies (Wang & Chugh, 2014; Dada, 2016; Danese et al., 2018; Fitz-Koch et al., 2018) and conduct a systematic literature review (Tranfield et al., 2003; Denyer & Neely, 2004; Thorpe et al., 2005) of strategic entrepreneurship. Such reviews exhibit high validity because there are “audit trails” of authors’ rationale, measures, and actions (Tranfield et al., 2003). Most researchers (e.g., Thorpe et al., 2005; Pittaway & Cope, 2007) agree that systematic reviews tend to be clear, focused, accessible, and unified – qualitative advantages in comparison with traditional, “narrative” reviews.

I study the included articles and manually code their relevant information in terms of 29 variables – following Danese et al. (2018) and Nolan and Garavan (2016) – via an Excel spreadsheet. Example variables include “year of publication”, “research type”, “research methods”, “type of data”, “empirical/theoretical research”, “unit of analysis”, “variables”, “region/country”, “sector”, “key findings”, and “future research”. After carefully extracting all relevant data, *expert judgment* (Wang & Chugh, 2014) is employed for the purpose of (partially) verifying the extraction and coded results. This judgment is provided by a fellow lecturer.

2. Descriptive statistics

This section includes an overview of the distribution of publications, a summary of articles by year and category, network analysis, regional/country analysis, and a description of the methodologies applied in SE research.

The review summarizes findings inferred from the coding of “authors’ names”, “authors’ appointed university”, “year of publication”, and “journal title”. First, Table 16. Articles by journal summarizes the articles by journal. The listing illustrates the dominant role of the *Strategic Entrepreneurship Journal* in SE research ($n = 21$), followed by

Entrepreneurship Theory & Practice ($n = 8$) and *International Entrepreneurship and Management Journal* ($n = 7$). These three journals account for nearly half (48%) of all studies; the remaining 22 articles are scattered across the journal landscape. Well over half (57%) of the leading and pioneering articles were published in high-ranking journals – that is, those of ABS grade 4*, 4, or 3 ($n = 43$).

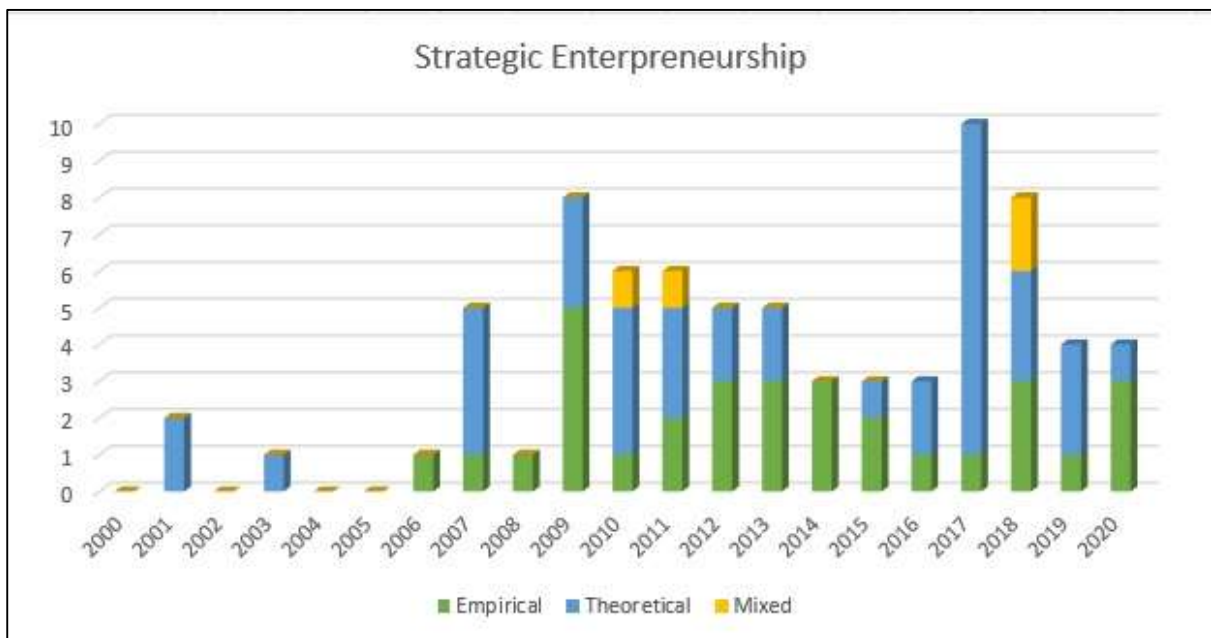
Table 16. Articles by journal

Journal	Frequency	Percentage	Ranking (ABS 2015)
<i>Strategic Entrepreneurship Journal</i>	21	28.0	Grade 4
<i>Entrepreneurship Theory and Practice</i>	8	10.7	Grade 4
<i>International Entrepreneurship and Management Journal</i>	7	9.3	Grade 1
<i>Technology Analysis & Strategic Management</i>	4	5.3	Grade 2
<i>Journal of Business Venturing</i>	2	2.7	Grade 4
<i>Business Horizons</i>	2	2.7	Grade 2
<i>European Business Review</i>	2	2.7	Grade 2
<i>Management Decision</i>	2	2.7	Grade 2
<i>Journal of Entrepreneurship</i>	2	2.7	Grade 1
<i>Academy of Management Review</i>	1	1.3	Grade 4*
<i>Journal of Management</i>	1	1.3	Grade 4*
<i>Strategic Management Journal</i>	1	1.3	Grade 4*
<i>Journal of Management Studies</i>	1	1.3	Grade 4
<i>Organization Studies</i>	1	1.3	Grade 4
<i>The Academy of Management Executive</i>	1	1.3	Grade 3
<i>Academy of Management Perspectives</i>	1	1.3	Grade 3
<i>International Small Business Journal</i>	1	1.3	Grade 3
<i>Financial Accountability and Management</i>	1	1.3	Grade 3
<i>Global Strategy Journal</i>	1	1.3	Grade 3
<i>Strategic Organization</i>	1	1.3	Grade 3
<i>Critical Perspectives on International Business</i>	1	1.3	Grade 2
<i>International Journal of Entrepreneurial Behaviour and Research</i>	1	1.3	Grade 2
<i>International Journal of Innovation Management</i>	1	1.3	Grade 2
<i>Journal of Family Business Strategy</i>	1	1.3	Grade 2
<i>Journal of Industry, Competition and Trade</i>	1	1.3	Grade 2
<i>Qualitative Research in Accounting & Management</i>	1	1.3	Grade 2
<i>Scandinavian Journal of Hospitality and Tourism</i>	1	1.3	Grade 2
<i>Scandinavian Journal of Management</i>	1	1.3	Grade 2
<i>Global Business and Economics Review</i>	1	1.3	Grade 1
<i>International Journal of Productivity and Performance Management</i>	1	1.3	Grade 1
<i>Journal of East European Management Studies</i>	1	1.3	Grade 1
<i>Journal of Enterprising Culture</i>	1	1.3	Grade 1
<i>Management Research Review</i>	1	1.3	Grade 1
<i>Scientometrics</i>	1	1.3	Grade 1
Totals	75	100.0	

Source: Author compilation based on Nolan and Garavan (2016).

Second, the distribution of articles by category (see Figure 4) can be roughly divided into two time frames: 2000–2008 and 2009–2020. Except during 2007, the first time frame witnessed no more than two publications annually; it is the second time frame that accounts for the vast majority of articles. During the first period, theoretical articles are predominant; however, theoretical and empirical articles are fairly evenly distributed during the second period. I find only four “mixed” studies (i.e., those combining theoretical and experimental approaches) that meet the criteria of relevance to strategic entrepreneurship.

Figure 4. Distribution of 75 studies by category and year of publication



Source: Author extrapolation based on Pelz (2019).

Third, this review identifies “author teams” – defined as a national, regional, or international team contributing to each individual article. Of the 75 articles included in this study, 41 (55%) are nationally based; another 13 (17%) are internationally based, and 21 articles (28% of the sample) are regionally based. I also determine each author’s contribution to the SE research field, which is measured as their respective total number of published articles. R. D. Ireland is the field’s most prolific contributor, having published nine SE articles

(12%) covered by this SLR ($n = 75$). He is followed by M. Wright with six articles (8%), M. A. Hitt with five (7%), and D. J. Ketchen with four articles (5.3%).

A similar picture emerges from an “impact citation” analysis (conducted 14 July 2019 and 14 July 2020) on Google Scholar, which amounts to evaluating the impact of each article in terms of how often it was cited by others (see Table 17. Authors with the most influence on strategic entrepreneurship). With only one exception, the authors who publish the most papers also account for the highest cumulative number of citations.

Table 17. Authors with the most influence on strategic entrepreneurship

Author (Affiliation)	Articles [number of citations]	Contributions
R. D. Ireland † (Leadership, Management Department, Mays School of Business, Texas A&M University, USA)	Hitt et al. (2001) [1,877], Ireland et al. (2001) [985], Ireland, Hitt, and Sirmon (2003) [2,065], Ireland and Webb (2007) [507], Ketchen, Ireland, and Snow (2007) [334], Webb et al. (2010) [117], Hitt et al. (2011) [551], Withers et al. (2018) [12]	<ul style="list-style-type: none"> • Conceptually developing SE • Creating the first model of SE • Further detailing SE as a process model • Investigating the balance between exploration/exploitation activities in SE • Studying innovation (collaborative/performance) and family business in SE
M. Wright † (Centre for Management Buy-out Research, Nottingham University Business School, UK)	Meuleman et al. (2009) [184], Liu et al. (2010) [71], Lumpkin et al. (2011) [73], Wright et al. (2012) [58], Bruton et al. (2013) [68], Wright and Hitt (2017) [12]	<ul style="list-style-type: none"> • Early quantitative investigation of SE through private equity/agency theory • Developing an SE model for emerging economies • Exploring the effect of employee mobility and knowledge spillovers in emerging markets • Analyzing SE in family firms • Developing of a framework for resource “orchestration” • Summarizing developments and current progress
M. A. Hitt † (Leadership, Management Department, Mays School of Business, Texas A&M University, USA)	Hitt et al. (2001) [1,877], Ireland et al. (2001) [985], Ireland et al. (2003) [2,065], Hitt et al. (2011) [551], Wright and Hitt (2017) [12]	<ul style="list-style-type: none"> • Conceptually developing SE • Creating the first model of SE • Further detailing SE as process model • Summarizing developments and current progress
D. J. Ketchen (Harbert College of Business, Auburn University, USA)	Ketchen et al. (2007) [334], Webb et al. (2010) [117], Mazzei et al. (2017) [24], McKenny et al. (2019) [25]	<ul style="list-style-type: none"> • Investigating SE in family firms • Studying innovation (collaborative/performance) and family business in SE • Shedding more light on strategic entrepreneurial orientation • Outlining important theoretical perspectives for future SE research

† Listed affiliations are to the universities where authors contributed most of their SE research; however, these authors undertook assignments at other universities as well.

Notes: Authors are ordered by the number of their respective papers published in the SE research field. Numbers bracketed in **boldface** indicate how often the focal work has been cited by other authors.

Source: Author compilation based on Danese et al. (2018).

Fourth, I investigate the extent of country representation, defined (cf. Pelz, 2019) as the number of articles published by an author affiliated with a certain university in a particular country ($n = 177$). This assessment establishes that SE research is published mainly by authors affiliated with universities in the United States (29%), followed by the United Kingdom (11%), Canada (5.5%), the Netherlands (5.5%), Australia (5%), and Sweden (4.5%).

In the rest of this exhibit, I analyze the coding variables “research type”, “research question”, “research methods”, “empirical/theoretical”, “type of data collected”, and “unit of analysis”. Table 18. Research methodologies summarizes the articles’ methodologies that are characterized by these variables.

Table 18. Research methodologies

	# of articles (out of 75)	% of all articles
<i>Research type</i>		
Theory building	39	52%
Theory testing	22	29%
Exploratory	10	13%
Mixed	4	5%
<i>Research question</i>	46	61%
<i>Research methods</i>		
Conceptual	36	48%
Survey	18	24%
Case study	8	11%
Secondary study	3	4%
Mathematical model	2	3%
In-depth interview	2	3%
Literature review	1	1%
Mixed	5	7%
<i>Empirical/theoretical</i>		
Empirical	31	41%
Theoretical	39	52%
Mixed	5	7%
<i>Type of data collected</i>		
Qualitative	14	19%
Quantitative	22	29%
<i>Unit of analysis</i>		
Firm	57	71%
Individual	8	10%

Others	15	19%
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Source: Author compilation based on Short et al. (2009).

In brief, the results tabulated here show that research focused on theory *building* accounts for more than half of all the reviewed studies. That outcome could reflect the recency of the field and the attempts, which at first can only be theoretical in nature, to build solid foundations for strategic entrepreneurship. Theory *testing* is the next most represented category, accounting for roughly a third of the studies. Exploratory research and mixed studies are in the minority. This finding was unanticipated because one would expect a research field that is still establishing its theoretical foundations to undertake more exploratory research aimed at increasing knowledge about the field’s characteristics and driving forces. Yet the observed research methods are dominated by conceptual (48%) and survey (24%) approaches. The articles are almost evenly distributed between theoretical and empirical research.

A closer examination of the sample’s 36 empirical articles reveals that most of their data are collected through quantitative surveys ($n = 24$); only 14 articles collect qualitative data. And among all of this review’s included articles, a substantial majority (61%) are inspired by a particular research question. My review of the “unit of analysis” coding variable identifies the structural form most studied, which in SE research is the firm followed by the individual. This finding is a logical outcome of a primary goal of SE: to create value and wealth, which is usually generated (by firms and individuals both) through above-average performance (Hitt et al., 2001; Mathews, 2010).

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EXHIBIT 3

Content Analysis

1. Definition of content analysis

For the content analysis, I examine large amounts of textual data; the goal is to identify major themes, trends, and differences in the field of strategic entrepreneurship research (Deng, 2012, p. 409). “Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (Krippendorff, 2004, p. 18); indeed, making such inferences is its *raison d’être* (McClelland et al., 2010, p. 1259).

2. Procedure

- In defining the major dimensions, I follow Danese et al. (2018).
- Defining the research focus proceeds iteratively (after Dada, 2016). All articles are systematically analyzed – in terms of the coding variable *research topic* – and then assigned to one or more of the dimensions. This study’s set-up allows for the coding of more than a single dimension for articles that address multiple phenomena.
- Empirical articles are subject to additional scrutiny in terms of the coding variable *focused sector* – that is, with respect to their area of implementation (e.g., healthcare, public organizations, government).
- For all included articles, I evaluate the outcomes reported and then group them by categories.

3. Content analysis

Table 19. Content analysis: Dimension and focus

Dimension	Research focus	Applied in
<i>Defining and conceptualizing strategic entrepreneurship</i>		
	To define strategic entrepreneurship	<ul style="list-style-type: none"> – Hitt, Ireland, Camp, & Sexton (2001, p. 479) – Ireland, Hitt, Camp, & Sexton (2001) – Ireland, Hitt, & Sirmon (2003) – Ireland & Webb (2009, pp. 469, 470) – Kyrgidou & Hughes (2010, p. 47) – Mathews (2010) – Simsek, Heavey, & Fox (2017, p. 515) – Webb, Ketchen, & Ireland (2010, p. 67)
	To explore the components and domains of SE	<ul style="list-style-type: none"> – Amit & Han (2017, p. 239) – Hitt et al. (2001, pp. 481–86) – Hitt, Ireland, Sirmon, & Trahms (2011, p. 57) – Ireland et al. (2001, p. 51) – Ireland, Hitt, & Sirmon (2003, p. 963) – Kraus, Kauranen, & Henning Reschke (2011, p. 59) – Kuratko & Audretsch (2009, p. 8) – Kyrgidou & Hughes (2010, p. 43) – McKenny et al. (2018, pp. 508–11) – Schindehutte & Morris (2009, pp. 241–42) – Shirokova, Vega, & Sokolova (2013, p. 173) – Simsek et al. (2017, p. 505)
	To develop a model, framework, concept, and/or quantitative measure of SE	<ul style="list-style-type: none"> – Anderson, Eshima, & Hornsby (2019, p. 199) – Hitt et al. (2011, p. 57) – Ireland et al. (2003, p. 963) – Keyhani (2019, p. 222) – Kim (2018, p. 184) – Kraus et al. (2011, p. 59) – Kyrgidou & Hughes (2010) – Luke, Kearins, & Verreynne (2011, p. 314) – Luke & Verreynne (2006, p. 4)

		<ul style="list-style-type: none"> – Paek & Lee (2018, p. 883) – Schindehutte & Morris (2009, pp. 241–42) – Shirokova et al. (2013, p. 173) – Simsek et al. (2017, p. 504) – Westgren & Wuebker (2019, p. 508) – Wright & Hitt (2017, p. 208)
	To investigate the characteristics of the transition, tension, and/or balance between exploration and exploitation (resp., opportunity-seeking and advantage-seeking) activities	<ul style="list-style-type: none"> – Höglund, Caicedo, & Mårtensson (2018, p. 364) – Ireland & Webb (2007, p. 49) – Ireland & Webb (2009, p. 469) – Ketchen, Ireland, & Snow (2007, p. 371) – Keyhani (2019, p. 222) – Kotha (2010, p. 284) – Kyrgidou & Hughes (2010, p. 43) – Kyrgidou & Petridou (2011, p. 697) – Mazzei, Ketchen, & Shook (2017, pp. 635, 638, 640) – Sirén, Kohtamäki, & Kuckertz (2012, p. 18) – Zhao, Ishihara, & Jennings (2020, p. 2)
	To develop a framework of SE-based cross-boundary industry disruption	<ul style="list-style-type: none"> – Burgelman & Grove (2007, pp. 316–17)
	To develop a framework of SE in emerging economies	<ul style="list-style-type: none"> – Bruton, Filatotchev, Si, & Wright (2013, p. 169)
	To develop a SE-based entrepreneurial decision-making process	<ul style="list-style-type: none"> – Cunha (2007, p. 1)
	To create a family-oriented framework (including dimensions and components) in the SE context	<ul style="list-style-type: none"> – Lumpkin, Steier, & Wright (2011, p. 285) – Webb et al. (2010, p. 67)
	To characterize the orchestration of resources in strategic entrepreneurship	<ul style="list-style-type: none"> – Hitt et al. (2011, p. 57) – Wright, Clarysse, & Mosey (2012, p. 913)
	To study the antecedents of strategic entrepreneurship	<ul style="list-style-type: none"> – Johanna de Villiers-Scheepers (2012, p. 400)
	To investigate the theoretical foundations of knowledge spillovers from strategic entrepreneurship	<ul style="list-style-type: none"> – Agarwal, Audretsch, & Sarkar (2007, p. 263)
	To develop a disequilibrium framework for strategic entrepreneurial dynamics	<ul style="list-style-type: none"> – Mathews (2010, pp. 219–20)
	To develop a normative framework of strategic entrepreneurial internationalization	<ul style="list-style-type: none"> – Autio (2017, pp. 211, 218)

<p><i>Implementing strategic entrepreneurship</i></p> <p>This topic addresses the settings in which attempts were made to implement SE (e.g., industry, sector, branch).</p>		
	High-technology industries	<ul style="list-style-type: none"> – Audretsch, Lehmann, & Plummer (2009) – Liu et al. (2010)
	Biotechnology	<ul style="list-style-type: none"> – Audretsch et al. (2009)
	Medical devices	<ul style="list-style-type: none"> – Audretsch et al. (2009)
	Life sciences	<ul style="list-style-type: none"> – Audretsch et al. (2009)
	E-commerce	<ul style="list-style-type: none"> – Audretsch et al. (2009)
	Healthcare industry	<ul style="list-style-type: none"> – Boudreaux (2020) – Burgelmann & Grove (2007) – Monsen & Boss (2009) – Subramaniam & Shankar (2020)
	Cellular industry	<ul style="list-style-type: none"> – Burgelmann & Grove (2007) – Liu, Lo & Dai (2018)
	Music industry	<ul style="list-style-type: none"> – Burgelmann & Grove (2007)
	Computing industry	<ul style="list-style-type: none"> – Burgelmann & Grove (2007)
	Retailing	<ul style="list-style-type: none"> – Boudreaux (2020) – Burgelmann & Grove (2007)
	Agriculture, forestry, fishing	<ul style="list-style-type: none"> – Boudreaux (2020) – Liu et al. (2010) – Mihalache et al. (2014) – Yiu et al. (2014)
	Architecture	<ul style="list-style-type: none"> – Yiu, Hoskisson, Bruton, & Lu (2014)
	Transportation	<ul style="list-style-type: none"> – Boudreaux (2020) – Mihalache, Jansen, Van den Bosch, & Volberda (2014) – Yiu et al. (2014)

	Telecommunications	<ul style="list-style-type: none"> – Kantur (2016) – Utoyo, Fontana, & Satrya (2019) – Yiu et al. (2014)
	Manufacturing	<ul style="list-style-type: none"> – Boudreaux (2020) – Mihalache et al. (2014) – Yiu et al. (2014)
	Property, real estate	<ul style="list-style-type: none"> – Boudreaux (2020) – Luke & Verreynne (2006) – Yiu et al. (2014)
	Conglomerate	<ul style="list-style-type: none"> – Sirén et al. (2012)
	Wholesale	<ul style="list-style-type: none"> – Boudreaux (2020) – Yiu et al. (2014)
	Software industry	<ul style="list-style-type: none"> – McKenny et al. (2018) – Sirén et al. (2012)
	Electronics	<ul style="list-style-type: none"> – Kim (2018) – Liu et al. (2010) – Paek & Lee (2018) – Subramaniam & Shankar (2020) – Tipu & Fantasy (2018)
	Information technology / Internet	<ul style="list-style-type: none"> – Boudreaux (2020) – Kim (2018) – Liu et al. (2010) – McKenny et al. (2018)
	Bioengineering	<ul style="list-style-type: none"> – Liu et al. (2010)
	New medical technology	<ul style="list-style-type: none"> – Liu et al. (2010)
	New materials technology	<ul style="list-style-type: none"> – Liu et al. (2010)
	Environmental protection technology	<ul style="list-style-type: none"> – Liu et al. (2010)
	Advance manufacturing technology	<ul style="list-style-type: none"> – Liu et al. (2010)
	Aviation and space technology	<ul style="list-style-type: none"> – Liu et al. (2010)

	New energy and high-power conservation technology	– Liu et al. (2010)
	Marine engineering	– Liu et al. (2010)
	Nuclear applied technology	– Liu et al. (2010)
	Education	– Boudreaux (2020) – Pearce & Quan (2015)
	Motor industry	– Boone, Wezel, & van Witteloostuijn (2013)
	Information and communications technology	– Johanna de Villiers-Scheepers (2012) – Kyrgidou & Petridou (2011) – Shirokova et al. (2013)
	Hotel/restaurant/café industry	– Shirokova et al. (2013)
	Wholesale/retail	– Shirokova et al. (2013)
	Aviation industry	– Kotha (2010)
	High-speed rail	– Sun (2015)
	Pharmaceuticals	– Kyrgidou & Petridou (2011) – McKenny et al. (2018) – Tipu & Fantazy (2018)
	Food/beverage	– Kantur (2016) – Kyrgidou & Petridou (2011) – Mihalache et al. (2014)
	Professional services, scientific & technical services	– Boudreaux (2020) – Mihalache et al. (2014)
	Construction	– Boudreaux (2020) – Mihalache et al. (2014)
	Bicycle industry	– Yan & Hu (2008)
	Mail industry	– Luke & Verreynne (2006)
	Weather forecasting	– Luke & Verreynne (2006)
	Hospitality	– Carlbäck (2012)
	Mining, quarrying, oil	– Boudreaux (2020)

	Utilities	– Boudreaux (2020)
	Finance & insurance	– Boudreaux (2020)
	Management of companies	– Boudreaux (2020)
	Administrative & waste management	– Boudreaux (2020)
	Arts & entertainment	– Boudreaux (2020)
	Public administration	– Boudreaux (2020) – Höglund et al. (2018) – Subramaniam & Shankar (2020)
	Others	– Boudreaux (2020)
	Textile	– Tipu & Fantazy (2018)
	Furniture	– Tipu & Fantazy (2018)
	Sport & leisure	– Tipu & Fantazy (2018)
	Automotive / metal	– Kantur (2016) – Tipu & Fantazy (2018)
	Cork	– Sarkar (2017)
	Gaming	– Zhao et al. (2020)
	Banking	– Kantur (2016) – Utoyo et al. (2019)
	Chemicals	– Kim (2018)
	Shipbuilding	– Kim (2018)
<i>Exploring relationship(s) between SE and:</i> This aspect of the research explores how strategic entrepreneurship is related to other disciplines and topics.		
	Complexity systems	– Schindehutte & Morris (2009, pp. 241–42)

	Venture's control of resources and distribution of equity	– Audretsch et al. (2009, p. 149)
	Governance	– Audretsch et al. (2009, p. 149)
	Principal–agent relationship (agency)	– Audretsch et al. (2009) – Bendickson, Muldoon, Liguori, & Davis (2016) – Meuleman, Amess, Wright, & Scholes (2009)
	Private equity–backed buyout market	– Meuleman et al. (2009, p. 224)
	Capabilities approach (in public organizations)	– Klein, Mahoney, McGahan, & Pitelis (2013, p. 70)
	Dueling institutional logics (state logic vs. market logic)	– Yiu et al. (2014, p. 198)
	Cross-boundary disruptor	– Burgelman & Grove (2007)
	Decision making	– Cunha (2007)
	Effects of exploitation and exploration (strategies) on the development of profits and on resources, the entrepreneurial mindset, and innovation ³	– Kyrgidou & Petridou (2011, p. 708) – Shirokova et al. (2013, p. 182) – Sirén et al. (2012, p. 20)
	Total factor productivity	– Bjørnskov & Foss (2013, p. 50)
	Knowledge spillovers	– Agarwal et al. (2007, p. 263) – Agarwal, Audretsch, & Sarkar (2010, p. 271) – Cristo-Andrade & Ferreira (2020, p. 263) – Ferreira, Ratten & Dana (2017, p. 161) – Kotha (2010, p. 284) – Liu et al. (2010, p. 340) – Sarkar (2017, p. 251) – Tavassoli, Bengtsson, & Karlsson (2017, p. 233)
	International employee mobility	– Liu et al. (2010, p. 340) – Pearce & Quan (2015, p. 226)
	Business models at the system level	– Demil, Lecocq, Ricart, & Zott (2015, p. 1)
	Firm positioning	– Boone et al. (2013, p. 511)
	Growth–profitability dynamics of firms of different ages	– Steffens, Davidsson, & Fitzsimmons (2009, p. 126)
	Strategic entrepreneurial entry	– Levie & Autio (2011, p. 1392)

³ *Innovation* is one of three dependent variables.

	Family business	– Lumpkin et al. (2011, p. 285) – Webb et al. (2010, p. 67)
	Policy programs' usefulness as perceived by academic entrepreneurs	– Patzelt & Shepherd (2009, p. 319)
	Innovation	– Ireland & Webb (2007) – Ketchen et al. (2007, p. 371) – Liu et al. (2010, p. 340) – Sun (2015, p. 646)
	Resource orchestration	– Amit & Han (2017, p. 239) – Wright et al. (2012)
	Job stress and employee retention	– Monsen & Boss (2009, p. 71)
	Top management team sharing leadership with regard to the organization's "ambidexterity" in an SE context	– Mihalache et al. (2014, p. 128)
	Internal and environmental antecedents	– Johanna de Villiers-Scheepers (2012, p. 405)
	Acquisitions of multi-nationals from emerging economies in advanced economies	– Madhok & Keyhani (2012, p. 26)
	Firm survival	– Boudreaux (2020, p. 93)
	Social capital	– Liu et al. (2018, p. 512)
	Competitive landscape shifts	– Withers et al. (2018, pp. 349, 355)
	Entrepreneurial leadership	– Utoyo et al. (2019, p. 1)
	Supply chains	– Tipu & Fantasy (2018, p. 2046)
	Institutions	– Gölgeci, Larimo, & Arslan (2017, p. 243)
	Entrepreneurial orientation	– Kim (2018, p. 180)
	Dynamic capabilities	– Kim (2018, p. 180)
	Entrepreneurial mindset	– Subramaniam & Shankar (2020, p. 8)
<i>Evaluating the outcomes of strategic entrepreneurship</i>		
Here I examine the beneficial		

results a firm can expect when applying SE.		
	New venture creation	<ul style="list-style-type: none"> – Agarwal et al. (2007, p. 263) – Ferreira et al. (2017, p. 162)
	Performance: equity buyouts, profits, returns, innovation, other financial metrics, innovation, socioeconomic ⁴ advances	<ul style="list-style-type: none"> – Agarwal et al. (2007, p. 263) – Anderson et al. (2019, p. 199) – Boone et al. (2013, p. 525) – Boudreaux (2020, p. 1) – Cristo-Andrade & Ferreira (2018, p. 263) – Ferreira, Fernandes, & Ratten (2016, p. 10) – Hitt et al. (2011, pp. 57, 60) – Ireland et al. (2001, p. 53) – Ireland et al. (2003, p. 963) – Ireland & Webb (2007, p. 58) – Ireland & Webb (2009, p. 478) – Johanna de Villiers-Scheepers (2012, p. 404) – Kantur (2016, p. 24) – Ketchen et al. (2007, p. 371) – Kim (2018, p. 180) – Kotha (2010, pp. 284, 286) – Kraus et al. (2011, p. 61) – Kyrgidou & Hughes (2010, p. 58) – Liu et al. (2010, p. 340) – Luke et al. (2011, p. 321) – Mathews (2010, p. 222, 240) – Mazzei (2018, p. 657) – Mazzei et al. (2017, p. 632) – McKenny et al. (2018, p. 504) – Meuleman et al. (2009, p. 213) – Mihalache et al. (2014, p. 130) – Monsen & Boss (2009, p. 71) – Obeng, Robson, & Haugh (2014, p. 514) – Paek & Lee (2018, p. 883) – Sarkar (2017, p. 253) – Schindehutte & Morris (2009, p. 269)

⁴ Bruton et al. (2013).

		<ul style="list-style-type: none"> – Shirokova et al. (2013, p. 173)⁵ – Simsek et al. (2017, pp. 505, 515) – Sirén et al. (2012, p. 18) – Steffens et al. (2009, p. 137) – Sun (2015, pp. 646, 649) – Tipu & Fantazy (2018, p. 2058) – Utoyo et al. (2019, p. 1) – Webb et al. (2010, p. 67) – Withers et al. (2018, p. 365) – Wright et al. (2012, p. 912) – Zhao et al. (2020, p. 1)
	Value creation and value capture	<ul style="list-style-type: none"> – Agarwal et al. (2007, p. 264) – Agarwal et al. (2010, p. 271) – Amit & Han (2017, p. 228) – Cristo-Andrade & Ferreira (2018, p. 266) – Ferreira et al. (2017, p. 162) – Hitt et al. (2001, p. 479) – Hitt et al. (2011, p. 57) – Ireland et al. (2001, p. 49) – Ireland et al. (2003, p. 983) – Ireland & Webb (2007, p. 51) – Johanna de Villiers-Scheepers (2012, p. 404) – Ketchen et al. (2007, p. 373) – Kim (2018, p. 181) – Klein et al. (2013, p. 71) – Kraus et al. (2011, p. 61) – Kyrgidou & Hughes (2010, p. 47) – Kyrgidou & Petridou (2011, p. 698) – Liu et al. (2017, p. 10) – Luke & Verreynne (2006, p. 6) – Lumpkin et al. (2011, pp. 288, 291–92) – Mazzei (2018, p. 659) – Mazzei et al. (2017, p. 632) – Meuleman et al. (2009, p. 213) – Monsen & Boss (2009, p. 74) – Paek & Lee (2018, p. 884)

⁵ Including “growth”.

		<ul style="list-style-type: none"> – Simsek et al. (2017, pp. 512, 515) – Sun, 2015 (p. 650) – Tavassoli et al. (2017, p. 234) – Webb et al. (2010, p. 69) – Westgren & Wuebker (2019, p. 507) – Withers et al. (2018, p. 351) – Wright et al. (2012, p. 912) – Wright & Hitt (2017, p. 200) – Zhao et al. (2020, p. 2)
	Growth (firm) ⁶	<ul style="list-style-type: none"> – Agarwal et al. (2007, p. 263) – Agarwal et al. (2010, p. 273) – Anderson et al. (2019, p. 212) – Ferreira et al. (2017, p. 163) – Ireland et al. (2001, pp. 49–50) – Ireland et al. (2003, p. 964) – Kim (2018, p. 181) – Kraus et al. (2011, p. 62) – Kyrgidou & Hughes (2010, p. 50) – Luke et al. (2011, p. 327) – Luke & Verreynne (2006, p. 5) – Mazzei (2018, p. 660) – Mazzei et al. (2017, p. 632) – Meuleman et al. (2009, pp. 214–15) – Obeng et al. (2014, p. 501) – Paek & Lee (2018, p. 887) – Schindehutte & Morris (2009, p. 269) – Steffens et al. (2009, p. 137) – Subramaniam & Shankar (2020, p. 10) – Withers et al. (2018, p. 351) – Wright et al. (2012, p. 911) – Wright & Hitt (2017, p. 207) – Yan & Hu (2008, p. 11)
	Economic growth	<ul style="list-style-type: none"> – Agarwal et al. (2007, p. 263) – Agarwal et al. (2010, p. 273)

⁶ Growth (e.g., increase in sales) is often used as a performance indicator. However, the literature frequently references economic growth and also growth more generally. To maintain a sharp focus, I treated the two overarching categories – performance and growth – separately.

		<ul style="list-style-type: none"> – Bjørnskov & Foss (2013, p. 50) – Bruton et al. (2013, p. 174) – Cristo-Andrade & Ferreira (2018, p. 271) – Hitt et al. (2011, p. 66) – Sarkar (2017, p. 255) – Tavassoli et al. (2017, p. 237) – Wright & Hitt (2017, p. 203)
	Wealth	<ul style="list-style-type: none"> – Agarwal et al. (2007, p. 266) – Agarwal et al. (2010, p. 273) – Ferreira et al. (2016, p. 10) – Hitt et al. (2001, pp. 480, 486–87) – Ireland et al. (2001, p. 49) – Ireland et al. (2003, p. 963) – Johanna de Villiers-Scheepers (2012, p. 403) – Kim (2018, p. 181) – Ketchen et al. (2007, p. 371) – Kyrgidou & Hughes (2010, p. 58) – Kyrgidou & Petridou (2011, p. 697) – Luke et al. (2011, pp. 332–33) – Luke & Verreynne (2006, p. 5) – Lumpkin et al. (2011, pp. 288, 292) – Mazzei (2018, p. 662) – Mazzei et al. (2017, p. 634) – Mihalache et al. (2014, p. 130) – Miller & Breton-Miller (2017, p. 671) – Monsen & Boss (2009, p. 72) – Obeng et al. (2014, pp. 502–3) – Paek & Lee (2018, p. 886) – Patzelt & Shepherd (2009, p. 319) – Sarkar (2017, p. 252) – Schindehutte & Morris (2009, p. 266) – Subramaniam & Shankar (2020, p. 10) – Tavassoli et al. (2017, p. 237) – Webb et al. (2010, p. 69) – Withers et al. (2018, p. 357) – Wright & Hitt (2017, p. 200) – Yan & Hu (2008, p. 11)

	Benefits: individual, organizational, economic, family, societal	<ul style="list-style-type: none"> – Ferreira et al. (2017, p. 162) – Hitt et al. (2011, p. 60) – Luke et al. (2011, p. 321) – Lumpkin et al. (2011, pp. 288, 292–95) – Mazzei et al. (2017, p. 647) – Tavassoli et al. (2017, p. 245) – Wright & Hitt (2017, p. 208)
	Internationalization	<ul style="list-style-type: none"> – Bruton et al. (2013, p. 172)
	Qualitative differences: novelty, newness, potentiality	<ul style="list-style-type: none"> – Ireland & Webb (2007, p. 52) – Mazzei (2018, p. 661) – Schindehutte & Morris (2009, p. 266)
	Competitive advantage	<ul style="list-style-type: none"> – Agarwal et al. (2007, p. 264) – Agarwal et al. (2010, p. 271) – Audretsch et al. (2009, pp. 148-49) – Bendickson et al. (2016, p. 183) – Boone et al. (2013, p. 512) – Bruton et al. (2013, p. 177) – Cunha (2007, p. 1) – Ferreira et al. (2017, p. 163) – Hitt et al. (2011, pp. 67–68) – Ireland et al. (2003, p. 967) – Ireland & Webb (2007, p. 50) – Ireland & Webb (2009, p. 469) – Johanna de Villiers-Schepers (2012, p. 403) – Kantur (2016, pp. 24, 28) – Kotha (2010, p. 284) – Kraus et al. (2011, p. 59) – Kuratko & Audretsch (2009, p. 7) – Kyrgidou & Hughes (2010, p. 44) – Kyrgidou & Petridou (2011, p. 699) – Levie & Autio (2011, p. 1392) – Liu et al. (2010, p. 342) – Luke et al. (2011, p. 320) – Luke & Verreyne (2006, p. 5) – Mazzei (2018, p. 657) – Mazzei et al. (2017, p. 632) – Meulemann et al. (2009, p. 214)

		<ul style="list-style-type: none"> – Monsen & Boss (2009, p. 72) – Paek & Lee (2018, p. 883) – Patzelt & Shephard (2009, p. 319) – Shirokova et al. (2013, p. 173) – Simsek et al. (2017, pp. 506, 510) – Sirén et al. (2012, p. 19) – Steffens et al. (2009, p. 126) – Subramaniam & Shankar (2020, p. 8) – Tassavoli et al. (2017, p. 234) – Tipu & Fantasy (2018, p. 2046) – Webb et al. (2010, p. 69) – Withers et al. (2018, p. 350) – Wright et al. (2012, p. 912) – Wright & Hitt (2017, p. 200) – Yan & Hu (2008, p. 11) – Yiu et al. (2014, p. 196) – Zhao et al. (2020, p. 1)
	Pace: rapidity or slowness of rhythms, rates of change in transitions	– Schindehutte & Morris (2009, p. 266)

Sources: Adapted from Nolan and Garavan (2016) and Danese et al. (2018).

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EXHIBIT 4

Theories Applied

1. Methodology

- I define theories as “logically organized set[s] of propositions that define events/[phenomena], describe relationships among events/[phenomena], and explain the occurrence of events/[phenomena] (Shaughnessy et al., 2012, p. 49). *Grounded* theory refers to the “systematic discovery of the theory from the data of social research” (Glaser & Strauss, 1967, p. 3), which means “that most hypotheses and concepts not only come from the data, but are systematically worked out in relation to the data during the course of the research” (Glaser & Strauss, 1967, p. 6). I compare and triangulate all of my findings with a least three grade-4/4* journals (seldom with grade-3 articles) to cross-verify and back up my selection of theories.
- Theories that are in line with the definition (Glaser & Strauss, 1967; Suddaby, 2006; Walsh et al., 2015; Shepherd & Suddaby, 2017) are considered for inclusion. A second inclusion prerequisite is that the respective theory be specifically utilized as a “theoretical lens” through which to examine the article under investigation (Danese et al., 2018).
- I do not include articles that were outlined in the introduction to a special issue when that special issue’s introduction – but not the referenced article itself – are part of this systematic review. I view those theoretical perspectives as being part of a separate research stream, so they are not included in the systematic literature review (SLR).
- I conduct a series of quality checks, which are detailed in Section 3.
- In developing this exhibit, I follow Glaser and Strauss (1967), Suddaby (2006), Walsh et al. (2015), Nolan and Garavan (2016), and Danese et al. (2018).

2. Research question

- What theoretical perspectives influence strategic entrepreneurship research? – “exploring the what, why, who, when, where and how questions” (Nolan & Garavan, 2016, p. 89; see also Crossan et al., 2011).

3. Cleaning process

- First, I again review all the articles in the SLR and reassess their inclusion criteria.
- I include all theories that match the inclusion criteria mentioned in Section 1 of this exhibit.

4. What is the opinion of leading journals?

Table 20. Cross-triangulation with leading journals publishing entrepreneurship and strategic management research

	Concept	Construct	Phenomenon	Theory
Dynamic capabilities	Helfat & Peteraf (2009) Barreto (2010, pp. 257, 276) Teece (2014a) De Massis et al. (2017, p. 8)			Fainschmidt et al. (2016, p. 22)
Austrian economic theory				Rosen (1997, p. 147) Schindehutte & Morris (2009, p. 249) Teece (2014a)
Transaction cost economics				Geyskens et al. (2006) Helfat & Peteraf (2009) Teece (2014b)
Evolutionary economics				Minniti (2004, p. 643) Helfat & Peteraf (2009) Schindehutte & Morris (2009, p. 241) Safarzyńska (2012, p. 1011)
Strategic renewal			Crossan et al. (2011)	
Organizational learning			Crossan et al. (2011)	Dutta & Crossan (2005, p. 425) Milanov & Fernhaber (2014, p. 377) Brauer et al. (2017, p. 1359)
International new venture				Autio (2017, p. 221)
Strategic entrepreneurship	Ireland et al. (2001) Audretsch et al. (2009, p. 152) Kuratko & Audretsch (2009, p. 1) Schindehutte & Morris (2009, pp. 242–43) Hitt et al. (2011, p. 70)	Ireland et al. (2003, p. 963) Audretsch et al. (2009, p. 152) Schindehutte & Morris (2009) Wright & Hitt (2017, p. 201) Withers et al. (2018, p. 350)		
Value capture theory				Gans & Ryall (2017)

Game theory				Hurwicz (1953) Wagner (1958) Shubik (1960) Fudenberg & Tirole (1987) Roth (2002) Heinemann et al. (2004) Schindehutte & Morris (2009, p. 249)
Resource-based view/theory				Fiss (2007, p. 1180) Short et al. (2008, p. 1055) Keyhani (2019, p. 229)
Porter's five forces				Keyhani (2019, p. 229)
Social capital theory				Nahapiet & Ghoshal (1998, p. 242) Pearson et al. (2008, p. 954) Fang et al. (2011, p. 128) Estrin et al. (2013, p. 479)
Entrepreneurial orientation	Covin & Lumpkin (2011, pp. 855–58) Covin & Wales (2011, pp. 1–5)	Covin & Lumpkin (2011, pp. 855–58) Covin & Wales (2011, pp. 1–5) McKenny et al. (2018, p. 518)	Covin & Lumpkin (2011, pp. 855–58) Covin & Wales (2011, pp. 1–5) Miller & Le Breton-Miller (2017, p. 670)	
Equifinality	Gresov & Drazin (1997, p. 403) Jacobs & Jacobs (2010)			
Configuration approach/theory	Short et al. (2008, p. 1055)			Meyer et al. (1993, pp. 1175–77) Fiss (2007, p. 1181) Drover et al. (2014, p. 840)
Contingency theory				Shepard & Hougland (1978, pp. 413–14) Birkinshaw et al. (2002, p. 274) Short et al. (2008, p. 1058) Zona et al. (2013, p. 301) Titus & Anderson (2018, p. 498)
Institutional theory				Short et al. (2008, p. 1055) Su et al. (2017, p. 505) Webb et al. (2020, p. 1)

Neo-institutional theory				Nicholls (2010, p. 611) Mueller et al. (2013, p. 1611) Li & Lu (2019, p. 3)
New institutional economics				Jones (1997, p. 10) Lockett & Thompson (2001) Amorós et al. (2019, p. 2)
Agency theory				Audtretsch et al. (2009, p. 149) Drover et al. (2014, p. 840) Bosse & Philipps (2016, p. 276) Kostova et al. (2018, p. 2611)
Complementarity theory				Fiss (2007, p. 1180)
Complexity theory				Minniti (2004, p. 638) Houchin & MacLean (2005, p. 149) Fiss (2007, p. 1180)
Effectuation theory			Arend et al. (2015, p. 34)	Sarasvarthy (2001, pp. 249–52) Fisher (2012, p. 1047) Reuber et al. (2016, p. 536)
Neoclassical economics theory				Nelson & Winter (1974, p. 886) Kirchhoff (1991, p. 95) Klein (2008, p. 175)
Creative destruction	Kirchhoff (1991, p. 104) Schindehutte & Morris (2009, p. 248) Westgren & Wuebker (2019, p. 513)			
Competitive dynamics				Livengood & Reger (2010, p. 52) Nair & Selover (2012, p. 359) Chen & Miller (2015, pp. 2, 13)
Knowledge spillover theory				Audretsch & Keilbach (2007, p. 1243) Plummer & Acs (2014, p. 121) Shu et al. (2014, p. 913) Ko & Liu (2015, p. 19)

Real options theory				Van de Vrande & Vanhaverbeke (2013, p. 2) Ahmmad et al. (2017, p. 180) Leiblein et al. (2017, p. 2593)
Network theory				Ter Wal et al. (2016, p. 3) Moreira et al. (2018, p. 2517) Burt (2019, p. 1)
Organization ecology (population ecology, organizational ecology)				Amburgey & Rao (1996, p. 1269) Schindehutte & Morris (2009, p. 249) Bertoni et al. (2017, p. 1) Lander & Heugens (2017, p. 1)
(General) systems theory				Von Bertalanffy (1972, p. 407) Perry (1975, p. 266) Short et al. (2008, p. 1061) Schindehutte & Morris (2009, p. 250) Frank et al. (2017, p. 709) Schleicher et al. (2018, p. 2212)
Strategic choice theory				Whittington (1988, p. 521) Child (1997, p. 43) Judge et al. (2015, p. 506)
Upper echelons theory				Patzelt et al. (2009, p. 558) Sosik et al. (2012, p. 368) Engelen et al. (2015, p. 1)
Social identity theory				Ashforth & Mael (1989, p. 20) Canella et al. (2015, p. 436) Kwok et al. (2018, p. 12)
Theory of reasoned action				Ajzen & Fishbein (1977) Becker et al. (1995, p. 617) Kolvereid (1996, p. 49)
Ricardian rents				Stigler (1952, p. 187) Samuelson (1959, p. 8) Finicelli et al. (2013, p. 96)
Penrosian economics/ theory; theory of the growth of the firm				McKelvie & Wiklund (2010, p. 261) Naldi & Davidsson (2014, p. 687) Nason & Wiklund (2018, p. 32)

Distinctive capabilities	Makadok & Walker (2000, p. 853)			
Human capital theory				Buchholtz et al. (2003, p. 506) Sturman et al. (2008, p. 290) Hatak & Zhou (2019, p. 1)
Absorptive capacity	Volberda et al. (2010, p. 931)	Zahra & George (2002, p. 185)		Schindehutte & Morris (2009, p. 149) Patel et al. (2012, p. 202) Schleimer & Pedersen (2014, p. 316) Qian & Jung (2017, p. 100)
Complexity science				Moldenau & Bauer (2004, p. 2004) Houchin & MacLean (2005, p. 149) Schindehutte & Morris (2009, p. 241)
Industrial organization, industrial economics				Fudenberg & Tirole (1987) Schmalensee (1988, p. 643) Schindehutte & Morris (2009, p. 249)
Behavioral theory of the firm				Gentry et al. (2016, p. 733) Hoskisson et al. (2017, p. 137) Bromiley et al. (2019, p. 1517)
Behavioral economic(s) (theory)				Shepherd & Zacharakis (2000, p. 25) Schindehutte & Morris (2009, p. 249) Thaler (2016, p. 1591)
Bounded rationality	Argote & Greve (2007, pp. 337, 339) Helfat & Peteraf (2009) Hallen & Pahnke (2016, p. 1536) Kotlar et al. (2019, p. 268)	Mathews (2010, p. 221)		Schindehutte & Morris (2009, p. 249) Kim & Anand (2018, p. 1960)
Structuration theory				Downing (2005, p. 187) Jarzabkowski (2008, p. 621) Short et al. (2010, p. 42)
Resource dependency theory				Sherer & Lee (2002, p. 102) Hillman et al. (2009) Brouthers et al. (2015, p. 1162)
Theory of innovation				Audretsch et al. (2009, p. 152)

Corporate entrepreneurship theory				Guth (1995, p. 165) Audretsch et al. (2009, p. 152)
Anti-trust economic(s) theory				Baden-Fuller (1995, p. S5) Ireland et al. (2003)
Property rights theory				Audretsch et al. (2009, p. 152) Kim & Mahoney (2010, p. 806) Bel (2018, pp. 1678–79)
Cross-boundary disruptor			Burgelman & Grove (2007, p. 315)	
Resource orchestration	Barney et al. (2011, p. 1306) Carnes & Ireland (2013, p. 1413) Baert et al. (2016, p. 349)			Wales et al. (2013, p. 93) Liu et al. (2016, p. 13) Frankenberger & Stam (2019, p. 1)
Strategic learning	Sirén et al. (2012, p. 19)			
Strategic fit	Katsikeas et al. (2006, p. 869) Apayadin et al. (2020, p. 5)			
Cultural entrepreneurship theory				Cullen et al. (2014, p. 776) Lounsbury et al. (2019, p. 1214) Taeuscher et al. (2020, p. 3)
Business model	Demil et al. (2015, p. 4)		Demil et al. (2015, p. 1)	
Signaling theory				Connelly et al. (2011, p. 39) Reuer et al. (2012, p. 667) Alsos & Ljunggren (2017, p. 567)
Employment choice theory				Levie & Autio (2011, p. 1392)
Theory of the strategic (entrepreneurial) entry				Levie & Autio (2011, p. 1392)
Theory of “noisy” selection				Jovanovic (1982, p. 649) Agarwal & Audretsch (1999, p. 246) Cefis & Marsili (2006, p. 627)

(Determinants of) growth	Weinzimmer et al. (1998, p. 237) Wong et al. (2005, p. 339) Du & Temouri (2015, p. 123)		McKelvie & Wiklund (2010, pp. 261, 264) Du & Temuouri (2015, p. 123)	
Goal setting theory				Kim & Hamner (1976, p. 48) Fried & Slowik (2004, p. 404) Guthrie & Hollensbe (2004, p. 264)
Knowledge-based theory				Grant (1996, p. 109) Nickerson & Zenger (2004, p. 617) Low & Ho (2016, p. 641) Caner et al. (2017, p. 1804)
Opportunity – discovery/creation	Short et al. (2010, p. 40)			Alvarez & Barney (2007, p. 11) Martin & Wilson (2016, p. 263)
Austrian economic theory				Hicks (1970, p. 257) Kirzner (1997, p. 60) Rosen (1997, p. 147) Teece (2014c, p. 328)
Capital structure theory				Bradley et al. (1984, p. 857) Cumming (2006, p. 157)
Imperfect environmental matching and unresolved conflict		Mathews (2010, p. 221)		
Theory of Knightian profit				Mathews (2006, p. 101) Miller & Mahoney (2008, p. 294) Amoroso et al. (2017, p. 341)
International product life cycle theory				Ayal (1981, p. 91) Mullor-Sebastián (1983, p. 95) Lancaster & Wesenlund (1984, p. 72)
Creative/entrepreneurial cognition			Mitchell et al. (2004, p. 511)	

Source: Developed exclusively for this research.

5. Theories applied in strategic entrepreneurship research

Table 21. Theories in strategic entrepreneurship research: Definitions and applications summarizes the various theories applied in the literature on strategic entrepreneurship. The theories are grouped by category, and each theory is defined. The table's last column lists scholars whose articles are included in this SLR and whose research is informed by the respective theories.

Table 21. Theories in strategic entrepreneurship research: Definitions and applications

Category	Theory	Definition	Applied in
<i>Economics</i>			
	Ricardian economics (2)	Ricardian economics is a classical economic theory influencing thought on the principles of political economy (wage theory, measure of value) and profits (theory of rent, diminishing returns) (Hollander 1983, p. 314).	<ul style="list-style-type: none"> - Ireland et al. (2003, p. 972) hold that Ricardian economics is the foundation of the resource-based view (RBV) and outline its importance for strategic management and entrepreneurship as a discipline. - Mathews (2010, p. 221) discusses Ricardian rents as the basis of his framework for strategic entrepreneurial dynamics.
	Neoclassical economics (1)	This theory assumes that an economy's equilibrium will be restored after a disturbance because of the "tâtonnement" (trial-and-error) process made possible by the flexibility in wages and prices (Rutherford 2013). "Neoclassical growth theory explains growth in terms of interactions between two basic types of factors: technology and conventional inputs" (Romer 1996, p. 203).	<ul style="list-style-type: none"> - Westgren & Wuebker (2019, p. 507) apply neoclassical economics to develop an economical model of strategic entrepreneurship (SE).
	Evolutionary economics (2)	Evolutionary economics describes the constant change within an economy in terms of a Darwinian evolutionary process characterized by variation, inheritance, and selection (Nelson & Winter 1982, pp. 9–11, 17).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 248) apply evolutionary economics to explain the relationship between strategic entrepreneurship and the firm's "meso-level" connections to the environment. - Hitt et al. (2011, p. 60) argue that SE's "environmental input factors" are founded on ecological theory and evolutionary theory.

	Industrial organization / Industrial economics (1)	“Industrial organization is concerned with the structure of industries in the economy and the behavior of firms and individuals in these industries” (Einav & Levin 2010, p. 146); this field addresses how markets deviate from perfect competition.	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 249) utilize industrial organization to connect strategic entrepreneurship with the firm level and the competitive environment.
	Transaction cost economics (2)	According to Williamson (2010, p. 673), “transaction cost economics is the means by which to breathe operational content into governance and organization ... examining economic organization through the lens of contract[s] (rather than the neoclassical lens of choice).”	<ul style="list-style-type: none"> - Hitt et al. (2001, p. 479) examine SE through the lens of transaction cost theory. - Schindehutte & Morris (2009, p. 248) apply transaction cost economics to describe how strategic entrepreneurship is related to “meso-level” connections between firm and environment.
	Behavioral economics (1)	Behavioral economics is defined as a mixture of psychology and economics that focuses on analyzing the economic decision-making process in terms of human behavior reflecting psychological foundations (Camerer et al. 2004).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 249) highlight the relevance of behavioral economics for strategic entrepreneurship by connecting the individual, the group, the firm, and the competitive environment.
	Austrian economics (3)	Austrian economics “[may be] defined ... as an attempt to analyze the market mechanism from a dynamic perspective, by defining competition as a disequilibrium process rather than a state of affair[s]” (Gloria-Palermo & Palermo 2005, p. 65).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 249) point to the relevance of Austrian economics for strategic entrepreneurship by connecting the individual, the group, the firm, and the competitive environment. - Mathews (2010, p. 219) applies a framework based on (Lachmann’s) Austrian economics to explain strategic entrepreneurial dynamics. - Keyhani (2019, p. 228–29) develops an Austrian-based computational model integrating “economic logics of equilibrium-based strategy theory and disequilibrium-based entrepreneurship theory”.
	Knightian profit (1)	Knight “defined [profit] as a pure ‘residual’ income after all contractual payments for factors utilized have been paid” (Mathews 2010, p. 225).	<ul style="list-style-type: none"> - Mathews (2010, p. 225) applies Lachmann’s capital structure theory and the Knightian theory of profit to develop a framework for strategic entrepreneurial dynamics.
	Human capital theory (2)	Human capital has been defined as “the stock of an individual’s marketable knowledge, skills and abilities gained by investing in education, training and experiences, that are ultimately valuable to organizations, and can influence the individual’s future income” (Ramaswami et al. 2016, p. 1963).	<ul style="list-style-type: none"> - Ireland et al. (2003, pp. 975–76) claim that human capital is a critical resource not only for new ventures but also for large established organizations – that is, because human capital is a factor that figures prominently in determining how the firm operates and competes. - Monsen & Wayne Boss (2009, p. 72) apply human capital theory to “open the black boxes of Ireland et al.’s (2003) model of strategic entrepreneurship”.
	Antitrust economics (1)	Antitrust economics is concerned “with the legal and regulatory limits on firms’ competitive strategies” (Shapiro 2010).	<ul style="list-style-type: none"> - Ireland et al. (2003, p. 972) argue that the foundation of RBV theory is antitrust economics and that RBV is, in turn, the foundation of SE.

	Capital structure theory (1)	Lachmann's theory is that "the capital structure of the economy is its defining characteristic at any moment in time, and it is being continuously made over, through combinations and recombinations of capital goods driven by entrepreneurs who[,] in seeking to put into effect their production plans, are forced to make adjustments as the plans prove to be mutually incompatible" (Mathews 2010, p. 219).	- Mathews (2010, p. 219) applies Lachmann's capital structure theory to explain strategic entrepreneurial dynamics.
	Property rights theory (1)	Under this theory, the firm is an assembly and connection of rights, incentives, and contracts in which the ownership of a certain asset confers control rights (Bel 2018, p. 1679).	- Audretsch et al. (2009, p. 150) borrow from the property rights view to address the question how – and with what implications for strategic entrepreneurship – a firm can exercise control over resources that it does not possess.
	Signaling theory (1)	The notion behind the (job market) signaling theory is that potential employees have <i>hidden</i> attributes that cannot be objectively studied by the employer but correlate with the employees' job performance and with the value for the employer. According to this theory, the employer interprets an employee's investment in education as a positive signal that correlates with productivity on the job (Spence 1973; Spence 2002, pp. 436–37).	- Levie & Autio (2011, p. 1392) apply signaling theory to test the "effect of business regulations and rule of law on strategic and non-strategic entrepreneurial entry".
	Game theory (2)	In game-theoretic models, each firm's optimal action depends on what it believes its rivals will do. So before making its own decisions, the focal firm must put itself "in the shoes" of its rival and analyze the situation from that perspective (Saloner 1991, p. 120).	- Schindehutte & Morris (2009, pp. 248–49) apply game theory to link strategic entrepreneurship with the competitive environment. - Keyhani (2019, p. 227) apply cooperative game theory to computational simulation methods to integrate "models of the entrepreneurial function in disequilibrium (economic foundations of entrepreneurship), thereby providing an economic foundation for strategic entrepreneurship".

	New institutional economics (1)	“New institutional economics is concerned to explain and evaluate the alternative ways in which economic activity is organized ... this includes a concern to explain both the existence of firms in the light of their apparent irrelevance in the neoclassical system ... and the advantages and disadvantages of extending the boundaries of existing firms” (Lockett & Thompson 2001, pp. 727–28).	<ul style="list-style-type: none"> - Gölgeci et al. (2017, p. 244) apply neo-institutional theory and new institutional economics to explore strategic entrepreneurship.
Strategic management			
	Knowledge-based view (3)	Knowledge-based theory argues that the “critical input in production and [the] primary source of value is knowledge” (Grant 1996, p. 112).	<ul style="list-style-type: none"> - Agarwal et al. (2007, pp. 265–66) connect the knowledge-based view (KBV) of the firm with SE by arguing that the heterogeneity of organizations – when viewed as “knowledge producing systems” – is due to members’ tacit knowledge that is individually and privately held. - Ketchen et al. (2007, p. 379) discuss the KBV in strategic entrepreneurship and identify links to collaborative innovations. - Liu et al. (2010, p. 342) develop an integrated framework that links social capital theory and the KBV to explore knowledge spillovers in the context of human mobility.
	Resource dependency theory (1)	Resource dependency theory is characterized by “the influence of external factors on organizational behavior and, although constrained by their context, managers can act to reduce environmental uncertainty and dependence” (Hillman et al. 2009, p. 1404).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 249) describe resource dependency as a central theory through which strategic entrepreneurship can be explained.
	Resource-based view (14)	The RBV builds on the idea that firm resources are heterogeneously distributed, are stable over time, and provide a sustained competitive advantage when they exhibit the (idiosyncratic) attributes of being valuable, rare, imperfectly imitable, and sustainable (Barney 1991, p. 99).	<ul style="list-style-type: none"> - Hitt et al. (2001, p. 479) employ the RBV as a building block in their explanation of SE. - Ireland et al. (2003, p. 964-65) argue that today’s most important competitive advantages are based on resources that are “more valuable, rare, imperfectly imitable, and nonsubstitutable than those held by competitors.” Yet firms must not only exploit temporary competitive advantages but also explore new competitive advantages; in other words, the firm needs to engage in both the opportunity-seeking and advantage-seeking behavior necessary for growth and wealth creation. - Ketchen et al. (2007, p. 380) describe the strategic resource dilemma faced by small and large firms alike in the SE realm; they also discuss collaborative innovation and its effects on wealth creation. - Yan & Hu (2008, p. 13) adopt the RBV perspective in their SE-oriented analysis of the Taiwanese bicycle industry.

			<ul style="list-style-type: none"> - Audretsch et al. (2009, p. 152) write that the foundations of strategic entrepreneurship comprise an “array of theoretical perspectives” that include the resource-based view. - Monsen & Wayne Boss (2009, p. 72) apply the RBV to “open the black boxes of Ireland et al.’s (2003) model of strategic entrepreneurship”. - Schindehutte & Morris (2009, p. 247) claim – in their analysis of strategic entrepreneurship – that RBV theory is a causal model and so cannot easily explain the concept of novelty, which presupposes dynamic behavior over time. - Steffens et al. (2009, p. 126) point out that both strategic positioning and the RBV focus on increasing – as a vital performance indicator – the firm’s competitive advantage and profitability vis-à-vis its rivals. - Mathews (2010, p. 220) applies Lachmann’s capital structure theory to explain strategic entrepreneurial dynamics – integrating “dominant approaches to strategy today, namely the resource-based view”. - Hitt et al. (2011, p. 61) argue – on the basis of organizational learning, the RBV, and real options theory – that the sharing of ideas, knowledge, capabilities, and opportunities among small and large firms supports the development of strategic entrepreneurship. - Luke et al. (2011, p. 319) maintain that the RBV is essential for (strategic) entrepreneurship. - Lumpkin et al. (2011, p. 289) leverage RBV theory to explain that, at the intersection of strategic entrepreneurship and family business, “familiness” represents a unique bundle of resources. - Carlbäck (2012, pp. 349, 357) examines strategic entrepreneurship in the Swedish hospitality industry through the lens of agency theory and the RBV. - Tipu & Fantazy (2018, p. 2046) harness the resource-based view to assess the relationship between strategic entrepreneurship and organizational performance as (partially) mediated by supply chain management.
	Real options theory (5)	This theory can be viewed as a “strategic and intuitive way of thinking ..., a logical tool or rhetorical device for creating or keeping options open and exploiting them” (Trigeorgis & Reuer 2017, p. 47; see also McGrath 1999).	<ul style="list-style-type: none"> - Ireland et al. (2003, p. 969) describe real options theory as a part of strategic entrepreneurship that supports the decision-making process – in particular, whether or not the firm should pursue its option to explore (invest in) an opportunity. - Ketchen et al. (2007, p. 380) apply real options theory in their discussion of how SE and collaborative innovation can be combined to create wealth.

			<ul style="list-style-type: none"> - Schindehutte & Morris (2009, pp. 248–49) argue that, at the firm level, real options theory is relevant to SE research. - Hitt et al. (2011, p. 61) argue – on the basis of organizational learning, the RBV, and real options theory – that the sharing of ideas, knowledge, capabilities, and opportunities among small and large firms supports the development of SE. - Mazzei et al. (2017, p. 631) apply real options theory in their “toolbox approach” to strategic entrepreneurship.
	Asymmetry-based view (1)	In the asymmetry-based view, a firm’s “hidden potential in ordinary or even disadvantaged resource positions ... can ultimately give rise to competitive advantage” (Madhok & Keyhani 2012, p. 27; see also Miller 2003).	<ul style="list-style-type: none"> - Madhok & Keyhani (2012, p. 27) adopt the asymmetry-based view when discussing the process and extent of internationalization of EMNEs.
	Competitive dynamics (1)	“Competitive dynamics considers competition to be interactive or ‘dynamic’, thus the building blocks of competition comprise action/reaction dyads” (Chen & Miller 2015, p. 2)	<ul style="list-style-type: none"> - Withers et al. (2018, p. 349) apply competitive dynamics theory to build and analyze a model of SE leading to competitive landscape shifts.
Sociology			
	Institutional theory (4)	Institutional theory describes a process by which organizations adapt “in reaction to the characteristics and commitments of participants as well as to influences and constraints from the external environment” (Scott 1987, p. 494).	<ul style="list-style-type: none"> - Hitt et al. (2001, p. 479) use institutional theory to help explain strategic entrepreneurship. - Schindehutte & Morris (2009, p. 248) argue that institutional theory is relevant to SE because it links the firm with the institutional environment. - Johanna de Villiers-Scheepers (2012, p. 404) discusses institutional theory in relation to SE and perceived environmental factors in emerging economies, market economies, systems, and institutions. - Mazzei et al. (2017, p. 631) apply institutional theory in their “toolbox approach” to strategic entrepreneurship.
	Neo-institutional theory (1)	Neo-institutional theory argues that institutions imitate the components of other institutions that have been shown to yield economic returns (Haunschild & Miner 1997, p. 473; Boone et al. 2013, p. 514).	<ul style="list-style-type: none"> - Gölgeci et al. (2017, p. 244) apply neo-institutional theory to study SE through the lens of institutions and dynamic capabilities.
	Institution-based view (2)	With roots in sociological and organizational institutionalism (Peng et al. 2017, p. 894; Peng et al. 2018, p. 190), the institution-based view reflects the “dynamic interaction between institutions and organizations and considers strategic choices as the	<ul style="list-style-type: none"> - Yiu et al. (2014, p. 196) adopt the institution-based view of the firm in their study of dueling institutional logics. - Pearce & Quan (2015, p. 228) treat the institution-based view as a complementary perspective when describing the entrepreneurial approach to mobility.

		outcome of such an interaction” (Peng et al., 2017, p. 894; see also Peng et al. 2009, p. 66).	
	Network theory (5)	“Network theory refers to the mechanisms and processes that interact with network structures to yield certain outcomes for individuals and groups” (Borgatti & Halgin 2011, p. 1168).	<ul style="list-style-type: none"> - Hitt et al. (2001, p. 481) develop a concept of strategic entrepreneurship as represented through six domains, one of which is external networks. - Ketchen et al. (2007, p. 378) apply network theory to discuss the significance of individuals, groups, and firms for strategic entrepreneurship, collaborative innovation, and wealth creation. - Schindehutte & Morris (2009, p. 252) claim that entrepreneurial action reflects a combination of network theory, the resource-based view, and behavioral assumptions. - Hitt et al. (2011, p. 61) argue that social capital theory, network theory, and theories of interconnectedness underpin any process model of strategic entrepreneurship. - Mazzei et al. (2017, p. 631) apply network theory in their “toolbox approach” to strategic entrepreneurship.
	Agency theory (6)	Agency theory is suitable for describing relationships “in which one party (the principal) delegates work to another (the agent), who performs that work” (Eisenhardt 1989, p. 58), where the particulars of this relationship are stipulated in a contract.	<ul style="list-style-type: none"> - Audretsch et al. (2009, p. 149) examine SE through the lens of agency theory; they report that the role of managers in entrepreneurial ventures is definitely not comparable to managerial roles in large and established organizations. - Meuleman et al. (2009, p. 215) “develop [a] complementary theoretical perspective of agency [theory] and strategic entrepreneurship”. - Schindehutte & Morris (2009, p. 249) explain the relevance of agency theory for strategic entrepreneurship at the individual level. - Carlbäck (2012, pp. 353–54) examines strategic entrepreneurship in the Swedish hospitality industry through the lenses of agency theory and the resource-based view. - Bendickson et al. (2016, p. 4) examines strategic entrepreneurship through the lens of agency, arguing further research is needed to study how the agency problem manifests in the concept of strategic entrepreneurship. - Mazzei et al. (2017, p. 631) apply agency theory in their “toolbox approach” to strategic entrepreneurship.
	Upper echelons theory (1)	The upper echelons theory posits “that executives’ experiences, values, and personalities greatly influence their interpretations of the situations they face and, in turn, affect their choices” (Hambrick 2007, p. 334)	<ul style="list-style-type: none"> - Mazzei et al. (2017, p. 631) apply upper echelons theory in their “toolbox approach” to strategic entrepreneurship.

	Structuration theory (1)	<i>Structuration</i> is defined as “the conditions governing the continuity and transformation of structures, and therefore the reproduction of systems”, while the systems themselves are “reproduced relations between actors or collectivities as regular social practices” (Leydesdorff 2010, p. 1239; see also Giddens 1979).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 249) establish that structuration theory is relevant to SE in that the former links the individual, group, and firm levels with both the competitive and institutional environment.
	Social capital theory (6)	Social capital is “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” (Nahapiet & Ghoshal 1998, p. 243).	<ul style="list-style-type: none"> - Ireland et al. (2003, p. 966) use social capital theory to derive theoretical foundations for strategic entrepreneurship. - Monsen & Wayne Boss (2009, p. 72) apply social capital theory to “open the black boxes of Ireland et al.’s (2003) model of strategic entrepreneurship”. - Liu et al. (2010, p. 342) develop an integrated framework that links social capital theory and the knowledge-based view in order to explore the knowledge spillovers associated with human mobility. - Hitt et al. (2011, p. 61) argue that the process model of SE is founded on social capital theory, network theory, and theories of interconnectedness. - Lumpkin et al. (2011, p. 289) discuss the value of family resources in strategic entrepreneurship. - Liu et al. (2018, p. 1) apply social capital theory to explore the success of HTC as a company to managing the strategic entrepreneurial process.
	Social identity theory (2)	According to social identity theory, “individuals partly define themselves in terms of salient group memberships or social categories” (Hogg & Terry 2000; Monsen & Wayne Boss 2009, p. 78).	<ul style="list-style-type: none"> - Monsen & Wayne Boss (2009, p. 78) use social identity theory in the SE context to bridge knowledge about organization-level entrepreneurial strategies and individual-level role ambiguity. - Mazzei et al. (2017, p. 631) apply social identity theory in their “toolbox approach” to strategic entrepreneurship.
Psychology			
	Goal-setting theory (1)	According to this theory, “individuals increase their commitment to a task when the goals of this task become more proximal” (Obeng et al. 2014, p. 320; see also Stock & Cervone 1990).	<ul style="list-style-type: none"> - Patzelt & Shepherd (2009, p. 318) adopt a goal-setting framework to investigate how policy programs are perceived by academic entrepreneurs.
	Theory of reasoned action (1)	“The theory of reasoned action proposes that a relatively small number of concepts can be used to predict, explain, and influence the behavior of individuals” (Becker et al. 1995).	<ul style="list-style-type: none"> - Kantur (2016, p. 36) applies the theory of reasoned action to study the mediation effect of SE on performance variables.

<i>Organization & system theories</i>			
	General systems theory (2)	“A system is defined by a boundary between itself and its environment, dividing it from an infinitely complex exterior ... where the inside of the system is an area of reduced complexity” (Schindehutte & Morris 2009, p. 252).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, pp. 252–53) distinguish between simple and complex systems toward the end of characterizing strategic entrepreneurship in terms of simple linear systems. - Mazzei et al. (2017, p. 631) apply systems theory in their “toolbox approach” to strategic entrepreneurship.
	Complexity theory (1)	Modern complexity theory underscores that some systems with many interactions and substantially differentiated components can yield simple results and behavior even as the behavior of other such systems is impossible to predict, where the latter are characterized by relatively few interactions and low levels of differentiation (Anderson 1999, p. 217).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 241) invoke complexity theory when exploring the topics of “exploration–exploitation, opportunity, newness, micro–macro interaction, and dynamics” in the SE field.
	(Evolutionary) theory of the growth of the firm (2)	Penrose’s (1959) evolutionary theory of firm growth postulates that firm characteristics and the environment determine the availability of resources and the extent of firm growth (Thota & Munir 2011). The theory of the growth of the firm (TGF) views a firm’s “‘bundle of resources’ ... – in particular[,] human resources – as ... the key to the firm’s success and the principal constraint on its growth” (Buckley & Casson 2018, p. 153).	<ul style="list-style-type: none"> - Ireland et al. (2003, p. 972) argue that the resource-based view could explain performance differences among firms and that Penrosian economics are the foundations of the RBV (cf. Nair et al. 2008, p. 1026). - Obeng et al. (2014, p. 334) apply the resource-based TGF to discuss firm growth in connection with strategic entrepreneurship in Ghana.
	Behavioral theory of the firm (2)	At the core of this theory is the notion that the “firm is an adaptive political coalition, a coalition between different individuals and groups of individuals in the firm, each having different goals and hence possibly in conflict” (Augier & March 2008, p. 3; see also Pitelis 2007). It is a theory that addresses “organizational goals, expectations and choice” (Augier & March 2008, p. 3; see also Pitelis 2007) with an emphasis on the decision-making process (March & Simon 1958; Cyert & March 1963).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 248) use the behavioral theory of the firm (BTF) to link strategic entrepreneurship with theories that explain heterogeneity. - Mathews (2010, p. 221) discusses the BTF’s role in his framework for strategic entrepreneurial dynamics.
	Resource dependence theory (1)	This theory considers the firm “as an open system, dependent on contingencies in the external environment” (Hillman et al. 2009, p. 1404; see also Pfeffer & Salancik 1978); one cannot understand, manage, or control organizations without first understanding the “ecology of organizations” (Pfeffer & Salancik 1978, p. 1).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 248) apply resource dependence theory to strategic entrepreneurship, linking “the social, political, and technological environments and change at the institutional environment, industry, and firm levels”.

	Organizational learning (9)	Organizational learning consists of the acquisition and processing of potentially useful knowledge by organizations (Huber 1991, p. 89).	<ul style="list-style-type: none"> - Hitt et al. (2001, p. 481) harness organizational learning to develop the concept of strategic entrepreneurship being represented through six domains. - Ireland et al. (2003, p. 966) use organizational learning as a theoretical building block when developing their model of strategic entrepreneurship. - Ketchen et al. (2007, p. 379) apply learning theory, which they define as organizational learning, to describe how “collaborative networks” can integrate different learning capabilities and help firms enhance their opportunity-seeking and advantage-seeking capabilities. - Monsen & Wayne Boss (2009, p. 72) apply organizational learning to “open the black boxes of Ireland et al.’s (2003) model of strategic entrepreneurship”. - Schindehutte & Morris (2009, p. 249) postulate the relevance of organizational learning for SE as firm-level theory. - Mathews (2010, p. 231) applies organizational learning and dynamic capabilities theory to develop a framework for strategic entrepreneurial dynamics. - Hitt et al. (2011, p. 61) argue – on the basis of organizational learning, the RBV, and real options theory – that sharing ideas, knowledge, capabilities, and opportunities among small and large firms supports the development of SE. - Kyrgidou & Petridou (2011, p. 699) examine exploration and exploitation competence in SE through the lens of organizational learning. - Sirén et al. (2012, p. 19) draw on organizational learning to explain the exploration–exploitation performance relationship as mediated by strategic learning.
	Population/organizational ecology (4)	Population ecology is based on Darwinian principles and analyzes “a population of organizations” by “examining how certain characteristics (e.g., size and scope), the environment, and random chance affect organizational outcomes ... over many years ... finding patterns across industries in how organizations are born, change, and die” (MacMillan & Komar 2017, p. 376). The theory applies a construct of organizational evolution to describe organizational diversity within a certain population and thereby assumes that organizations adapt slowly as compared with the pace of environmental change (Hannan & Freeman 1977; Carroll & Hannan 2015, p. 358).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, pp. 248–49) utilize population ecology to explain how strategic entrepreneurship is connected to the environment at the industry and firm level. - Hitt et al. (2011, p. 60) argue that SE’s environmental input factors are founded on ecological theory and evolutionary theory. - Boone et al. (2013, p. 512) acknowledge population ecology’s contribution to the development of a dynamic theory of firm positioning. - Mazzei et al. (2017, p. 631) apply organizational ecology in their “toolbox approach” to strategic entrepreneurship.

	Strategic choice theory (2)	In strategic choice theory, leaders (or leading groups) can exploit a political process to alter the organizational structure for their own benefit (Child 1972; Child 1997, p. 43).	<ul style="list-style-type: none"> - Schindehutte & Morris (2009, p. 249) underscore the relevance of strategic choice theory as a firm-level account of strategic entrepreneurship. - Mazzei et al. (2017, p. 631) apply strategic choice theory in their “toolbox approach” to strategic entrepreneurship.
	Contingency theory (3)	Contingency theory explores the interdependencies among subsystems – as well as between organizations and the environment – to identify connections and variable compositions while acknowledging the multivariate nature of organizations. This theory seeks to explain how organizations function under different circumstances and at different times (Kast & Rosenzweig 1973; Shepard & Hougland 1978, pp. 413–14).	<ul style="list-style-type: none"> - Hitt et al. (2001, p. 479) employ contingency theory to describe the role of SE in wealth creation. - Schindehutte & Morris (2009, pp. 248–49) argue that contingency theory is relevant to strategic entrepreneurship because it explains the “interaction between exogenous discontinuities originating in the ... environment and change at ... [the] firm level.” - Luke et al. (2011, p. 321) suggest that SE must be managed in a way that allows the firm to maintain its internal balance.
	Configuration approach theory (3)	The configuration approach describes relationships among variables representing multiple domains (Dess et al. 1993, p. 776).	<ul style="list-style-type: none"> - Steffens et al. (2009, p. 126) harness the configuration approach to define their endogenous variables: firm growth and profitability. - Kraus et al. (2011, p. 63) use the configuration approach to explain their conceptual model of SE. - McKenny et al. (2018, p. 504) apply a configuration approach in strategic entrepreneurial orientation to study the effect of different entrepreneurial orientation domains on firm performance.
	Theory of “noisy selection” (1)	Jovanovic (1982, p. 649) takes a novel approach to firm growth: “noisy selection”, which describes how firms learn about their efficiency at different lead times and connects that learning to firm growth and survival.	<ul style="list-style-type: none"> - Obeng et al. (2014, p. 502) apply learning theory in their discussion of how strategic entrepreneurship is related to firm growth in Ghana.
Entrepreneurship			
	Cultural entrepreneurship theory (1)	<i>Cultural entrepreneurship</i> is “the process of storytelling that mediates between extant stocks of entrepreneurial resources and subsequent capital acquisition and wealth” (Lounsbury & Glynn 2001, p. 545).	<ul style="list-style-type: none"> - Hitt et al. (2001, p. 479) employ cultural entrepreneurship theory when examining strategic entrepreneurship through various theoretical lenses.
	Knowledge spillover theory (8)	“Knowledge spillovers ... [are] ... the external benefits from knowledge creation ... enjoyed by parties other than the party investing in the creation” (Agarwal et al. 2010, p. 272).	<ul style="list-style-type: none"> - Agarwal et al. (2007, p. 264) argue that SE knowledge spillovers constitute a vital mechanism in creative construction theory. - Agarwal et al. (2010) discuss knowledge spillovers in the context of strategic entrepreneurship. - Kotha (2010, p. 287) references knowledge spillover theory when describing SE in the US aviation industry. - Liu et al. (2010, p. 344) remark that only a few studies have recognized the entrepreneur as a conduit for knowledge transfers.

			<ul style="list-style-type: none"> - Sarkar (2017, p. 253) utilizes the knowledge spillover theory to analyze the cork industry in Portugal with regard to SE. - Ferreira et al. (2017, p. 161) discuss knowledge spillover from strategic entrepreneurship and the domain's future research path. - Tavassoli et al. (2017, p. 233) apply knowledge spillover theory to analyze three dimensions of strategic entrepreneurship. - Cristo-Andrade & Ferreira (2018, p. 263) study the effect of knowledge spillovers and strategic entrepreneurship on different outcome variables.
	Effectuation (1)	Effectuation theory explains that “in highly uncertain and dynamic environments, target customers can only be defined <i>ex post</i> through whoever buys a product or service ... goals change, are shaped and constructed over time, and are sometimes formed by chance” (Sarasvathy 2008, p. 1024).	<ul style="list-style-type: none"> - Miller & Le Breton-Miller (2017, p. 667) apply effectuation theory in strategic entrepreneurship to study sources of entrepreneurial orientation.

Sources: Adapted from Glaser and Strauss (1967), Suddaby (2006), Walsh et al. (2015), Nolan and Garavan (2016), and Danese et al. (2018).

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EXHIBIT 5

Future Research Avenues

1. Methodology

- In this section, I summarize possible future research avenues so as to enhance the robustness of strategic entrepreneurship's theoretical foundations and also the generalizability of frameworks adopted by a variety of applied research methods (cf. Short et al., 2009).
- In addition to summarizing the key future research proposed by all articles included in the systematic literature review (SLR), this exhibit merges findings to present an integrated framework for future research possibilities (Exhibit 7).
- If an article addresses more than one topic – for instance, strategic entrepreneurship (SE) *and* knowledge spillovers – then I list only the proposed future research related to SE (since that is the focus of this SLR).
- I do not consider the future research proposed in “special issue” articles.
- Throughout my review of all included articles, future research possibilities are extracted and the vast majority are included in Exhibit 5 (Future Research Avenues); they are then transferred to this exhibit.
- I synthesize the articles' results as a function of their content and group them accordingly. I develop corresponding research questions for each of the groups with reference to their managerial, academic, and/or policy orientation. The findings from this Exhibit 5 (Future Research Avenues) are integrated into this Exhibit 7 (Analysis of Research Gaps).

2. Integrated summary of research opportunities in strategic entrepreneurship

Table 22. Research opportunities in SE research

Gap/Area	Research opportunity	Sample research questions (cf. Exhibit 7)	Discussed in
<i>Theoretical perspectives, concepts, and foundations</i>		Addressing Gap 1: Heterogeneity in theories applied	
	Application of other theoretical lenses in SE research	How can theories of revolutionary participation/momentum explain resource mobilization in strategic entrepreneurship (SE)?	Schindehutte & Morris (2009, p. 270)
		What other theoretical perspectives or concepts inform and drive SE? (Developed for this study using gap analysis.)	
		How does SE relate to the institutional-based view of the firm?	Levie & Autio (2011, p. 1411); Yiu et al. (2014, p. 10)
		How can the theoretical basis of the connection between knowledge spillovers and SE be enlarged?	Agarwal et al. (2010, p. 276)
		How does Penrose's resource-based theory inform SE research?	Patzelt & Shepherd (2009, p. 334)
		What effects do family versus business identity, stable versus dynamic markets, and cognitive conflict due to decision-maker homogeneity have on SE's exploration and exploitation in family-controlled firms?	Webb et al. (2010, pp. 74–75)
		What effect do dynamic capability dimensions (processes, paths, positions) have on social capital in strategic entrepreneurship?	Liu et al. (2018, p. 10)
		How and why does <i>autonomy</i> play a key role in SE performance outcomes?	McKenny et al. (2018, p. 516)
		How does <i>organizational ecology</i> inform SE research with regard to the effect of environmental characteristics and the balance between opportunity-seeking and advantage-seeking behaviors?	Mazzei et al. (2017, p. 637)
		How do network ties (degree of embeddedness) influence SE outcomes through the lens of network theory? How do strong or weak ties moderate the SE–outcome relationship? How do network ties rival with each other within the SE process?	Mazzei et al. (2017, pp. 637, 643)
		Through the lens of <i>agency theory</i> : how do firms guide, motivate, manage, and reward their upper- and middle-level managers for successful SE application? How do opportunity- and advantage-seeking behaviors differ by general personnel, middle management, and senior management?	Ireland & Webb (2009, p. 473); Bendickson et al. (2016, p. 187); Mazzei et al. (2017, p. 637); Mazzei (2018, p. 640)

		Applying <i>real options theory</i> : what is the best organizational design for developing an opportunity portfolio for SE that promotes both opportunity- and advantage-seeking behaviors?	Mazzei et al. (2017, p. 637)
		Leveraging <i>institutional theory</i> , what are the reactions of competitors when firms successfully apply SE?	Mazzei et al. (2017, p. 637)
		Using general systems theory, what is the effect of the engagement in SE on consequential changes in internal/external systems?	Mazzei et al. (2017, p. 638)
		What is the effect of general systems (systems theory) on exploration and exploitation activities?	Mazzei (2018, pp. 648–49)
		In terms of <i>competitive dynamics</i> and <i>social network theory</i> , what effect does strategic partner collaboration in exploration and exploitation activities have on the existing partnerships?	Mazzei et al. (2017, p. 643)
		In light of the <i>upper echelons perspective</i> , how do top management team characteristics (age, tenure, education) affect the composition, balance, and outcomes of SE behaviors?	Mazzei et al. (2017, p. 645)
	Framework	How is strategic entrepreneurial internationalization embedded in the overall SE framework?	Autio (2017)
		What are the effects of market and non-market channels of knowledge transfer on SE?	Agarwal et al. (2010, p. 277)
		What is the effect on a firms' existing exploration and exploitation activities when it turns to exploring new markets? (Developed for this study, based on Mazzei 2018, p. 646).	Mazzei (2018, p. 646)
		How can we further explore the economic foundations of SE by applying a cooperative game-centric computational model that integrates entrepreneurial-based disequilibrium theories and strategy-based equilibrium theories?	Keyhani (2019, p. 221)
		How do successful and unsuccessful configurations in SE differ from each other?	Kyrgidou & Hughes (2010, p. 57); Kraus et al. (2011, p. 68)
		What are the domains and components of SE?	Paek & Lee (2018, p. 910)
		How does SE differ from other constructs, such as entrepreneurial orientation and corporate entrepreneurship? Is SE an “umbrella” concept that subsumes other concepts?	Simsek et al. (2017, p. 510)
		What determines SE's uni-dimensional and multi-dimensional characteristics?	Simsek et al. (2017, p. 506)
		What antecedents foster or hinder SE?	Kyrgidou & Petridou (2011, p. 710); Mazzei et al. (2017, p. 645)
		What are the micro foundations of SE? How do they develop and/or merge?	Miller & Breton-Miller (2017, p. 672); Simsek et al. (2017, p. 315)

		Addressing Gap 2: Process, dynamics, mechanics	
Process, dynamics, mechanics, exploration/exploitation	More research could be conducted on the <i>processes, dynamics, mechanics</i> , and chaos that influence SE.	How are SE outcomes affected by systemwide versus individual change?	Schindehutte & Morris (2009, p. 270)
		How can “capability lock-in” – and the attendant long-term damage to SE – be prevented?	Kyrgidou & Hughes (2010, p. 59)
		How does the SE process differ in public sector organization as compared with private companies?	Höglund et al. (2018, p. 364)
		How do the fundamental process dynamics of strategic entrepreneurship work?	Schindehutte & Morris (2009, p. 270); Liu et al. (2010, p. 352)
		How are SE characteristics altered by complexity and chaos in dynamic systems?	Burgelman & Grove (2007, p. 326)
		How can a firm’s resources level in SE, and its subsequent ability to discover and exploit, be determined?	Steffens et al. (2009, p. 143)
		What processes hinder or support long-term SE development? What enables SE to reach its full potential?	Kyrgidou & Hughes (2010, p. 59); Mazzei (2018, p. 663)
		Is SE a linear and sequential process or rather a cyclically adaptive one? (Developed for this study.)	
		The importance of simultaneously pursuing opportunity seeking and advantage seeking is undisputed, but why is that pursuit presently organized sequentially with contingency-dependent building blocks and process steps? (Developed for this study.)	
		How are opportunity and strategy in SE linked, and how do they individually and jointly facilitate alignment in the overall concept?	Simsek et al. (2017, p. 510)
		Do firms operationalize different configurations of SE?	Kyrgidou & Hughes (2010, p. 57)
		How do the various components of SE interact with each other?	Ireland et al. (2003, p. 983); Mazzei (2018, p. 662);
		What are successful and unsuccessful configurations in strategic entrepreneurship?	Kyrgidou & Hughes (2010, p. 57); Kraus et al. (2011, p. 68)
		How can the SE-induced landscape shifts underlying heterogeneity be characterized?	Withers et al. (2018, p. 365)
		Is SE a consistent output-delivering process or do SE outcomes appear in waves or blasts?	Mazzei (2018, p. 663)

		If SE is a process model, then at what process stage does it create and capture value? Does that stage differ by firm? (Developed for this study.)	
		How can entrepreneurial-based disequilibrium actions/processes/theories and strategy-based equilibrium actions/processes/theories be integrated to create competitive advantage, wealth, and other benefits?	Keyhani (2019, p. 221)
		How does the “cognitive process” occur in key dimensions of SE, including strategic resource management and the application of creativity?	Kraus et al. (2011); Mazzei (2018, p. 662)
		How does the process in SE differ from one context to the next (opportunity space, landscape shifts)?	Schindehutte & Morris (2009, p. 270); Withers et al. (2018, p. 364)
		What are the underlying cause-and-effect relationships of <i>knowledge spillover strategic entrepreneurship</i> (KSSE) with regard to processes and mechanisms?	Ferreira et al. (2017, p. 166)
		Is the SE process linear and sequential in nature? Or does SE evolve in a “spiral” manner as strategically managed resources and knowledge development evolve and inform each other in parallel over time?	Kyrgidou & Hughes (2010, p 54); Mazzei (2018, p. 663); Zhao et al. (2020, p. 18)
		Is SE a cyclic process whereby exploratory and exploitive activities are complementary, mutually supporting, and carried out at the same time? (Developed for this study.)	
		Addressing Gap 2: Resources, capabilities	
Resources, capabilities	Substantial research is needed in the areas of <i>managing, bundling, leveraging, and structuring resources</i> to create new capabilities and competitive advantage.	How do resource accumulation, configuration, and coordination differ – in the SE context – when one compares family and non-family businesses?	Steffens et al. (2009, p. 143); Lumpkin et al. (2011, p. 299); Wright et al. (2012, p. 924)
		How can resources be managed to exploit today’s competitive advantages while exploring for new opportunities?	Ireland & Webb (2009, p. 472); Kyrgidou & Hughes (2010, p. 59)
		Are the same kind of employees needed in the exploration phase as in the exploitation phase?	Ireland & Webb (2009, p. 474)
		How can resources be managed strategically to create a competitive advantage?	Ireland et al. (2003, p. 983)
		How do a firm’s resource levels affect its exploration and exploitation abilities, and what are the outcomes when resources are located at different levels (external environment, firm-specific, and individual)?	Steffens et al. (2009, p. 143); Hitt et al. (2011, p. 70); Mazzei (2018, p. 635)
		What specific resources strengthen, enable, or constrain strategic entrepreneurship?	Kyrgidou & Hughes (2010, p. 59).

		How do SE-oriented university spin-offs develop and orchestrate resources and competencies over time?	Wright et al. (2012, p. 924)
		How can a firm secure the resources it needs when they are controlled by other stakeholders?	Audretsch et al. (2009, p. 163)
		How does the interaction between financial and non-financial resources affect SE and the ventures that are ultimately founded?	Patzelt & Shepherd (2009, pp. 334–35)
		What factors induce managers to deploy specific resources to achieve a sustainable balance between exploration and exploitation activities, and what is best way to determine, at the individual level, when a firm’s managers should engage in opportunity-seeking versus advantage-seeking behavior?	Audretsch et al. (2009, p. 163); Mazzei et al. (2017, p. 638); Mazzei (2018, p. 662)
		How does the resource orchestration process affect SE outcomes?	McKenny et al. (2018, p. 516)
		How can resources be optimally bundled, configured, leveraged, and structured to develop new capabilities and innovation?	Ireland et al. (2003, p. 983); Lumpkin et al. (2011, p. 299); Mazzei (2018, p. 662)
		How are the resource orchestration subprocesses of structuring, bundling, and leveraging interconnected to form a coherent set-up conducive to developing a competitive advantage and creating value? (Developed for this study.)	
		How do different resource input factors for exploration activities differ from those needed for exploitation activities when the goal is to foster innovation?	Mazzei (2018, p. 662)
		What organizational characteristics are associated with the most suitable resource orchestration set-up for innovation performance? (Developed for this study.)	
		What is the effect on SE of knowledge spillover input, knowledge input developed by the firm, and resource orchestration?	Tavassoli et al. (2017, p. 245)
		How do competitors react to changes in a firm’s SE resource endowment?	Withers et al. (2018, p. 365)
		Which resources within the SE process are most suitable for achieving a balance between exploration and exploitation? Which resources are complementary, which are at odds with each other, and which are neutral?	Mazzei (2018, p. 635)
		Addressing Gap 2: Balance	
Balance	Abundant opportunities lie in the investigation of <i>balancing</i> exploration and exploitation activities (i.e., of the simultaneous engagement in	How can engagement in advantage- and opportunity-seeking behaviors be measured at the individual level?	Agarwal et al. (2007, p. 278); Audretsch et al. (2009, p. 163); Ireland & Webb (2009, p. 473)
		How does balancing exploratory and exploitive activities in strategic entrepreneurship differ in public-sector companies?	Höglund et al. (2018, p. 166)

	opportunity-seeking and advantage-seeking behavior).		
		When strategic management is promoted in knowledge spillover strategic entrepreneurship, does the balance shift to “intrapreneurship”?	Agarwal et al. (2007, p. 280)
		What is the optimal organizational structure, process, and set-up for balancing a firm’s exploration and exploitation activities. Which factors create an imbalance?	Kyrgidou & Hughes (2010, p. 59); Hitt et al. (2011, p. 69); Kraus et al. (2011, p. 68); Paek & Lee (2018, p. 910); Withers et al. (2018, p. 366)
		How does the competitive environment affect the likelihood that a firm’s exploration and exploitation capacities will create value over time?	Hitt et al. (2011, pp. 69–70); Zhao et al. (2020, p. 18)
		How does the appetite for risk in SE affect the firm’s exploration and exploitation capacities to create value and wealth over time?	Anderson et al. (2019, p. 216)
		What techniques can firms apply to master and to excel simultaneously at exploration and exploitation? Is it necessary to excel to the same degree in both domains?	Kyrgidou & Hughes (2010, p. 58); Hitt et al. (2011, p. 70); Simsek et al. (2017, p. 506)
		How should strategic leaders select from the multitude of opportunities to promote a specific balance between exploration and exploitation activities, and are there “temporal shifts” between the two resource inputs?	Mazzei (2018, p. 650)
		What affects the quest to achieve an equilibrium between exploration and exploitation activities when operating in internal and external systems?	Mazzei (2018, p. 648)
		How do top management team attitudes toward risk affect SE behaviors?	Anderson et al. (2019, p. 216)
		What is the optimal balance between exploration and exploitation activities, and how can this state be reached (for simultaneous engagement in opportunity-seeking and advantage-seeking behaviors)?	Shirokova et al. (2013, p. 195)
		How and when does a firm shift its supporting values, culture, and reporting structures from the exploration mode to the exploitation mode?	Ireland & Webb (2009, p. 473)
		How does the quest for balancing exploration and exploitation inside the firm affect organizational identity across functional and divisional units? Does a firm need to establish multiple organizational identities to cater to both types of behavior?	Mazzei et al. (2017, p. 654)
		What abilities does a firm need in order to switch between opportunity- and advantage-seeking behaviors (exploration, exploitation)?	Simsek et al. (2017, p. 506)
Behavior	Research could further explore how certain behaviors affect SE.	What behaviors or activities reveal the existence of SE in firms?	Mazzei (2018, p. 661)

		How do certain leadership or decision-making styles (by manager level) foster or hinder successful application of SE in firms (small firms, state-owned enterprises, multi-nationals)?	Simsek et al. (2017, p. 515); Anderson et al. (2019, p. 216)
		Do qualitative or quantitative behaviors justify a firm's engagement (or not) in strategic entrepreneurship?	Mazzei (2018, p. 662)
		How can SE behavior be fostered within a group of agents?	Mazzei (2018, p. 640)
Level of analysis		Addressing Gap 3	
	Research could shed more light on how different levels or units of analysis affect SE.	What insights about strategic entrepreneurship can be gained by adopting a different unit of analysis? (Developed for this study using gap analysis; see Exhibits 7 and 8.)	
		How do countries on a macro-level apply SE? (Developed for this study using on gap analysis.)	
		What effects do industry structure have on the outcomes of strategic entrepreneurship?	Boudreaux (2019, p. 20)
		How do the empirical findings from different level of analysis in SE research (institutional environment, competitive environment, firm, team/group, individual) inform our understanding? (Developed for this study using gap analysis.)	
		Where (level, unit) and how (single action, set of actions) does SE materialize?	Simsek et al. (2017, p. 506)
Context of research		Addressing Gap 4: Sector	
	General context	Why is the entrepreneurial context an important differentiator in SE performance outcomes? (Developed for this study.)	See Audretsch et al. (2009, p. 163); Kantur (2016, p. 38); Amit & Han (2017, p. 239); Ferreira et al. (2017, p. 165); Kim (2018, p. 202)
		How do environmental factors affect decision making and the choice of a particular SE strategy?	Mazzei (2018, p. 635)
		How do the industry life cycle and industry structure affect SE outcomes over time? Is there an optimal point at which to undertake strategic entrepreneurship?	Mazzei et al. (2017, p. 645); McKenny et al. (2018, p. 516); Boudreaux (2019, p. 20)
		How do the entrepreneurial mindset, culture, time, and external shocks affect SE outcomes?	Ireland et al. (2009, p. 970); Mazzei et al. (2017, p. 646); Wright & Hitt (2017, p. 207); Mazzei (2018, pp. 662–63); Anderson et al. (2019, p. 216); Subramaniam & Shankar (2020, pp. 27, 28)
	Spatial/aspatial	How do spatial aspects influence SE characteristics and outcomes?	Wright & Hitt (2017, p. 207)

	Conduct SE research in different industry contexts.	How do strategic entrepreneurship outcomes vary in different industry contexts? (Developed for this study using gap analysis; see Exhibit 7.)	See Carlbäck (2012, p. 368); Shirokova et al. (2013, p. 173); Kantur (2016, p. 38); Ferreira et al. (2017, p. 165); Wright & Hitt (2017, p. 207); Kim (2018, p. 202)
		Are there SE outcome differentials in service and manufacturing industries? (Developed for this study using gap analysis.)	See Sirén et al. (2012, p. 36); Shirokova et al. (2013, p. 194)
		What can we learn by studying SE from the ethnographic point of view?	Mazzei (2018, p. 662)
	Conduct SE research in different organizational/institutional contexts.	How do SE outcomes vary in different organizational contexts (e.g., academic institutions, public organizations, market organizations)?	Luke & Verreyne (2006, p. 22); Patzelt & Shepherd (2009); Agarwal et al. (2010, pp. 276–77); Luke et al. (2011, p. 333); Mazzei et al. (2017, p. 645)
		Are SE knowledge spillovers and spill-ins context specific and/or specific to industries whose products have short life cycles?	Kotha (2010, p. 303)
		Does SE differ in companies with competing, complementary, or vertical relationships?	Agarwal et al. (2010, p. 276)
	Conduct SE research in other high-tech parks.	Do SE research findings differ from the results of investigating high-tech parks?	Liu et al. (2010, pp. 352–53)
	Detail our understanding of SE in the academic context.	How does the application of strategic entrepreneurship differ in the academic/university context as compared with the commercial context?	Patzelt & Shepherd (2009, p. 335); Agarwal et al. (2010); Wright et al. (2012)
		How do university spin-offs choose a strategy, and how are those strategies adapted in view of SE?	Wright et al. (2012, p. 922)
		How do successful university spin-offs accumulate and deploy resources?	Wright et al. (2012, p. 924)
		How are the acquisition strategies of SE-oriented university spin-offs timed vis-à-vis product launches in the market?	Wright et al. (2012, p. 924)
		How are SE-oriented university spin-offs concerning downstream activities related to the acquiring firm's upcoming product launches?	Wright et al. (2012, p. 924)
		How do SE-oriented spin-offs develop governance structures?	Wright et al. (2012, p. 924)
	Facilitate research of family-based firms to study the environmental factors, cognitive characteristics, and differences in human capital involved.	How do environmental factors interact with firm resources to affect that latter's input value to strategic entrepreneurship?	Lumpkin et al. (2011, p. 300); Webb et al. (2010, p. 73-75)

		How do family and non-family cognitive characteristics differ in strategic entrepreneurship?	Lumpkin et al. (2011, p. 292)
		How is “portfolio entrepreneurship” – either within a family firm or as new venture – supported or constrained by family influence in SE?	Lumpkin et al. (2011, p. 299)
		How does human capital differ in family and non-family SE-oriented firms?	Lumpkin et al. (2011, p. 299)
		What effects do loyalty, nepotism, informal justice, affective conflict, commitment among family members, and homogeneous group characteristics of family members have on SE exploration and exploitation in family-controlled firms?	Webb et al. (2010, pp. 73–74)
		What effect do family versus business identity and stable versus dynamic markets – as well as cognitive conflict due to the homogeneity of group decision makers – have on SE exploration and exploitation in family-controlled firms?	Webb et al. (2010, pp. 74–75)
		What psychological, family, and social factors lead families to be self-actualizing rather than self-serving?	Webb et al. (2010, p. 75)
	Investigate whether SE differs among male versus female entrepreneurs.	Do the different rates of female versus male strategic entrepreneurialism reflect contextual moderators (e.g., industry, technology)?	Levie & Autio (2011, p. 1414)
Countries of research		Addressing Gap 5	
	SE applications in other countries / multi-country / cross-country	Do strategic entrepreneurship outcomes and applications differ across countries?	Liu et al. (2010, pp. 352–53); Kyrgidou & Petridou (2011, p. 711); Levie & Autio (2011, p. 1414); Johanna de Villiers-Scheepers (2012, p. 420); Sirén et al. (2012, p. 36); Shirokova et al. (2013, p. 194); Tipu & Fantazy (2018, p. 2061)
		How does intellectual property protection affect SE in other countries?	Bruton et al. (2013, p. 176)
		Addressing Gap 6	
		Do results from empirical studies conducted in North America, Australasia, Africa, and the rest of the world differ from those in Europe and Asia? (Developed for this study using gap analysis.)	
		Addressing Gap 7	
	Conduct SE research in emerging economies.	Do SE applications and outcomes differ in industrialized countries as compared with emerging economies?	Bruton et al. (2013, p. 169); Shirokova et al. (2013, p. 194); Ferreira et al. (2017, p. 165)

		How do knowledge spillovers in SE differ between developed and emerging economies?	Agarwal et al. (2010, pp. 276–77)
		How – and to what extent – does strategic entrepreneurship arise in emerging economies?	Bruton et al. (2013, p. 176)
		What types of entrepreneurship (informal, global, family) affect SE performance in emerging economies?	Bruton et al. (2013, pp. 175–76)
Content of research		Addressing Gap 8	
Conceptualizing	Further explore frameworks, process models, and components.	What are the criteria for a generally accepted model or framework for strategic entrepreneurship? (Developed for this study; see Exhibit 7)	
		What components of SE should be illustrated by a model or framework? (Developed for this study.)	
		Addressing Gap 9	
	Explore balance between exploration and exploitation activities.	Do quantitative SE studies that explore similar issues with comparable constructs report the same results when studying the balance between exploration and exploitation? (Developed for this study; see Exhibit 7.)	
		Addressing Gap 10	
Implementation	Conduct SE research in a variety of industries (international data collection).	How do empirical quantitative SE findings in service industries differ from those in manufacturing industries? (Developed for this study using gap analysis.)	Kotha (2010, p. 303); Carlbäck (2012, p. 368); Johanna de Villiers-Scheepers (2012, p. 420); Sirén et al. (2012, p. 36); Shirokova et al. (2013, p. 173)
		How do SE research results vary as a function of different industries and industry life cycles?	
		Addressing Gap 11	
Relationships	Undertake more research on SE in relation to other fields, theories, and constructs.	What can we learn from research on how strategic entrepreneurship is related to other fields, theories, and constructs? (Developed for this study; see Exhibit 7.)	
	Further investigate the relationship between knowledge spillovers and strategic entrepreneurship.	What is the theoretical underpinning of the connection between strategic entrepreneurship and knowledge spillovers?	Agarwal et al. (2010, p. 276); Kotha (2010, p. 303)
		In the SE context, what are the boundary conditions on creative construction – and how does creative construction differ from creative destruction?	Agarwal et al. (2007, p. 279); Kotha (2010, p. 301)
		How is creative construction related to venture failure?	Agarwal et al. (2007, p. 279)
		How does SE affect employee mobility?	Agarwal et al. (2007, p. 278)

		How is KSSE affected by the focal industry's technological intensity and life-cycle position?	Agarwal et al. (2007, p. 278)
		What are the mechanics of and boundary conditions on knowledge spillovers in SE?	Agarwal et al. (2010, p. 276)
		What are the differential effects on SE of market, technical, and non-technical knowledge?	Agarwal et al. (2010, p. 277)
		Addressing Gap 12	
Outcomes	There are abundant research opportunities related to how SE affects outcome variables other than performance.	How do firms gain knowledge and achieve competitiveness from knowledge spillovers in SE?	Agarwal et al. (2010, p. 276); Liu et al. (2010, p. 352)
		How are knowledge spillovers in SE effected externally (i.e., individually, organizationally, strategically, institutionally, and environmentally)?	Agarwal et al. (2010, pp. 276–77)
		How does “employee entrepreneurship/mobility in SE affect the strategy and performance of both the source and recipient organizations”?	Agarwal et al. (2010, p. 277)
		How do SE-initiated landscape shifts affect firm performance?	Withers et al. (2018, p. 366)
		How can SE levels among companies be compared?	Mazzei (2018, pp. 661–62)
		How do competitive intensity, technological change, and product-market characteristics affect SE outcomes?	Mazzei (2018, p. 663)
		How do other variables (lower-level managers, culture, leadership), affect SE outcomes (performance, non-performance)?	Mazzei (2018, p. 640); Utoyo et al. (2019, p. 30)
		How do growth strategies in SE differ in their respective outcomes?	Meuleman et al. (2009, p. 233)
		How can strategic entrepreneurship research be expanded by incorporating outcome variables other than performance, value creation, profit, growth, and wealth? (Developed for this study; see Exhibit 7.) How does SE affect knowledge variables? (Developed for this study.) How does SE affect innovation performance? (Developed for this study.) What is the relation between SE and the retaining of top management teams (TMTs)? (Developed for this study.) What can we learn from the relationship between SE and the number of patents granted to a firm? (Developed for this study.) How does SE affect organizational culture?	
		What is the effect of strategic entrepreneurship on the formation of strategic alliances?	Boudreaux (2019, p. 113)
	There exist SE research opportunities in the areas of	How does SE affect affiliations, marketing organizations, and “referral chains”?	Carlbäck (2012, p. 368)

	innovation systems, networks, affiliations, and their interactions.		
		How is strategic entrepreneurship affected by open versus closed innovation systems?	Agarwal et al. (2010, p. 277)
		“What kind of institutional mechanisms can promote open innovation and the strategic use of knowledge spillovers?”	Agarwal et al. (2007, p. 280)
		How do (knowledge spillover–based) SE spin-outs compare with other market entrants in terms of the performance indicators of innovation, quality, and productivity?	Agarwal et al. (2007, p. 279)
		What effect do loose versus strong ties with collaborative networks have on the quality and quantity of innovation?	Ketchen et al. (2007, p. 379)
		What conditions foster multi-firm collaborative network innovations that complement internal innovation efforts?	Ketchen et al. (2007, p. 382)
	Considerably more research is needed into how SE is related to performance, competitiveness, (public) benefits, value, and wealth creation.	How is global competitiveness affected by SE spillovers as a strategic lever in diffusing innovation? Is public value diminished when activities traditionally performed by public organizations are outsourced to the private sector?	Ketchen et al. (2007); Agarwal et al. (2010); Boudreaux (2019)
		Does value creation under SE differ when organized structurally instead of contextually?	Kyrgidou & Hughes (2010, p. 58)
		How do job stress–related variables moderate the relationship between SE and performance?	Monsen & Wayne Boss (2009, p. 96)
		What are the moderating effects of individual and organizational attributes on the relationship between strategic entrepreneurial activities and related performance outcomes?	Hitt et al. (2011, p. 70)
		What is the moderating effect of the informal and the formal economy on the relationship between SE and value creation?	Hitt et al. (2011, p. 71)
		Do outcomes in the case of publicly created benefits differ from those observed under public and private “stewards”?	Klein et al. (2013, p. 83)
		What win–win (or win–lose) relationships are likely to arise under KSSE?	Agarwal et al. (2010, p. 277)
		What are the reciprocal effects of “opportunity-seeking activities within firms, opportunity-seeking activities between firms, advantage-seeking activities within firms, and advantage-seeking activities between firms” on SE and on wealth creation?	Ketchen et al. (2007, p. 381)

Techniques, methodologies, measures		Addressing Gap 13	
	More studies are needed that apply a longitudinal research design.	How does SE evolve over time?	Liu et al. (2010, p. 352); Hitt et al. (2011, p. 70); Johanna de Villiers-Scheepers (2012, p. 420); Sirén et al. (2012, pp. 36, 37); Bjørnskov & Foss (2013, p. 66); Shirokova et al. (2013, p. 194); Yiu et al. (2014, p. 210); Mazzei et al. (2017, p. 655); Mazzei (2018, p. 663)
		Addressing Gap 14	
	Methods: Empirical studies	Are similar results obtained irrespective of the research methods applied in strategic entrepreneurship? (Developed for this study using gap analysis.)	
		What characteristics of SE (and KSSE) might be revealed by more robust qualitative and quantitative research studies?	Agarwal et al. (2007, p. 278); Kraus et al. (2011, p. 68)
		How can we advance SE research by conducting more empirical studies?	Kraus et al. (2011, p. 68); Paek & Lee (2018, p. 911)
		How can the application of case study methods advance SE research?	Simsek et al. (2017, p. 515); Mazzei (2018, p. 663); Paek & Lee (2018, p. 910)
		What results are likely from more in-depth interviews that shed more light on SE characteristics?	Kantur (2016, p. 38)
	Methods: Informant	Do results differ in the cases of multiple informants versus a single/key informant?	Kyrgidou & Petridou (2011, p. 711)
	Sample size influence	What can be learned about SE from studies that feature a large sample size grouped by top, middle-level, and ground-level management?	Monsen & Wayne Boss (2009, p. 96)
	Research based on structural equation modeling (SEM)	How can SE research be advanced through SEM analysis?	Kraus et al. (2011, p. 68)
		Addressing Gap 15	
	Applying different measures to explore SE	How do various measures differentially assess strategic entrepreneurship?	Monsen & Wayne Boss (2009, p. 96); Boone et al. (2013, p. 526)
		How does SE affect firm performance variables other than sales?	Meuleman et al. (2009, p. 233); Shirokova et al. (2013, p. 194); Kantur (2016, p. 38)

		What additional dependent variables (e.g., organizational innovation, R&D, patents) might help explain the SE construct?	Liu et al. (2010, p. 352)
		Addressing Gap 16	
	Developing quantitative scales for SE	What would a robust quantitative measurement scale for SE look like?	Luke & Verreyne (2006, p. 22); Luke et al. (2011, p. 333); Simsek et al. (2017, p. 515); Kim (2018, p. 183); Anderson et al. (2019, p. 217)
General issues			
Strategy, structure	Research opportunities reside in studying the effects of strategy and structure on SE outcomes.	How can a firm best be organized to facilitate strategic entrepreneurship?	Kyrgidou & Hughes (2010, p. 58); Mazzei (2018, p. 647)
		Does the structural organization of SE differ depending on firm size?	Kyrgidou & Hughes (2010, p. 58)
		How does SE influence organizational structure/culture variables and employee motivation – and vice-versa?	Mazzei (2018, p. 640); Anderson et al. (2019, p. 216)
	Shift from exploration to exploitation	When and how (in terms of culture, incentives, reporting, etc.) does the firm shift from exploration to exploitation activities?	Ireland & Webb (2009, p. 473)
	Motivations for venture creation and self-employment in SE	What mechanisms drive the decision to switch from being an employee to starting a new venture? What rationale and choice determinants induce entry into KSEE?	Agarwal et al. (2007, p. 278); Levie & Autio (2011, p. 1414)
		What selection process determines a KSSE-based new venture's founding team members and team composition?	Agarwal et al. (2007, p. 278)
		How does (knowledge spillover) SE factor in to the formation of new ventures?	Agarwal et al. (2007, p. 278)
Leadership	Leadership, learning, human resources, and mindset	What is the effect, in an SE context, of top management team shared leadership on the behavior of lower-level employees?	Mihalache et al. (2014, p. 143)
		How do leaders' cognitive limitations effect the outcomes of SE, and what drives leaders to foster SE?	Mazzei (2018, p. 635); Withers et al. (2018, p. 366)
		What is the best way to establish an entrepreneurial mindset and culture in the SE domain?	Ireland et al. (2003, p. 983)
		What characterizes the optimal entrepreneurial mindset in SE?	Mazzei (2018, p. 635)
		To what extent is organizational learning affected, moderated, or mediated by SE?	Bruton et al. (2013, p. 176)

		How entrepreneurial leaders identify the right opportunity, within a set of opportunities, to ensure that the balance between opportunity-seeking and advantage-seeking behavior is maintained?	Mazzei (2018, p. 635)
	SE in public and private organizations	How does the implementation of strategic entrepreneurship differ in public versus private contexts?	Luke & Verreyne (2006, p. 22); Luke et al. (2011, p. 333); Höglund et al. (2018, p. 364); Withers et al. (2018, p. 366)
Survival capabilities		How can SE be constructed so as to protect/defend against competitors?	Withers et al. (2018, p. 365)
Governance		What kind of governance mode (same/different) should be established to steer opportunity- and advantage-seeking behaviors?	Mazzei (2018, p. 663)

Sources: Adapted from Short et al. (2009), Nolan and Garavan (2016), Danese et al. (2018), and Kerr and Coviello (2019).

3. Research opportunities and questions, by research gap, extracted from the SLR's articles

Table 23. Research opportunities and questions, by research gap, extracted from SLR articles

Future research opportunities	Supporting evidence	Relevance
<i>Theory</i>		
To conduct further studies on how the components of strategic entrepreneurship interact with each other	Ireland et al. (2003, p. 983)	Academic and managerial relevance to clarifying the foundations and mechanics of strategic entrepreneurship
There is a need for more in-depth research into the relationship between SE and the institutional-based view of the firm.	Yiu et al. (2014, p. 210)	Of academic relevance to explaining SE from the perspective of institutional theory
To study successful and unsuccessful SE configurations from an empirical perspective	Kraus et al. (2011, p. 68)	To understand which configurations might be successful with which companies at what stage of their development
To establish more theoretical foundations on the connection between knowledge spillovers and strategic entrepreneurship	Agarwal et al. (2010, p. 276)	Fill the gap in academic knowledge about the relation between knowledge spillovers and SE
To investigate and compare, in the SE realm, the boundary conditions for creative construction and those for creative destruction	Kotha (2010, p. 301)	Increase academic knowledge about the differences between creative construction and creative destruction
Future research should be more inclined to apply Penrose's resource-based theory of the firm when studying strategic entrepreneurship.	Patzelt & Shepherd (2009, p. 334)	Fill the research gap in applying different theoretical perspectives to the field of academic venturing in SE

What effects do loyalty, nepotism, informal justice, affective conflict, commitment among family members, and the homogeneous group characteristics of family members have on SE's exploration and exploitation in family-controlled firms?	Webb et al. (2010, pp. 73–74)	Of academic and managerial relevance because any findings would shed light on how contextual variables affect SE outcomes
What effects do family versus business identity, stable versus dynamic markets, and cognitive conflict due to decision-maker homogeneity have on SE's exploration and exploitation in family-controlled firms?	Webb et al. (2010, pp. 74–75)	Of academic and managerial relevance in that the results would reveal how multi-group comparisons influence SE outcomes
What psychological, family, and social factors lead families to be self-actualizing instead of self-serving?	Webb et al. (2010, p. 75)	
“Do firms exhibit different configurations of SE?”	Kyrgidou & Hughes (2010, p. 57)	It is important for academic and managerial research to identify the components of SE that affect value and hence wealth creation.
Future research would benefit from considering more antecedents that foster strategic entrepreneurship.	Kyrgidou & Petridou (2011, p. 710)	It would be beneficial for academics and practitioners alike to study the drivers of wealth-creating SE outcomes.
There is a need to develop more conceptual clarity on how strategic entrepreneurial internationalization can be integrated into the broader strategic entrepreneurship framework.	Autio (2017)	It is important to understand the relation between both concepts because they are similarly concerned with achieving competitive advantage.
Future studies could advance research on the economic interface of SE by including “entrepreneurial creation” as a subprocess in the computational model studying entrepreneurial-based disequilibrium theories and strategy-based equilibrium theories.	Keyhani (2019, p. 221)	This would academically advance the computational model in this regard because it would include the Schumpeterian and Shackle-based perspectives that evolving innovations will change a given opportunity structure and knowledge existing in society, leading to a new design of objective opportunity structure (Schumpeter 1934; Shackle 1970, 1979; Keyhani 2019, p. 233). This is contrary to Kirzner (2009), who did not account for a “creation” process.
Future studies can further explore the relationship between strategic entrepreneurship and social capital theory by utilizing dynamic capabilities view.	Liu et al. (2018, p. 10)	Answers to this question would advance SE research both academically and managerially, shedding more light on how the dimensions of dynamic capabilities (processes, paths, positions) influence the effects of social capital on the SE process.
To study the “cognitive process” and how creativity occurs within key domains of SE, including the strategic management of resources and applying creativity	Mazzei (2018, p. 662)	To understand the fundamental processes underlying SE
To examine how single domains within SE successfully interact with each other to positively influence SE	Mazzei (2018, p. 662)	Answers the question, for practitioners and academics, of how different domains affect SE outcomes
To explore further the domains of strategic entrepreneurship	Paek & Lee (2018, p. 910)	
Future research can further explore how and why “autonomy” plays a key role within strategic entrepreneurial orientation performance outcomes.	McKenny et al. (2018, p. 516)	Since most successful configurations display a combination of “high autonomy” paired with “competitive aggressiveness”, it is important for academics and practitioners to study the reason in order to leverage this pattern more directly.

To explore a how resource orchestration perspective might influence outcome of strategic entrepreneurial orientation (SEO) in a contextual sense	McKenny et al. (2018, p. 516)	It is important for practitioners and academics to understand how firms adapt SEO patterns based on different influences from the external environment.
To examine how to manage resources strategically (structuring, leveraging, bundling) to support creativity for innovation development	Mazzei (2018, p. 662)	There is a strong need to understand the underlying process of resource orchestration and how it informs SE success.
To understand whether specific resources support the formation of successful SE and help balance the tension between exploration activities and exploitation activities	Mazzei (2018, p. 662)	It is important for academics and practitioners alike to understand which specific characteristics (inputs/resources, environment, processes, relations) make an essential difference in achieving a balance between opportunity- and advantage-seeking behaviors, wealth creation, and successful strategic entrepreneurship.
To study SE from the viewpoint of organizational ecology with regard to the effect of environmental characteristics and the most appropriate balance between opportunity- and advantage-seeking behaviors	Mazzei et al. (2017, p. 637)	
To use strategic choice theory and determine whether managers deliberately deploy resources to achieve a continuous balance between exploration activities	Mazzei et al. (2017, p. 638)	
To understand, from a social identity perspective, how balanced exploration and exploitation activities affect organizational identity across functional and divisional units in the SE context	Mazzei et al. (2017, p. 654)	
To understand whether resource input factors are the same for opportunity- and advantage seeking behaviors in the context of fostering innovation	Mazzei (2018, p. 662)	
To determine whether a balance of opportunity- and advantage-seeking behaviors (exploration, exploitation) require the firm to switch between the two dimensions	Simsek et al. (2017, p. 506)	
To study how opportunity and strategy in strategic entrepreneurship are linked and how they individually and jointly facilitate alignment in the overall concept	Simsek et al. (2017, p. 510)	
To investigate whether SE-based innovations are an outcome of an entrepreneurial culture and mindset	Mazzei (2018, p. 663)	
To examine more closely the effect of knowledge spillover input, internal knowledge input, and resource orchestration on SE	Tavassoli et al. (2017, p. 245)	
To examine <i>agency theory</i> perspectives in SE by taking a closer look at how successful firms motivate, manage, and reward their upper- and middle-level managers for successful SE application	Mazzei et al. (2017, p. 637)	It is important for academics and practitioners to understand the drivers and moderators of the SE performance–outcome relationship.
To study <i>network theory</i> in relation to SE by exploring how network ties (or degree of embeddedness) affect SE outcomes	Mazzei et al. (2017, p. 637)	
To understand more deeply the most beneficial organizational design for pinpointing and developing a portfolio of entrepreneurial opportunities that promotes opportunity- and advantage-seeking behaviors in terms of <i>real options theory</i>	Mazzei et al. (2017, p. 637)	Academics and practitioners must understand how to design and organize companies in a way that enables the development of relevant opportunities while simultaneously balancing opportunity- and advantage-seeking behaviors.

To examine the reactions of competitors when firms successfully apply SE through the lens of <i>institutional theory</i>	Mazzei et al. (2017, p. 637)	To understand in-depth the effects that SE cause on reaction in the external environment
To apply <i>general systems theory</i> and study the effect of engagement in SE on consequential changes in internal/external systems	Mazzei et al. (2017, p. 638)	Important for academics and practitioners to know if there is a <i>single theory</i> or rather a <i>combination of theories</i> that positively affect SE outcomes
To engage in more research exploring the most efficient (<i>social</i>) <i>network</i> set-up supporting SE activities and how (the number of) strong or weak ties moderate the performance relationship	Mazzei et al. (2017, p. 643)	To understand more clearly how ties moderate performance outcomes of SE in specific social networks.
To study SE from the perspective of <i>competitive dynamics</i> and <i>social network theory</i> , when firms actively seek strategic partners for exploration and/or exploitation, and the possible effect on existing partnerships	Mazzei et al. (2017, p. 643)	To gain more understanding of SE's side effects when increasing strength through partnering (on the one hand) and destabilizing existing partnerships (on the other hand)
To determine whether there is an optimal point, within an <i>industry life cycle</i> , at which conduct SE activities	Mazzei et al. (2017, p. 645)	Increased research in this area would help practitioners and academics because it helps to pinpoint when resources are utilized most efficiently.
To understand how top management team characteristics (age, tenure, education), in light of the <i>upper echelons</i> perspective, affect the composition, balance, and outcomes of SE behaviors	Mazzei et al. (2017, p. 652)	It would be especially instructive for practitioners to understand which SE drivers lead to above-average returns.
To examine the specific occurrence of agency theory in SE and how it differs with regard to opportunity- and advantage-seeking activities of general personnel, middle management, and senior management	Bendickson et al. (2016, p. 187)	To increase our understanding how agents behave differently in processes of exploration and exploitation activities and their related effects on outcomes of the firm
To provide clarity about SE uniqueness, generalizability, and central differences from other constructs, including entrepreneurial orientation and corporate entrepreneurship	Simsek et al. (2017, p. 510)	Findings would advance our understanding of how best to differentiate constructs from each other, thereby reducing the ambiguity due to inadequate specification and measurement.
To determine whether strategic entrepreneurship serves as an “umbrella” concept subsuming other entrepreneurial concepts	Simsek et al. (2017, p. 510)	
To study whether strategic entrepreneurship is a multi-dimensional construct and how the construct relates to its dimensions	Simsek et al. (2017, p. 506)	To gain conceptual clarity of what constitutes strategic entrepreneurship and how it is structured; absent such clarity, it is impossible to achieve empirical validity and generalizability
To understand empirically whether the SE construct is uni-dimensional or multi-dimensional	Simsek et al. (2017, p. 514)	Findings on this question would advance SE research because they would enable researchers to apply the correct composition, which in turn has effects on how SE performance outcomes are interpreted.
To study the micro foundations of strategic entrepreneurship within the firm and how they emerge	Simsek et al. (2017, p. 315)	
Level of analysis		
To examine how, and the exact levels at which, strategic entrepreneurship materializes	Simsek et al. (2017, p. 506)	

If one possible unit of analysis is “action”, then it would be beneficial to understand if the unit of analysis is represented by a single action, by a set of actions, or by a decision-making process whose end result is a focused set of actions.	Simsek et al. (2017, p. 506)	To achieve more clarity regarding whether SE becomes manifest on several levels or rather at a single level; more clarity on “scope” conditions would help identify the drivers of firm performance and wealth
To conduct more in-depth analysis of whether the integration of opportunity- and advantage-seeking behaviors is best conducted at a particular level or unit of analysis	Simsek et al. (2017, p. 506)	
To explore “the action unit of analysis” based on grounded theory, including the underlying entrepreneurial intentions and decision-making process	Simsek et al. (2017, p. 515)	Insights into the mechanisms of SE micro foundations would increase its explanatory power and empirical validity.
To investigate whether integration of the entrepreneurial and strategic domains takes can occur at the firm level – where capabilities, cognition, and actions are orchestrated and formed toward the end of developing a competitive advantage	Simsek et al. (2017, p. 315)	Findings could help us understand where SE manifests and how best to address specific foundations of SE in the context of wealth creation
Research setting (context)		
To develop a more fine-grained understanding of different types of entrepreneurship (informal entrepreneurs, global entrepreneurs, family entrepreneurs, etc.) with regard to strategic entrepreneurship in emerging economies and in different contexts	Bruton et al. (2013, pp. 175–76)	Economic impact of entrepreneur returnees on home country To assess the effect of cross-national networks on an emerging economy The effect of institutional regulations on the legal form of entrepreneurship chosen
To explore the strategic learning construct in different service and manufacturing contexts	Sirén et al. (2012, p. 36); Shirokova et al. (2013, p. 194)	Assessing the impact of strategic learning in different industrial sectors would be relevant for academics and practitioners both.
To conduct surveys in different high-tech parks, including Shanghai and Hong Kong	Liu et al. (2010, pp. 352–53)	We should like to know whether there are performance differences among high-tech parks in the same or a different industry; such research would help generalize findings within and across countries.
To study the “impact on knowledge spillovers and strategic entrepreneurship within and across organizational contexts (e.g., academic institutions and organizations occupying competing, complementary, or vertical supply chain relationships)”	Agarwal et al. (2010, p. 276)	There is a need for academics and management to understand the effects and mechanics of knowledge spillovers in different organizational contexts.
To explore various influences on knowledge spillovers and SE in the academic/university context	Agarwal et al. (2010, p. 277)	It would be of interest to identify any differences between strategic entrepreneurship in academic and other contexts.
To study the effect of exploration and exploitation on firm performance in industries <i>other</i> than information and communications technology, life sciences, and wholesale/retail	Shirokova et al. (2013, p. 173)	Academics and practitioners would like to know whether the positive outcomes of exploration and exploitation can be generalized to other industries.

To conduct more SE spillover/spill-in research in industries with short product cycles (e.g., consumer goods, software, electronics)	Kotha (2010, p. 303)	Academic and managers would benefit from increased generalizability of findings and a more thorough understanding of the prerequisites for opportunity-seeking behavior and of the performance resulting from spill-ins.
“How do environmental factors interact with individual, family, and organizational resources to affect their value as inputs [and the SE process as such]?”	Lumpkin et al. (2011, p. 300)	It is crucial for academics and practitioners to understand the environment’s effect on input factors and process outcomes.
To examine strategic entrepreneurship in different contexts (e.g., public versus private)	Luke & Verreyne (2006, p. 22); Luke et al. (2011, p. 333)	Helps academics and practitioners broaden their understanding of SE in different economic relations
To investigate the relationship between strategic entrepreneurship and social capital on supply chain management in a comparative study that compares developed and developing countries	Tipu & Fantazy (2018, p. 2061)	Results of such research would increase understanding on how SE, in relation to supply chain management, differs as a function of entrepreneurial and cultural context.
To explore whether landscape shifts in opposite direction would in turn lead to the opposite outcome (viz., reduced competition)	Withers et al. (2018, p. 355)	The “reciprocity” of these shifts must be tested in order to generalize the SE model and to explain how SE affects shifts in the competitive landscape.
To study the effect of founders with majority of ownership and “agent” CEO in public companies on performance differentials moderated by an “unified mindset” and “energized culture”	Withers et al. (2018, p. 366)	Research on these topics would help academics and practitioners better understand whether “founder” or “agent” leadership and organizational setting make a difference in the context of SE competitive dynamics.
To explore what effect the type of industry (technology-intensive, turbulent) has on conducting “radical” strategic entrepreneurial actions	Withers et al. (2018, p. 366)	Findings would help us better understand how SE outcomes differ by industry.
There is a need to explore whether SE is applicable to all firms and industries.	Mazzei (2018, p. 664)	Academics need to know whether SE benefits some industries more than others; since firm resources are typically scarce, a precise application of SE in particular contexts is needed.
To examine whether there is a specific institutional context that positively supports SE application	Mazzei et al. (2017, p. 645)	It would be interesting for academics and practitioners to understand which antecedents or environmental moderators lead to particular SE outcomes.
To investigate how antecedents (e.g. legal, financial, tax) support or constrain application of SE in some (institutional) contexts	Mazzei et al. (2017, p. 645)	
To inquire how the context of time affects exploration in new markets	Mazzei et al. (2017, p. 646)	Findings could help firms apply their resources more precisely by pinpointing the right time frame for conducting exploration activities in a target market.
To study whether specific changes in the environment cause a misalignment of opportunity- and advantage-seeking activities within SE	Mazzei et al. (2017, p. 646)	Findings could help top management teams identify external effects on the firm and allow them to rebalance opportunity- and advantage-seeking behaviors toward the end of continuous wealth creation.
To review whether <i>external shocks</i> lead to firm inertia owing to the inability to rebalance exploration and exploitation activities	Mazzei et al. (2017, p. 646)	
To research how and when environments affect leaders, in terms of strategic choice, by facilitating opportunity- or advantage-seeking activities	Mazzei et al. (2017, p. 650)	

To explore SE in specific industries	Kim (2018, p. 202)	To determine whether SE outcomes are different in different industries or, instead, generalizable across industries
To explore the effect of SE on firm performance moderated by other factors: culture, organizational structure, local markets, global markets, competence developing, competence destroying	Kim (2018, p. 202)	It is important to identify the factors that influence the SE–performance relationship.
To examine the outcomes of the resource orchestration process in “less high-tech and high tech sectors with longer lead times”	Wright & Hitt (2017, p. 207)	To create more awareness regarding whether the resource orchestration process leads to similar outcomes in different industries
To study the resource orchestration process in different organizational contexts, including venture capital–supported projects, social enterprises, and others	Wright & Hitt (2017, p. 207))	Especially interesting for practitioners because they need to understand which contextual characteristics and set-ups support or hinder SE performance
To investigate the effect of ownership and governance on SE	Wright & Hitt (2017, p. 207)	
To explore how SE “behaves or develops” over a firm’s life cycle	Wright & Hitt (2017, p. 207)	
To understand how spatial aspects affect SE characteristics and outcomes	Wright & Hitt (2017, p. 207)	
To shed more light on knowledge spillover–based SE and its relation to contextual factors, including regulatory, institutional, and political norms	Ferreira et al. (2017, p. 165)	
To conduct comparative research studies assessing the direct effect of KSSE in the context of emerging, transitional, and developed countries	Ferreira et al. (2017, p. 165)	
To test for whether “market or nonmarket” knowledge transfer channels have differential effects on SE	Ferreira et al. (2017, p. 165)	
To investigate KSSE in different sectors and how SE spillovers behave in different contexts (professional, technological)	Ferreira et al. (2017, p. 165)	
To explore the effect of contextual factors (e.g., top management leadership characteristics, organizational culture, reward mechanisms) on strategic entrepreneurship outcomes	Kantur (2016, p. 38)	
To explore the magnitude of digitization as a contextual factor in the selection of resources and the resource orchestration process within strategic entrepreneurship	Amit & Han (2017, p. 239)	It is important for practitioners and academics to understand how SE resource orchestration processes must be tuned to reflect the age of digitization.
To determine whether the positive effect of certain “mindset combinations” can be generalized (e.g., across industries/sectors)	Subramaniam & Shankar (2020, p. 28)	Findings would help determine whether certain combinations of entrepreneurial mindsets affect SE outcomes in the same way irrespective of the specific industry.
Future research might study the effect of industry structure at more granular level.	Boudreaux (2019, p. 20)	To gain more insight about which industry subsectors exhibit superior performance – and why they do so.

Issues		
To investigate whether integrating the entrepreneurial and strategic domains should take place on the firm level, where capabilities, cognition, and actions are orchestrated for the purpose of developing a competitive advantage	Simsek et al. (2017, p. 315)	Findings could help reveal where SE manifests, thus enabling extrapolation to addressing specific foundations of SE in the context of wealth creation.
To explore how SE behaviors change the interplay between organizational culture and structure as well as organizational performance outcomes	Anderson et al. (2019, p. 216)	Especially interesting for practitioners to pinpoint what drives organizational performance and how different contextual factors can influence that performance
To shed light on the question of whether <i>strategic entrepreneurship behaviors</i> (SEBs) will compensate for the external effects of environmental dynamism and hostility on organizational performance	Anderson et al. (2019, p. 216)	Practitioners would like to know how SEBs can level out external influences on the firm by keeping profitability at a high level.
To review how SEBs discourage competitive threats and ensure organizational survival	Anderson et al. (2019, p. 216)	Because SE is associated with growth and wealth creation, it would be instructive to study the “missing link” of how SEBs help avoid inertia and ensures survival.
To study how SEBs change over time as well as the internal or external circumstances that lead SEBs to change	Anderson et al. (2019, p. 216)	If SEBs are essential for organizational performance, then practitioners and academics should want to identify the internal or external influences that explain the differential in performance outcomes.
To explore the SE construct as a mechanism for defending against competitors	Withers et al. (2018, p. 365)	Research addressing this topic would help academics and also practitioners because it would describe how SE could protect against rivals by developing streams of marketable innovative products and services reflecting of SE-led resource differentials.
Creating an entrepreneurial mindset and culture in strategic entrepreneurship	Ireland et al. (2003, p. 983)	Findings would help to predict SE outcomes.
To study strategic resource management with the aim of creating a competitive advantage	Ireland et al. (2003, p. 983)	Research on this topic should help academics and practitioners forecast wealth creation more precisely.
To explore the links among bundling, leveraging, and structuring resources to create new capabilities in SE	Ireland et al. (2003, p. 983)	Findings could close the knowledge gap concerning the “engine” (or key, or heart) of strategic entrepreneurship per se.
To identify the best process for mobilizing resources	Ireland et al. (2003, p. 983)	It is essential that academics and practitioners be able to recognize the best resource mobilization process and its effects on performance outcomes.
To investigate the drivers of SE resource endowments and, in turn, how competitors react to this competitive action	Withers et al. (2018, p. 365)	It is important for academics and practitioners to understand why a firm decides to accumulate and process specific resources as well as what effects such decisions have on the overall SE process and outcomes; in addition, it is critical to know how this resource endowment triggers competitor actions.
To examine the challenges that firms face when attempting “market shifts” with regard to market commonality and resource similarity	Withers et al. (2018, p. 365)	Studies on this topic would help academics and practitioners avoid pitfalls and spare resource commitments when attempting to change SE-driven market conditions.

To compare the effects of systemwide changes in SE with those of changes in individual components	Schindehutte & Morris (2009, p. 270)	An SE process may incorporate several individual yet integrated processes; scholars would benefit from understanding how overall system changes affect wealth creation.
To study the underlying process that leads to SE-endorsed competitive landscape shifts	Withers et al. (2018, p. 364)	
To study the underlying processes of SE in an “opportunity space”	Schindehutte & Morris (2009, p. 270)	
To explore bottom-up simulations of multiple dynamics	Schindehutte & Morris (2009, p. 270)	
To study how best to describe the SE context	Audretsch et al. (2009, p. 163)	Academics and practitioners must understand how SE performance outcomes differ depending on the setting.
To explore differential effects, in the SE context, of internal versus external growth strategies adopted by buyout firms	Meuleman et al. (2009, p. 233)	
To study the role of stakeholders who possess resources that the firm seeks to control	Audretsch et al. (2009, p. 163)	To increase our understanding of how, in the SE process, resources controlled by others can be obtained, leveraged, and distributed.
Further research should be conducted “to understand how the marginal benefits of publicly created capabilities differ between private and public stewards”.	Klein et al. (2013, p. 83)	Scholars and policy makers would benefit from a better understanding of the performance and value differentials in the public and private creation, through SE, of capabilities.
Does the private-sector outsourcing of functions traditionally undertaken by public organizations lead to destruction of public value?	Klein et al. (2013, p. 84)	
To examine cross-boundary disruptors (XBDs) through the lens of strategic entrepreneurship	Burgelman & Grove (2007, pp. 324, 326)	Managerial: Companies in industries subject to stagnation can leverage XBDs to create growth opportunities.
To investigate how SE characteristics change in response to the complexity and chaos that are characteristic of dynamic systems	Burgelman & Grove (2007, p. 326)	Much more research is necessary to explain the fundamental processes in strategic entrepreneurship and how SE subprocesses interact with each other.
To study in greater depth the relationship between organizational learning and strategic entrepreneurship	Bruton et al. (2013, p. 176)	To detail how, in SE, organizational learning supports the process of accumulating, structuring, and leveraging resources
To explore the mechanics (in SE) of how one firm gains knowledge via another firm’s knowledge spillovers and to identify the network types that support knowledge flows	Liu et al. (2010, p. 352)	Being able to estimate how SE-induced knowledge spillovers support the growth of companies, regions, and societies
To research the different effects of “market and non-market channels of knowledge transfer on strategic entrepreneurship”	Agarwal et al. (2010, p. 277)	Academic/managerial: Close the knowledge gap related to how strategic entrepreneurship can be enhanced in general
To examine differential effects of technical and non-technical knowledge (markets, environment, partnerships, financiers, customers) on strategic entrepreneurship	Agarwal et al. (2010, p. 277)	Academic: Fill the gap in theory about how technical and non-technical knowledge affect SE performance Managerial: It is important for practitioners to understand how best to harness the potential of SE.

To study spillovers in SE as a strategic lever in the diffusion of innovation via increased global competitiveness	Agarwal et al. (2010, p. 276)	To understand how spillovers in strategic entrepreneurship affect wealth creation
To study the mechanics of and boundary conditions for knowledge spillovers in SE research	Agarwal et al. (2010, p. 276)	Academic/managerial: Understand the process and outcomes of knowledge spillovers and why some recipients benefit more than others
To investigate the mechanics underlying strategic entrepreneurship and knowledge spillovers and how those mechanics might be externally affected (individually, organizationally, strategically, institutionally, and/or environmentally)	Agarwal et al. (2010, pp. 276–77)	Academic/managerial: Forecast more accurately the outcomes of knowledge spillovers and SE
To analyze how “employee entrepreneurship/mobility in SE affect the strategy and performance of both the source and recipient organizations”	Agarwal et al. (2010, p. 277)	To shed more light on how knowledge spillovers can facilitate resource mobilization in SE
To describe how entrepreneurial activity and knowledge spillovers can result in win–lose or win–win scenarios	Agarwal et al. (2010, p. 277)	Academic/managerial: Identify the party most likely to benefit (or to lose) when knowledge spillovers occur in SE settings
To study how knowledge spillovers – and SE – differ for firms that follow a strategy of open versus closed innovation	Agarwal et al. (2010, p. 277)	Academic/managerial: Enlarge academic and practical research by employing approaches to innovation strategy that have different effects on knowledge spillovers and strategic entrepreneurship
To conduct research that simultaneously measures a firm’s resource levels and its exploitation and discovery abilities (as moderated by age) as well as how those abilities change over time	Steffens et al. (2009, p. 143)	This topic is paramount for both practitioners and educators because findings would help resolve whether resource levels have a positive or rather a negative effect on discovery and exploitation abilities.
To identify the organizational mechanics that have a positive effect on the “optimal balance between exploration and exploitation and [that] allow firms to engage simultaneously in opportunity-seeking and advantage-seeking behaviour”	Shirokova et al. (2013, p. 195)	Practitioners need to understand the interplay between opportunity-seeking and advantage-seeking activities in order to reduce exploration and exploitation costs by effectively deploying resources.
How best to determine, at the individual level, when a firm’s managers should engage in opportunity-seeking versus advantage-seeking behavior	Audretsch et al. (2009, p. 163)	
“How and when does the firm transition [from exploration activities to] the culture, incentive, and reporting structures, as well as other mechanisms that are needed to support the objectives of exploitation?”	Ireland & Webb (2009, p. 473)	
When transitioning from exploration to exploitation activities, should the company employ the same staff for both processes?	Ireland & Webb (2009, p. 473)	
To explore whether opportunity- and advantage-seeking behaviors occur over a span of time or rather at a specific time	Mazzei (2018, p. 662)	It is important for academics and practitioners to know whether firms must cater, over time, to a general SE set-up or rather to a reiterative set-up because of environmental conditions.
To determine whether opportunity- and advantage-seeking activities must be steered by the same form of governance	Mazzei (2018, p. 663)	Practitioners and academics would like to know if different governance modes must be applied to the two different types of activities.
To explore other institutional effects, in the SE realm, at the level of entrepreneurial activity	Levie & Autio (2011, p. 1411)	It is crucial for regulators to know what factors they can affect that will facilitate entrepreneurial activity and encourage strategic entry into entrepreneurship.

To understand better why individuals switch from being employees to starting their own ventures	Levie & Autio (2011, p. 1414)	Policymakers must understand what drives employed workers to self-employment, because that switch figures prominently in job creation.
To perform the same analysis while investigating whether there are significant differences between male and female SE rates as well as whether SE varies as a function of industry or technology level	Levie & Autio (2011, p. 1414)	It is important for academics, policymakers, and practitioners to acknowledge any significant multi-group (here, gender-related) differences in SE outcomes.
To conduct more research that addresses whether knowledge spillovers/spill-ins are context specific as well as how that knowledge informs SE	Kotha (2010, p. 303)	Academics and management: Do the benefits of knowledge spillovers/spill-ins differ depending on the context?
To study in more depth the process by which firms benefit from market and technical knowledge spillovers and the effects of those spillovers on entrepreneurial behavior in the SE context	Kotha (2010, p. 303)}	Academics and management: Close the knowledge gap on how different types of knowledge affect firm performance and entrepreneurial situations
How does human capital differ, in the SE context, between family versus non-family firms?	Lumpkin et al. (2011, p. 299)	Academics and practitioners: Shed more light on how family entrepreneurs differ from their non-family counterparts
How does socio-emotional goal setting affect advantage seeking and opportunity seeking in strategic entrepreneurship?	Lumpkin et al. (2011, p. 292)	To learn more about how socio-emotional moderators affect opportunity-seeking and advantage-seeking activities in SE
How do family and non-family cognitive characteristics differ in SE?	Lumpkin et al. (2011, p. 299)	It is vital that academics and practitioners know whether or not family and non-family teams differ in terms of financial or non-financial rents.
How is portfolio or serial entrepreneurship – either within a family firm or as new venture – supported or constrained by family influence in strategic entrepreneurship?	Lumpkin et al. (2011, p. 299)	To expand theory about the influence of families on entrepreneurship activity
How do the accumulation, configuration, and coordination of resources differ – in the SE context – when family and non-family businesses are compared?	Lumpkin et al. (2011, p. 299)	To develop a better understanding of how family versus non-family firms create value
“How do family businesses sustain the processes of entrepreneurial activity over time (serial family business entrepreneurs)?” – and how does strategic entrepreneurship support this process?	Lumpkin et al. (2011, p. 300).	It is important for academics and practitioners to understand how SE supports entrepreneurial activity as a continuous process.
How does the interaction between financial and non-financial resources affect SE and the ventures founded thereby?	Patzelt & Shepherd (2009, pp. 334–35)	To assess whether interaction effects are positively associated with venture creation
Research results can be cross-verified by future studies conducted in a similar set-up but while using non-academic entrepreneurs.	Patzelt & Shepherd (2009, p. 335)	To determine whether results differ in studies undertaken by academic versus non-academic entrepreneurs
What constitutes the <i>reciprocal</i> effect – of “opportunity-seeking activities within firms, opportunity-seeking activities between firms, advantage-seeking activities within firms, and advantage-seeking activities between firms” – on SE and on wealth creation?	Ketchen et al. (2007, p. 381)	Although most studies focus on how existing businesses affect wealth creation, it is necessary also to understand how exploration activities affect wealth creation.

“Future studies shall not only consider opportunity-seeking and advantage-seeking activities within the firm but shall also consider these activities from outside the firm, from external sources including their interaction”; that approach will lead to four sets of inquiry: opportunity, advantage, inside, and outside.	Ketchen et al. (2007, p. 381)	Both small and large firms may find it difficult to create the streams of innovation needed to excel at strategic entrepreneurship; hence closing the knowledge gap requires more research into each of the aforementioned sets of inquiry.
What effect do loose versus strong ties with collaborative networks have on the quality and quantity of innovation?	Ketchen et al. (2007, p. 379)	Findings would substantially advance research for academics and practitioners by shedding new light on the relative merits of network-based (through a network of several companies) innovation performance.
What conditions foster multi-firm collaborative network innovations that complement internal innovation efforts?	Ketchen et al. (2007, p. 382)	Results would help to close the research gap regarding how the collaborative network innovation process should be structured so that participating companies benefit from network innovation (asymmetry of resources / liability of smallness).
Future research could look to identify the optimal organizational structure for achieving SE-oriented firms’ optimal balance of opportunity-seeking and advantage-seeking behavior.	Hitt et al. (2011, p. 69)	Findings in this area would contribute significantly to understanding what drives the proper alignment between strategic management and entrepreneurial-oriented activities, which involve different processes, human capital, and resources; insights are needed into what factors (e.g., structure, environment, techniques) could moderate the relationship between a good exploration–exploitation balance and performance outcomes.
Future research should examine the extent to which the competitive environment moderates the relationship between the balance achieved between exploitation and exploration and the firm’s ability to create value over time.	Hitt et al. (2011, pp. 69–70)	
“How do organizations learn to manage resources in ways that appropriately and simultaneously serve their need to exploit today’s advantages and explore for new opportunities to exploit?”	Hitt et al. (2011, p. 70)	
Future research should investigate techniques that firms can apply to master and to excel at both types of behaviors (exploration and exploitation) simultaneously.	Hitt et al. (2011, p. 70)	
Future research might examine whether firms engaging in SE need to exhibit high levels in both domains (opportunity- and advantage-seeking behaviors) simultaneously or if both can be fostered and increased in different time frames.	Simsek et al. (2017, p. 506)	
More studies are needed to study the moderating effects of individual and organizational attributes on the relationship between entrepreneurial activities and related outcomes.	Hitt et al. (2011, p. 70)	
“Do firms need to balance entrepreneurial and strategic behaviours simultaneously in a process of SE ...?”	Kyrgidou & Hughes (2010, p. 58)	
To evaluate “what conditions create an imbalance towards strategic activity as opposed to entrepreneurial activity and vice-versa, and how might such deterioration be mitigated”	Kyrgidou & Hughes (2010, p. 59)	
To assess how SE-initiated landscape shifts can lead to a different balance between opportunity- and advantage-seeking behaviors	Withers et al. (2018, p. 366)	

To study the optimal and non-optimal balance between different domains in the SE model as a function of the configuration approach	Kraus et al. (2011, p. 68)	
To study how corporate entrepreneurs can find an appropriate balance between exploration and exploitation	Paek & Lee (2018, p. 910)	
Scholars should check for whether “the effects of formal and informal institutions on entrepreneurial activities vary between the formal economy and those in the informal economy, where the formal economy includes activities that are deemed legal by formal institutions and legitimate by informal institutions”.	Hitt et al. (2011, p. 71)	Knowledge accumulation in this area would be beneficial for academics and practitioners, since it would increase understanding of how formal and informal economic settings affect SE outcomes.
The moderating effects of informal and formal economies on the relationship between strategic entrepreneurship and value creation can be further examined.	Hitt et al. (2011, p. 71)	
“Can a single key configuration best explain superior performance?”	Kyrgidou & Hughes (2010, p. 57)	To help close the research gap regarding how best to organize strategic entrepreneurship – structurally and contextually – for the purpose of delivering optimal performance
To explore how SE activity “might ... best be organized to take place in organizations”	Kyrgidou & Hughes (2010, p. 58)	
To investigate if “the organization of SE differ[s] between firms of different sizes and is it necessary for this to happen”	Kyrgidou & Hughes (2010, p. 58)	
To determine whether “firms exhibit different degrees and types of value creation if strategic is [entrepreneurship] organised structurally as opposed to contextually”	Kyrgidou & Hughes (2010, p. 58)	
To conduct more research evaluating “what specific firm resources facilitate, enable or constrain SE”	Kyrgidou & Hughes (2010, p. 59)	To educate practitioners and academics about which resource set-ups foster (or impede) SE implementation and processes vis-à-vis performance and value creation
To explore “what processes prevent capability lock-in from occurring and thus damaging long-term SE”	Kyrgidou & Hughes (2010, p. 59)	
To consider role conflict, role overload, and other types of role stress as possible mediators of the relationships among perceived strategy, behavior, and performance	Monsen & Wayne Boss (2009, p. 96)	To broaden our understanding of how various factors influence the SE–performance relationship
To study in detail “the effect of TMT shared leadership on the behaviour of lower-level employees, as it stands to enhance ambidexterity and strategic entrepreneurship by stimulating collaborative behaviours associated with shared leadership throughout the organization”	Mihalache et al. (2014, p. 143)	To increase understanding of how specific leadership styles and outcomes affect employee behavior
To examine how leaders’ cognitive limitations effect the outcomes of SE (in landscape shifts)	Withers et al. (2018, p. 366)	To shed more light on agency characteristics on SE outcomes
To explain how new ventures are formed based on knowledge spillover strategic entrepreneurship	Agarwal et al. (2007, p. 278)	To account in more detail for why employees or scientists venture out on their own

More in-depth research is needed on knowledge spillovers and employee mobility.	Agarwal et al. (2007, p. 278)	To understand the exogenous effect of knowledge spillovers on employee movement and the related effect on regional development
To explore the decision-making rationale and the choice determinants of individuals who decide to engage in KSSE	Agarwal et al. (2007, p. 278)	If policymakers understand better what triggers an individual's decision to become an entrepreneur, then they could influence those determinants via regional or national legislation.
To study the selection process for founding team members, team composition, and team heterogeneity in a new venture resulting from KSSE	Agarwal et al. (2007, p. 278)	It would be beneficial for academics and practitioners to recognize how founding teams of new ventures are assembled.
To study SE-facilitated landscape shifts and their underlying heterogeneity	Withers et al. (2018, p. 365)	It is important for academics and practitioners to understand how differences in resources, processes, and context affect the outcome of landscape shifts.
To research the effects on KSSE of the focal firm's technological intensity and position within its industry life cycle	Agarwal et al. (2007, p. 278)	Policymakers need to know what moderates the relationship between KSSE (on the one hand) and regional- and industry-specific growth (on the other hand).
To "explore the performance of spinouts in terms of their innovation input, quality, and productivity, as compared to other entrants"	Agarwal et al. (2007, p. 279)	Academics would benefit from assessing differences in firm performance as a function of innovation input led by knowledge spillovers.
The understanding of creative construction and creative destruction would be enhanced by more research on the connection between KSSE and venture failure.	Agarwal et al. (2007, p. 279)	Increase our understanding of venture <i>failure</i> as a building block for economic <i>growth</i>
"What kind of institutional mechanisms can promote open innovation and the strategic use of knowledge spillovers? What is the changing role of the financial innovation machine in commercializing spillovers in an open innovation system?"	Agarwal et al. (2007, p. 280)	To shed more light on KSSE in the context of research and development
Regarding the "strategic management of spillovers, is the balance likely to shift towards intrapreneurship – or being an entrepreneur within an incumbent organization – rather than spinout from an organization to start one's own venture?"	Agarwal et al. (2007, p. 280)	The answers to this question have far-reaching implications for corporate venturing, corporate entrepreneurship, and strategic entrepreneurship.
To explore the mechanics (in SE) of how one firm gains knowledge from another firm's spillovers and to identify the types of networks that support knowledge flows	Liu et al. (2010, p. 352)	It is necessary for academics and especially policymakers to understand the dynamics underlying knowledge spillovers, since only then is it possible to direct this process toward the ends of industrial and economic growth.
How university spin-offs differentiate strategy making and how spin-offs adapt their strategies in view of strategic entrepreneurship	Wright et al. (2012, p. 922)	Implications for academic research into how university spin-offs develop and adapt to the environment over time
How do successful university spin-offs accumulate and deploy resources over time?	Wright et al. (2012, p. 924)	To cast more light on how resources and competencies are best <i>presently</i> orchestrated and aligned for <i>future</i> networks
To investigate how the acquisition strategies of SE-oriented university spin-offs are related to the acquiring firms' future product launches	Wright et al. (2012, p. 924)	Implications for academics, practitioners, and policymakers who seek to understand more about the business case and an investment's net present value
How do SE-oriented spin-offs develop their governance structures?	Wright et al. (2012, p. 924)	To deconstruct the "black box" of how university spin-offs evolve and survive

How do SE-oriented university spin-offs develop and orchestrate resources and competencies over time?	Wright et al. (2012, p. 924)	Increase our understanding of how university spin-offs manage scarce resources and of how management connects such resources to its strategic decisions
To understand the “underlying cause-and-effect” relationship (mechanisms, process) through which KSSE operates	Ferreira et al. (2017, p. 166)	To understand how KSSE produces value and what influences the input-output process
To gain further insight into strategic entrepreneurship associated with affiliations, marketing organizations, and referral chains in the hospitality industry	Carlbäck (2012, p. 368)	To learn more about SE and its influence on the overall value chain and participating partners
To study in greater depth the SE process in public-sector organizations	Höglund et al. (2018, p. 364)	It is important for policymakers, practitioners, and academics to learn more about how strategic entrepreneurship differs in the public-sector context and if it yields the same societal benefits.
To study how economic cycles affect strategic entrepreneurial orientation patterns (composition) over time	McKenny et al. (2018, p. 516)	In order to appreciate the sustained outcomes of SEO, academics must study how SEO patterns develop in relationship to performance outcomes.
To investigate how micro factors, including rewards and compensation systems, affect strategic entrepreneurship	Miller & Breton-Miller (2017, p. 672)	To understand more about what factors affect SE outcomes
Future work could include “subjective assessments by firms of rivals’ positions in technology or attribute space”	Westgren & Wuebeker (2019, p. 526)	To extend the economic model of competing firms to incorporate the perspective of consumers
To study the effect of an SE-initiated landscape shift on firm performance	Withers et al. (2018, p. 366)	An entrepreneurial activity is feasible when it produces positive rents, so it is important for academics and practitioners to understand the SE landscape shift–performance effect.
To examine whether synergies can be achieved from existing and new landscapes	Withers et al. (2018, p. 366)	Results would help us assess the feasibility of landscape shifts from the “economies of scale” perspective
To identify the behaviors and activities by which SE can be most easily detected	Mazzei (2018, p. 661)	In order to generalize the SE construct, academics and practitioners must understand how to distinguish SE from other constructs or concepts.
To study if benchmarks can be applied to determine whether or not a company utilizes SE	Mazzei (2018, pp. 661–62)	To identify the application of SE by firms
To determine whether it is qualitative or rather quantitative behaviors that are better indicators of whether a firm engages in SE	Mazzei (2018, p. 662)	There is a need to measure when firms engage in SE.
To understand if SE must be simultaneous and consistent or instead can come in “bursts, waves, or some other form”	Mazzei (2018, p. 663)	To understand how SE develops over time and in terms of homogeneity or heterogeneity in firms
To understand if there is a potential “triggering” event, either internal or external in nature, that releases SE’s full potential	Mazzei (2018, p. 663)	Academics and practitioners need to understand whether SE outcomes are triggered by a certain event or instead evolve over time.
To determine whether or not the SE process is linear in nature	Mazzei (2018, p. 663)	Of utmost importance, for academics and practitioners alike, is to know whether the SE process is linear in nature or instead reflects an interacting network, or cosmos.

To determine whether SE can be viewed as a spiral effect – that is, as strategically managed resources and knowledge development evolve and informing each other over time	Mazzei (2018, p. 663)	To understand how the underlying dynamics of SE lead to competitive advantage and wealth
To understand whether top management, organizational structure, and the firm’s strategy-making process and culture influence SE similarly as they do general firm-level entrepreneurship	Mazzei (2018, p. 664)	Especially interesting for practitioners to discover whether different organizational set-ups affect SE outcomes
There is an ongoing academic debate over whether SE outcomes are affected by competitive intensity, technological change, or product-market characteristics.	Mazzei (2018, p. 664)	To clarify which contextual drivers most influence strategic entrepreneurship
To investigate the level of <i>individual motivations and behavior</i> within the SE process	This study, based on Mazzei et al. (2017, p. 635)	To gain more knowledge of how individual contributions support outcomes of the SE process
To explore the effects of <i>resources located at different levels</i> (external environment, firm-specific resources, individual members)	Mazzei et al. (2017, p. 635)	Because SE is conceptualized as an input–process–output model, it is important to understand how to integrate resources from different levels inside and outside of the firm.
To examine what drives the leaders of organizations to foster SE behavior	Mazzei et al. (2017, p. 635)	Overall firm performance is strongly correlated with the actions and behavior of the top management team; hence academics and practitioners would like to gain more understanding of the how executives promote SE behavior to achieve success in their firms.
To detail the overall constitution and characteristics of the ideal entrepreneurial mindset for adopting SE	Mazzei et al. (2017, p. 635)	Although the entrepreneurial mindset is a critical input and resource of the SE, academics and practitioners know little about the aspects of that mindset will positively influence SE outcomes.
To review how entrepreneurial leaders identify the right opportunity, within a given set of opportunities, for ensuring a balance between opportunity-seeking and advantage-seeking behaviors	Mazzei et al. (2017, p. 635)	Research has shed some light on the tensions between exploratory and exploitive behaviors; however, academics and practitioners would benefit from a deeper understanding of how executives decide on which opportunity to pursue when seeking to achieve balance between the two behaviors.
To inquire which resources in the SE process facilitate a balance between exploration and exploitation – which resources are complementary, supportive, antagonistic, or neutral?	Mazzei et al. (2017, p. 635)	It is important for academics and also practitioners to understand which resources lead to which SE outcomes; it is especially important, for achieving overall balance within the SE process, to identify which resources facilitate exploratory versus exploitive activities.
To inquire how environmental factors affect a leader’s choice regarding the specific direction of SE strategy	Mazzei et al. (2017, p. 635)	Academics and practitioners seek a clearer understanding of the factors determining the selection of specific strategies; it would be helpful to know whether there is any correlation between environmental factors and the application of strategies based on those factors.
To study companies that exhibit high performance levels of SE and how they embody organizational identity within divisions, units, and groups	Mazzei et al. (2017, p. 635)	To gain more knowledge about how the firm can best organize for strategic entrepreneurship

To study how SE behavior can be fostered within a group of agents	Mazzei et al. (2017, p. 640)	To gain more understanding of how employees and middle-level managers can be encouraged to achieve better performance outcomes
To study how internal <i>organizational design</i> can supports or hinder strategic entrepreneurship	This study, based on Mazzei et al. 2017, p. 635	To increase our knowledge of how organizational structure, different employee levels, and governance affect the SE–performance relationship
To explore how organizational design, employee motivation, and governance structures affect SE outcomes	Mazzei et al. (2017, p. 640)	
To examine agency-related issues in SE with regard to structures, guidelines, and control over resources and to the striving for a balance between exploration- and exploitation-related behaviors	Mazzei et al. (2017, p. 640)	
To engage in more research focusing on how lower-level managers can contribute to entrepreneurial performance	Mazzei et al. (2017, p. 640)	
To inquire about which <i>structural elements</i> support or inhibit strategic entrepreneurship	Mazzei et al. (2017, p. 647)	
To understand better how the characteristics of an <i>entrepreneurial opportunity portfolio</i> affect SE and the striving for a balance between exploration and exploitation activities	Mazzei et al. (2017, p. 641)	To increase our understanding of how different opportunities affect the balance between exploration and exploitation activities as well as how they affect performance outcomes over time
To determine whether adopting a broad or rather a narrow perspective on an <i>entrepreneurial portfolio set-up</i> better supports superior outcomes and the balance between exploration and exploitation activities	This study, based on Mazzei et al. (2017, p. 641)	
To investigate how strategic leaders select from the multitude of opportunities to promote a specific balance between exploration and exploitation activities – and whether there are “temporal shifts” between the two resource inputs	Mazzei et al. (2017, p. 650)	
To see whether the externalizing of exploration and exploitation activities requires specific firm-level ties	Mazzei et al. (2017, p. 643)	There is ample room for SE research to develop more understanding of network relationships and ties – and of how such ties affect exploration and exploitation activities as well as organizational performance.
To explore how different <i>network relationships and ties</i> compete against each other within the SE process	Mazzei et al. (2017, p. 643)	
To research, through the lens of competitive dynamics, how firms can manage an <i>inter-organizational network</i> most efficiently for the benefit of all existing and new strategic partners/alliances/ties in the network	Mazzei (2018, p. 643)	
To evaluate how a firm’s legitimacy in an existing market affects exploration activity in a new market	Mazzei et al. (2017, p. 646)	

To analyze how exploring <i>new markets</i> affects exploration and exploitation activities in <i>existing markets</i>	This study, based on Mazzei et al. (2017, p. 646)	Applying institutional theory, researchers could gain a more fine-grained appreciation of how legitimacy affects SE outcomes in new market endeavors and whether it is more beneficial for exploration or exploitation.
To study how internal and external systems affect the application of SE in firms (general systems theory)	Mazzei et al. (2017, p. 648)	To build in-depth knowledge on the relationship between general systems theory and SE with regard to a closer fit for exploratory or exploitive activities; what is the best design for achieving equilibrium?
To analyze, from general systems perspective, whether firms are pushed more toward exploration or rather exploitation activities when engaging in SE	Mazzei et al. (2017, p. 648)	
To inquire what balance between internal and external systems affects the achievement of an equilibrium between opportunity- and advantage-seeking activities	Mazzei et al. (2017, p. 648)	
To study the effect of successful SE application on internal and external systems	Mazzei et al. (2017, p. 649)	
To review the influence (over time) of SE on employee retention, employee satisfaction, organizational commitment, and organizational culture	Mazzei et al. (2017, p. 649)	
To research how successful SE application influences competitive dynamics in the industry and ecosystem	Mazzei et al. (2017, p. 649)	Academics and practitioners could gain a deeper understanding of how different strategic SE moves lead to competitors' reactions in interconnected markets.
To investigate whether an organizational identity focusing on exploitive (resp. exploratory) activities can still support exploratory (resp. exploitive) behavior in firms	Mazzei et al. (2017, p. 654)	Organizational members share joint beliefs, values and culture, so it is important for academics and practitioners to understand how these variables influence the balance of exploration and exploitation activities; furthermore, the community needs to understand how to organize the "identity" to achieve increased performance levels – in other words, a clear view is needed regarding whether a single or a multiple identity best supports both exploration and exploitation activities.
To explore whether organizational identities – which are closely coupled with a firm's values, beliefs, and culture – can shift at the same pace when a rebalancing of opportunity- and advantage-seeking activities is required	Mazzei et al. (2017, p. 654)	
To analyze whether firms develop multiple organizational identities around exploration and exploitation or, instead, embrace a single organizational identity configuration that caters to both behaviors	Mazzei et al. (2017, p. 654)	
To study the effect, on organizational performance, of maintaining multiple organizational identities to represent SE	Mazzei et al. (2017, p. 654)	
To explore the relationship between entrepreneurial leadership and entrepreneurial culture in SE and how that relationship drives performance outcomes	Utoyo et al. (2019, p. 30)	
To study whether SE-oriented firms need to achieve opportunity-seeking and advantage-seeking activities at the same time or rather in sequence	Zhao et al. (2020, p. 18)	A fundamental question concerning the foundations of SE, which needs to be clarified for the sake of academics and practitioners alike

To analyze how the environment and strategic and entrepreneurial initiatives develop over time	Zhao et al. (2020, p. 18)	If academics and practitioners wish to understand what triggers firm performance, contextual variables must be further explored
To study how the appetite for risk and strategic entrepreneurial behaviors change during the transformation from a start-up to an established firm	Anderson et al. (2019, p. 216)	Findings would advance our understanding of how, in the SE context, company age affects risk behaviors and, subsequently, performance outcomes.
To analyze how SE behaviors are affected by the attitudes of top management teams toward risk	Anderson et al. (2019, p. 216)	Especially interesting for practitioners to further understand how top management team characteristics affect firm outcomes
To determine whether there are leadership styles or attributes that foster or hinder the successful application of SEBs and related organizational performance outcomes	Anderson et al. (2019, p. 216)	Results from such research would be groundbreaking for both academics and practitioners because it would illuminate how leader behavior directly affects the firm's performance outcomes
To examine the effect on SE of decision making at different managerial levels	Simsek et al. (2017, p. 515)	Instructive given that academics and practitioners need to understand how different managerial levels affect SE outcomes
To study whether other entrepreneurial mindsets inform effective entrepreneurial leadership in strategic entrepreneurship	Subramaniam & Shankar (2020, p. 27)	Findings would produce more clarity regarding how the characteristics of individual mindset components influence SE outcomes.
To study whether different combinations of entrepreneurial mindsets lead to a more powerful entrepreneurial culture and thus to improved SE outcomes	Subramaniam & Shankar (2020, p. 28)	
To understand whether certain combinations of mindsets prove more efficient in the five forms of strategic entrepreneurship	Subramaniam & Shankar (2020, p. 28)	
To examine whether entrepreneurial leaders exercising strategic entrepreneurship with multiple mindsets are subject to greater stress	Subramaniam & Shankar (2020, p. 28)	Research results would help explain in more detail the effects of strategic entrepreneurship – both inside the firm and on specific management levels
<i>Cultural, ethical, countries</i>		
To test the viability of previous findings in different sectors and with different environmental antecedents	Johanna de Villiers-Scheepers (2012, p. 420)	It would be helpful for academics and practitioners to understand SE implementation in different regions, countries, industries, and sectors; doing so would enable results to be cross-verified and findings to be generalized.
More research should be conducted on SE in emerging economies (e.g., Brazil, China, Indonesia, India, South Korea, Russia)	Bruton et al. (2013, p. 169)	
“How and to what extent does [strategic] entrepreneurship develop in emerging economies over time?”	Bruton et al. (2013, p. 176)	
“How does intellectual protection impact [strategic] entrepreneurship in different economies?”	Bruton et al. (2013, p. 176)	
International data collection	Sirén et al. (2012, p. 36)	
To conduct a cross-national study (that includes, e.g., China, India, Latin America, and Europe)	Liu et al. (2010, pp. 352–53)	

To study strategic entrepreneurship in other emerging economies	Shirokova et al. (2013, p. 194)	
To test the SE model in a multi-country context	Kyrgidou & Petridou (2011, p. 711)	
To use a sample comprising several countries and then to cross-verify the analysis	Johanna de Villiers-Scheepers (2012, p. 420)	
To conduct surveys in various high-tech parks (including Shanghai and Hong Kong) and/or to conduct a cross-national study (including, say, China, India, Latin America, and Europe)	Liu et al. (2010, pp. 352–53)	
To conduct a similar study in other hospitality markets	Carlbäck (2012, p. 368)	
To explore, in a variety of markets, whether SE renders affiliations more distinctive	Carlbäck (2012, p. 368)	To increase our knowledge of strategic entrepreneurship and affiliation/independence in hospitality industries worldwide
To compare the effects of SE-related knowledge spillovers and spill-ins in developed versus emerging economies	Agarwal et al. (2010, pp. 276–77)	To recognize how developed countries and emerging countries differ in terms of spillovers and spill-ins
“To understand institutional effects on SE activity across countries”	Levie & Autio (2011, p. 1414)	Policymakers and practitioners need to establish whether or not the institutional effects observed in different countries have similar effects on entrepreneurial activity and on SE entry.
<i>Techniques, methods (collection, constructs, variables, analysis)</i>		
To apply different sets of entrepreneurship and performance measures (e.g., percentage of sales exported)	Meuleman et al. (2009, p. 233)	Scholars, policymakers, and practitioners would benefit from a more detailed account of how strategic entrepreneurship affects a variety of endogenous factors.
To study the effect of SE on firm performance by using indicators other than sales growth and “satisfaction”	Shirokova et al. (2013, p. 194)	
To study organizational innovation in strategic entrepreneurship using variables other than R&D and patents	Liu et al. (2010, p. 352)	
To conduct more empirical studies investigating strategic entrepreneurship	Kraus et al. (2011, p. 68)	To learn more in depth about SE, which would form the basis for additional academic research and for studies more applicable to management
To study SE from the perspective of structural equation modeling	Kraus et al. (2011, p. 68)	Academics and practitioners would profit from the application of different analysis techniques because SE could then be examined from different angles.
Empirical studies could be undertaken to investigate whether “multi-firm collaborative innovation complements a firm’s internal innovation efforts”	Ketchen et al. (2007, p. 382)	To evaluate whether multi-firm collaborative innovation creates wealth for all the collaborating firms or only for some (or one) of them

The strategic entrepreneurship field would benefit from utilizing multiple informants instead of a single or “key” informant.	Kyrgidou & Petridou (2011, p. 711)	Academics and practitioners would benefit if results were strengthened through cross-verification using the same unit of analysis (here, the firm).	
To study SE from the ethnographic research angle	Mazzei (2018, p. 662)	To study foundations of the SE construct	
To collect a larger sample that includes top management, middle-level managers, and operating-level managers	Monsen & Wayne Boss (2009, p. 96)	A larger sample size would enable a more robust assessment of hypotheses when using a split-sample approach; it would also allow for evaluating, in more detail, reactions to entrepreneurial initiatives at different management levels.	
To conduct research under a similar set-up but while incorporating different environmental antecedents	Johanna de Villiers-Scheepers (2012, p. 420)	To determine whether, in emerging economies, different factors affect the relationship between environmental antecedents and entrepreneurial intensity	
To conduct similar research that adopts a “triangulated” approach and offers a longitudinal analysis	Johanna de Villiers-Scheepers (2012, p. 420)	To strengthen research by adopting robust research methods and to verify previous results over a longer time frame, thereby explaining how values and wealth develop over time	
Research would benefit from a longitudinal design	Sirén et al. (2012, p. 37)		
Longitudinal research on new ventures should reveal how entrepreneurial activities differ over time.	Hitt et al. (2011, p. 70)		
Demonstrating causality requires the application of a longitudinal research design to assess the mediating role of strategic learning on performance.	Sirén et al. (2012, p. 36); Shirokova et al. (2013, p. 194)		
To utilize longitudinal data sets	Liu et al. (2010, p. 352)		
To explore the application of SE and “dueling institutional logics” over time by applying a longitudinal research design	Yiu et al. (2014, p. 210)		
To study the long-run dynamics of a political/economic system	Bjørnskov & Foss (2013, p. 66)		
To conduct longitudinal research	Mazzei et al. (2017, p. 655)		
Future research should use the themes and elements already identified as being relevant to SE for the purpose of developing a scale that can measure SE quantitatively.	Luke & Verreyne (2006, p. 22); Luke et al. (2011, p. 333)		To advance strategic entrepreneurship research by operationalizing the SE construct
Quantitative research is needed to understand more fully the interplay among the components/domains of SE.	Paek & Lee (2018, p. 911)		
Future research is explicitly encouraged to develop alternative measurement constructs of SE.	Anderson et al. (2019, p. 217)		
Future research could operationalize other constructs to measure industry-level product homogeneity in the SE context.	Boone et al. (2013, p. 526)	It is relevant for scholars to explore the SE construct and to confirm that results still apply when different variables are used.	

To conduct a mixture of qualitative and quantitative research to investigate (knowledge spillover) SE and related motives	Agarwal et al. (2007, p. 278)	To gain a better understanding of what structures underlie (knowledge spillover) SE and to generalize previous results, thereby improving forecasts of (knowledge spillover) SE outcomes
Case studies and longitudinal research can advance SE research by shedding more light on the interface of exploration and exploitation activity as managed over a longer time frame.	Mazzei (2018, p. 663)	To use different research methods to understand the interface of exploration and exploitation in firms.
To apply case-study methodology to firms of different ages and in diverse industries as a means of studying the components of SE	Paek & Lee (2018, p. 910)	To gain more understanding of contextual influences on SE through exploratory research
To develop a survey measure for “strategic entrepreneurial orientation”	McKenny (2018, p. 518)	To study strategic entrepreneurship in a quantitative context toward the end of generalizing results related to performance outcomes
To create measures and constructs for studying SE empirically will require the development of operational measures and indicators.	Simsek et al. (2017, p. 515)	
To explore the SE construct empirically	Kim (2018, p. 183)	It would benefit academics and practitioners to acquire more generalizable data concerning which aspects of SE drive positive benefits and performance outcomes.
To conduct more in-depth interviews that focus on qualitative research with the aim of exploring different characteristics of firms’ entrepreneurial activities	Kantur (2016, p. 38)	Findings from such research could lead to a deeper understanding of SE characteristics.
To study strategic entrepreneurship through case-study methodology	Simsek et al. (2017, p. 515)	Insights into the mechanisms of SE’s micro foundations would increase its explanatory power and empirical validity.
Research content		
To study the effect of strategic entrepreneurship on outcomes other than performance	Kantur (2016, p. 38)	Positive findings on non-performance outcomes would confirm that SE has a generally positive effect on a firm’s key performance indicators and also on non-performance outcomes.

Sources: Adapted from Short et al. (2009), Nolan and Garavan (2016), Danese et al. (2018), and Kerr and Coviello (2019).

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EXHIBIT 6

Analysis of Variables

Table 24. Analysis of variables and key findings

Article	Independent variable	Moderator / mediator	Dependent variable	Key findings
Audretsch et al. (2009)	Number of patents owned by the CEO (proxy) Number of patents owned by the firm (proxy)		Share of equity ownership (as a percentage of firm assets)	The number of patents held by the CEO is positively related to the share of equity ownership held by the CEO. The share of manager ownership increases with the company's age.
Meulemann et al. (2009)	Divisional buyout / other buyout Private equity (PE) experience (cumulative number of buyouts per investor); value adding and monitoring (measured by ratio of investment to executive)		Profitability (return on capital employed) Efficiency (sales per employee) Sales growth (average sales) Employee growth (average)	Divisional buyouts do not lead to significant changes in profitability. Divisional buyouts do increase efficiency (sales per employee and employee growth). A firm's PE experience affects neither its profitability nor its efficiency.
Monsen & Boss (2009)	Strategic entrepreneurship (entrepreneurial orientation)		Job stress (role ambiguity) Employee retention (intention to quit)	The effects of strategic entrepreneurship on management differ from those on staff and so different approaches are required. Entrepreneurial strategies must differ to reflect the managerial level involved.
Steffens et al. (2009)		Firm age	Sales growth Profitability (return on assets)	Firms that focus first on profitability and second on a growth strategy are more likely than other firms to achieve above-average performance. A young firm should strive for growth but should first identify possible sources of growth and profitability.
Liu et al. (2010)	Returnee-owned firms Multi-national enterprise Returnee spillover 1 (interaction with returnee) Returnee spillover 2 (returnee density)	Technology gap 1 (time to catch up) Technology gap 2 (average labor productivity of returnee firms)	Innovation performance	Firms founded by returnee entrepreneurs are more innovative than those founded by domestic entrepreneurs. Returnee entrepreneur firms have an indirect spillover effect on non-returnee firms' innovation performance.

				Technology gaps positively moderate the relationship between returnee spillovers on non-returnee firms' innovation performance.
Sirén et al. (2012)	Exploitation strategy Exploration strategy	Strategic learning	Profits	Strategic learning acts as a mediator between exploration vs. exploitation and profits. The effect of exploration on strategic learning is moderated by the extent of exploitation.
Bjørnskov & Foss (2013)	Entrepreneurship	Institutions	Total factor productivity (TFP)	Government final consumption is negatively related to TFP. Openness to trade is positively related to TFP. Entrepreneurship has a strong effect on TFP. The more that a government intervenes (i.e., the lower the government size index), the greater the effect of entrepreneurship.
Shirokova et al. (2013)	Entrepreneurial orientation Entrepreneurial values Investment in internal resources Knowledge-based resources Organizational learning Developmental and transitional changes		Growth of sales Perceived non-financial performance	Both exploration and exploitation have a positive effect on firm performance. Strategic entrepreneurship in general does not have statistically significant effects on firm performance.
Obeng et al. (2014)	Entrepreneur characteristics Firm resources Firm strategy		Firm growth (number of employees)	In Ghana, medium-sized businesses grow more rapidly than do small and "micro" businesses. In Ghana, there is a positive relationship between family ownership and employment growth in the manufacturing sector. Firms led by younger (resp., older) entrepreneurs tend to

				grow more rapidly (resp., more slowly).
Yiu et al. (2014)	Government-induced administrative heritage State-owned legacy Formal control by business group Informal control by business group		Strategic corporate entrepreneurship (R&D, capital expenditures on plants and equipment, new products introduced to markets, development of new markets)	Institutional state logic and ownership remain strong influences; market logic supports SE operating when formally or informally controlled by business groups. Companies are more likely to change their institutional logic when the prevailing regime's leaders are more powerful.
Patzelt & Shephard (2009)	Access to non-financial resources Reduction of administrative burden Tax incentives	Access to finance	Academic entrepreneurs' assessment of policy programs' usefulness	Access to financial capital, as provided by a policy program, is fundamental and leads to entrepreneurs perceiving the program as being more beneficial.
Kyrgidou & Petridou (2011)	Competence exploration Competence exploitation		Strategic entrepreneurship (entrepreneurial mindset, creating innovation, managing resources, exploiting competitive advantage)	Competence exploration positively and significantly affects innovation and the entrepreneurial mindset. Competence exploitation has a positive and significant effect on the strategic management of resources and on the exploitation of competitive advantage.
Levie & Autio (2011)	Regulatory burden index Rule-of-law index	Rule-of-law index	Total early-stage entrepreneurial activity Strategic entrepreneurial activity Non-strategic entrepreneurial activity	There is a "lighter burden of regulation associated with a higher rate and relative prevalence of strategic entrepreneurial entry" (p. 1392). "[R]egulation has a significant effect on strategic entry only when rule of law is strong" (p. 1392).
Johanna de Villiers-Scheepers (2012)	Organizational antecedents (management support, autonomy, rewards, time, boundaries) External and environmental antecedents (munificence, hostility)		Entrepreneurial intensity	In emerging economies, "organizational climate" has a strong influence on entrepreneurial firms. Entrepreneurial intensity is positively associated with organizational antecedents and perceptions of

				environmental opportunity.
Boone et al. (2013)	Industry-level product homogeneity		Product portfolio overlap at entry Exit rates	High industry-level product diversity encourages new entrants to imitate incumbents. Increasing industry-level product homogeneity makes it less likely that differentiating entrants will survive. The general pattern of entries and exits in an industry leads to the homogenization of its products and services.
Mihalache et al. (2014)	Top management team (TMT) shared leadership	Centralization Connectedness TMT “cooperative conflict” style of management TMT decision-making comprehensiveness	Organizational ambidexterity (exploration / exploitation)	Shared leadership can influence organizational ambidexterity.
Boudreaux (2019)	Education Work experience Age Gender Race Home base Sole proprietorship Have intellectual property Credit risk Assets (logged) Income		Firm survival Profits Profit quartile Sales revenue Perceptions of competitive advantage	The rates of profit and survival tend to be greater for service industries than for all other industries. The categories of retail and manufacturing exhibit the lowest profit and survival rates.
Tipu & Fantasy (2018)	Social capital Strategic entrepreneurship (orientation)	Sustainable supply chain management	Organizational performance	Social capital and strategic entrepreneurship are positively related to organizational performance
Utoyo et al. (2019)	Entrepreneurial mindset Entrepreneurial culture Entrepreneurial leadership	Capability-driven strategy Configuration core innovation capabilities	Innovation performance Collaborative innovation	Exploration is a major influence on capability-driven strategy and on subsequent innovation performance.
Zhao et al. (2020)	Relevant experience First-order embeddedness		Timing of entry into a new market space Entrant performance	Resources can have convergent effects on opportunity- and advantage-seeking

	Second-order embeddedness			activities, and they are not always mutually supporting.
Kim (2018)	Entrepreneurial orientation	Firm age Firm size Market dynamism Product innovation radicalness	Firm performance	When assessing the SE–performance relationship, the moderating effects of dynamic capabilities are more critical for incumbent firms than for small firms.
Kantur (2016)	Entrepreneurial orientation	Strategic entrepreneurship	Firm performance Non-financial performance	Strategic entrepreneurship mediates the relationship between entrepreneurial orientation and performance

Source: Developed for this research; based on Calabrò et al. (2019) and Welbourne and Mejia (1995).

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EXHIBIT 7

Analysis of Research Gaps

1. Methodology

- The main gaps listed in this exhibit are identified based on an analysis of the articles included in the systematic literature review; they are supported by Exhibit 3 (Content Analysis) and the most significant gaps described in Exhibit 5 (Future Research Avenues).
- The findings are then merged in this Exhibit 7 to generate an integrated summary of gaps functioning as blueprint for future research directions.
- The structure of this exhibit follows Danese et al. (2018).
- The content and methodology of merging the Exhibit 5 results are developed for this study.

2. Summary analysis of research gaps

Table 25. Research gaps

Gaps	Evidence
<i>Theoretical perspectives, concepts, and foundations</i>	
Gap 1: Heterogeneity in the theories applied. Applying theories other than RBV (14) to study SE: complexity theory (i.e. complex adaptive systems), competitive dynamics theory, social capital theory, leadership theory, knowledge-based view.	<ul style="list-style-type: none"> ▪ Most theories relate to RBV (14), organizational learning (9), agency theory (6), real options theory (5), or network theory (5).
Gap 2: Absence of in-depth <i>theoretical</i> SE studies addressing resources, processes, and the exploration–exploitation balance. Exploring the adoption of a cyclic process view of SE, where opportunity- and advantage-seeking behaviors simultaneously and mutually reinforce each – rather than sequentially balancing the behaviors step by step against actual resource settings.	<ul style="list-style-type: none"> ▪ This gap is identified by several studies as a future research avenue (see Exhibit 5). ▪ Only a few studies explore the within- and across-boundary conditions of SE
<i>Levels of analysis</i>	
Gap 3: Research studies could focus on different levels of analysis.	<ul style="list-style-type: none"> ▪ The prevailing unit of analysis is the firm (in 57 of 75 studies) followed by the individual (8 of 75).
<i>Context of research</i>	
Gap 4: Far fewer empirical studies exploring the services sector than exploring either the manufacturing sector or their combination.	<ul style="list-style-type: none"> ▪ Only 17% of the studies focus solely on the services sector.
Gap 5: Paucity of research from the multi-country perspective	<ul style="list-style-type: none"> ▪ The empirical SE research is dominated by single-country research studies (83%).
Gap 6: Not enough empirical research based on data from the Americas, Australasia, Africa, or the world.	<ul style="list-style-type: none"> ▪ Most of the empirical articles reviewed here are based either in Europe (31) or in Asia (13).
Gap 7: Lack of studies that address emerging economies.	<ul style="list-style-type: none"> ▪ The majority of SE research is conducted in developed economies.
<i>Content of research</i>	
Gap 8: Conceptual lacunae that could be filled by further exploring SE frameworks, process models, and components.	<ul style="list-style-type: none"> ▪ Despite the existence of several SE frameworks and process models, there is no consensus on which are the most accurate or on the underlying resource orchestration process.
Gap 9: Qualitative and quantitative empirical studies whose results would enable a more developed understanding of the trade-offs between exploration and exploitation (i.e., the balance between opportunity-seeking and advantage-seeking activities).	<ul style="list-style-type: none"> ▪ Lack of empirical evidence: the content analysis revealed that only one of the articles explored the optimal balance empirically.
Gap 10: Studies of SE implementation within a wider range of industries and sectors.	<ul style="list-style-type: none"> ▪ Most of the reviewed articles involved implementation in just a few industries (i.e., life sciences, ICT, or wholesale/retail).
Gap 11: More in-depth research on how strategic entrepreneurship relates to other fields, theories, and constructs.	<ul style="list-style-type: none"> ▪ Current approaches – most of which relate SE to agency theory, knowledge spillovers, or family businesses – could be expanded to include other areas.
Gap 12: Substantial research is necessary to investigate the effect of SE on outcome variables other than performance.	<ul style="list-style-type: none"> ▪ This gap is identified by several studies as a future research avenue (see Exhibit 5).
<i>Techniques, methodologies, and measures</i>	
Gap 13: Absence of studies providing a longitudinal perspective on strategic entrepreneurship issues.	<ul style="list-style-type: none"> ▪ This gap is identified by several studies as a future research avenue (see Exhibit 5).
Gap 14: Homogeneity among the research methods used to study strategic entrepreneurship.	<ul style="list-style-type: none"> ▪ 72% of all the included articles are conceptual in nature or focus on survey research methods.
Gap 15: The use of SE outcome variables <i>other</i> than the creation of value and wealth creation – for example, financial and non-financial performance, organizational innovation, knowledge, general benefits.	<ul style="list-style-type: none"> ▪ This gap is identified by several studies as a future research avenue (see Exhibit 5).

Gap 16: Lack of metrics for assessing strategic entrepreneurship

- Only one measurement scale has been developed for measuring strategic entrepreneurship.
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Source: Developed exclusively for this study (adapted from Danese et al. 2018).

Chapter 3

The effect of corporate venturing on knowledge acquisition and performance in small and medium-sized firms

Arndt Schulze & Olufunmilola (Lola) Dada

Abstract

How does corporate venturing (CV) influence knowledge acquisition (KA) and performance in small and medium-sized enterprises (SMEs)? and how does transformational leadership and technological turbulence affect the aforementioned relationship? To address these, we utilized survey data of 570 organizational members, up to the top management level, of SMEs in Germany. The results indicate that CV positively affects KA and performance. Additionally, we found positive moderation effects of transformational leadership and technological turbulence on the CV-performance relationship. The results also suggest that firms practicing CV in high technology dynamism related industries face *a triangle of tensions* where high technology turbulence supports exploitation of existing competitive advantages, but the former dampens the exploration of future competitive advantages through new knowledge. This can be a substantial issue if firms are forced to constantly innovate. The research findings offer vital theoretical and practical implications.

Keywords: Corporate venturing, transformational leadership, knowledge-based view of the firm, technological turbulence, firm performance

JEL Classifications: L26, O30

1. Introduction

Theoretical and empirical research on corporate venturing (CV) continues to flourish, exploring the heterogeneous facets of the phenomenon (Hill & Birkinshaw, 2008; Narayanan, Yang & Zahra, 2009). CV, generally discussed in the realm of corporate entrepreneurship, refers to the “corporate entrepreneurial efforts that lead to the creation of new business organizations” (Sharma & Chrisman, 1999, p. 19). More particularly, the literature exploring the effect of CV on performance outcomes has been increasing at a rapid pace (Miller, Wilson & Adams, 1988; Tsai, MacMillan, Low, 1991; Zahra, 1996; Thornhill & Amit, 2001; Hill & Birkinshaw, 2008; Zahra & Hayton, 2008; Chandler & Lyon, 2009; Covin et al., 2015; Garrett & Covin, 2015; Wadhwa, Phelps, Kotha, 2016; Wadhwa, Freitas & Sarkar, 2017). Similarly, empirical studies exploring the effect of the knowledge incorporated or acquired by the company in CV have been growing steadily over the last twenty years (Schildt, Maula & Keil, 2005 (patents); Wadhwa & Kotha, 2006, (patents); Keil, Maula, Schildt & Zahra, 2008 (external knowledge sources: alliance, joint ventures, acquisitions); Anokhin, Örtqvist, Thorgren & Wincent, 2011 (knowledge sharing in open innovation); Wadhwa et al., 2016 (knowledge creation through innovations); Cirillo, 2019 (external learning/CV spinouts); Dushnitsky & Shaver, 2009 (IP protection).

Today, we know that CV is associated with gaining new knowledge (McGrath, Venkantaraman & MacMillan, 1994; Thornhill & Amit, 2001), achieving corporate vitalization (McGrath, Venkantaraman & MacMillan, 1992), acquiring new skills, competencies, capabilities or technologies (Tsai, MacMillan & Low, 1991; Burgers, Jansen, van den Bosch & Voberda, 2009; Narayanan et al., 2009; Dushnitsky & Birkinshaw, 2016), and is connected to entering new markets, improving firm performance, growth and survival (Thornhill & Amit, 2001; Schildt et al., 2005; Narayanan et al., 2009) as well as innovation (Schildt et al., 2005).

Despite the pioneering work of previous scholars, there still remains substantial gaps in order to advance the field of CV.

An important prevailing issue is that studies in the CV literature do not systematically build up on respective studies, thereby making it difficult to evaluate the advancement in this field of research over time (Narayanan et al., 2009). This is especially a major issue as research findings do not support generalizability towards a unified understanding of the field. Although there is a common view that the inflow of new knowledge is important for firm performance and survival, to the best of our knowledge there is no extant study that has focused on applying a direct measure for assessing firm level knowledge acquisition (KA) in CV research. As Schildt et al. (2005) suggest, it is equally important for researchers and practitioners to cross validate findings that apply different learning measures by including small to large size companies' perspectives to make findings more generalizable. Narayanan et al. (2009, p. 64) highlight a similar call, arguing that "given the range of strategic benefits associated with CV (e.g., learning and capability building), more creative measures are needed in future research".

Although a small group of studies focus on joint ventures in CV (Shortell & Zajak, 1988; Park & Kim, 1997; Inkpen, 2000), majority of present studies focus either on single or dual venturing modes, i.e. either on internal or external CV or a combination thereof (e.g. McGrath, 1995; Park & Kim, 1997; Anokhin et al., 2011; Basu & Wadhwa, 2013; Covin, Garrett, Kuratko & Shepherd, 2015; Garret & Covin, 2015). They do not span the complete domain of CV, which includes a perspective on internal corporate venturing (ICV), cooperative corporate venturing (CCV) and external corporate venturing (ECV). While specifically researching one of the three forms might be beneficial for elaborating on distinct research questions, it does not allow for generalization of findings to the overall field exploring the positive effects of CV endogenously.

Also, extant studies explore knowledge influx or KA endogenously⁷ of the firm, applying patent measures operationalized as proxy (Schildt et al., 2005; Wadhwa & Kotha, 2006; Keil et al., 2008; Anokhin et al., 2011; Wadhwa et al., 2016; Cirillo, 2019) or corporate venture capital and other knowledge performance measures (Dushnitsky & Shaver, 2009; Dushnitsky & Lavie, 2010; Basu, Phelps & Kotha, 2011; Gaba & Bhattacharya, 2012; Basu & Wadhwa, 2013; Titus, House & Covin, 2017; Covin et al., 2015). Although, the gains from knowledge inflows through patent citations are fairly well researched, surprisingly no research was found to have been done to assess the direct effect of CV (ICV, CCV and ECV) on KA.

Contextual, environmental and technology-related factors influencing CV (e.g. dynamism, hostility, technology strategy) have received attention in the literature (Tsai et al., 1991; Chandler & Hanks, 1994; Zahra, 1996; Burgers et al., 2009; Covin et al., 2015). Despite the theoretical and empirical attention with regards to the effects of environmental and technology factors on CV, extant literature is largely silent not only about the role of leadership in CV (Covin & Miles, 2007; Narayanan et al., 2009) but also about how technology moderates the CV- KA relationship. Theory and practice would benefit from a more fine-grained understanding of how leadership and technology influence the acquisition of new knowledge to form new capabilities, skills and resource combinations.

“Transformational leadership can be defined as the style of leadership that heightens consciousness of collective interest among the organization's members and helps them to achieve their collective goals” (García-Morales, Jiménez-Barrionuevo & Gutiérrez- Gutiérrez, 2012, p. 1040). Transformational leadership affects the fundamental attitudes of firm members in constructing a common attitude towards the firm’s strategic intentions (García-Morales, Llorénes-Montes & Verdú-Jover, 2008). As outlined by García-Morales et al. (2008), there are still few studies, which systematically evaluate the effects of transformational leadership on

⁷ Scholars used “proxies” to measure the influx of knowledge as a dependent variable (such as patents, CVC or knowledge performance measures). That is what “endogenously” refers to.

performance and knowledge (acquisition). This has to be seen in light of the confirmed positive relationship of transformational leadership, knowledge and performance throughout the literature (García-Morales et al., 2008; Birasnav, 2014). Although, this positive relationship in various contexts is acknowledged, research provides limited insights on how transformational leadership affects the relationship between CV (i.e. ICV, CCV and ECV) and KA as well as performance.

Also, several studies have explored CV in small and medium-sized enterprises (SMEs) (MacMillan & Day, 1987; McDougall, Robinson & DeNisi, 1992; Miles & Covin, 2002; Schildt et al., 2005; Yamakawa, Khavul, Peng & Dees, 2013; Naldi & Davidsson, 2014). When evaluating CV and the level of analysis in the context of SMEs, then, we obtain a picture, which is scattered and fragmented, unable to provide a thorough overview on the status quo of SMEs in CV research. In other words, the majority of studies within the CV literature focus on applying a different unit of analysis, e.g. general internal or external venture units, corporate venture capital units, public entities or the focus on capturing the largest publicly traded firms in the US. This raises the need to explore CV in the context of SMEs more in-depth, especially with regards to the effect of CV on KA and performance.

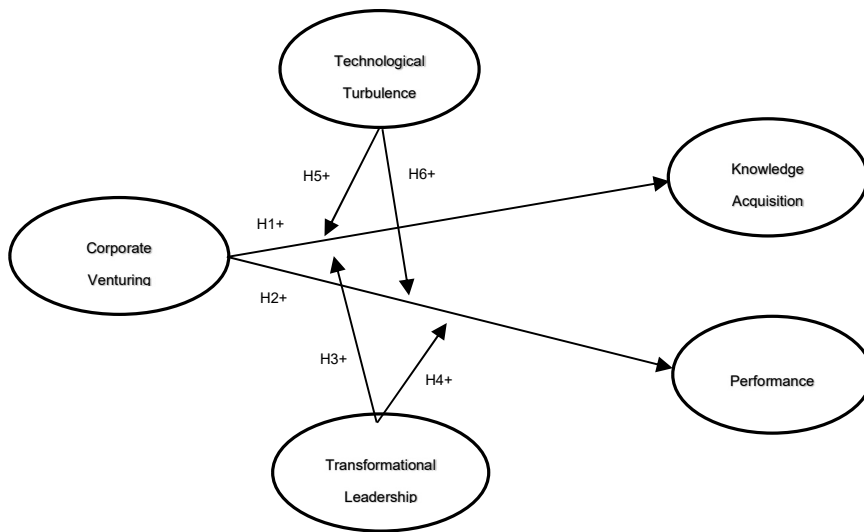
In a study carrying out a comprehensive analysis on “context–CV characteristics–outcome framework”, Narayanan et al. (2009, p. 70) highlight that “it is not possible to assess whether the significant results found in prior studies reflect the spurious correlations among the variables explored; i.e., correlations that might disappear when other relevant factors are considered and controlled for in the analysis. This leads us to urge future researchers to apply SEM-type analyses to examine the relationships as comprehensively as possible [...]”. Therefore, two research questions will guide this research, namely (1) How does CV influence KA and performance in SMEs? (2) How does transformational leadership and technological turbulence affect the CV-KA and performance relationship? To address these, we utilized a quantitative

survey of 570 organizational members drawn from management teams of SMEs in Germany, spanning twenty different industries.

Our study offers a number of important contributions to the literature. First, we develop a measure of CV that spans its whole domain, thereby providing a broader foundation on which future studies can build upon. Second, while extant research focuses either on ICV or ECV our research explicitly includes all three domains as outlined by Morris, Kuratko & Covin (2010). Third, this is the first known study to explore the combined direct effects of CV (ICV, CCV, ECV) on KA and performance. Fourth, we enhance our understanding of the effects of transformational leadership and technological turbulence on the CV-KA and performance relationship. Finally, we apply SEM-methods for the analysis, thereby responding to calls of previous scholars (notably, Narayanan et al., 2009).

In the next section, we provide a holistic review of the theoretical foundations of our hypotheses in exploring the relationship between CV and KA as well as performance, and the moderating influences of technological turbulence and transformational leadership, as outlined in our research model (Figure 5. The effect of CV on KA & performance). After this, we explain the methodology, including the sample, followed by the data analysis and the results of the research. In the final section, we provide a discussion of the research implications and conclusion.

Figure 5. The effect of CV on KA & performance



2. Theory and hypotheses development

Corporate venturing

Strategic entrepreneurship (SE) and corporate venturing (CV) are normally discussed in the realm of corporate entrepreneurship (CE), and both represent two related but separate phenomena involving organizational renewal activities (Dushnitsky & Birkinshaw, 2016; Dunlap-Hinker, Kotabe & Mudambi, 2010; Phan, Wright, Ucbasaran & Tan, 2009; Guth & Ginsberg, 1990). SE involves entrepreneurial action within an existing organization that manifests itself in “organizationally consequential innovations [that are] adopted in the pursuit of competitive advantage” (Morris et al., 2010, p. 80; see also Verbeke, Chrisman & Yuan, 2007). These organizational consequential innovations can lead to substantial changes, which will be considerable departures from the organizations’ previous strategies, products, markets, organization structures, processes, capabilities, or business models (Morris et al., 2010). In turn, “corporate venturing refers to corporate entrepreneurial efforts that lead to the creation of new business organizations” (Sharma & Chrisman, 1999, p. 19) “in existing or new fields, markets or industries—using internal [, cooperative] and external means” (Narayanan et al., 2009, p. 59). CV differs from SE in at least two major ways: (1) the “focus [of CV is] on the various

steps and processes associated with creating new businesses and integrating them into the firm's overall business portfolio" (Narayanan et al. 2009, p. 59; see also Burgelman, 1983) and (2) CV is limited to specific product-market combinations which lead to the formation of new organizational units (von Hippel, 1977; Burgelman, 1983; Burgelman, 1985; Sharma & Chrisman, 1999; Ernst, Witt & Brachtendorf, 2005; Burgers et al., 2009; Hill & Birkinshaw, 2014;) while SE are innovation based renewal activities affecting the entire existing firm (Morris et al., 2010).

Our research follows the seminal work of Burgelman (1983), which shows how firms create new organizational units in the form of autonomous divisions or departments to operationalize newly created businesses. This view was reinforced by Sharma & Chrisman (1999, p. 19) as they regard CV as "new organizational units that are distinct from existing organizational units in a structural sense (e.g., a new division)". This '*separate unit view*' is echoed by several recent authors and back in the days (von Hippel, 1971; Burgelman, 1985; Shortell & Zajac, 1988; McGrath et al., 1992; Burgers et al., 2009; Garrett & Neubaum, 2013; Dushnitsky & Birkinshaw, 2016). We deem this is an important differentiation criteria when assessing CV as a whole as measurement models need to cater for this distinction.

Our research follows Morris et al.'s (2010) definition, which proposes three sub-dimensions – internal corporate venturing (ICV), cooperative corporate venturing (CCV) and external corporate venturing (ECV). "With ICV, new businesses are created and owned by the corporation", different to CCV which "refers to entrepreneurial activity in which new businesses are created and owned by the corporation together with one or more external development partners" (e.g. joint venture) (Morris et al., 2010, p. 83). The third domain, ECV, "refers to entrepreneurial activity in which new businesses are created by parties outside the corporation and subsequently invested in or acquired by the corporation" (Morris et al., 2010, p. 83).

Prior work implies that all forms of CV (ICV, CCV & ECV) have one thing in common; they all seek revitalization of the firm through the inflow of new knowledge to recombine existing capability and competency sets to achieve competitive advantage, growth and firm survival (Zahra, Nielsen & Bogner, 1999; Covin & Miles, 2007; Burgers et al., 2009; Narayanan et al., 2009; Titus et al., 2017).

Corporate venturing and the knowledge-based view

As outlined by Burgers et al. (2008), in the knowledge-based economies, competitive advantages vanish at an ever-increasing rate. Building up and maintaining sets of competitive advantages is at the heart of every firm. Knowledge-based resources form the foundation of performance differentials and firm success (Inkpen, 2000). Having its foundation in the resource-based view, knowledge is regarded as the most strategically important resource of the firm as it is considered a primary input for production (Grant, 1996). The knowledge-based view of the firm is highly relevant to the context of CV as it describes the criticality of knowledge accumulation and transfer for firm success and performance in general (Burgelman, 1983; Thornhill & Amit, 2001; Narayanan et al., 2009). Strategic benefits with regard to knowledge in CV have been highlighted in terms of knowledge flows and learning (Schildt et al., 2005), new knowledge creation (Wadhwa & Kotha, 2006; Keil et al., 2008), knowledge spillovers (Wadhwa & Kotha, 2006; Arrow, 1962), and tapping into new knowledge from start-ups (Keil et al., 2008). Hence, firms intending to undertake CV activities with a focus on novel innovations need to consider how to absorb new knowledge sets and integrate them into the firm. Tacit knowledge inherent in employees plays a key role for firm success, as explained by Schulze and Dada in the Chapter 4, as this specific employee knowledge “can only be observed through its application and acquired through practice” (Grant 1996, p. 111), contrary to explicit knowledge, which can be structured, codified and shared. As a result, it is strategically important to manage tacit knowledge for firm innovation.

Corporate venturing and knowledge acquisition

Having established a close link between the foundations of knowledge and its general importance for CV, this section specifically focuses on the role of knowledge acquisition (KA). Within CV literature, KA is studied in numerous ways. The first group of researchers study the exogenous effect of knowledge variables on different outcome variables. Chandler & Lyon (2009) establish that KA is significantly and positively related to venture performance. In a study by Sullivan & Marvel (2011), they analyze the effect of different knowledge types on sales and innovation outcomes. Their findings indicate that especially knowledge especially related to technology is positively associated with innovativeness of products and services. Similarly, a study by Yamakawa et al. (2013), on the effect of international market and technological knowledge on international venture expansion, reveal that international expansion is driven by reputation and the exploration of incoming knowledge flows. A positive effect of KA was also confirmed by Naldi & Davidsson (2014) who uncover that KA is strongly related to growth from international expansions. Additionally, Naldi & Davidsson (2014) observe that firm age negatively affects this relationship.

A second group of researchers study factors that affect KA or on the inflow of knowledge into the firm. In a study comparing different types of spin-outs in the information communication technology (ICT) sector in the USA, Cirillo (2019) found that when mother firms integrate unrelated knowledge components created by their CV spin-outs, this in turn leads to higher quality inventions. Also, in a study analyzing a US based sample of 110 ICT firms, Schildt et al. (2005) ascertain that less integrated external corporate venturing (ECV) modes and technology relatedness have significant effects on KA in form of explorative learning. Furthermore, in a study evaluating technology and knowledge acquired from international joint ventures, Park (2010) found that managerial knowledge, that has more sticky features relative to technology, is acquirable know-how.

Although knowledge plays an important role in CV, substantial gaps still remain uncovered. Today, no research focuses on the direct effects of CV on KA by spanning the whole domain of CV, i.e. ICV, CCV and ECV. Therefore, taken together, we hypothesize that:

H1: CV is positively related to KA.

Corporate venturing and performance

Theoretical and empirical evidence acknowledges the importance of CV activities on firm performance (Thornhill & Amit, 2001; Covin & Miles, 2007; Hill & Birkinshaw, 2008). There has been some advancement in recent decades in extant literature focusing on the different effects of CV on a variety of firm performance outcomes. With regards to CV, some studies focus on how ideas, learning and opportunity affect performance outcomes (Hill & Birkinshaw, 2008; Chandler & Lyon, 2009; Garret & Covin, 2015), while other studies evaluate how market aspects (e.g. market attractiveness, market familiarity, and venture offerings that target market fit) influence performance results (Chandler & Hanks, 1994; Covin et al., 2015; Garret & Covin, 2015). Another group of studies evaluates how strategy (i.e. role of strategy, technology strategy, and strategy making-process) relates to performance outcomes in CV (McDougall et al., 1992; Zahra, 1996; West & Meyer, 1998). Despite the growing literature evaluating the effect of CV on firm performance, less is explicitly understood as to how the combined three CV modes (ICV, CCV and ECV) directly relate to performance outcomes. Thus we hypothesize that:

H2: CV is positively related to performance.

The moderating role of transformational leadership

Although several scholars have examined the importance of leadership within the CV literature, in general, it remains a mystery as to how it affects CV overall. MacMillan (1987)

elaborates on the importance of specific transformational leadership capabilities associated with new business development. In a later study, Ensley, Pearce, Craig & Hmieleski (2006) consider the topic of leadership within CV, with a specific focus on environmental dynamism. Their study reveals that environmental dynamism has a significant positive influence on the transformational leadership-new venture performance relationship. Naldi & Davidsson (2014) study the effect of KA on entrepreneurial growth moderated by leadership experience. The research from the aforementioned scholars uncovered that KA from international markets fuel entrepreneurial growth, but could not confirm that leadership plays a vital role in influencing this relationship. In a qualitative study, applying in-depth comparative case studies on CV, Marchisio, Sciascia, Miles & Astrachan (2010) found that CV can affect firms at the family or individual levels positively, negatively or a combination thereof, depending on four specific moderating factors (such as existence of a succession process (individual level), participation in strategy development (individual level), importance of non-active family members (family level), and financial impact of CV initiatives (family level)). The research also indicates that succession process positively influences the leader's capability to effectively drive selection and training of the next generation of family members.

Principally, scholars agree on the important role of leadership in CV research. Greene, Brush & Hart (1999, p. 105) note that the "literature on corporate venturing covers [...] innovation, *leadership*, and agency roles crucial in new product innovation". Similar view is provided by Sykes & Block (1989, p. 164) who argue that "everybody acknowledges that management and leadership skills are critical ingredients for new venture success". Despite these observations, the role of leadership in CV remains largely under-researched in extant literature.

A similar view is valid for the effect of leadership on the CV-performance relationship. Substantial research evaluating the CV-performance relationship confirms the positive effect of CV on the latter (McGrath et al., 1992; Zahra, 1996; Covin & Miles, 2007; Thornhill & Amit,

2001; Narayanan, et al. 2009). Although a lot of advancement has taken place over the last decade on the aforementioned relationship, the extant literature does not provide much discussion on how leadership affects the relationship. Therefore, we hypothesize the following:

H3: The CV-KA relationship is positively moderated by transformational leadership, such that increases in transformational leadership lead to stronger positive CV effects on KA.

H4: The CV-performance relationship is positively moderated by transformational leadership, such that increases in transformational leadership lead to stronger positive CV effects on performance.

The moderating role of technological turbulence

The importance of technology within CV literature takes a prominent place as outlined by Burgelman (1983, p. 231) who stated that “in five out of six cases, the definition of the new business opportunity had its origin in technical linking activities [... suggesting] "technology first" [...] as the dominant mode of conceiving of a new venture”. In the era of technological emergence, CV assumes increased strategic importance in growing the firm’s capability building and deciding on its growth (Narayanan et al., 2009). Studies on themes related to technology in CV research have increased substantially over the years. These have focused on technology strategy (Zahra, 1996; Hitt, Nixon, Hoskisson & Kochhar, 1999; Dushnitsky & Lenox, 2006), technology with focus on intrapreneurship (Antoncic & Hisrich, 2001), technology and corporate venture capital (CVC) investments (Dushnitsky & Lennox, 2005; Dushnitsky & Lennox, 2006), technological performance (Hill & Birkinshaw, 2008), technological knowledge (Schildt et al., 2005; Yamakawa et al., 2013), technological resources, capabilities, intensity and change (Basu, Phelps & Kotha, 2011; Sullivan & Marvel, 2011; Basu & Wadhwa, 2013; Van de Vrande & Vanhaverbeke, 2013), technological knowledge diversity (Wadhwa & Kotha, 2006) and technological discontinuities as well as dynamism (Maula, Keil & Zahra, 2013; Titus et al., 2017).

Despite the contributions of prior studies in advancing the field of research with regards to technological knowledge assimilated from CV activities, important gaps remain within extant literature. Little is known about the moderating effect of technology on the CV- KA, as well as the CV-performance, relationships, especially when the exogenous effect of CV on KA and performance is designed as a combined effect of ICV, CCV and ECV. Thus we hypothesize that:

H5: The CV-KA relationship is positively moderated by technological turbulence, such that increases in technological turbulence lead to stronger positive CV effects on KA.

H6: The CV-performance relationship is positively moderated by technological turbulence, such that increases in technological turbulence lead to stronger positive CV effects on performance.

3. Methods

Sample

Following prior studies (DeCelles, DeRue, Margolis & Ceranic, 2012; Ng & Feldman, 2015; Courtright, Gardner, Smith, McCormick & Colbert, 2016; Crilly, 2017) we used an online panel data from Qualtrics™ to attain our research sample. Participants of the survey were ensured strict anonymity and confidentiality. To test our hypotheses, we collected data in the timeframe of February 2020 to December 2020 in four waves focusing on small and medium-sized enterprises (SMEs), which met the following three criteria: (1) firms which were active, (2) with operational activities in Germany, and (3) with a workforce of 1 to 249 employees (Dada & Fogg, 2016).

We calculated the response rate based on the number of participants who opened the Qualtrics invitation to participate in the study in relation to the number who completed it (Brown & Robinson, 2011; Long, Bendersky, & Morrill, 2011; Dumas, Phillips, & Rothbard, 2013; Hewlin, Dumas & Burnett, 2017). The number of participants that opened the invitation to participate was 5,484 while 1,262 completed the overall survey, leading to a response rate of

23%. We imputed missing values with an ‘educated guess’ (Tabachnick & Fidell, 2014) and filtered out univariate outliers (speeders, flat liners, consecutive numberings, and responses with substantially missing values) (Meade & Craig, 2012; Tabachnick & Fidell, 2014; Meade, Pappalardo, Braddy & Fleenor, 2020) providing a final sample size of 570 respondents.

Table 26. Characteristics of firms and respondents (n = 570)

Group	Ratio	Group	Ratio
Role		Industry*	
Owner/President	29.1%	Agriculture, Forestry	1.9%
Executive/C-Level	11.6%	Mining, quarrying	0.5%
Senior Manager Level	16.8%	Manufacturing	7.7%
Middle Manager Level	30.0%	Electricity, gas, steam	2.1%
First Manager Level	12.5%	Water supply, sewage	0.9%
Senior Specialist	0 %	Construction	10.0%
		Wholesale, retail	13.3%
		Transportation, storage	3.9%
		Accommodation, food service	3.5%
		Information & communication	10.4%
		Financial & insurance activities	4.0%
		Real estate activities	2.1%
Gender		Professional, scientific et al. ⁸	10.4%
Male	62.1%	Admin. & support services	5.1%
Female	37.9%	Public admin & defense	1.9%
		Education	3.5%
Tenure	Mean: 11.35	Human health & social work	4.7%
	Std. Devi.: 8.756	Arts, entertainment, recreation	4.9%
	Min.: 1	Other service activities	7.4%
	Max.: 45	Activities of households	1.2%
		Activities of extraterritorial org.	0.5%
Firm age	Mean: 27.68		
	Std. Devi.: 29.01		
	Min.: 0		
	Max.: 265		
Age group		Organizational size	
18-20	2.8%	1-4	22.5%
21-29	15.1%	5-9	10%
30-39	33.9%	10-19	10%
40-49	21.9%	20-49	16.1%
50-59	15.4%	50-99	26.5%
60 or older	10.9%	100-249	14.9%

(Source: United Nations (2021), International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4)

Developing the instruments

⁸ Professional, scientific and technical activities

Our study used constructs developed in earlier studies and original constructs created for this research. We followed a double back-translation process. All constructs were developed in English, were translated to German for this study, back-translated to English and again translated to German. The overall process was supported by a German based translation company from Berlin. Disagreements in translation and interpretation were mutually discussed and resolved. This approach ensured that questionnaires were consistent across languages and mirrors the approach of other authors in the field (Brislin, 1980; Kreiser, Marino, Louis, Dickson & Weaver, 2010; Cai, Chen, Chen & Bruton, 2017). After the completion of the translation process, we pilot tested the questionnaire in two waves. The first wave contained ten pretesters, testing the translated questionnaire. Comments led to small modifications in the questionnaire, which was then subsequently tested in wave two with another four participants.

Measures

As outlined earlier, we employed existing constructs to measure our hypotheses whenever possible. However, as there is no construct in extant literature available for operationalizing our theorized CV construct in line with our definition, we created our own construct.

Corporate venturing (CV). This refers to “various methods for creating, adding to, or investing in new businesses (i.e., new product-market combinations)” involving the formation of new organizational units (Morris et al., 2010, p. 88). CV can take three forms: internal corporate venturing, cooperative corporate venturing and external corporate venturing (Phan et al., 2009; Morris et al., 2010; Corbett, Covin, O’Connor & Tucci, 2013; Dushnitsky & Birkinshaw, 2016). “With *internal corporate venturing*, new businesses are created and owned by the corporation”, while *cooperative corporate venturing* “refers to an entrepreneurial activity in which the new businesses are created and owned by the corporation together with one or more external development partners” (Morris et al., 2010, p. 88). External corporate venturing refers to entrepreneurial activity in which new businesses are created by parties

outside the corporation and subsequently invested in [...] or acquired by the corporation (Morris et al., 2010). We therefore followed Morris and colleagues to theoretically develop the construct. The scale development procedures of Hinkin (1998), MacKenzie, Podsakoff & Podsakoff (2011) and Kapoutsis, Papalexandris, Treadway & Bentley (2017) were applied to technically create the measurement scale of CV.

Item generation, review assessment and item reduction. A deductive scale development method was utilized, which started with analyzing the theoretical definition of CV (Hinkin, 1998; Kapoutsis et al., 2017). The items were kept consistent, we avoided “double-barrelled” items, designed items to show little variance and eliminated negatively worded ones (Hinkin, 1998, p. 108; see also Kapoutsis et al., 2017). The item pool was optimized in two rounds of pretests, which included three academics and one practitioner to assess the quality, comprehensiveness and accuracy of the initial item pool of 12 CV items. The activity carried out by these individuals resulted in the deletion of two items; thus totaling ten items to measure CV.

Administration and rater assessment. A matrix was developed showing the theoretical definitions at the top of the questionnaire in columns, and ‘item statements’ on the left of the questionnaire representing the rows (MacKenzie et al., 2011; Hinkin, 1998). Each rater was asked to assess, on a five-point Likert scale ranging from 1 (not at all) and 5 (completely), how much the ‘item-statement’ on the left of the questionnaire corresponds to the definitions at the top of the questionnaire. Each rater was thoroughly briefed about the task in written and verbal form prior to the questionnaire launch (Hinkin & Tracey, 1999). The final sample consisted of 30 respondents (18 males, 12 females).

Scale purification, validity and model fit. A three-step purification approach removed in total three of the items, giving a final measurement scale for CV comprising nine items. The individual scales showed good item-to-item correlations (ICV $\alpha = 0.919$; CCV $\alpha = 0.826$; ECV

$\alpha = 0.865$), composite reliability (CR) is above 0.6 (ICV = 0.919; CCV = 0.826; ECV = 0.865) indicating reliability of the factors (Bagozzi & Yi 1988), AVE above 0.5 (ICV = 0.791; CCV = 0.615; ECV = 0.691) confirming convergent validity (Hair, Tatham, Anderson & Black, 2006) and square root of the AVE was bigger than any correlation of any latent factor (Fornell & Larcker, 1981; Hair et al., 2006). Fit indices, which included the ‘marker variables’ of knowledge acquisition⁹, indicated acceptable model fit (Chi-square 1.654, $p = 0.000$, CFI = 0.959, TLI = 0.953, NFI = 0.904, IFI = 0.960, SRMR = 0.056, RMSEA = 0.066, PCLOSE = 0.021) (Hair et al., 2006). Additionally, we checked for common method bias by including a ‘common latent factor’ (Dheer & Lenartowicz, 2018) and performing a zero constraints test (Simmering, Fuller, Richardson, Ocal & Atinc, 2015). The null hypothesis could not be rejected and subsumed that specific bias is not present that affects the model. We continued and decided to operationalize CV as a unidimensional first-order reflective construct composed of nine items on a five-point Likert scale (1: strongly disagree to 5: strongly agree).

Knowledge acquisition (KA). We operationalized KA by including a six-item scale used by Geneste & Galvin (2015), inquiring to which extent the firm learned from its entrepreneurial activities. The survey scale was previously used also by other authors in the field proving its validity (Lyles & Salk, 1996; Rindfleisch & Moorman, 2001). The scale was slightly adapted to fit our research framework while the core parts of each measurement item stayed the same. Specifically, we changed the introduction of the items from “To what extent have you learned from your arm’s-length clients” to “My company has learned ...”. We asked participants to provide their assessment on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Performance. Performance was evaluated by using the three-item scale of Keh, Nguyen & Ng (2007). We asked survey participants to assess the performance of the representing firm

⁹ The scale development process contained also the development of KA as a MIMIC-model (Diamantopoulos & Winklhofer 2001), which functioned in the scale development process as “marker variable” and SE.

compared to competitors, based on a five-point Likert scale ranging from 1 (much weaker) to 5 (much stronger). A similar setup of the scale was previously and successfully applied by other researchers in the field (Murphy, Trailer & Hill, 1996; Wiklund, 1999; Butler, Keh & Charmornman, 2000). The scale was slightly adapted to fit our research setting. Rather than listing the items as done in Keh et al. (2007: 604), e.g. “Profitability”¹⁰, we changed it slightly to “Profitability compared to those of competitors”. The overall content of all measurement items remained the same.

Transformational leadership. This was also measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). We used a well-established scale to assess transformational leadership (Podsakoff, MacKenzie & Bommer, 1996; Garcia-Morales et al., 2008), with our intention being to better understand how transformational leadership is practiced inside firms. We modified the introduction to every survey item from ‘The firm’s management’ to read ‘Our management’. Apart from the change in the introduction, each survey item remained the same.

Technological turbulence. We assessed technological turbulence using four out of five items of the construct developed by Jaworski & Kohli (1993). The intention was to evaluate how technological environmental factors shape the influx of knowledge within a firm and the overall effect on performance. Again, we used a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). We especially selected the construct developed by Jaworski & Kohli (1993) as the measure is widely accepted in the literature measuring environmental factors, such as technological turbulence. The measurement scale was not subject to modifications. During the scale refinement process we removed item number five, “Technological developments in our industry are rather minor”.

¹⁰ “Performance items are self-reported and are measured relative to those of competitors”.

Control variables. We controlled for organizational size, industry, firm age, tenure, age group, and gender (1 = male; 2 = female). In our perspective, the control variables might influence outcome levels of KA and/or performance. Organizational size was measured as a continuous variable. Industry was assessed by following the structure of the United Nations – International Standard Industrial Classification of All Economic Activities (Rev. 4) (United Nations 2021). Data on industry was gathered through 22 categorical variables. Firm age and tenure were measured with a continuous scale. Age group was assessed by using an ordinal scale (1 = 17 or younger; 2 = 18-20; 3 = 21-29; 4 = 30-39; 5 = 40-49; 6 = 50-59; 7 = 60 or older). The roles the individuals had in the organization were also measured with an ordinal scale (1 = owner/president; 2 = C-level (e.g. CEO, CFO; CTO); 3 = senior manager; 4 = middle manager; 5 = first level manager).

4. Data analysis

We tested our hypotheses using structural equation modeling (SEM) with AMOS Version 26. SEM combines the measurement model (confirmatory factor analysis) and the structural model (path analysis) in a two-stage model approach (Anderson & Gerbing, 1988; Chirico & Salvato, 2014). The first stage (conducting the confirmatory factor analysis) evaluates validity and reliability of the measurement model, while during the second stage, the structural model, hypothesized relationships among the latent variables are tested (Anderson & Gerbing, 1988; Chirico & Salvato, 2014).

Measurement model - Confirmatory factor analysis. To assess the quality of the measurement model, we conducted a confirmatory factor analysis with all five constructs involved. We adopted a Maximum Likelihood extraction method with ProMax rotation to develop our factor structure. A clear five factor structure evolved with no cross loadings > 0.287. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) leveled out at 0.946 (Field, 2013). Following Dheer & Lenartowicz (2018), we utilized several indices to assess the fit of our

model with the following thresholds: CMIN/DF <3.0 (Rivers, Meade & Fuller, 2009; Nye, Joo, Zhang & Stark, 2020), CFI >0.90 (Bentler, 1990; Hu & Bentler, 1995), TLI >0.90 (Chirico & Salvato, 2016), IFI >0.90 (Bollen, 1989), SRMR <0.09 (Hair et al., 2006), RMSEA <0.08 (Hair et al., 2006). Our measurement model provided overall good/acceptable fit with the data (CMIN/DF 3.774, CFI 0.908, TLI 0.897, IFI 0.908, SRMR 0.055, RMSEA 0.070).

Validity and reliability. Table 27. Constructs and measurement items includes all items grouped by measurement constructs used in this research and their corresponding standardized factor loadings (SFL), Cronbach's alphas (α), composite reliability (CR), average variance extracted (AVE) and maximum shared variance (MSV) (Dada & Watson, 2013). We validated our constructs using the following procedure. All standardized factor loadings were above the cut-off criteria of 0.4 (Stevens, 1992). Five loadings were at fair to good levels while the rest of the 22 factor loadings were at very good to excellent levels (Tabachnick and Fidell, 2014; Comrey and Lee, 1992) (min: 0.424; max: 0.978). To assess convergent validity, we applied the cut-off criteria of 0.50 for the AVE, which were all above the threshold (min: 0.561; max: 0.633) (Fornell & Larcker, 1981; Hair et al., 2006). Also, the square root of the AVE was greater than the correlations between the pairs of constructs, indicating discriminant validity among the constructs (Fornell & Lacker, 1981; Dada & Watson, 2013). We additionally assessed the AVE-MSV relationship summarizing that all MSV values were below their AVE counterparts confirming discriminant validity (Hair et al., 2010; Dheer & Lenartowicz, 2018). We used Bagozzi & Yi's (1988) cut-off criteria of 0.60 for assessing Cronbach's alpha and composite reliability. The Cronbach's alpha (min: 0.809; max: 0.921) and CRs (min: 0.811; max: 0.921) were greater than the threshold. We can conclude that all constructs in our study achieved the necessary validity and reliability levels.

Table 27. Constructs and measurement items

Constructs	Measurement items	SFL	α	CR	AVE	MSV
Knowledge acquisition	(1) My company has acquired new technological knowledge.	0.500	0.888	0.889	0.572	0.488
	(2) My company has acquired new marketing and sales knowledge.	0.646				
	(3) My company has acquired new ideas for new products.	0.735				
	(4) My company has acquired new product development knowledge.	0.909				
	(5) My company has acquired new managerial knowledge.	0.718				
	(6) My company has acquired new operations process knowledge.	0.783				
Performance	(1) Sales growth compared to those of competitors.	0.978	0.809	0.811	0.590	0.436
	(2) Market share compared to those of competitors.	0.651				
	(3) Profitability compared to those of competitors.	0.515				
Corporate venturing	(1) My company develops new businesses in the form of new organizational units, which are solely owned by my company.	0.511	0.921	0.921	0.566	0.488
	(2) My company continuously strives to create new businesses, which are independently owned by my company.	0.424				
	(3) My company often pursues new businesses through newly established organizational units, which are fully owned by my company.	0.497				
	(4) My company often pursues new businesses together with an external venture partner by establishing new organizational units.	0.792				
	(5) My company often enters into joint ventures with shared ownership, focusing on the creation of new businesses.	0.844				
	(6) My company collaborates with external organizations to establish and own new businesses.	0.790				
	(7) My company often obtains licenses from parties outside my company to strengthen the focus on new businesses.	0.737				
	(8) My company frequently invests in new businesses (e.g. young ventures, early-growth stage firms or start-ups), which were created by 3 rd parties outside of my company.	0.832				
	(9) My company is actively acquiring new businesses, which were previously built and owned by parties outside my company.	0.845				
Technological turbulence	(1) The technology in our industry is changing rapidly.	0.876	0.830	0.835	0.561	0.480
	(2) Technological changes provide big opportunities in our industry.	0.862				
	(3) It is very difficult to forecast where the technology in our industry will be in the next 2 to 3 years.	0.579				
	(4) A large number of new product ideas have been made possible through technological breakthroughs in our industry.	0.507				
Transformational leadership	(1) Our management is always on the lookout for new opportunities for the unit/department/company.	0.644	0.894	0.896	0.633	0.389
	(2) Our management has a clear common view of its final aims.	0.813				
	(3) Our management succeeds in motivating the rest of the company.	0.867				
	(4) Our management always acts as the company's leading force.	0.868				
	(5) Our company has leaders who are capable of motivating and guiding their colleagues on the job (masters).	0.806				

† SFL, standard factor loadings; α , Cronbach's alpha; AVE, average variance extracted; CR, construct reliability; MSV, maximum shared variance

Test of normal distribution. Normal distribution of the data in our study was checked by evaluating the level of skewness and kurtosis. Generally, skewness (SK) greater ± 2 and kurtosis (KU) exceeding ± 7 suggest non-normal distributions (Hansen, 1995; Schütte et al., 2018; Schuster, Nicolai & Covin, 2020). Skewness and kurtosis showed acceptable levels (SK: min: -1.132, max: 1.349; KU: min: -1.756, max: 1.806), except for firm age which was slightly skewed and in excess of kurtosis (SK: 3.546; KU: 19.345).

Common method variance. We assessed common method variance by carrying out a Harman's one-factor test (Podsakoff, MacKenzie, Lee & Podsakoff, 2003) by including all reflective items and constructs of the study in a principal components analysis. The analysis concluded with a five factor structure with the first factor leveling out at 42.41% (Podsakoff et al., 2003; Dada & Watson, 2013). This is below the cut-off criteria of 50%, indicating common method variance is not a substantial threat to our results (Dheer & Lenartowicz, 2018).

Multicollinearity. We analyzed multicollinearity using the variance inflation factor (VIF) as an indicator. We tested multicollinearity with all exogenous variables included and modeled on the endogenous variable KA. In our study, factor scores were distributed from 1.388 to 1.794, which were below the cut-off point of 10 (Hair et al., 2006; Dheer & Lenartowicz, 2018; Gimenez-Jimenez, Edelman, Minola, Calabrò & Cassia, 2020).

Structural model – model fit. After developing the structural model, we assessed model fit once again against the same thresholds. Also, in this case, the model fit of the structural model provided good fit with the data (CMIN/DF 2.161, CFI 1.000, TLI 0.998, IFI 1.000, SRMR 0.004, RMSEA 0.011).

5. Results

The correlations, means and standard deviations are presented in Table 28.

Correlations, means and standard deviations

Table 28. Correlations, means and standard deviations

		Means	Standard	1	2	3	4	5	6	7	8	9	10	11
			Deviation											
1	Corporate venturing	2.99	1.02	1										
2	Knowledge acquisition	3.54	0.90	0.718**	1									
3	Performance	3.43	0.80	0.601**	0.673**	1								
4	Technological turbulence	3.43	0.96	0.600**	0.695**	0.526**	1							
5	Transformational leadership	3.82	0.91	0.511**	0.677**	0.593**	0.416**	1						
6	Gender	1.38	0.49	0.096*	0.092*	0.042	0.041	0.115**	1					
7	Industry	10.63	5.12	-0.091*	-0.082	-0.028	-0.097*	-0.030	0.068	1				
8	Tenure	11.35	8.77	-0.175**	-0.126**	-0.044	-0.122**	0.007	-0.167**	0.020	1			
9	Firm age	27.68	29.01	-0.052	-0.041	-0.026	0.024	-0.009	-0.114**	-0.139**	0.440**	1		
10	Organ. size	54.10	59.31	0.352**	0.243**	0.237**	0.247**	0.157**	-0.001	-0.142**	0.045	0.219**	1	
11	Age group	4.65	1.29	-0.322**	-0.244**	-0.112**	-0.210**	-0.097*	-0.157**	0.126**	0.593**	0.174**	-0.103*	1

† Pearson correlations based on SPSS 26; n = 570 *Correlation is significant at the .05 level (two-tailed); **Correlation is significant at the .01 level (two-tailed)

An overview of the results of the SEM is shown in Figure 6. Structural equation model analysis results. We used SEM for two main reasons – SEM enables the researcher to test several regression equations at the same time and SEM permits controlling of measurement errors between latent constructs instead of comparing the mean values of these variables (Monsen & Boss, 2009; Jiang, Jiang, Sheng, & Wang, 2020). Overall, the majority of the hypotheses were supported. As specified in *H1*, we found significant and positive effect of CV on knowledge acquisition (KA) ($\beta = 0.315, p < 0.001$). This indicates that corporate ventures' strong focus also lies in gaining new knowledge to develop new products and services or new business models (i.e. CV is associated with greater KA). The results also supported *H2*, demonstrating the significant and positive effect of CV on performance ($\beta = 0.256, p < 0.001$). In other words, successfully practicing CV subsequently leads to increased performance. Interestingly, *H3* was not supported. However, *H4* was supported, indicating that TL positively moderates the CV-performance relationship ($\beta = 0.111, p < 0.010$) as outlined in more detail in Figure 7. The Moderating Effect of Transformational Leadership on the Relationship between Corporate Venturing and Performance. Contrary to our expectation, although the result for *H5* was significant, it had a negative relationship in terms of the moderating effect of technological turbulence in the CV-KA relationship. This suggests that the relationship of CV and KA is dampened by technological turbulence. The relationship is illustrated in more detail in Figure 8. The Moderating Effect of Technological Turbulence on the Relationship between Corporate Venturing and Knowledge Acquisition. As predicted, we found support for *H6*, with the results showing a significant and positive moderating effect of technological turbulence on the CV-performance relationship. The relationship is illustrated in more detail in Figure 9. The Moderating Effect of Technological Turbulence on the Relationship between Corporate Venturing and Performance. We further analyzed the effect of our control variables, i.e. firm size, industry, firm age, tenure, age group and gender on KA and performance. None of the

paths indicated a significant influence, whether positive or negative, on either of the two variables (Dada & Watson, 2013).

Figure 6. Structural equation model analysis results

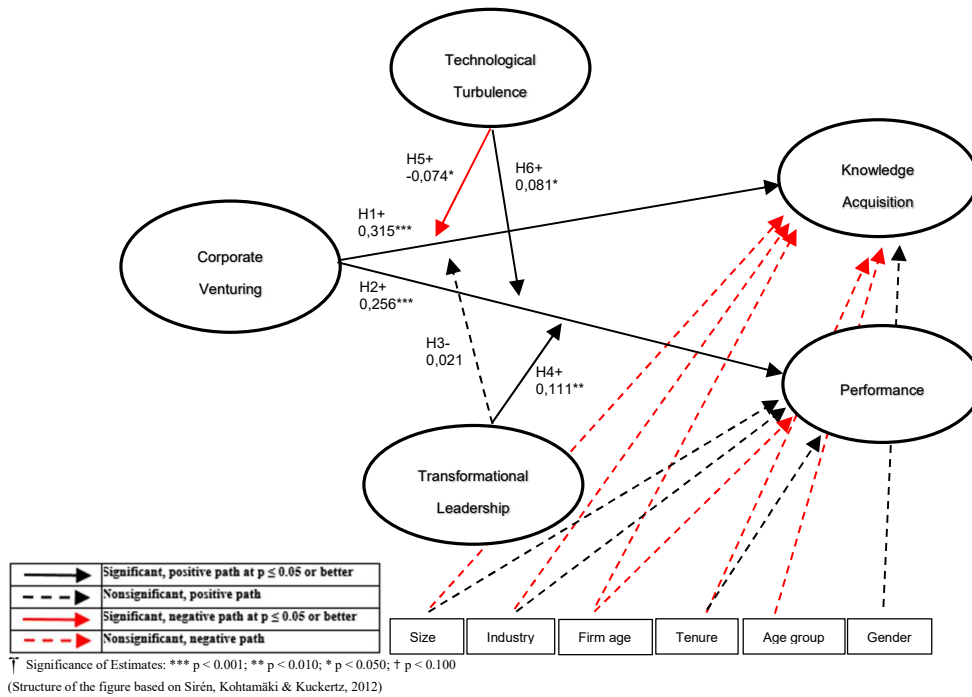
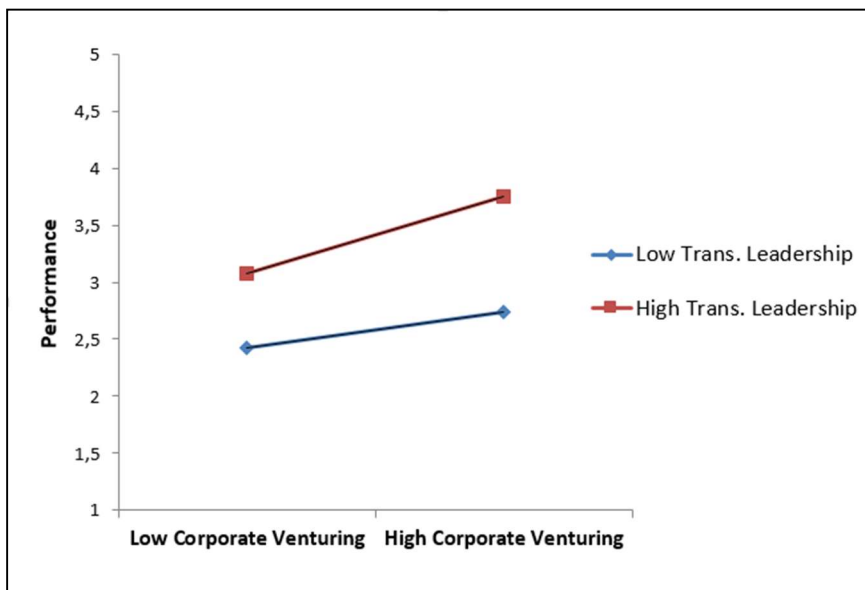
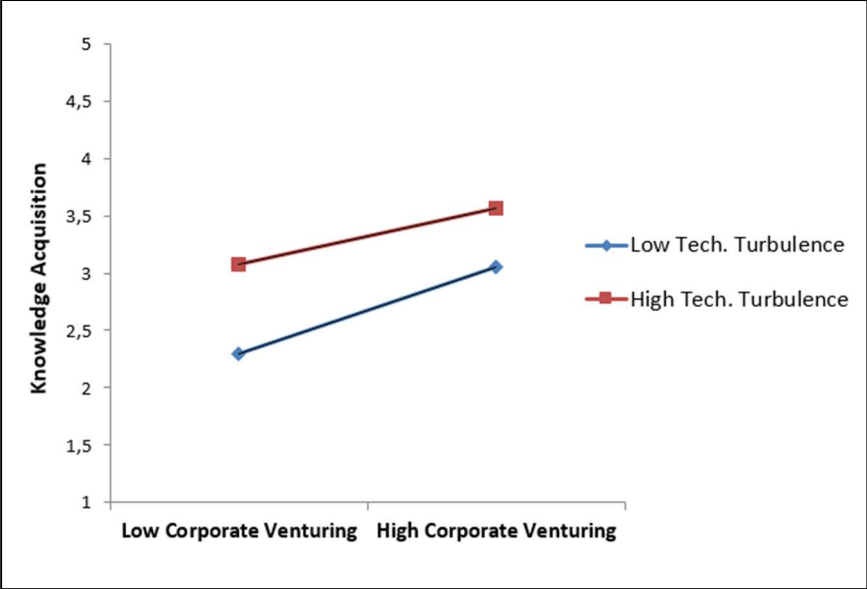


Figure 7. The Moderating Effect of Transformational Leadership on the Relationship between Corporate Venturing and Performance



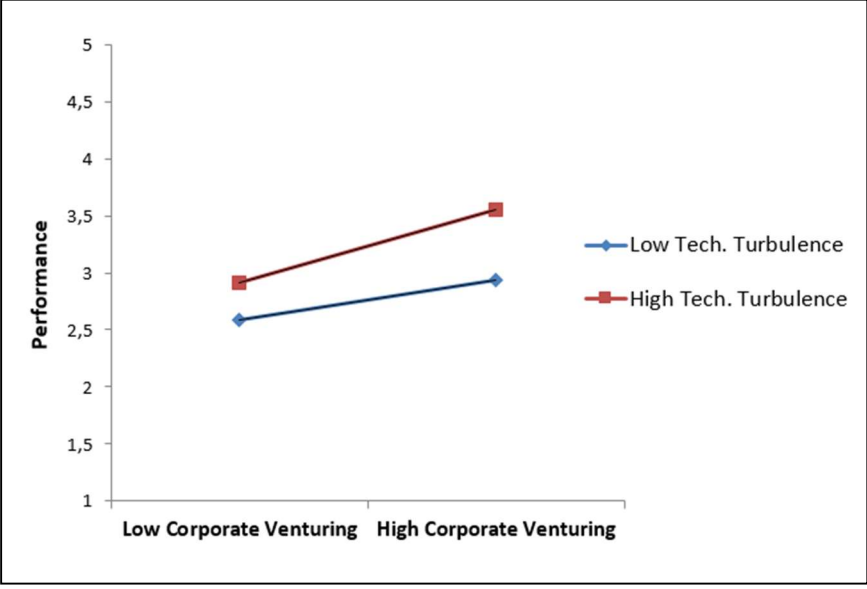
Structure of the figure based on Hewlin et al. (2012); Courtrigh et al. (2017).

Figure 8. The Moderating Effect of Technological Turbulence on the Relationship between Corporate Venturing and Knowledge Acquisition



Structure of the figure based on Hewlin et al. (2012); Courtrigh et al. (2017).

Figure 9. The Moderating Effect of Technological Turbulence on the Relationship between Corporate Venturing and Performance



Structure of the figure based on Hewlin et al. (2012); Courtrigh et al. (2017).

Similar to other studies (Monsen, Patzelt & Saxton, 2010; Lu & White, 2014; Prandelli, Pasquini & Verona, 2016), we validated our results by running a robustness check (Exhibit 1). Using STATA, we used a multivariate multiple regression analysis (mvreg) to estimate our model including all control variables. We see slight differences in the magnitude of the parameter estimates on the level of the control variables. Slight deviations in results of the robustness check can be expected (Monsen et al., 2010; Liu, 2014). As hypothesized, CV is significant and positively correlated to the dimensions of KA ($\beta = 0.313$, $p < 0.001$) and performance ($\beta = 0.259$, $p < 0.001$). Also, the moderating effect of technological turbulence on the CV-KA relationship turned out to be negative ($\beta = -0.067$, $p < 0.050$). As predicted, technological turbulence affects the CV-Performance relationship significantly and positively ($\beta = 0.067$, $p < 0.050$). Moreover, when assessing the effect of transformational leadership on the CV-KA relationship, it is highly similar to our original evaluation ($\beta = 0.016$, $p = \text{n.s.}$) using AMOS. Previous results are also robust when analyzing the effect of transformational leadership on the CV-Performance relationship ($\beta = 0.088$, $p < 0.050$). Overall, the results of the robustness check find strong support for the results previously obtained in AMOS.

6. Discussion

This article examines how CV influences knowledge acquisition (KA) and performance, and how transformational leadership and technological turbulence affect the aforementioned relationship. We address these two research questions by developing a reflective measurement instrument (MacKenzie et al., 2011; Hinkin & Tracey, 1999) spanning the domain of CV, covering ICV, CCV and ECV, thereby allowing for direct measurement of the phenomena. That is an important enhancement as the direct measure of CV avoids overlaps to adjacent fields of research, such as strategic entrepreneurship (SE). In other words, CV and SE are both concerned balancing exploration and exploitation activities. As highlighted by Wadhwa & Basu (2013, p. 917), certain CV activities can help in “creating a balance between exploration and

exploitation”. The novel measurement scale might help to avoid overlaps especially when comparing the new direct measure of CV with the narrower view of SE (cf. Chapter 2; Chapter 4). This empirical quantitative study, applied SEM, using a novel dataset of 570 German based SMEs. Based on the knowledge-based view (Grant, 1996), this study builds on the argument that firms need new knowledge and skills to develop future competitive advantages and achieve superior performance.

With regards to our first research question on how CV affects KA and performance, we find comparable results to other scholars (Schildt et al., 2005; Wadhwa & Kotha, 2006; Hill & Birkenshaw, 2008; Keil, Maula, Schildt & Zahra, 2008; Marchisio et al., 2010) that CV has a significant positive relationship to KA and performance. Schildt et al. (2005) found that firms rather employ less integrated external venturing modes to conduct exploration activities. While Wadhwa & Kotha (2006) explain that investment of corporate venture capital (CVC), as part of external corporate venturing, positively influences knowledge creation rate. Our research extends the findings of the aforementioned studies by showing that not only external venturing modes are associated with higher influx of knowledge but that this holds true as well for all venturing modes, suggesting that internal and cooperative CVs also focus on acquiring new knowledge. Extending the findings of Schildt et al. (2005), our results shed new light on the fact that all three modes of CV can be integrated and governed by the parent company. Through the lens of the KBV, the results indicate that, since knowledge is of paramount importance and an underlying factor for the production of all goods and services (Grant, 1997, see also Titus et al., 2017; Uotila, Maula, Keil & Zahra, 2009), we argue that firms strive to acquire new knowledge to form *recombined- knowledge lakes*¹¹ in order to enhance their abilities, skills and

¹¹ This research defines *knowledge lakes* as the overall sum of all explicit and tacit knowledge the firm holds through codified knowledge or tacit knowledge through their employees. The term “lake” refers to the circumstance that all activities of a firm reflect interaction with this respective “knowledge repository”.

competencies. These knowledge lakes form the basis for new competitive advantages, which in turn, are the prerequisite for superior performance and wealth.

This is an interesting fact as extant research on ECV is constructed to explore for new knowledge (resources) using CVC, alliances, mergers & acquisitions, or joint ventures vehicles as extended resource foundation. In other words, ECV activities support the generation of new knowledge inputs to absorb from outside the existing firm in order to recombine resources for new competitive advantages. This finding further warrants a closer view on the level of analysis, which will be addressed later in this Chapter.

In extant CV research, several scholars have examined the effect of different exogenous variables on firm performance measured by sales growth, market share and profitability (Tsai et al., 1991; Zahra, 1996; Chandler & Lyon, 2009; Sullivan & Marvel, 2011). This study extends their findings by showing how combining all three venturing modes, operated as an exogenous variable, positively affects firm performance. For example, Chandler & Lyon's (2009) focus on exploring new venture performance in 155 US companies revealed that KA activities have a positive and significant effect on venture performance in CV. We broaden their findings but explore how CV as direct combined measure affect performance of German based SMEs.

Our second research question, with regards to how technological turbulence and transformational leadership affect the CV relationship with KA and performance, suggests mixed results. With respect to the moderation effects of technological turbulence on the CV-KA relationship, the literature on CV suggests that it is necessary for firms to balance behaviors that are concerned with the exploration of new knowledge, technology and capabilities with behaviors that are concerned with the exploitation of the existing knowledge, technology and capabilities (Schildt et al., 2005; cf. March, 1991). Our research results with regard to technological turbulence are somewhat surprising, indicating a significant but negative

relationship of technological turbulence on the CV-KA relationship. In other words, in case the environment is characterized by high technological disruptions, this may consequently lead to a negative impact on the CV-KA relationship for SMEs based in Germany. This is unexpected as we argue that firms need to absorb new knowledge to stay ahead of the game and ensure firm survival. Our results might be best explained through the findings of other scholars on the interplay of dynamism and a firm's level of knowledge search, where solely focusing on exploitation to the downside of exploration might be explained through managerial mistakes in decision-making (Wang & Li, 2008). The aforementioned study highlights that the firm's management occasionally tends to be more optimistic with strategy outcomes, being overconfident of the success of their existing projects, which leads to an escalation of commitment in resources and excessive exploitation (Wang & Li, 2008; cf. Staw, 1981). This means, managers might conclude that the expected value from exploitation projects is higher than the uncertain outcomes of future exploration projects. However, this shortsighted illusion might lead to a misfit in existing innovations and product congruence in the long term with market expectations (Wang & Li, 2008). Translating this to our research, it might be the case that in technological turbulent environments, smaller firms with limited resources switch from exploration focus on knowledge to possibly a more exploitation focus in general. However, this can be risky as solely focusing on exploitation activities by reducing overall exploration activities, such as developing new innovative products and services, might endanger long term competitiveness and firm survival.

With regards to the moderation effects of technological turbulence on the CV-performance relationship, our results support prior studies. Similar to what we expected, technology-oriented firms practicing CV are generally associated with higher performance levels (Zahra, 1996; Dushnitsky & Lenox, 2006; Wadhwa, Phelps & Kotha, 2016). Taking these thoughts further and extending the work of Titus et al. (2017) who found that exploration in CV is positively

related to the relative use of acquisitions moderated by technological dynamism, we show in this study that the moderation effect of technological turbulence is also positive for the CV-performance relationship.

We now address the second part of our second research question, how transformational leadership moderates the CV performance-KA relationship. As outlined above, CV in general is associated with higher levels of performance. Extant research also confirmed the positive effect of transformational leadership on organizational performance (García-Morales et al., 2008; Garcia-Morales et al., 2012; Engelen, Gupta, Strenger, & Brettel, 2015). However, literature does not offer substantial insights explaining how transformational leadership moderates the relationship of CV on either KA or performance.

Although literature confirms the positive association between CV, knowledge, transformational leadership and performance in general (Wadhwa & Kotha, 2006; García-Morales et al., 2008; Birasnav, 2014), our research findings could not find a positive relationship of CV on KA moderated by transformational leadership. In line with Ling et al. (2008), one explanation might be that the aforementioned relationship is affected by the fact that in these SMEs, founder CEOs might have already left the company, as the effect of transformational leadership in SMEs is especially influenced from CEO founders.

As expected, our study finds that transformational leadership is positively affecting the CV-performance relationship. This result seamlessly integrates with findings of other researchers from adjacent research fields. Engelen et al. (2015) confirms that transformational leadership positively impacts the EO-performance relationship. Also, Naldi & Davidsson (2014) studied how KA affects performance (i.e. entrepreneurial growth) and how this relationship is influenced by leadership experience. However, the studies of these scholars reveal little insights on how leadership experience affects the aforementioned relationship. Our research closes this gap and provides new insights, showing that transformational leadership has a significant

impact on the influence of CV on performance. In a study specifically focusing on privately owned SMEs, Ling, Simsek, Lubatkin, Michael & Veiga (2008) reveal that transformational leadership has a significant and direct effect on firm performance. Our study, which is (to the best of our knowledge) the first of its kind, extends existing aforementioned literature in two aspects. First, it is novel as it combines a direct measure of CV and second, it extends our understanding of the moderating effect of transformational leadership on performance within the CV context.

Although the focus of this study is on SMEs, another novelty provided by our study is that the newly created direct measure of CV is not limited to SMEs but intentionally kept broad to cater for application in research addressing all firm sizes. This is a substantial departure from the proxy oriented and sometimes narrowly focused application of existing measures, thereby ensuring generalizability across firm sizes and industries.

Contributions to Theory

Our study makes five contributions to theory and research. First, following a call from Schildt et al. (2005) and Narayanan et al. (2009), we develop a creative and generalizable measure of CV. Preceding authors (Narayanan et al., 2009) argue that research findings of previous literature do not build up on each other. Our CV measure, designed to span all firm sizes and industries contribute to generalizability of findings. Second, this is the first measure in extant literature that spans the complete domain of CV, directly measuring CV with regards to ICV, CCV and ECV (Morris et al., 2010), without turning to proxy applications. We thoroughly pre-tested the created measurement scale through an iterative cycle of development, validation, exploratory and confirmatory factor analysis. The focus of our study does not only contribute to all modes of CV but also sheds light on the firms' overall approach towards CV. Third, as hypothesized the results show that CV directly affects KA and firm performance.

Knowledge accumulation and creation are vital for firms to renew strategies and adapt to the external environment (Titus et al., 2017). Our findings enhance this understanding that a firm's central strategy is to acquire and absorb new knowledge to improve the firm's skill and competency sets. In turn, this can form the ground for internal, joint and external venturing activities with the aim to create new businesses. These new businesses function as a basis for firm performance and survival based on new product and service offerings. Fourth, this research contributes to extant literature by shedding more light on how technological turbulence affects the CV-performance relationship. The aspect of technology takes a prominent place in CV literature in general. Scholars argue that CV is especially useful in hostile environments (Zahra & Covin, 1995; Narayanan et al., 2009). While other studies found that hostility and environmental dynamism are negatively related to firm performance outcomes (Kuratko, Covin & Garrett, 2009), in this study, we found that technological turbulence is positively related to firm performance outcomes. In other words, rapidly changing technology provides big opportunities in each respective industry and the findings suggest that a number of new product and service ideas have been made possible through new technological breakthroughs in our study. In turn, this means that SMEs in Germany in general are able to keep up the pace with technological change and actively integrate new technological changes in their business models.

Somewhat unexpected is the negative moderation effect of technological turbulence on the CV-KA relationship. We hypothesized that in technology turbulent environments, firms need to update skills and competencies at a faster pace compared to industries where technological change is not similarly influencing. It seems that firms operating in technological turbulent environments use their complete strength to focus on existing advantages and exploit known certainties (March, 1991).

Although few research studies focus on how leadership influences CV in general (Ensley et al., 2006; Marchiso et al., 2010; Naldi & Davidsson, 2014), there remains a substantial gap on

what role leadership plays in the CV-performance relationship overall. This research is one of the first studies to evaluate how transformational leadership affects the CV-performance relationship empirically. Our research setting revealed that transformational leadership is positively associated with firm performance, thereby confirming earlier research indicating that leadership is positively associated with firm performance. Fifth, we contribute to extant literature by following a call of Narayan et al. (2009, p. 70) to apply more *SEM-type analyses* on CV relationships to provide the most adequate overview as “it [was previously] not possible to assess whether the significant results found in prior studies reflect the spurious correlations among the variables explored”.

Implications for Practice

CV is a viable means of updating knowledge, skills and competencies. This will help firms not only to adapt to external environmental conditions but also to ensure firm survival. The knowledge, skills and competencies acquired through venturing activities ensure a recombination of resources in new ways. These differentiated product and service offerings enable firms to stay ahead of the competition, leading to superior performance.

“Today’s information and knowledge society requires new leaders who can confront a reality based on knowledge and foster innovation to achieve improvements in organizational performance” (García-Morales et al., 2008, p. 299). A general implication for practice is that when CV is practiced together with transformational leadership, it is more likely to produce positive organizational performance outcomes (Howell & Avolio, 1993). In other words, the positive results attributed to transformational leadership with respect to performance are likewise applicable in CV activities, as shown in our results.

Despite the general positive impact of CV on KA, top management teams in SMEs need to be aware that the positive relationship is dampened in technological turbulent environments

when conducting venturing activities. Industries which are characterized by rapidly changing technologies, where future technological influences are difficult to predict, might not yield the same KA benefits as compared to industries with low technological dynamism. As the influx of new knowledge is critical for future competitive advantages, CV activities need to be closely aligned with the external environment. This means that SMEs need to make conscious decisions when (and possibly how) to invest in CV with a focus on gaining new knowledge. When the technological environment in a given industry is considered to be turbulent or even hostile, firms might foster internal R&D activities or SE activities over leveraging CV as explained by Schulze and Dada in the third paper presented in the next chapter. However, firms need to assess these influential environmental factors on individual basis. Findings on the relation of technological turbulence in a given industry and the effect of KA need to be carefully balanced against benefits arising with regard to performance, as our research findings indicate that the effect of CV on performance moderated by technological turbulence is positive. The tension top management teams face is that technological turbulence relates positively to technological turbulent environments with regard to firm performance outcomes in CV, but negatively with regard to KA. This is a difficult *relational triangle* top management teams have to manage for SMEs in specific industries as new knowledge is needed to form future advantages but in turn might be heavily influenced by technological dynamism.

Limitations and future research directions

In line with extant research, we acknowledge that our study is not free from limitations. We approach the topic of CV from the perspective of the knowledge-based view, arguing that new knowledge is necessary to build future competencies, skills and advantages. Future research could employ different theoretical lenses to study the phenomenon, e.g. social capital theory, or network theory (cf. Chapter 2; Gap 1). Future research might use our CV measure to further

test the explanatory power of the scale in different theoretical settings. An area where substantial future research is further necessary is how the topic of leadership relates to CV. Empirical research on leadership in CV are especially scarce. CV as a research field would benefit from more studies investigating how leadership styles, e.g. charismatic, authentic, or transactional leadership, would influence KA and performance in other research settings. Also, our study focuses on a multi-industry perspective. Although this approach ensures higher levels of generalizability, it does not account for research questions related to specific industries. Extant research in the field of CV is strong with regard to research findings relating to the high technology industries. Future research can examine if our findings are comparable in other services- or manufacturing sectors, or even countries using our measures (cf. Chapter 2; Gap 4/5/10). Additionally, our study applies cross-sectional research design, providing insights, which relate to a specific point in time. Future research might employ longitudinal research design to analyze the findings over a longer period of time (cf. Chapter 2, Gap 13). In what follows are additional future research avenues other scholars might study in the future. Also addressing Gap 2/16 (cf. Chapter 2) of this thesis, future research might explore further commonalities and differences in domain conceptualization between CV and SE. In addition, different qualitative research methods might be utilized to further explore SE domains and processes. As mentioned earlier in the discussion, ECV activities might cross different levels of analysis (cf. Chapter 2; Gap 3). For this reason, future research might apply Coleman's (1990) bathtub model to explore how new knowledge crosses different level of analysis through ECV activities (CVC, alliances, mergers & acquisitions, and joint ventures), where acquired knowledge from third parties will be subsequently integrated within the recipient firm. Extending this idea, it would be interesting to further explore how much knowledge will be integrated into the recipient firm, which is not covered by contractual relations between the originating and recipient firm through knowledge spillovers (Agarwal, Audretsch & Sarkar,

2010). Additionally, as this research was conducted in an economic powerful country in Europe, it would be interesting to see how findings, applying this construct, would materialize in emerging economies (cf. Chapter 2; Gap 7). Also, our research evaluates how technological turbulence relates to the CV-KA/performance relationship. Future research can examine the role of other environmental moderators in the relationship.

7. Conclusions

Existing competitive advantages are temporary in nature (D'Aveni, Dagnino & Smith, 2010; Chen & Miller, 2015). CV is a viable means of how SMEs can leverage the influx of new knowledge and update existing resources combinations, skills and competency sets. Our study confirms the strong effect of CV on KA and performance. Our results are in line with the knowledge-based view of the firm, which suggests that knowledge plays a central role in the development of idiosyncratic resources central for future competitive advantages. Our results are a 'two-edged sword' with regard to transformational leadership and technological turbulence in CV. While they both enhance performance, they are also either neutral or negative on KA. This is a difficult to manage triangle as KA is a central building block in generating new competitive advantages. This research produced several novel outcomes. It presents the first direct measure of CV, which spans its complete domain, including ICV, CCV and ECV. Another novelty includes the fact that the measure supports not only the investigation of the SME context but is intentionally kept broadly to reflect all firm sizes. Additionally, this is the first study of its kind to investigate how leadership, i.e. transformational leadership, relates to the CV-performance relationship. Future research would benefit from applying this measure to other CV research settings to test the measure in related fields. Finally, CV as a research field would gain from a broader understanding of how leadership plays a role in this context.

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Exhibit 1 – Robustness Check

Results with comments

- ✔ Results in line with AMOS (parameters might deviate 2nd or 3rd digit after comma) = OK*
- ✔ Results similar to AMOS = **sign, tendency and significance same**, parameter slightly different
- ✘ Results similar to AMOS = **sign different**, but **significance same**, parameter slightly different

Equation	Obs	Parms	RMSE	"R-sq"	F	P>F
KA2	570	12	.5035374	0.7274	135.3336	0.0000
PERFORM	570	12	.6543633	0.5241	55.86663	0.0000
	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
KA2						
✔ CV	✔ .3133173	.0323345	9.69	✔ 0.000	.2498051	.3768294
✔ TT	✔ .3228237	.0317658	10.16	✔ 0.000	.2604285	.3852189
✔ TL	✔ .3844498	.0328339	11.71	✔ 0.000	.3199566	.448943
✔ CV_x_TT	✔ -.0655919	.0256904	-2.55	✔ 0.011	-.1160535	-.0151302
✔ CV_x_TL	✔ .0168962	.026564	0.64	✔ 0.525	-.0352814	.0690739
✔ OrgSize2018	✔ -.0001144	.0003957	-0.29	✔ 0.773	-.0008916	.0006629
✔ INDUSTRY	✔ -.0012312	.0042566	-0.29	✔ 0.773	-.0095921	.0071297
✔ FIRMAGE	✔ -.0007729	.0008478	-0.91	✔ 0.362	-.0024382	.0008923
✔ TENURE	✔ -.0007089	.0033364	-0.21	✔ 0.832	-.0072624	.0058445
✔ AGEGROUP	✔ -.0144869	.0216758	-0.67	✔ 0.504	-.057063	.0280891
✔ GENDER	✘ -.0061512	.0447213	-0.14	✔ 0.891	-.0939939	.0816915
_cons	.1521086	.1202038	1.27	0.206	-.0839986	.3882159
PERFORM						
✔ CV	✔ .2598289	.0420197	6.18	✔ 0.000	.1772927	.342365
✔ TT	✔ .2341954	.0412807	5.67	✔ 0.000	.1531107	.31528
✔ TL	✔ .4134016	.0426688	9.69	✔ 0.000	.3295906	.4972127
✔ CV_x_TT	✔ .0674675	.0333855	2.02	✔ 0.044	.0018909	.133044
✔ CV_x_TL	✔ .0884123	.0345208	2.56	✔ 0.011	.0206057	.1562189
✔ OrgSize2018	✔ .000504	.0005142	0.98	✔ 0.327	-.0005061	.0015141
✔ INDUSTRY	✔ .0047186	.0055316	0.85	✔ 0.394	-.0061467	.0155839
✔ FIRMAGE	✔ -.0008541	.0011018	-0.78	✔ 0.439	-.0030182	.00131
✔ TENURE	✘ -.0001531	.0043358	-0.04	✔ 0.972	-.0086695	.0083634
N/A AGEGROUP	.02952	.0281684	1.05	0.295	-.025809	.0848489
N/A GENDER	-.0545646	.0581168	-0.94	0.348	-.168719	.0595899
_cons	-.1922117	.1562088	-1.23	0.219	-.4990408	.1146174

*Except for one minor deviation (CV x TT on KA; CV x TL on PERFORM): **significance** varies by .002

Significance of Estimates:

*** p < 0.001

** p < 0.010

* p < 0.050

† p < 0.100

Chapter 4

Building Strategic Human Capital Resources: The Effects of Strategic Entrepreneurship on Employee Retention and Recruitment

Arndt Schulze & Olufunmilola (Lola) Dada

Abstract

Based on novel survey data, this study explores the relationship between strategic entrepreneurship (SE) and employee retention and recruitment. We draw on an integrated framework that combines strategic human capital and social capital theory to inform our analysis. Results from our sample of 576 United Kingdom-based small and medium sized firms indicate that SE is positively related to employee retention and recruitment. Furthermore, the results show that the effect from SE is moderated by corporate reputation and competitive intensity. The moderation effect suggests that the firms' corporate reputation is key to employee retention activities. The results of the study also reveal that when competition in an industry is high, employee retention rates remain at high levels when practicing SE. Our findings offer important implications for theory and practice.

Keywords: Strategic entrepreneurship, strategic human capital theory, social capital theory, employee retention, employee recruitment

JEL Classifications: L26, O30

1. Introduction

Firm innovation is considered to be “a life-and-death matter for the firm” (Baumol, 2002, p. 1). Organizations are urged to develop innovations in order to achieve competitive advantages and superior performance, although their advantages are subject to rapid alterations over time (Lengnick-Hall, 1992). For every firm – whether young or old, an experienced incumbent or a learning start-up – the path of survival includes investments in the exploration of new opportunities while harnessing existing competitive advantages (Ireland, Hitt & Sirmon, 2003; Agarwal, Audretsch & Sarkar, 2010; Hitt, Ireland, Sirmon & Trahms, 2011; Mazzei, Ketchen & Shook, 2017). Strategic entrepreneurship (SE) is broadly considered to be a viable means of operating in environments characterized by constant change. Therefore, it is of high importance to adequately measure SE and obtain findings that are generalizable across industries and firm characteristics. Today, there exists only one direct quantitative reflective measure, which solely focuses on defining and operationalizing SE (*as behaviors*) along product-market characteristics (Anderson, Eshima & Hornsby, 2019). This research closes this gap by intentionally keeping SE broad, spanning the complete domain of SE, as outlined later in this study. Closing this gap provides a more comprehensive understanding and measurement of organizational consequential innovations that lead to superior firm performance.

Furthermore, extant research on employee retention and recruitment highlights the importance of strategic human capital resources for theory and practice, as prior studies have shown that firms need to avoid knowledge loss in order to protect existing competitive advantages (Gjerlov-Juel & Guenther, 2019; Haesli & Boxall, 2005). Also, organizations need the influx of new knowledge and skills to develop new sets of competitive advantages (Ireland et al., 2003; Boon, Eckardt, Lepak & Boselie, 2018, see also March, 1991). Informed by the resource-based view of the firm, human capital, social capital, organizational learning, and creative cognition, Monsen & Boss (2009) substantially increase our understanding of the

effects of SE on job stress and employee retention. They establish that SE activities impact staff and management differently, and therefore call for different approaches towards strategy for both groups. This suggests that different organizational groups can react differently to SE strategies.

SE research with regard to employee retention and recruitment is in its infancy. While research conducted by Monsen & Boss (2009) shows the effects of SE on employee retention, the aforementioned scholars applied proxy-measurement of SE to develop their construct. This raises the question as to how a direct measure of SE would relate to these results. Therefore, this research attempts to close this gap by evaluating the direct effect of SE on employee retention. Additionally, extant literature does not shed light on how SE affects employee retention outside the USA (e.g. United Kingdom).

Whilst tacit knowledge embedded in employees is of high importance for capability and competency building in SE (Ireland et al., 2003; Hitt et al., 2011), extant literature does not provide any insights on how SE relates to employee recruitment. We attempt to address this by exploring the direct relationship between SE and employee recruitment.

Moreover, extant literature provides first insights on how environmental factors (e.g. dynamism, competition, turbulent and hostile business environments) relate to SE (Sirén, Kohtamäki & Kuckertz, 2012; Shirokova et al., 2013; McKenny, Short, Ketchen, Payne & Moss, 2018; Withers, Ireland, Miller Harrison & Boss, 2018). However, there still remains a substantial research gap in understanding how especially environmental factors, e.g. competitive intensity, moderate the SE-employee retention/employee recruitment relationship.

Additionally, while corporate reputation as a field of study indicates a positive relationship with organizational outcomes, e.g. firm performance (Agarwal, Osiyevskyy & Feldmann, 2015; Ali, Lynch, Melewar, Jin, 2015), literature on SE does not provide considerable insights. This is especially interesting as SE is considered to lead to superior firm performance, which in the

end also affects the overall wealth of the company (Hitt et al., 2011). This research sheds more light on this.

With regards to units of analysis, prior scholars have studied SE in relation to public sector entities (Luke & Verreyne, 2006), new ventures (Audretsch, Lehmann & Plummer, 2009), academic spin-off ventures (Patzelt & Shepard, 2009), and entrant-games (Zhao, Ishihara & Jennings, 2020). Although the unit of analysis is quite heterogeneous, only a few have studied SE in the small and medium-enterprises (SME) context (Steffens, Davidsson & Fitzsimmons, 2009; Liu, Wright, Fliatotchov, Dai & Lu, 2010; Shirokova, Vega & Sokolova, 2013; Obeng, Robsen & Haugh, 2014; Kim, 2018). These studies also do not focus on evaluating employee retention and recruitment, which the present paper addresses by evaluating UK-based SMEs. Similar results can be found with regard to the level of analysis, where the prevailing focus is on the firm followed by the individual (cf. Chapter 2; Gap 3).

Therefore, this research will focus on the following research questions: (1) How does SE influence employee retention and recruitment in SMEs) (2) How do firm-level and environmental factors moderate the relationship between SE and employee retention and recruitment in SMEs?

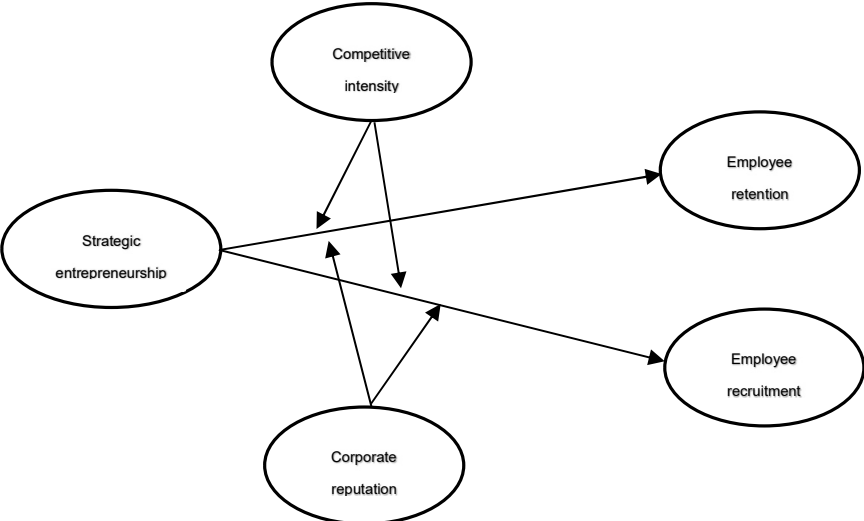
In this study, we focus on Morris et al.'s (2010) conceptualization of SE, which reflects how organizational consequential innovations lead to competitive advantage and superior performance. The basis for these consequential innovations might often be the knowledge, skills and capabilities embodied in employees who make up the idiosyncratic human capital pool of the firm (Morris, Kuratko & Covin, 2010; Wright, Coff & Moliterno, 2014; Boon et al., 2018).

This research makes four contributions to the literature. First, the study creates a ten-item one-factor scale, reflecting the domain of SE, thereby going beyond proxy applications or measuring SE with only product-market opportunities. Second, this research extends understanding of the effect of SE on employee retention and recruitment, thereby shedding

more light on how SE helps to avoid knowledge loss, and aids the development of a human capital pool specific to the firm. We analyze firm-level data from the United Kingdom, by studying 576 firm managers (owners/presidents, C-level executives, senior managers, middle managers, and first level managers) in terms of their perception of SE towards employee retention and recruitment. Third, we also contribute to the literature by studying how firm-level and environmental factors moderate the relationship between SE and employee retention and recruitment. Finally, this research extends knowledge on how the aforementioned relations turn out in the SME context.

In the following section, we discuss the theoretical background and hypotheses of the study (Figure 10. Theoretical model). After this, we explain the methods before presenting the empirical analysis and results. The final section concludes the paper with a discussion of the research findings, theoretical and practical implications, limitations and future research directions.

Figure 10. Theoretical model



2. Theory & hypotheses

We build on a comprehensive framework that integrates strategic human capital theory with social capital theory to study employee retention and employee recruitment in strategic entrepreneurship (SE). Strategic human capital is viewed as the human capital pool that enables critical firm capabilities, leading to competitive advantage (Wright et al., 2014). The theory describes how idiosyncratic human capital resources specific to the firm can achieve superior advantage in relation to competitors in the industry. While social capital can be broadly understood as a resource in form of goodwill embedded in social relations that can be mobilized through networks to enable action (Adler & Kwon, 2002). Both theories complement each other as they place high importance on resources and relational networks (Naphiet & Ghosal, 1998; Boon et al., 2018). This conceptual framework allows us to study how SE impacts employee retention and employee recruitment.

Strategic entrepreneurship

Studies published in the 21st century (Hitt, Ireland, Camp & Sexton, 2001; Ireland, Hitt, Camp & Sexton, 2001) and also before then (Mintzberg, 1973; Covin & Slevin, 1989; Lumpkin & Dess, 1996; Meyer & Heppard, 2000) identify a close and reciprocal relationship between strategy and entrepreneurship. The complementary concepts of exploitation (strategy) and exploration (entrepreneurship) are so inseparable (March, 1991; Meyer & Heppard, 2000; Ireland et al., 2003) that neither one is viable without the other (Ireland et al., 2003).

SE is characterized most notably by its pervasiveness; in particular, through innovation, SE applies to both new ventures and existing organizations, regardless of their size or age (Hitt et al., 2011). Another related viewpoint is that SE consists of entrepreneurial action, within an existing organization, that manifests itself in “organizationally consequential

innovations ... [adopted] in the pursuit of competitive advantage” (Audretsch et al., 2009, p. 149; see also Morris et al., 2010).

SE literature recognizes both broader and narrower conceptualizations. The broader view of SE involves “simultaneous opportunity-seeking and advantage-seeking behaviors ... [that result] in superior firm performance” (Ireland et al., 2003, p. 963). However, Covin & Miles (1999), Kuratko & Audretsch (2009) and Morris et al. (2010) adopt a narrower view of the scope of SE and thus argue, for instance, that SE “can take one of five forms – strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation, and business model reconstruction” (Kuratko, Hornsby & Hayton, 2015, p. 248; see also Corbett, Covin, O'Connor & Tucci, 2013).

This article adopts the narrower view of SE for two important reasons. First, we regard SE as an individual concept which is measurable with an individual construct that “can stand on its own feet” (Mathews, 2010, p. 220). Thus we attempt to advance SE research by going beyond proxy measurement (Monsen & Boss, 2009; Kantur, 2016; Kim, 2018). Second, we put forward the notion that the concept of SE also goes beyond capturing product-market opportunities, conceptualized and developed by Anderson et al. (2019) as SE behaviors. Although the aforementioned scholars concede that corporate entrepreneurial activities, i.e. organizational renewal, domain redefinition, organizational rejuvenation and business model reconstruction are not strategic entrepreneurial behaviors (SEBs) as per their definition, they confirm “they are all important, entrepreneurial functions undertaken by the firm” (p. 202). These scholars further argue that studying product-market activities delivers immediate tangible results, while organizational rejuvenation or business model innovation happen less frequently and are possibly more difficult to observe compared to product-level innovations (Anderson et al., 2019).

We, however, argue that focusing only on *one* of the five forms, i.e. product-market opportunities, might fall too short. In our view, “the innovations that are the focal points of strategic entrepreneurship initiatives represent the means through which opportunity is capitalized upon. These are innovations that can happen *anywhere* and *everywhere* in the company” (Morris et al., 2010, p. 99-100). Morris et al. (2010) captured this understanding within the five forms of SE, reflecting a more complete domain, as outlined earlier above. This means a measure representing SE as such would need to span the whole domain and not isolated with a focus on product-level innovations. Prominent examples include Zara’s fashion strategy, moving from sketch to shelf in record speed, or turning to Netflix, which redefined the business model of video rental industry (Doblin, 2015), or the need for firms to adapt their internal processes and structures as a result of the age of digital transformation to cater for new innovations. All these are relevant examples as to why firms need to center on organizational consequential innovation relating to all *entrepreneurial functions* of the firm. Additionally, Anderson et al. (2019) explicitly encourage further development of alternate measurement scales for SE.

Strategic entrepreneurship, strategic human capital and social capital

Ireland et al. (2003) argue that the following three critical resources are fundamental to firms intending to successfully apply strategic entrepreneurship (SE): financial capital (tangible), human capital (intangible) and social capital (intangible). This importance is echoed by other scholars in the field (Monsen & Boss, 2009; Hitt et al., 2011; Lumpkin, Steier & Wright, 2011).

Strategic human capital. In the context of this research, human capital is defined “as a unit-level resource that is created from the emergence of individuals' knowledge, skills, abilities, or other characteristics” (Polyhart & Moliterno, 2011, p. 127). When human capital is aggregated on the macro-level of the firm it can be referred to as the “human capital pool”, reflecting the

aggregated “skill base” of all employees (Wright et al., 2014, p. 304; see also Wright, McMahan & McWilliams, 1994; Polyhart & Moliterno, 2011; Nyberg, Moliterno, Hale & Lepak, 2014). The “skill base” can be viewed as the sum of the employees’ knowledge, skills, abilities and other characteristics (KSAOs) (Wright et al., 2014, p. 304; see also Wright et al., 1994). Following the theorizing of the resource-based view of the firm, resources which are valuable, rare, inimitable and non-substitutable (VRIN) help to achieve competitive advantage and superior performance (Barney, 1991). By extending this idea to the human capital perspective and drawing on the arguments of Boon et al. (2018), the firms’ human capital pool and aggregated skill base can be a source of competitive advantage when the human capital is (1) a key determinant of performance (valuable), (2) where human capital resources are heterogeneously shared across firms (rare), and (3) where social complexity and network structure are making it difficult for competitors to achieve comparable results (inimitable, non-substitutable) (Hitt et al., 2001; Nyberg et al., 2014; Boon et al., 2018). Based on our view above, we therefore define strategic human capital as the idiosyncratic skill base enabling critical firm capabilities through different compositions and configurations in human capital characteristics, leading to competitive advantage and superior performance (Wright et al., 2014; Nyberg et al., 2014; Boon et al., 2018). The importance of human capital as input factor for learning, knowledge acquisition and firm value creation is widely acknowledged in entrepreneurship research (Dess et al., 2003; Unger, Rauch, Frese & Rosenbusch, 2011; Marvel, Davis, & Sproul, 2016). It is surprising that the field of SE thus far has only limited application of the theory (Ireland et al., 2003; Monsen & Boss, 2009). Strategic human capital researchers (Boon et al., 2018) have argued for an integration of social capital theory in their views to explore the effects of turnover (retention) and replacement recruitment to either retain high performers (Nyberg, 2010) or infuse new ideas, knowledge and capabilities into the firm (Boon et al., 2018).

Social capital theory. This describes “the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor” (Adler & Kwon, 2002, p. 23). Social capital is regarded as the total composition of value-creating resources accumulated by a firm (Ireland et al., 2003). The specific characteristics of social relations that support social capital are related to (1) opportunities inherited by the network structure of the social relations, (2) the norms, values and motivational force that construct social network ties, and (3) the abilities of each of the individual actors in this network that can be mobilized by goodwill (Kwon & Adler, 2014). Social capital theory bridges the network perspective internal to the firm (intra-inter-view) with external organizations, thereby helping to gain access and control of resources and acquire new knowledge and skills (Nahapiet & Ghosal, 1998; Ireland et al., 2003). Social capital was applied as a lens guiding theoretical (Ireland et al., 2003; Hitt et al., 2011) and empirical research (Monsen & Boss, 2009; Liu et al., 2010; Lumpkin et al., 2011; Liu et al., 2010). In SE research, social capital structure and network ties can help to explain how knowledge spillovers occur to foster innovation (Agarwal et al., 2010; Kwon & Adler, 2014). This understanding is also shared by Adler & Kwon (2002, p. 17) who argue that network ties represented by focal actors (employees) help to “facilitate [...] interunit resource exchange and product innovation”. Also, organizational consequential innovations are the *raison d'être* for SE, i.e. the core foundations of SE. Social capital theory can further explain how group cohesiveness and community sense, supported by cognitive ties (Kwon & Adler, 2014), lead to higher retention rates despite constant change induced by SE.

Therefore, following the logics of the resource-based view, the tacit knowledge embedded in employees are a core building block for creating innovations and identifying and exploiting opportunities, which can lead to differentials in firm performance (Ireland et al., 2003). Social network ties can help to mobilize resources and capabilities across the network structure as a

foundation for organizational consequential innovations. These arguments therefore place high importance on the role of the employee within the overall value-added process. Thus strategic human capital and social capital theory are specifically suited to further explore and shed new light on the employee retention and employee recruitment relationship in SE.

Strategic entrepreneurship and employee retention / recruitment

Extensive research has been conducted on the role of employee retention and recruitment in the general management literature (Cotton & Tuttle, 1986; Cohen, 1993; Breugh & Starke, 2000; Collins & Clark, 2003; Hancock, Allen, Bosco, McDaniel & Pierce, 2013; Rothausen, Henderson, Arnold, & Malshe, 2017; Philips & Gully, 2015) and within the entrepreneurship literature in particular (Dess, Lumpkin & McGee, 1999; Kickul, 2001; Wales, Monsen & McKelvie, 2011; Vardaman, Allen & Rogers, 2018; Gjerlov-Juel & Guenther, 2019).

Recent research shows that especially for young firms, the liability of smallness and long term firm survival can only be overcome when there is a high level of employee retention (Gjerlov-Juel & Guenther, 2019). Young and matured firms alike need to avoid knowledge loss to build joint experience among employees and specific knowledge resources (Gjerlov-Juel & Guenther, 2019; Haesli & Boxall, 2005). We recall that consequential innovations are the foundations for the concept of SE, and knowledge and skills, which reside in human capital are the foundations for these innovations and, hence, for competitive advantages. Particularly, tacit knowledge can be viewed as the specific ingredient for opportunity- and advantage-seeking behaviors and determinant of differentials in firm performance (Coff, 2002; Ireland et al., 2003).

Monsen & Boss (2009) advanced our understanding of employee retention in SE. In an empirical study (staff, n = 1,643; managers, n = 332), they found that SE impacts management and general personnel differently. More specifically, they found that staff members showed lower levels of SE (i.e. risk taking, innovativeness and proactiveness) compared to managers.

They argue that SE initiatives need to be designed differently for both groups. Their research also suggest to “attempt to collect a larger sample of top, middle, and operating-level managers, as middle-level managers react even more extremely to entrepreneurial strategies” (Monsen & Boss, 2009, p. 96). Therefore, it would be essential for SE theory and practice to understand if similar results with regards to managers can be confirmed in different regional and industry settings in order to enhance generalizability of findings and demonstrate how SE unfolds in different countries and contexts. Therefore, based on prior research we expect that:

H1: SE is positively related to employee retention.

Knowledge loss causes a threat to young and mature firms alike as the risk of losing employees with idiosyncratic knowledge can lead to disruption of the firm (Boon et al., 2018; Gjerlov-Juel & Guenther, 2019). Therefore, maintaining current sets of knowledge, which underline existing competitive advantages and gaining new sets of knowledge and skills, which will be the basis for future competitive advantages, are of critical importance to the firm. While knowledge loss in form of employee turnover cannot be avoided at all times, we also highlight that employee recruitment “provides an opportunity for the firm to infuse new ideas and approaches into the firm with the additional knowledge and skills” (Boon et al., 2018, p. 50, see also March, 1991). Firms successfully practicing SE need to infuse new knowledge, skills and ideas to combine resources in different ways, innovate and achieve superior performance. In other words, by applying the lens of strategic human capital, individual knowledge and skills recruited externally might be “generic” but will be aggregated at unit-level forming a complementary mix of idiosyncratic knowledge and skill resources (aggregated human capital pool of the entire workforce), which are specific to the firm (Wright et al., 2014, p. 359, 366; see also Nyberg et al., 2014). Therefore, we argue that:

H2: SE is positively related to employee recruitment.

The moderating role of corporate reputation

There has been an advancement in the research on the antecedents, consequences, measurements and moderating effects of corporate reputation (Weigelt & Camerer, 1988; Chun, 2005; Lange, Peggy & Dai, 2011; Ali et al., 2015). A study by Ogunfowora (2014) found that the positive effect of leadership on employee recruitment can be explained by corporate reputation. Also, prior studies establish that good corporate reputation leads to lower employee turnover (Chun, 2005). While corporate reputation as a field of research has been substantially developed over the last three decades in the management literature, corporate reputation in the field of SE, and in the general entrepreneurship literature appears to be under researched. Furthermore, within entrepreneurship research, Dess et al. (1999, p. 98) argue that “additional research incorporating non-financial criteria is also needed to better evaluate the outcomes of corporate entrepreneurial activities or processes [...] outcome measures such as *employee retention* and satisfaction, *public image*, and *reputation* may be insightful in accessing near-term outcomes”. We argue that firms successfully practicing SE are attractive employers; this is due to their reputation for continuous streams of innovations that lead to superior performance (Ireland & Webb, 2007), making them attractive employers. We therefore hypothesize that:

H3: The SE-employee retention relationship is positively moderated by corporate reputation, such that increases in corporate reputation lead to stronger positive SE effects on employee retention.

H4: The SE-employee recruitment relationship is positively moderated by corporate reputation, such that increases in corporate reputation lead to stronger positive SE effects on employee recruitment.

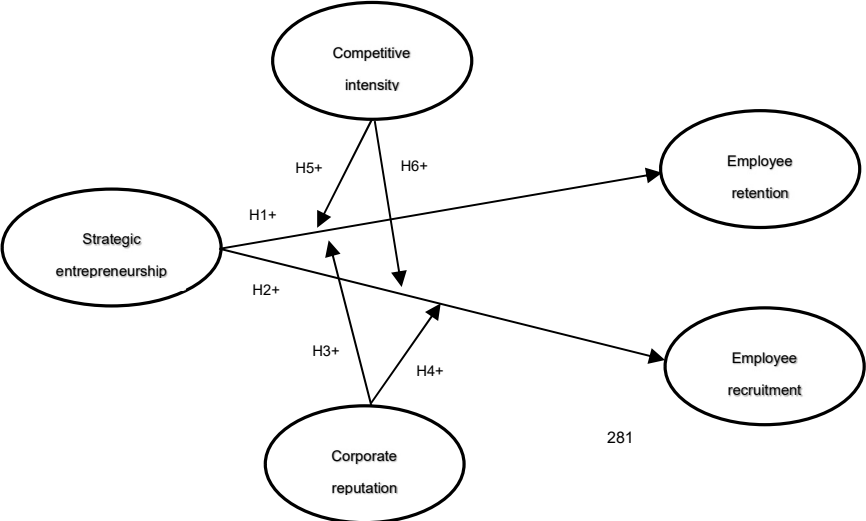
The moderating role of competitive intensity

Competition plays a central role in SE research. Ireland et al. (2003, p. 982) highlight the importance of strategic entrepreneurial innovators that “try to proactively influence their competitive destiny rather than waiting to be influenced by the evolution of the markets in which they compete”. Other scholars focus their SE research on interindustry competitive dynamics (Burgelman & Grove, 2007), competition in the realm of uncertainty (Ireland & Webb, 2009; Hitt et al., 2001) or opportunity- and advantage-seeking activities which improve competitive positioning (Sirén et al., 2012). We argue that firms that continuously strive to change the market characteristics they compete in, through new product and service developments, new business models, the creation of new markets or through adapting internal structures, attract and retain more employees. We argue that employees prefer to work for employers that are innovators and market leaders rather than work for employers with unclear future outlooks. Therefore, we expect that:

H5: The SE-employee retention relationship is positively moderated by competitive intensity, such that increases in competitive intensity lead to stronger positive SE effects on employee retention.

H6: The SE-employee recruitment relationship is positively moderated by competitive intensity, such that increases in competitive intensity lead to stronger positive SE effects on employee recruitment.

Figure 11. Theoretical model



3. Methods

Sample

Data for our research was collected via online panel members provided by Qualtrics™. Utilizing online panel data is considered a viable method in entrepreneurship and management research (e.g. Ng & Feldman, 2015; Courtright, Gardner, Smith, McCormick & Colbert, 2016; Kuechle, Boulu-Reshef & Carr, 2016; Crilly, 2017). To ensure face and content validity, the questionnaire was reviewed and pre-tested by eight senior managers (Hunt, Sparkman & Wilcox, 1982; Mathieu, Luciano, D’Innocenzo, Klock & LePine, 2020). Following Dada & Fogg (2016), we focused on SMEs in the United Kingdom (UK) which met three criteria: (1) firms which were active; (2) with operations in the UK; and (3) with fewer than 250 employees. Similar to prior studies, the response rate was calculated based on the number of participants who opened the questionnaires compared to the ones who actually completed the questionnaires (Hewlin, Dumas & Burnett, 2017; Dumas, Philips & Rothbard, 2013). Overall, 2,771 participants opened the questionnaire and 1,120 completed the questionnaire, leading to a response rate of 40.4%. We imputed missing values with an ‘educated guess’ (Tabachnick & Fidell, 2014) and filtered out univariate outliers (speeders, flat liners, consecutive numberings, and responses with substantially missing values) (Maede & Craig, 2012; Tabachnick & Fidell, 2014; Meade, Pappalardo, Braddy & Fleenor, 2020), providing a final sample size of 576. Our respondent group consists of owners/presidents (48.8%), executives/C-level representatives (11.1%), as well as senior- (15.3%), middle- (18.4%) and first-level (6.4%) managers. The sample therefore portrayed the overall management of a firm. Respondents were from six different industries (i.e. agriculture, mining, manufacturing, electricity, water supply and construction) and the majority of respondents worked in firms with 1 to 49 employees (71.7%),

while the remaining respondents worked for firms with employees between 50 and 249 (28.3%). Male (48.6 %) and female (51.4 %) respondents were relatively equally distributed.

Measurement of constructs

Wherever possible, we utilized existing measures and reworded these to fit the strategic entrepreneurship (SE) context. When validated constructs were not available, we employed extant research and theory to develop our own original measures (i.e. for SE and employee recruitment).

Strategic entrepreneurship. The research field of SE has substantially developed over the last two decades, both conceptually and empirically. Scholars often apply proxies (e.g. entrepreneurial orientation (EO) or exploration/exploitation constructs) to measure SE. Today, only one measurement scale is available for assessing SE (behaviors), which is based on the foundations of EO and defined as “the firm's exploitation of new product-market opportunities through the intended commercialization of its product innovations” (Anderson et al., 2019, p. 217). Marking an advancement in research, we nevertheless feel that in the fast pace market arena characterized by hyper-competition (D’aveni, 1994), disruptive technologies (Christensen, 1997), blurring competitive boundaries and the increasing temporariness of competitive advantages (Withers et al., 2018), the focus of a scale to measure SE cannot be based on *product-market opportunities alone* as outlined earlier in this paper. Thus we operationalized SE as consisting of entrepreneurial action, within an existing organization, that manifests itself in “organizationally consequential innovations ... [adopted] in the pursuit of competitive advantage” (Audretsch et al., 2009, p. 149; see also Morris et al., 2010). We argue that SE “can take one of five forms – strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation, and business model reconstruction” (Kuratko et al., 2015, p. 248; see also Corbett et al., 2013). We followed Morris et al. (2010) and Audretsch et

al. (2009) to theoretically develop the construct. The scale development procedures of Hinkin (1998), MacKenzie, Podsakoff & Podsakoff (2011) and Kapoutsis, Papalexandris, Treadway & Bentley (2017) were applied to technically create the measurement scale of SE.

Item generation, review assessment and item reduction. The research adopted a deductive scale development method which, started with the theoretical definition of the construct of interest (Hinkin, 1998; Kapoutsis et al., 2017). We kept items consistent, avoided “double-barrelled” items, designed items to show little variance and eliminated negatively worded ones (Hinkin, 1998, p. 108; see also Kapoutsis et al., 2017). Two pretests were carried out to improve and assess the validity of the initial item pool. The pretests were conducted with two academics and one practitioner to assess the quality, comprehensiveness and accuracy of the initial pool of 23 SE items. The activity carried out by the respondents resulted in the deletion of 5 items, leaving a total of 18 items to measure SE.

Administration and rater assessment. A matrix was developed showing the theoretical definitions at the top of the questionnaire in columns and ‘item statements’ on the left of the questionnaire representing the rows (MacKenzie et al., 2011; Hinkin, 1998). Each rater was asked to assess on a five-point Likert scale, ranging from 1 (not at all) and 5 (completely), how much the ‘item-statement’ on the left of the questionnaire corresponds to the definitions at the top of the questionnaire. Each rater was thoroughly briefed about the task in written and verbal form prior to the questionnaire launch (Hinkin & Tracey, 1999). The final sample consisted of 30 respondents (18 male, 12 female).

Scale purification, validity and model fit. A three-cycle purification led to the deletion of eight items arriving at a final measurement scale for SE, comprising ten items. The final scale showed an item-to-item correlation of 0.971 (Cronbach’s alpha), composite reliability (CR) is above 0.6 (0.971) indicating reliability of the factors (Bagozzi & Yi, 1988), average-variance-extracted (AVE) above 0.5 (0.774) confirming convergent validity (Hair, Tatham, Anderson &

Black, 2006) and square root of the AVE was bigger than any correlation of any latent factor (Fornell & Larcker, 1981; Hair et al., 2006). Fit indices indicated acceptable model fit (Chi-square = 1.654, $p = 0.000$, CFI = 0.959, TLI = 0.953, NFI = 0.904, IFI = 0.960, SRMR = 0.056, RMSEA = 0.066, PCLOSE = .021) (Hair et al., 2006). We additionally checked for common method bias by including a ‘common latent factor’ (Dheer & Lenartowicz, 2018) and performing a zero constraints test (Simmering, Fuller, Richardson, Ocal & Atinc, 2015). The null hypothesis could not be rejected, thereby suggesting that specific bias which can affect the model is not present. We therefore operationalized SE as a unidimensional first-order reflective construct, composed of ten items on a five-point Likert scale (1: strongly disagree to 5: strongly agree).

Employee retention. We measured employee retention by ‘*intention to quit*’, using Rosse & Hulin’s (1985) three item scale, which was also operationalized by Monsen & Boss (2009). The scale was slightly adapted from Monsen & Boss (2009) to fit our research framework. We changed the original scales from Monsen & Boss (2009), which comprise “How likely is it that you will actively look for a new job in the next year,” “I often think about quitting,” and “I will probably look for a new job in the next year”; in this study, we used the following adapted items: “Many of our employees actively searched for new jobs”, “Many of our employees thought about quitting to find jobs”, “Many of our employees looked for a new job”. A five-point Likert scale was used to measure the items (1: strongly disagree to 5: strongly agree). We used this scale because it was previously operationalized successfully in the SE context (cf. Monsen & Boss, 2009). We slightly adapted the introduction and structure of each measurement item to fit our research framework.

Employee recruitment¹². The measure of employee recruitment is theoretically based and adapted from Rosse & Hulin’s (1985) employee retention scale. As the employee retention

¹² In constructing and validating employee recruitment, we employed the same procedure as we did for SE.

scale is proven in the SE context, we strived for consistency when developing the measure. With the development of this scale we attempted to mirror the Rosse & Hulin's (1985) measurement construct to fit the recruitment context. The five-item reflective construct is measured on a five-point Likert scale (1: strongly disagree to 5: strongly agree) aiming to measure the nomological network of employee recruitment.

Corporate reputation. We measured corporate reputation using Agarwal et al.'s (2015) four item scale as a reflective first-order construct. We selected this scale as it is accepted and validated within the field of research (Fombrun, Gardberg, Naomi & Sever, 2000; Ponzi, Fombrun, & Gardberg, 2011; Aramburu & Pescador, 2017; Wolter, Donovan & Giebelhausen, 2021). We marginally adapted the scale to fit our research context. For example, we changed the original scale from "I trust this company" to read "People trust our company". We used a five-point Likert scale (1: strongly disagree to 5: strongly agree) to ask the respondents how the four corporate reputation statements relate to their firm.

Competitive intensity. Similar to Feng, Wang, Lawton & Luo (2019), we operationalize competitive intensity using Jaworski & Kohli's (1993) scale as a reflective first-order construct on a 5-point Likert scale (1: strongly disagree to 5: strongly agree). We used this scale as it is a widely accepted scale measuring environmental factors, such as competitive intensity. During the scale purification process, we removed item six from the scale, "Our competitors are relatively weak". The remaining five items remained as outlined in the original scale.

Control variables. In line with extant studies, we included seven control variables in our analysis in order to properly specify the model and allow for alternate explanations in employee retention and recruitment differentials (Dada & Watson, 2013; Dheer & Lenartowicz, 2018). Control variables included were organizational size, industry, firm age, tenure, age group, role and gender. Organizational size (*ORGSIZE*) was measured as a continuous variable. *INDUSTRY* was assessed by following the structure of the United Nations – International

Standard Industrial Classification of All Economic Activities (Rev. 4) (United Nations, 2021). Thus we deployed *INDUSTRY* on a categorical scale with 22 categories. *FIRMAGE* was measured on a continuous scale. *TENURE* was also measured on a continuous scale. *AGEGROUP* with an ordinal scale (1 = 17 or younger; 2 = 18-20; 3 = 21-29; 4 = 30-39; 5 = 40-49; 6 = 50-59; 7 = 60 or older). We measured *ROLE* on an ordinal scale (1 = owner/president; 2 = C-level (e.g. CEO, CFO; CTO); 3 = senior manager; 4 = middle manager; 5 = first level manager). We also measured *GENDER* on a dichotomous scale (1 = Male; 2 = Female).

Empirical analysis

Reliability and validity. In Table 29. Constructs and measurement items, we present the constructs and all the measurement items of the study and their related standardized factor loadings (SFL), Cronbach's alphas (α), composite reliability (CR), average variance extracted (AVE) and maximum shared variance (MSV). We further validated the measurement constructs in the following ways. Convergent validity was achieved as all the items exceeded the cut-off criteria of 0.50 (min: 0.602; max: 0.927) (Hair et al., 2006). Convergent validity was additionally confirmed by the AVE of the constructs, which were all above 0.50 (min: 0.514; max: 0.851) (Fornell & Larcker, 1981; Hair et al., 2006). Further, the square root of the AVE was bigger than the correlations between the pairs of constructs, establishing discriminant validity among the constructs (Fornell & Larcker, 1981; Dada & Watson, 2013). Also, all MSV values were below their AVE counterparts, additionally confirming discriminant validity (Hair et al., 2006; Dheer & Lenartowicz, 2018). We further assessed reliability by analyzing Cronbach's alpha and composite reliability. All Cronbach alpha indicators (min: 0.841; max: 0.945) and CRs (min: 0.840; max: 0.945) exceeded the indicator value of 0.60 (Bagozzi & Yi, 1988). Therefore, all constructs achieved the necessary reliability and validity levels.

Test of normal distribution and multicollinearity. We assessed normality by testing the levels of skewness and kurtosis. Based on prior studies, skewness (SK) greater ± 2 and kurtosis (KU) exceeding ± 7 suggest non-normal distributions (Hansen, 1995; Schütte et al., 2018; Schuster, Nicolai & Covin, 2020). No skewness or kurtosis was apparent, except for FIRMAGE (KU 34.93). The firm age distribution highlights a long right tale, indicating positive skewness. The average firm age of 34.93 suggests that younger firms were underrepresented in our data set (Coad, Segarra, Teruel, 2016). This finding was also highlighted by other studies (Coad, Segarra, Teruel, 2013; Coad et al., 2016). Therefore, the results related to the firm age group have to be interpreted cautiously.

Next, we checked multicollinearity by analyzing the variance inflation factor scores, which were distributed from 1.5 to 1.65, showing levels below the cut-off point of 10, indicating that multicollinearity was not an issue (Hair et al., 2006; Dheer & Tomasz, 2018).

Table 29. Constructs and measurement items

Constructs	Measurement items	SFL	α	CR	AVE	MSV
Employee retention	(1) Many of our employees actively searched for new jobs.	0.927	0.945	0.945	0.851	0.121
	(2) Many of our employees thought about quitting to find jobs.	0.927				
	(3) Many of our employees looked for a new job.	0.917				
Employee recruitment	(7) Many employees joined our company.	0.759	0.927	0.927	0.717	0.281
	(8) Many employees applied for jobs in our company.	0.903				
	(9) Many employees looked for a new job in our company.	0.875				
	(10) Many employees joined from other companies in the same industry.	0.831				
	(11) Many employees reached out to our company to find jobs.	0.838				
Strategic entrepreneurship	(1) My company leverages entrepreneurial initiatives to shape the firm's strategy.	0.608	0.922	0.923	0.546	0.311
	(2) My company applies new strategies essentially changing its relationship to markets.	0.690				
	(3) My company regularly enters markets that are new to us, using our existing products and/or services.	0.694				
	(4) My company shows an ongoing pattern in the identification of new markets.	0.797				
	(5) My company strives to create markets that were not actively exploited previously by other companies.	0.744				
	(6) My company is a market pioneer regularly creating new market spaces for competitors to follow.	0.712				
	(7) My company regularly seeks to enhance its competitive position by adapting its internal processes, structures and/or capabilities.	0.708				
	(8) My company continuously adjusts its internal operations to achieve a competitive advantage.	0.742				
	(9) My company often adapts its business models to differentiate itself from competitors.	0.784				
	(10) My company often adopts new business models in pursuit of a competitive advantage.	0.856				
Corporate reputation	(5) People have a good feeling about our company.	0.766	0.898	0.899	0.691	0.121
	(6) People admire and respect our company.	0.812				
	(7) People trust our company.	0.908				
	(8) Our company has a good overall reputation.	0.826				
Competitive intensity	(6) Competition in our industry is cutthroat.	0.761	0.841	0.840	0.514	0.311
	(7) There are many "promotion wars" in our industry.	0.767				
	(8) Anything that one competitor can offer, others can match readily.	0.602				
	(9) Price competition is a hallmark of our industry.	0.717				
	(10) One hears of a new competitive move almost every day.	0.687				

† SFL, standard factor loadings; α , Cronbach's alpha; AVE, average variance extracted; CR, construct reliability; MSV, maximum shared variance

Common method variance. Common method variance can be a serious threat to validity and generalizability of research findings. In order to counterbalance this, we ensured participants anonymity and confidentiality, procedural techniques highlighted by previous studies (Podsakoff, MacKenzie, Lee & Podsakoff, 2003; Dada & Watson, 2013). We engaged in an additional statistical assessment to verify that common method variance is not a substantial issue in our study. We carried out a Harman's one-factor test (Podsakoff et al., 2003), operationalizing all items included in the study through principal components analysis. The factor structure generated five factors with the first factor representing 33% of the variance. This is noticeably below the threshold of 50%, indicating that common method variance is not a threat to our results (Dheer & Lenartowicz, 2018).

4. Results

The correlations, means and standard deviations are presented in Table 30. Correlations, means and standard deviations. We used structural equation model (SEM) (AMOS Vers. 26) to test our conceptual framework and hypotheses. SEM was applied for several reasons. First, SEM permits testing several regression equations simultaneously (Monsen & Boss, 2009). Second, SEM adequately allows for controlling of measurement errors between latent constructs rather than by comparing the means of these variables (Jiang, Jiang, Sheng & Wang, 2020). Finally, SEM has been increasingly adopted for testing moderated relationships (Chirico & Salvato, 2016; Gimenez-Jimenez, Edelman, Minola, Calabrò & Cassia, 2020; Jiang et al., 2020). Following Dheer & Lenartowicz (2018), we utilized several indices to assess the fit of our model with the following thresholds: CMIN/DF <3.0 (Rivers, Meade & Fuller, 2009; Nye, Joo, Zhang & Stark, 2020), CFI >0.90 (Bentler, 1990; Hu & Bentler, 1995), TLI >0.90 (Chirico & Salvato, 2016), IFI >0.90 (Bollen, 1989), SRMR <0.09 (Hair et al., 2006), RMSEA <0.08

(Hair et al., 2006). Our model provided good fit with the data (CMIN/DF 1.224, CFI 1.000, TLI 0.988, IFI 1.000, SRMR 0.005, RMSEA 0.020).

The model showed statistically significant impact of the control variables of *SIZE* ($\beta = 0.149$, $p < 0.001$), *FIRMAGE* ($\beta = 0.140$, $p < 0.001$), *ROLE* ($\beta = 0.158$, $p < 0.001$) and *TENURE* ($\beta = -0.100$, $p < 0.010$) on employee retention, while control variables of *INDUSTRY* ($\beta = 0.025$, n.s.) and *GENDER* ($\beta = 0.031$, n.s.) did not show any statistical significance. Additionally, with regard to employee recruitment, the control variables of *SIZE* ($\beta = 0.207$, $p < 0.001$), *FIRMAGE* ($\beta = 0.083$, $p < 0.050$), *ROLE* ($\beta = 0.184$, $p < 0.001$) and *AGEGROUP* ($\beta = -0.104$, $p < 0.010$) showed statistical significance but did not reveal any significance for the control variables of *INDUSTRY* ($\beta = 0.031$, n.s.) and *TENURE* ($\beta = -0.050$, n.s.).

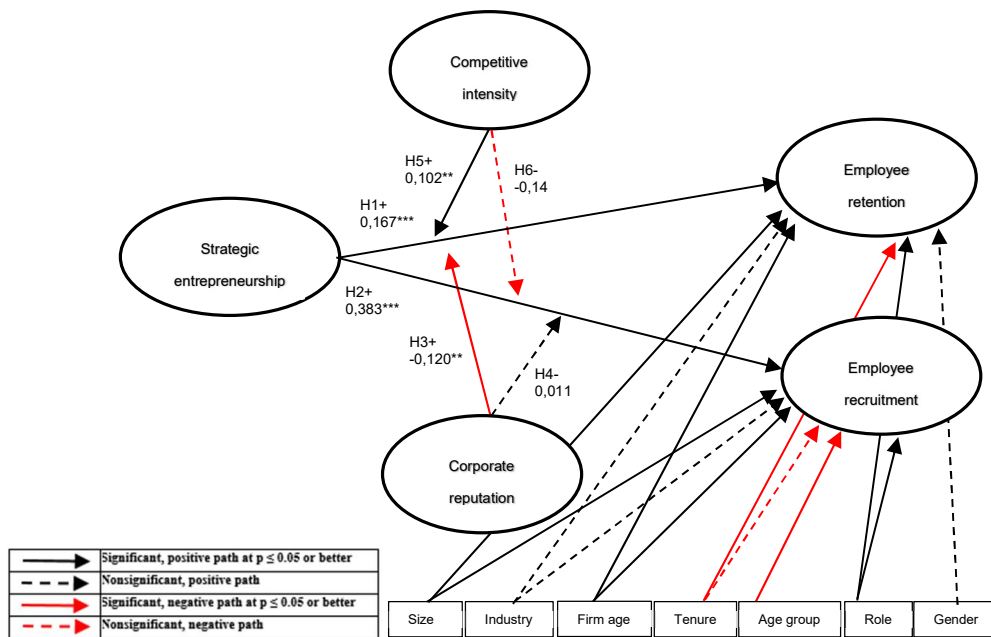
Table 30. Correlations, means and standard deviations

	1	2	3	4	5	6	7	8	9	10	11	12
1 Strategic entrepreneurship	1											
2 Competitive intensity	0,577**	1										
3 Corporate reputation	0,355**	0,206**	1									
4 Employee retention	0,122**	0,171**	-0,336**	1								
5 Employee recruitment	0,557**	0,382**	0,239**	0,375**	1							
6 Gender	0,023	-0,029	0,106*	-0,017	0,016	1						
7 Role	0,050	-0,032	-0,077	0,295**	0,319**	0,013	1					
8 Age group	-0,180**	-0,063	0,051	-0,175**	-0,248**	-0,254**	-0,180**	1				
9 Industry	-0,103*	-0,155**	-0,005	-0,051	-0,080	0,168**	-0,115**	-0,020	1			
10 Tenure	-0,118**	-0,039	0,044	-0,115**	-0,134**	-0,176**	-0,083*	0,472**	-0,080	1		
11 Firm age	-0,063	-0,070	-0,033	0,167**	0,111**	-0,039	0,246**	0,127**	-0,063	0,342**	1	
12 Organ. size	0,205**	0,153**	0,003	0,293**	0,405**	-0,077	0,426**	-0,081	-0,158**	-0,001	0,244**	1
Means	3.345	3.431	4.235	2.340	3.118	1.510	2.230	9.530	12.230	9.530	21.710	45.300
Standard deviation	0.884	0.939	0.732	1.246	1.166	0.500	1.381	1,176	6,035	7,437	25,971	60,277

† Pearson correlations based on SPSS 26; n = 576; *Correlation is significant at the .05 level (two-tailed); **Correlation is significant at the .01 level (two-tailed)

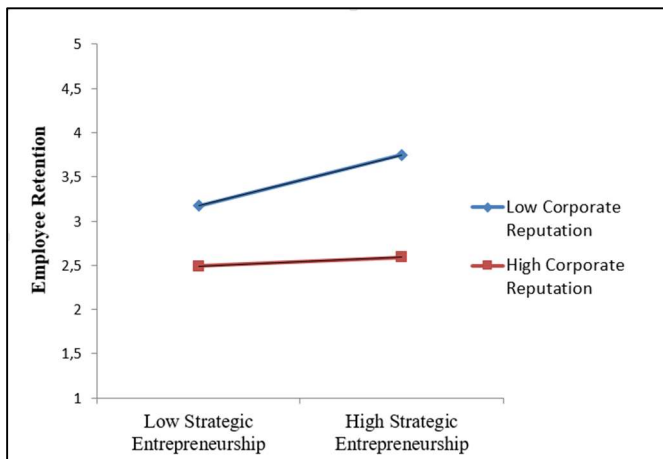
The results of the structural equation model evaluation and its coefficients are illustrated in Figure 12. Structural equation model analysis results. As predicted in *H1*, we found a significant and positive effect of strategic entrepreneurship (SE) on EMPLOYEE RETENTION ($\beta = 0.167, p < 0.001$). This means that SE has a significant effect on the decision of employees to stay with a specific employer (i.e. SE is associated with greater EMPLOYEE RETENTION). The results also confirm *H2*, showing a significant and positive effect of SE on EMPLOYEE RECRUITMENT ($\beta = 0.383, p < 0.001$). Thus SMEs successfully practicing SE seem to have higher chances of recruiting the right talents for the firm (i.e. SE is associated with greater EMPLOYEE RECRUITMENT). Somewhat surprising is the analysis of *H3*, showing also a significant but negative effect of CORPORATE REPUTATION on the relationship between SE and EMPLOYEE RETENTION ($\beta = -0.120, p < 0.010$). In other words, the relationship of SE and EMPLOYEE RETENTION is dampened by CORPORATE REPUTATION (see Figure 13. The Moderating Effect of Corporate Reputation on the Relationship between Strategic Entrepreneurship and Employee Retention). The study could not find any support for *H4*. However, the results support our prediction of *H5* which is significant and positive, showing that COMPETITIVE INTENSITY positively influences the SE -EMPLOYEE RETENTION relationship. As plotted in Figure 14. The Moderating Effect of Competitive Intensity on the Relationship between Strategic Entrepreneurship and Employee Retention, higher levels of COMPETITIVE INTENSITY lead to reduced intention to quit when practicing SE. The study could not find any support also for *H6*.

Figure 12. Structural equation model analysis results



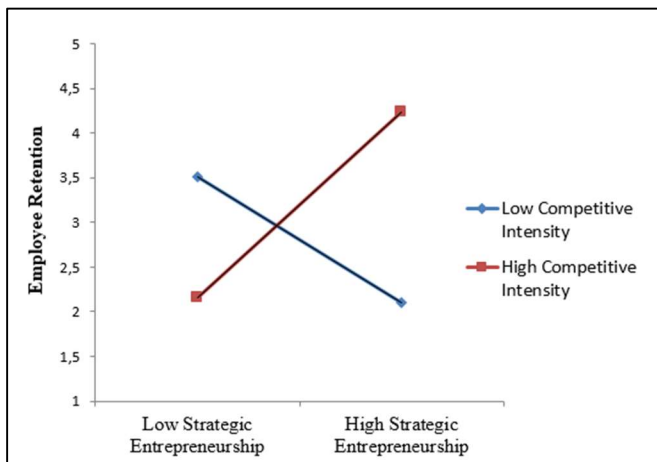
† Significance of Estimates: *** $p < 0.001$; ** $p < 0.010$; * $p < 0.050$; † $p < 0.100$
 (Source: Structure based on: Sirén et al. 2012)

Figure 13. The Moderating Effect of Corporate Reputation on the Relationship between Strategic Entrepreneurship and Employee Retention



Source: Structure based on Hewlin et al. (2012); Courtrigh et al. (2017).

Figure 14. The Moderating Effect of Competitive Intensity on the Relationship between Strategic Entrepreneurship and Employee Retention



Source: Structure based on Hewlin et al. (2012); Courtrigh et al. (2017).

Similar to other studies (Monsen, Patzelt & Saxton, 2010; Lu & White, 2014; Prandelli, Pasquini & Verona, 2016), we validated our results by running a robustness check (Exhibit 2). Using STATA, we used a multivariate multiple regression analysis (mvreg) to estimate our model including all control variables. We see slight differences in the magnitude of the parameter estimates on the level of the control variables. Slight deviations in results of the robustness check can be expected (Monsen et al., 2010; Liu, 2014). Also as expected, SE is significant and positively related to the dimensions of employee retention ($\beta = 0.158, p < 0.001$) and employee recruitment ($\beta = 0.379, p < 0.001$). In addition, the moderating effect of competitive intensity on the SE-employee retention relationship turned out to be positive ($\beta = 0.085, p < 0.050$). Also, for the effect of competitive intensity on the SE-employee recruitment relationship, we do not find a significant and positive influence ($\beta = -0.011, p = \text{n.s.}$). Moreover, when assessing the effect of corporate reputation on the SE-employee retention relationship, the picture is very similar to our original evaluation ($\beta = -0.116, p < 0.010$). Previous results are also robust when analyzing the effect of corporate reputation on the SE-employee recruitment relationship ($\beta = 0.012, p = \text{n.s.}$). Overall, the results of the robustness check find

strong support for the results previously obtained in AMOS, which enables us to move ahead with our presentation of this analysis.

5. Discussion

Despite the burgeoning literature on strategic entrepreneurship (SE) in recent years, only very few research articles have been published in academic journals empirically analyzing SE in the context of social and human capital (Monsen & Boss, 2009; Liu et al., 2010; Lumpkin et al., 2011; Sirén et al., 2012). The first question this study puts forward is how SE influences employee retention and recruitment in SMEs. The first step includes creation of a ten-item reflective unidimensional measure (MacKenzie, 2011; Hinkin & Tracey, 1999) for SE through an iterative process of development, validation, exploratory, and confirmatory factor analysis. Our empirical study of 576 SMEs in the UK shows that SE is positively related to employee retention and recruitment. This research thereby extends the view on SE measurement of Anderson et al. (2019) who operationalized SE as a specific set of product-market behaviors. The aforementioned scholars implied that measuring all five domains might lack simplicity and clarity. Contrary to these latter arguments, we find that our construct was also able to reflectively measure, in an adequate manner, the domains of strategic renewal, domain redefinition, organizational rejuvenation and business model reconstruction. This makes our measurement scale for SE the first of its kind (to our knowledge), which does not focus on one specific area of SE but focuses on entrepreneurial activities covering all areas as outlined by Morris et al. (2010) as a direct measure. Further, the impact of SE on employee retention is consistent with findings revealed by Monsen & Boss (2009, p. 95) that SE is “generally associated with less and not more [...] intention to quit”. Similar to prior studies, we share the view postulated by Ireland et al. (2003) that effective SE helps to overcome anxiety associated with the constant journey to outperform the market by being ahead of the competition based on innovation induced change within the five forms of SE. Our research sheds new light on how

SE, operationalized through the five forms, affect employee retention. The research findings also portray this in a less researched context, i.e. the United Kingdom, with the results suggesting that SE leads to enhanced employee retention. The strong direct effects of SE in the present study might also be explained through the lens of the social capital and strategic human capital theory. Employees embedded in social relations within the firm share a strong sense of group cohesiveness and belong to a community supported by cognitive ties (Kwon & Adler, 2014). Employees working for SMEs are embedded in complex social connections which makeup the idiosyncratic human capital pool, i.e. the aggregation of all of *their* generic knowledge, skills and abilities, which is central to firm survival (Adler & Kwon, 2002; Hitt et al., 2011; Wright et al., 2014). This social embeddedness supports group collaboration and might also explain how employees overcome individual hurdles by joining forces towards a unified goal, thereby reducing turnover levels.

We also find direct, positive effects of SE on employee recruitment. Our research further extends Monsen & Boss' (2009) findings by shedding additional light on employee recruitment. Similar to our findings relating to employee retention, our results suggest that SE also affects employee recruitment in a positive way. Our results might be interpreted in that way that companies, which practice SE, while harnessing existing competitive advantages tend to be more innovative (exploration/exploitation) compared to firms that only focus on exploitation. As competitive advantages erode over time, employees might focus to work for firms that occupy a strong position in their industry in terms of exploration and exploitation activities as explained by Schulze and Dada in Chapter 4.

Our argument is backed up by recent research, which confirmed that a “standing out strategy”, here in the form of SE producing continuous streams of innovations, helps to recruit qualified employees for young ventures (Moser, Tumasjan & Welpe, 2017, p. 604). Young ventures are threatened by the liability of newness, matured firms are threatened by, what we

call, liability of *maturedness*, meaning that matured firms have challenges to innovate for survival (Ireland et al., 2003; Ketchen, Ireland & Snow, 2007) as they are tuned to harnessing existing competitive advantages. As SE is a concept for young and matured firms alike (Hitt et al., 2011), we argue that a market individualized “standing out strategy” is necessary for young and matured firms in the pursuit of new innovations enhanced by qualified employees on the path of firm survival (Moser et al., 2017, p. 604).

We now discuss how do firm-level and environmental factors moderate the relationship between SE and employee retention and recruitment in SMEs? The results show that corporate reputation has a negative and significant effect on the relationship between SE and employee retention. This is somewhat unexpected as we hypothesize that corporate reputation positively affects employee retention, which is in line with expectations deduced from the literature (Chun, 2005; Coldwell, Billsberry, van Meurs & Marsh, 2008). In particular, Chun (2005, p. 91) pointed out that “corporate reputation affects the way in which various stakeholders behave towards an organization, influencing, for example, employee retention ...”. How can this be explained? This might be described through the views of Lange et al. (2011, p. 162) who pointed out that “if reputation is considered an asset of the firm, it implies and signifies that reputation is a characteristic of the firm ... [it] does not presuppose a positive relationship between reputation and beneficial firm outcomes. It allows for reputation to have negative consequences for the firm, just as it could have positive consequences”. Linking this idea to our result, it might be that negative corporate reputation also leads to a negative impact on employee retention when exercising SE. This would mean that the positive impact of SE on employee retention in general is vanished when a firm’s reputation is a liability. Additionally, it would indirectly mean that a firm showing strong levels of SE with prospective innovations cannot compensate liabilities resulting from its reputation. Our findings therefore extend the studies of Monsen & Boss (2009) and Lange et al. (2011) by showing how differently corporate reputation

can affect a previously positive relationship and turn it into a dampened moderation effect. It is also the first known article of its kind addressing this specific relationship.

Additionally, it is surprising that the effect of corporate reputation on the SE and employee recruitment relationship is non-significant. Other scholars suggested theoretically, or found empirically, a stronger relationship between corporate reputation and employee recruitment (Coldewell et al., 2007; Cable & Turban, 2003). The study of Cable & Turban (2003) shows that corporate reputation perceptions influence recruitment perspectives of job seekers. In an empirical study by Ogunfowora (2014, p. 540), they found that “the positive effects of specific leadership on job pursuit can be explained by organizational reputation”. Extending this logic to our research findings, it might be the case that the corporate reputation of young firms has not been recognized by the ‘outside world’ and therefore cannot influence levels of employee recruitment in SE, although the young firm might be engaged in promising innovations. In contrast, matured firms might be seen as being ‘innovation laggards’ even though their entrepreneurial activities might have already changed to become simultaneously explorative and exploitative, but the reputation of employees in the ‘outside world’ with respect to these specific firms might not have changed. Although our results show a non-significant relationship of corporate reputation on the SE-employee recruitment relationship, this is the first known study, which tested this relationship.

As expected, we found a positive and strong interaction effects of competitive intensity on the SE-employee retention relationship. Our research, which is again the first known study of this relationship in the SE context indicates that in industries where rivalry is high, likewise, higher employee retention levels can be expected when firms practice SE. Drawing on social capital theory and the “bonding” view of internal collective relations between a defined group, associability and strong trust between the parties in a network lead to high levels of unified community behavior and pursuit of joint goals (Newell, Tansley & Huang, 2004, p. 46; see also

Adler & Kwon, 2002). Applying this perspective of social capital theory to our findings, when constant change, promoted by SE, and strong industry rivalry join forces, higher rates of employee retention are the result. This can be further explained by a “we-feeling” of group solidarity and group identification where employees tend to stay closer together and support each other (Kwon & Adler, 2014, p. 416).

We attempt to close the gap also on the SE-employee recruitment relationship moderated by competitive intensity. Contrary to our expectation, the results did not reveal a significant positive relationship.

Earlier in this study, we highlighted that SMEs are seldom the focus of attention in SE research (Steffens et al., 2009; Liu et al., 2010; Shirokova et al., 2013; Obeng et al., 2014; Kim, 2018). In particular, also not with the target on evaluating employee retention and recruitment. We close this gap by focusing on evaluating United Kingdom based SMEs, thereby also contributing to research findings on SMEs within the international context.

Implications for theory and research

This study makes several important contributions. First, it advances SE literature by creating a novel unidimensional measurement scale spanning the complete domain of SE, i.e. the five forms of SE by following the call of Anderson et al. (2019, p. 217) to create “alternate measures” for measuring SE. The measurement scale operationalized in this research was thoroughly evaluated through an iterative process of pre-test evaluations, explorative and confirmatory factor analysis. Satisfactory results were obtained on all necessary reliability tests.

Second, our results show a strong direct effect of SE on both employee retention and employee recruitment. As hypothesized, firms actively engaging in SE activities retain and attract the top talents necessary to continuously develop new innovations. This suggests that the firm retains and attracts specific employees forming an idiosyncratic human capital pool striving to constantly adapt the firms’ strategy, to develop new products, services and new

markets, restructure the firm to be ahead of the competition and introduce new business models to contend with competitors. Although the firm is engaged in constant SE induced change employees endeavor to work for these types of firms. This also indicates that employees anticipate a secure future when working for SE-orientated firms and may be willing to resist job stress through change in order to become a potential leader in the respective industry. Embeddedness of employees in social networks fosters group cohesiveness and unification towards firm goals. The social networks of employees ensure inter- and intra-firm knowledge acquisition and knowledge flow, which support the accretion of specific knowledge that functions as a basis for new skills and competencies (Haar & White, 2013). In summary, the results support Ireland et al.'s (2003) claim that SE helps to overcome anxiety in connection with innovations and change. This also holds true for employee recruitment. Our results indicate that employees purposefully select SE-orientated firms as an employer and are inclined to resist job stress (Monsen & Boss, 2009).

Third, this research helps to explain how negative corporate reputation generally affects employee retention. Despite the evident positive impact of SE on employee retention and recruitment, this research discovers that the interaction effects of corporate reputation on employee retention was significantly negative. This study helps to explain that corporate reputation can be regarded as an asset or liability, with either positive or negative characteristics. Our findings therefore expand extant literature by highlighting that the positive relationship between SE and employee retention can be affected if corporate reputation is perceived to be negative by the outside world. We will further address this point below.

The study contributes to the understanding of the moderating effects of SE and competitive intensity with regards to its influence on employee retention. The results of the study demonstrate that when competition in an industry is high, employee retention rates remain at

high levels when practicing SE. This is a novel insight into SE research and has not been revealed previously.

Fourth, this study contributes to an enhanced understanding of how SE unfolds in SMEs especially in different country contexts. While extant literature evaluates the effect of SE in SMEs, especially in Australia, China, Russia, Ghana and Korea, this study provides new insights with regards to SE in SMEs in the United Kingdom.

It can be concluded that the results support the premise that SE has a positive impact on employee retention and recruitment. This also holds true in the case of employee retention when environmental factors, e.g. competitive intensity, influences the relationship.

Implications for practice

Firms intending to take a leading position in their respective industry practice SE, i.e. they focus on opportunity- and advantage-seeking behaviors that result in competitive advantages and superior firm performance (Ireland et al., 2003). This study suggests that firm survival is closely connected to the firms' ability to harness existing competitive advantages and their competence to consequently innovate. Firms need to strive to continuously transform themselves substantially (i.e. the degree of differentiation) in the five forms of SE from competitors (Kuratko & Audretsch, 2009) in order to stay ahead of the competition.

Drawing on the resource based-view of the firm, resources which are valuable, rare, inimitable and non-substitutable (VRIN) can lead to competitive advantage. In the context of our study, tacit knowledge, embedded in employees of the firm, especially meet this criteria. Integrating perspectives from strategic human capital theory, firms can strategically select these human capital resources that can help to differentiate them from competitors within the five forms of SE, i.e. the focus of the firm lies in the development of an idiosyncratic human capital pool which sustainably supports the firms' differentiation strategy. This implies that it is of

utmost importance for firms to concentrate on employee retention and recruitment with the aim to construct what we call the *firm specific idiosyncratic human capital pool*. Different firms with different competitive advantages, in different industries, require different but fitting firm specific idiosyncratic human capital pools which are aligned with the characteristics of their product and service offerings. As product and service offerings in the market need to be differentiated from rival offerings in order to achieve a competitive advantage, the firm specific idiosyncratic human capital pools need to support these differentiation characteristics.

Another implication for practice relates to the effect of corporate reputation on employee retention in SE. Firms need to be aware that negative corporate reputation image can substantially affect employee retention in SE. This might also be the case for high performing SE-orientated firms. Our results indicate that even when SE is at high levels, meaning the firm is to a high degree focusing on innovations, negative corporate reputation leads to lower levels of employee retention. This is a difficult situation for firms where their core asset is human capital that enables differentiation from the competition.

Further implication for practice relates to the finding of competitive intensity in SE. Firms practicing SE are subject to constant change on their path to continuously innovate; despite this constant change, it does not increase the employees' intention to quit the job. Also, when the firm decides to compete in an industry with high levels of rivalry, employees appear to stay focused under a unified firm goal. This is an important piece of information as it supports firms in the decision-making process in terms of which markets to possibly compete in.

Limitations and future research

Every research must be viewed in light of its *limitations*. The focus of this research was a multi-industry perspective that is not specific to one standalone industry. This might increase generalizability but blur industry specific differences (Sirén et al., 2013; Dada & Watson, 2013). Therefore, future research might test the constructs in our research in comparative studies,

focused on specific industries, industries not selected in this research, or even specific countries (cf. Chapter 2; Gap 4/5/10). Also, our study is based on a cross-sectional research design, capturing one specific point in time (cf. Chapter 2; Gap 13). Thus it is possible that data gathered at one specific point in time is different from those that are gathered at another point in time. Future studies might apply longitudinal research designs to test the relationships in this study over time.

Future studies might once again explore the relationship between SE and employee recruitment moderated by corporate reputation as our results surprisingly suggested different results compared to our hypothesis. Building on the discussion of theories and perspectives in SE (cf. Chapter 2, Gap 1), future studies might also apply different theoretical lenses, such as complexity theory, knowledge-based view, entrepreneurial leadership perspectives, network theory or competitive dynamics to further study SE. As outlined before in this research, the level of analysis studied in SE research is narrowly focused on firms and individuals (cf. Chapter 2, Gap 3). Future research might study different levels of analysis. For example, future research could further apply Coleman's bathtub model (Coleman 1990) to explore the micro-macro effects of SE or study how SE pervades over different levels within the firm (hierarchy, units, time) (Wales, Monsen & McKelvie, 2011; Wales, Covin & Monsen, 2020). Also, a wide range of empirical studies in SE (cf. Chapter 2; Gap 6/7) are conducted in Europe or Asia. Future research might further conduct empirical studies on SE with the focus especially on the Americas, Australasia, Africa, or the emerging economies. Theoretical research has focused substantially on competitive advantage, performance, value creation/capture and innovation (cf. Chapter 2; Gap 12/15). Future studies might include more non-financial performance indicators to study the effect inside a firm.

The next suggestion on future research rests on addressing Gap 2/8/14 (cf. Chapter 2) with regard to the nature of SE as well as the research methods to explore these. As SE research is

heavily based on conceptual studies and survey research design, future research might turn to qualitative research design to explore the nature and domains of SE in more depth. In other words, future studies could further investigate the nomological network, process conceptualizations, domains, and interactions in SE. Further, this research operationalized Morris et al.'s (2010) conceptualization of SE in form of the narrower view. While other researchers explicitly encouraged the further development of measurement instruments in the field of SE (Anderson et al., 2019), future research might explore the domains of SE by paving the ground for possible new measurement conceptualizations (cf. Chapter 2; Gap 8/16). Building on the aforementioned research opportunity, new conceptualizations of SE might further explore how to integrate benefits of ambidexterity research's ability to balance the tension of the exploration and exploitation process (cf. Chapter 2; Gap 11).

6. Conclusion

The construct of strategic entrepreneurship (SE) holds a lot of potential for young and matured firms alike. This is the first known study to create a direct unidimensional measure, spanning the complete domain of SE. Additionally, this study demonstrates the strong effect of SE on employee retention and employee recruitment. It is also a pioneering SE article to shed new light on the SE-employee retention and recruitment relationship moderated by corporate reputation and competitive intensity. Our results stress that strategic human capital and social capital play a central role in developing an idiosyncratic pool of human capital that is vital to competitive advantage and superior performance of the firm. Also, corporate reputation can support or hinder effective employee retention in SE. In addition, this research is among the few, which explores SE in SME context providing insights on how SE unfolds in the research setting of the United Kingdom. We hope our findings will enable more research in this area.

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Exhibit 2 – Robustness Check

Results with comments

- Results in line with AMOS (parameters might deviate 2nd or 3rd digit after comma) = OK
- Results similar to AMOS = *sign, tendency and significance same*, parameter slightly different
- Results similar to AMOS = *sign different, but significance same*, parameter slightly different

Equation	Obs	Parms	RMSE	"R-sq"	F	P>F
ERet	576	13	.812159	0.3181	21.88178	0.0000
ERec	576	13	.7130845	0.4676	41.20288	0.0000
	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
ERet						
● CR	● -.4510391	.0420293	-10.73	● 0.000	-.5335925	-.3684857
● CI	● .19361	.0457103	4.24	● 0.000	.1038265	.2833935
● SE	● .1588279	.049111	3.23	● 0.001	.0623647	.2552911
● SE_x_CI	● .0857239	.0341904	2.51	● 0.012	● .0185675	.1528803
● SE_x_CR	● -.1160481	.0388367	-2.99	● 0.003	-.1923307	-.0397656
● OrgSize2018	● .0023734	.0006613	3.59	● 0.000	.0010744	.0036724
● INDUSTRY	● .0043139	.0058413	0.74	● 0.461	-.0071596	.0157874
● FIRMAGE	● .0052689	.0014817	3.56	● 0.000	.0023586	.0081792
● TENURE	● -.0104447	.0055222	-1.89	● 0.059	● .0212914	.000402
N/A AGEGROUP	-.0446	.0343756	-1.30	0.195	-.11212	.02292
● ROLE	● .1072659	.0284337	3.77	● 0.000	.0514168	.1631151
● GENDER	● .0211084	.072182	0.29	● 0.770	-.1206706	.1628874
_cons	-.2376788	.2334107	-1.02	0.309	-.696141	.2207834
ERec						
● CR	● .1143309	.0369022	3.10	● 0.002	.0418481	.1868136
● CI	● .1168375	.0401341	2.91	● 0.004	.0380066	.1956683
● SE	● .3796327	.04312	8.80	● 0.000	.2949369	.4643284
● SE_x_CI	● -.0117287	.0300196	-0.39	● 0.696	-.0706928	.0472353
● SE_x_CR	● .0122504	.0340991	0.36	● 0.720	-.0547265	.0792274
● OrgSize2018	● .0032678	.0005807	5.63	● 0.000	.0021273	.0044083
● INDUSTRY	● .0056935	.0051288	1.11	● 0.267	-.0043804	.0157674
● FIRMAGE	● .0031406	.0013009	2.41	● 0.016	.0005854	.0056959
● TENURE	● -.0060224	.0048486	-1.24	● 0.215	-.0155459	.0035011
● AGEGROUP	● -.1025954	.0301821	-3.40	● 0.001	-.1618787	-.0433121
● ROLE	● .1279518	.0249651	5.13	● 0.000	.0789157	.176988
N/A GENDER	-.0591762	.0633766	-0.93	0.351	-.1836597	.0653072
_cons	.07158	.2049372	0.35	0.727	-.3309548	.4741148

*Except for Tenure. Amos model: significant (.09). STATA: not significant (.059)

**SE_x_CI: Amos model and STATA model show very slight deviations in the level of significance

Chapter 5

Discussion

This thesis advances the field of corporate entrepreneurship in the two separate domains of corporate venturing (CV) and strategic entrepreneurship (SE) through three research papers focusing on three essential topics. First, it focuses on the development of a systematic literature review (SLR) (paper 1) in Chapter 2 analyzing the research field of SE and proposing unique avenues for future research. Second, it concentrates on studying the effect of CV on knowledge acquisition (KA) and performance moderated by technological turbulence and transformational leadership (Chapter 3). The third topic explores how SE affects employee retention and recruitment moderated by corporate reputation and competitive intensity (Chapter 4).

The SLR paper especially focuses on studying what theoretical perspectives might advance SE research, how different process conceptualizations might progress SE literature and how research focusing on the different levels of analysis can advance future SE research. These research issues were addressed by proposing the theoretical perspectives advancing SE research as including complexity theory, competitive dynamics, social capital theory, leadership and knowledge-based view thereby addressing Gap 1 (cf. Chapter 2).

Additionally, this research paves the way for a different view on the conceptualization of the SE process and its micro-foundations catering for cross-boundary knowledge flows and synchronized resource exchange between the processes as well as a cyclically evolving process over time (cf. Chapter 2; Gap 2). This research further identifies research gaps (Chapter 2; Gap 3-16), which offer further opportunities to advance SE as a field of research. These gaps address the level of analysis, context of research, content of research as well as techniques,

methodologies and measures. These future research opportunities are further addressed in detail later in this section.

In terms of the second paper, this focuses on two research questions, namely how does CV relate to KA and performance in SMEs and how does transformational leadership and technological turbulence affect the aforementioned relationship. With regards to the first research question of this study, research findings of prior studies (Schildt et al., 2005; Wadhwa & Kotha, 2006) indicate that less integrated external venturing modes are recommended for exploration activities. This thesis extends the work of the previous authors by showing that all three venturing modes (i.e. internal corporate venturing (ICV), cooperative corporate venturing (CCV), and external corporate venturing (ECV)) can be instrumental for incorporating new knowledge to the firm, thereby addressing the relation between CV and KA. Also, the effect of specific exogenous variables on firm performance in CV has been studied by several authors (Tsai et al., 1991; Zahra, 1996; Chandler & Lyon, 2009; Sullivan & Marvel, 2011). This thesis extends these studies by exhibiting how all three venturing modes positively contribute to the overall performance of the firm.

Somewhat surprising are the findings regarding the second research question. The thesis reveals that when the technological environment is considered to be turbulent, that this circumstance has a negative effect on the CV-KA relationship. It can be assumed that SMEs continue to solely focus on exploitation activities when the pressure from the environment is high.

This thesis especially extends previous findings on the relationship of leadership in CV. Previously, Naldi & Davidsson (2014) could not find a significant relationship between CV and performance in relation to leadership characteristics in their study. We build on the study of Naldi & Davidsson (2014) by showing the strong effect of CV on performance moderated by transformational leadership.

Turning now to the third paper of this thesis, this focuses on two essential research questions: How does SE influence employee retention and recruitment in SMEs, and how do firm-level and environmental factors moderate the relationship between SE and employee retention and recruitment in SMEs? Extant research generally applies proxies to measure SE (Monsen & Boss, 2009; Shirokova et al., 2013; Kim, 2018), or exploration and exploitation constructs (Sirén et al., 2012) or direct measures, which cover product-market domains of SE (Anderson et al., 2019). This is the first known study, which validates and operationalizes SE as a reflective ten-item construct focusing on the five forms of strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation, and business model reconstruction as outlined by Morris et al. (2010).

Previous authors explored the relationship between SE and employee retention (Monsen & Boss, 2009). This thesis builds on previous findings by showing a positive and significant direct effect of SE, as conceptualized with the five forms, on both employee retention and recruitment, thereby extending previous studies.

The findings in this thesis also uncover an especially interesting fact. Contrary to this study's hypothesis and extant research (Chun, 2005; Coldwell, 2008), this thesis finds that corporate reputation has a significant but negative effect on the SE-employee retention relationship. Along the lines of Lange et al. (2011, p. 162), this thesis argues that when the firm reputation is negative, this might also have a negative influence on the aforementioned relationship.

Additionally, this thesis increases our knowledge by establishing a positive and strong moderation effect of competitive intensity on the SE-employee retention relationship. This thesis is the first known study of its kind to examine this relationship in the SE context, indicating that in industries where rivalry is high, higher employee retention levels can also be expected when firms practice SE. This is a novel finding in this specific research context, which can be explained via social capital theory, where the "bonding" view of internal collective

relations between a defined group and the parties in a network lead to high levels of unified community behavior and pursuit of joint goals (Newell et al., 2004, p. 46; see also Adler & Kwon, 2002). This essentially means that when SE meets strong rivalry in the market, higher rates of employee retention might be the result through bonding relations of the internal work force established through a “we-feeling” and solidarity (Kwon & Adler, 2014, p. 416).

Implications for theory

The SLR of this thesis contributes to theory in a twofold way. First, this thesis proposes theoretical perspectives, which can have substantial impact on SE by substantially advancing the field of research. Second, this research advances extant research by shedding new light on the SE process conceptualization. Existing process conceptualizations in SE are rather static and consider shifts between exploration and exploitation. This research conceptualizes SE as a dynamic and adaptive process, which includes interlinkages between exploration and exploitation sub-processes and considers feedback loops and the exchange of resources. Such conceptualization of the SE processes is the first known study of its kind. Researchers (Ireland & Webb, 2009) argue that firms transition between the processes. This research contends that firms successfully applying SE do not transit between the processes but simultaneously operate both processes by synchronizing their activities amongst each other. It is the view of this research that micro interconnections – in an iterative manner – facilitate alignment across process dynamics, enable a cyclic dynamic process in turbulent environments, link exploration and exploitation process knowledge, and help distinguish successful from unsuccessful configurations.

The second paper makes three important contributions. First, Narayanan et al. (2009) summarized in their review that findings from previous authors lack generalizability and proposed that future research can employ more structural equation modeling (SEM)-type

methodologies. This thesis is the first known study to develop, validate and operationalize CV as a three-form reflective conceptualization as outlined by Morris et al. (2010) (ICV, CCV, and ECV), thereby spanning all firm sizes whilst also applying SEM methodology to arrive at thorough conclusions. Second, although extant literature mostly focuses on either ICV or ECV, this research advances our knowledge by showing the combined direct effect of ICV, CCV, and ECV on KA as well as on performance. The research findings confirmed that the combined direct effect of CV on KA and performance is significant and positive. Third, this research sheds new light on how transformational leadership and technological turbulence affect the CV-performance relationship. There exists a debate in extant literature as to whether external environmental variables, such as hostility positively (Zahra & Covin, 1995; Narayanan, et al. 2009) or negatively (Kuratko et al., 2009) affect performance outcomes in CV. This thesis increases our knowledge in this area as it finds that technological turbulence positively relates to firm performance outcomes in CV. Additionally, previous research could not confirm a significant moderation effect of transformational leadership on the CV-performance relationship. This is now the first known research in the field of SE to report positive findings of the aforementioned relationship. Previous authors (Naldi & Davidsson, 2014) could not confirm any significant findings.

With regards to the second quantitative empirical paper (paper 3), this thesis makes four contributions. First, this is the first study to develop, validate and operationalize SE as a ten-item reflective direct measure spanning the complete domain of SE, covering strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation, and business model recreation (Morris et al., 2010). This research thereby extends the measurement approach by Anderson et al. (2019), which especially focuses on operationalizing product-market combinations. Second, this research advances the study of Monsen & Boss (2009) who find that SE is generally concerned with less intention to quit and therefore higher retention rates.

This thesis confirms this finding from the previously mentioned authors and extends their study by not only showing that SE has a significant and positive impact on employee retention but also on employee recruitment. Third, it extends our present knowledge by showing for the first time that competitive intensity has a significant and positive effect on the SE-employee retention relationship. In other words, higher competitive intensity also leads to higher rates of employee retention. Fourth, it is the first known study to test the 5-form-SE-scale, operationalized as a ten-item reflective measurement scale, based on a sample of SMEs in the UK.

Going beyond the individual articles of this thesis and aggregating the contributions on a higher level, this study benefits the field of CE as it provides novel answers to its two core domains (CV, SE) and how they affect specific outcome variables. This research strives to provide answers as to how core corporate entrepreneurship activities can be measured and designed with regard to firm level characteristics and the environmental context. The newly created direct measures for CV and SE can form the basis to further assess the domain of CE overall. Also, the thesis goes beyond individual articles by providing perspectives on future research opportunities, which can be merged at a higher level in form of the SLR research gaps and the empirical findings of the Chapter 3 and Chapter 4. In other words, the combined findings of the three papers might inform future researchers on what are the most pressing questions in the area of CE and on how conceptual and empirical findings relate. Additionally, there is another implication beyond the individual parts of this thesis. There appears to be consensus that CE encompasses the domains of CV and SE (Guth & Ginsberg 1990; Phan et al. 2009). This thesis contributes to present research by providing two direct measures for CV and SE, enabling the field to further study CE as a second order construct.

This research as a whole also partially addresses the call from Phan et al. (2009) to further study the processes, which influence longevity of different organizational forms of CE and

their underlying learning mechanisms. The combined empirical results of this thesis show several important aspects partially addressing the call of Phan et al. (2009). This research suggests that the first domain of CE, CV, has a strong effect on the firm's ability to acquire new knowledge and deliver on performance expectations. In terms of performance outcomes, this fact is also stable in technological turbulent environments thereby contributing to the question of longevity in CE as raised by the aforementioned study. With regards to the second domain of CE, SE, this thesis shows the strong effect of SE on retention and recruitment levels. As firms compete in a knowledge economy, maintaining and having access to talents is of paramount importance. Being able to maintain and access the right employees with the right capabilities and competencies also underpins SE's strategic importance for knowledge generation and longevity of the firm. Therefore, both domains contribute to the question of survival, longevity and knowledge generation of firms that are successfully practicing CE.

Furthermore, this thesis as a whole also addresses Kurtako & Audretsch's (2013, p. 332-333) call to explore the two "domains [i.e. CV & SE] and gain a sharper focus on the corporate entrepreneurship process, [which] may be a most important step for scholars interested in moving the field forward".

Building on the aforementioned statement, this thesis attempts to also provide answers to Covin & Miles's (1999, p. 60) call that "[t]he principal challenge to management researchers is to identify the entrepreneurial processes that lead to various forms of corporate entrepreneurship, and then to theoretically predict and empirically verify the forms of this phenomenon that produce the best results for firms in various business and industry contexts. Admittedly, this is a tough challenge. However, the pay-off in terms of improved firm performance should be substantial".

Implications for practice

This thesis unfolds three major implications with regards to the results related to CV. First, despite the theoretical and empirical attention with regards to the effects of environmental and technology factors on CV, extant literature is largely silent about the role of leadership in CV (Covin & Miles, 2007; Narayanan et al., 2009). This research closes this gap and unravels practical implications for firms. This is, when CV is practiced together with transformational leadership, this might lead to improved organizational performance outcomes. In other words, transformational leadership strengthens the relationship of CV and performance. A second important practical implication relates to the effect of technological turbulence which dampens the CV-KA relationship. This implies that when firms operate in technological turbulent environment, the ability to acquire new unfamiliar knowledge is particularly difficult. The third implication builds on the aforementioned implication, by demonstrating that although technological turbulence affects the CV-KA relationship in a negative way, it strengthens the relationship between CV and performance. Firms operating in turbulent environments therefore face a difficulty. On the one hand, firms need new knowledge to update temporary competitive advantages in CV and build new capabilities, which is hindered by environmental factors, while these specific environmental conditions cater for exploitation of existing competitive advantages. That is a difficult to manage triangle as a sole focus on exploitation activities without simultaneously focusing on exploration activities might impact the firm negatively in the long run.

This thesis also reveals three major implications with regards to the results related to SE. First, human capital can be a strategic resource when this human capital is characterized as valuable, rare, inimitable and non-substitutional. This is especially true for tacit knowledge which resides in employees. Therefore, there are important practical implications for firms to pay attention to employee retention and recruitment in order to build the firm's idiosyncratic

human capital pool. The findings of the thesis demonstrate that the direct effect of SE on employee retention and recruitment is significant and positive. The second practical implication this research indicates is that corporate reputation can significantly and negatively influence the SE-employee retention relationship. This implies that when the outside view on a given firm is negative, this can in turn directly influence the levels of employee retention. The third implication relates to the moderation effect of competitive intensity on the SE-employee retention relationship; that is, also in competitive intensive environments, employees tend to stay with their respective employer when this employer focuses on continuous and substantial organizational consequential innovations within the five forms of SE.

Limitations and future research

With regards to the SLR of this thesis, it does have limitations. First, this thesis only considers articles, where the main topic is concerned with SE. Second, the SLR of this thesis only includes articles, which are published in Association of Business Schools (ABS)-ranked journals in order to ensure a rigorous quality standard. A third limitation comes with the meticulous and systematic application of the inclusion criteria, which in this case could have resulted in the inadvertent exclusion of potentially relevant articles (i.e., in sampling bias).

The *raison d'être* of the SLR consists to a large degree on providing a route for new research avenues. A high number of articles included in the SLR focus on the resource-based view to theorize and explain their findings, this research suggests that future research might turn to complex adaptive systems theory, competitive dynamics, social capital theory, leadership theory and the knowledge-based view to study SE (cf. Chapter 2; Gap 1). Also, future research might study the SE model and its underlying processes in new ways, by focusing on its dynamic nature and micro-foundations to explain how interconnectedness and resource sharing occurs between the processes of exploration and exploitation (cf. Chapter 2; Gap 2). Building on the foundation of March (1991), future research might further explore the commonalities and

differences between SE and ambidexterity research as both streams of literature are concerned with explaining performance differentials and how to overcome the tension arising from the exploration and between the two processes. Additionally, the predominant focus in SE research is the firm and the individual as unit of analysis. As outlined previously in this thesis (cf. Chapter 2; Gap 3), this research expects that there is substantial room to further explore how SE pervades *at and across* different levels of analysis (Wales, Monsen & McKelvie, 2011; Wales et al., 2020). For example, researchers could extend the concept of how EO pervades different levels of analysis (Wales et al. 2011; Wales et al., 2020) to SE research and study how SE expands vertically, at and across different hierarchy levels, how SE unfolds horizontally, across different business units, or how SE cyclically develops over time. Building on the aforementioned research gap, future research could also leverage Coleman's Bathtub Model (1990) to study how SE crosses the micro-macro-micro level. Coleman's Bathtub Model might also be used to study Hitt et al.'s (2011) SE process model, thereby attempting to empirically explain how SE contributes to social benefits and economic growth as the conceptualization of their SE model suggests to span the micro-macro-level. Furthermore, with regards to the context where SE has been explored in prior studies, future research might focus more on studying the services sector (cf. Chapter 2; Gap 4). It would be helpful for extant research to understand if research findings on the combination of the manufacturing and services sector hold true in other specific sector context (i.e. conducting comparative studies with specifically selected industries). Also, the SLR revealed that researchers predominantly apply a single-country perspective (83%) (cf. Chapter 2; Gap 5). In other words, researchers focus on conducting research in one country instead of multiple countries to explore the phenomenon of SE. A single-country perspective helps to address specific research questions but might limit generalizability of findings overall. Therefore, future research might conduct a cross-country comparison study to explore if findings are robust across countries. Moreover, empirical

research is dominated by studies associated with Europe (31) or Asia (13) with a specific focus on developed economies (c.f. Chapter 2; Gap 6). Future research could focus more on empirical studies in the Americas, Australasia, and Africa, and, especially leveraging an emerging economies perspective, thereby addressing Gap 6 (cf. Chapter 2). Additionally, scholars argue that firms need to transition between explorative and exploitative activities (Ireland & Webb 2007; Ireland & Webb 2009). Yet, I believe that switching between processes comes with increased switching costs. Firms urged to switch between the exploitation and exploration process will possibly avoid to change organizational routines to explore new opportunities in order to avoid disruption. Future research might analyze mechanisms which can cater for balancing two inherently different processes of exploration and exploitation by that leveraging that on the ambidexterity perspective (cf. Chapter 2; Gap 8, 9). Furthermore, this research shows that the majority of empirical research was conducted in industries such as life sciences, ICT, or wholesale/retail. Addressing research Gap 10 (cf. Chapter 2), future research might explore specific research questions related to other industries. This research also unravels the dominance of research focusing heavily on outcome variables to include performance, value, and wealth (cf. Chapter 2; Gap 12, 15). Hitt et al. (2011) suggest that since SE is designed, among other things, to provide individual and societal benefits, it is necessary to measure these benefits to understand how they are evaluated. Therefore, future research might turn to dependent variables other than performance. Such variables might include organizational innovation, generation of knowledge, organizational value, individual and societal benefits, development of new organizational units, or economic growth. Additionally, the empirical field of SE is, to a substantial degree, covered by cross-sectional studies (cf. Chapter 2; Gap 13). The benefits of SE (Hitt et al., 2011) will become only generalizable when confirmed over an extended time frame. Therefore, future research would substantially benefit from more longitudinal perspective in SE research. Gap 14 (cf. Chapter 2) outlined homogeneity among

the research methods utilized in SE research. In other words, SE research is dominated by conceptual studies, which is understandable for the existence of the field of research, but also cross-sectional survey methods occupy a large degree. Future research could turn to more innovative research methods, such as qualitative research methods in the area of case study evaluation to develop grounded theory (as in Suddaby, 2006) by exploring opportunity- and advantage-seeking behaviors in SE. Another promising future field of research might include the measurement of SE. Today, SE is predominantly measured quantitatively by proxies, such as EO or exploration-exploitation constructs (cf. Chapter 2; Gap 16). Although, a direct measure for SE has recently been developed, it focuses solely on product-market combinations and not spanning the complete domain of SE (Anderson et al., 2019). Future research might further create measures, which also include strategic renewal, domain redefinition, organizational rejuvenation, and business model reconstruction (Covin & Miles 1999; Morris et al. 2010). With regard to the empirical papers (i.e. papers 2 and 3 in chapters three and four), this research first addresses their commonalities before turning to a specific research agenda for each of the individual articles. This research will start with their limitations.

Both empirical articles are not free from limitations. In the first instance, both papers focus on a multi-industry perspective. While a multi-industry perspective enables generalizability of research findings it does not allow for specific industry analysis. Future research might apply the measurement constructs of this thesis and apply it to specific industry settings to compare the results with those reported here. Also, both empirical papers apply a cross-sectional research design. Future research might operationalize longitudinal research methods to study the research questions and findings over an extended time frame. Additionally, future research might further explore if the research findings of this thesis are robust across other industries, i.e. industries, which have not been included in this research.

With regard to paper two, which applies the knowledge-based view as the theoretical lens for the research setting. Future research might turn to social capital, network theory, and entrepreneurial leadership to explore the study constructs. Future research might study CV, leveraging this construct, to evaluate the moderation effect of transformational leadership on KA again, as it turned out in our study that the relationship is insignificant. Similar to the relationship between CV and KA moderated by technological turbulence, which turned out to be negative. As outlined by this study, firms need to acquire new knowledge (opportunity-seeking behavior) in order to build new competencies and capabilities for firm survival.

Paper three applies strategic human capital as the theoretical perspective. Research might also apply other perspectives to explain SE outcomes, such as complexity theory, network theory, knowledge-based view or competitive dynamics. Future research could also explore again the relationship between SE and employee retention and employee recruitment moderated by competitive intensity and corporate reputation as the findings, except for competitive intensity on employee retention, were either insignificant or negative.

Going beyond the individual parts of this thesis, future research might apply the newly created direct measures to study CE as second order factor with the two domains of CV and SE modelled as first level construct. As extant research defined CE as encompassing the two phenomena of CV and SE (Guth & Ginsberg 1990; Phan et al. 2009), there is an important need to further understand the combined direct effect of CE (modeled as CV plus SE) on financial and non-financial outcome variables.

Chapter 6

Conclusion

There is the wide held belief that CE may be the most efficient approach to attain high levels of firm performance (Morris et al., 2010; Kuratko & Audretsch, 2013). CE essentially involves SE and CV (Guth & Ginsberg, 1990; Kuratko & Audretsch, 2009; Morris et al., 2010; Hornsby et al., 2013; Bierweth et al., 2015). By exploring three important topics through three research papers (in Chapters 2-4), this thesis advances SE and CV specifically, and CE research in general. Paper one, the SLR of this thesis (Chapter 2), provides a unique view on the conceptualization of the micro-foundations and interconnections of the exploration and exploitation processes in SE. This research highlighted ample opportunity in the SLR to advance SE research. Without devaluing the remaining research gaps, future research might specifically explore how the cyclically evolving SE processes (exploration/exploitation) are microfoundationally connected to knowledge flows, synchronization of information, and resource exchange. Another important area to consider for future studies is the level of analysis. Future research could explore how SE pervades at and across different hierarchy levels, across business units, over time, and on the micro-macro level. The thesis further paves the way for new research avenues, which presently remain largely unstudied in the SE context.

Paper two studies the effect of CV on KA and performance moderated by transformational leadership and technological turbulence (Chapter 3). This thesis confirms that CV has a significant effect on KA and performance. The research reveals that transformational leadership and technological turbulence both enhance performance; it also reveals that technological turbulence influences the CV-KA relationship negatively. This is a difficult to manage triangle as KA is a central building block for developing new competencies and capabilities, which are in turn the foundation for superior performance and new competitive advantages. Also, paper two produces several novel outcomes. This research presents the first

direct measure of CV, which spans its complete domain, including ICV, CCV and ECV. Another novelty includes the fact that the measure supports not only the investigation of the SME context but is intentionally kept broadly to reflect all firm sizes. Additionally, this is the first known study of its kind to investigate how leadership, i.e. transformational leadership, relates to the CV-performance relationship. Future research could turn to social capital, network theory, and entrepreneurial leadership to further explore the constructs of this study. Future research might also again study SE, leveraging the construct of this thesis, to evaluate the moderation effect of transformational leadership on KA.

Paper three studies the effect of SE on employee retention and recruitment moderated by competitive intensity and corporate reputation (Chapter 4). The thesis in this section stresses the importance for firms to develop idiosyncratic knowledge pools to enhance superior performance and competitive advantage. The research reveals that SE strongly affects both employee retention and employee recruitment. Also, in times of intensive rivalry, employees stay with their employers, which indicates a strong sense of unity. Contrary to the initial hypothesis in paper 3 (Chapter 4), corporate reputation has a negative impact on the SE-employee retention relationship indicating that not only good reputation influences the intention to quit of employees but also especially negative ones. This study creates the first known direct unidimensional reflective 10-item measure, spanning the complete domain of SE. It is also the first known SE study that enhances our knowledge of the SE-employee retention and recruitment relationship, moderated by corporate reputation and competitive intensity. The findings of this thesis can encourage further new research directions on SE. Future research might apply other perspectives such as strategic human capital complexity theory, network theory, knowledge-based view or competitive dynamics to study SE. Future research could also explore again the relationship between SE and employee retention and employee recruitment

moderated by competitive intensity and corporate reputation as the findings, except for competitive intensity on employee retention, were either insignificant or negative.

In terms of ambidexterity research, this thesis argues that SE and ambidexterity research are built on the same intersection, which is the seminal work of March (1991). This thesis therefore also contributes to ambidexterity research by showing how firms simultaneously explore for new opportunities, while harnessing existing certainties. Future research might further explore the commonalities and differences between SE and ambidexterity research. Overall, the results of the empirical chapters remain robust across different analysis techniques (i.e. multivariate multiple regression analysis in STATA and structural equation modeling done in AMOS).

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