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<sup>44</sup> A man who reviews the old so as to find out the new <sup>99</sup> is qualified to teach others.

Confucius (551–479 BC) Teacher, editor, politician, and philosopher

The overarching theme of corporate entrepreneurship literature is to understand why some firms are able to generate higher levels of corporate entrepreneurship than others. While the extant literature has greatly advanced our understanding of entrepreneurial activities by established firms, less effort has been made to systematically review the literature to help us identify missing links and knowledge in prior studies. To address this gap, this article critically reviews previous important studies on corporate entrepreneurship and then develops a framework integrating previous research. Finally, the article suggests five potentially worthwhile avenues for future research.

#### Introduction

Corporate entrepreneurship refers to entrepreneurial activities, such as innovation, venturing, and strategic renewal, within existing firms (Zahra, 1996). The idea behind corporate entrepreneurship goes back to the mid-1970s. It was first introduced by Peterson and Berger (1971) as a strategy and leadership style adopted by large organizations to cope with the increasing level of market turbulence. It took until the early 1980s for corporate entrepreneurship to become a separate research topic through the works of Burgelman (1983) and Miller (1983), and in particular when Pinchot's (1985) book on intrapreneurship was published (Christensen, 2004).

Different labels have been used to address the phenomenon of entrepreneurship within established firms, such as corporate venturing (Burgelman, 1983), intrapreneurship (Pinchot 1985), corporate entrepreneurship (Guth & Ginsberg, 1990), internal corporate entrepreneurship (Jones & Butler, 1992) and strategic entrepreneurship (Hitt et al., 2011). Nevertheless, based on evidence from special issues of journals, it appears that corporate entrepreneurship has gained the most attention as the main construct (Guth & Ginsberg, 1990; Phan et al., 2009). The considerable potential for corporate entrepreneurship to renew companies through innovation-based initiatives has led to increasing interest and research in how corporate entrepreneurship can be perpetuated within established companies (Corbett et al., 2013).

Prior research on corporate entrepreneurship has attempted to clarify the scope of this construct, its antecedents and outputs, and the boundary conditions of these links. Yet, less effort has been devoted to reviewing and organizing previous studies to identify our knowledge gaps and valuable paths for future research. In this vein, this article aims to systematically review and organize prior research following several steps. The review was restricted to papers published in toptier journals spanning the period between January 1, 1990 and December 30, 2015. Several keywords were used to identify relevant articles including corporate entrepreneurship, intrapreneur, and organizational entrepreneurship. All relevant articles were identified and categorized using an integrative model. Under-investigated themes were also identified.

This article contributes to the corporate entrepreneurship literature by integrating prior studies on corporate entrepreneurship including the conceptualization, antecedents, and outputs. More importantly, it identifies missing links and knowledge in the extant literature and suggest paths for future research. The remainder of this article is structured as follows: first, the method is explained; then, the literature is critically reviewed and synthesized; finally, five future research paths are identified.

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### Method

Following Shepherd, Williams, and Patzelt (2015), criterion sampling was used based on keyword searches in top management and entrepreneurship journals such as Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly, Journal of Management, Journal of Management Studies, Management Science, Organization Science, Strategic Management Journal, Journal of Business Research, Journal of Business Venturing, Entrepreneurship Theory and Practice, Strategic Entrepreneurship Journal, and Journal of Small Business Economics. The initial inventory included papers possessing the keywords of corporate entrepreneurship, intrapreneur, and organizational entrepreneurship in their title, abstract, or keywords, and spanning the period from 1989 to the end of 2015.

#### **Literature Review**

As shown in Figure 1, the relevant papers were categorized (discussed in the subsections below) into three main categories: i) papers conceptualizing corporate entrepreneurship, ii) papers about the antecedents of corporate entrepreneurship, which are categorized based on their levels of analysis entailing the team management, firm, network/dyad, and environment, and finally iii) papers focused on the outcomes of corporate entrepreneurship.

## *Corporate entrepreneurship: conceptualization and dimensionality*

Scholars have endeavoured to define the corporate entrepreneurship domain over the last few decades. There were initially mixed views on the scope of corporate entrepreneurship because it was not clearly differentiated



Figure 1. A model of corporate entrepreneurship's antecedents and outputs in the literature

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from the common phenomenon of innovation or new product development in firms (Corbett et al., 2013). Guth and Ginsberg (1990) were among the first scholars attempting to clarify the domain by introducing two categories of corporate entrepreneurial activities, namely business venturing and strategic renewal. Business venturing refers to "the birth of new business within existing organizations," and strategic renewal is defined as "the transformation of organizations through renewal of the key ideas on which they are built" (Guth & Ginsberg, 1990). Zahra (1996) then divides corporate entrepreneurship into three components of innovation, venturing, and strategic renewal. Innovation refers to "a company's commitment to creating and introducing products, production processes, and organizational systems". Venturing means "the firm will enter new businesses by expanding operations in existing or new markets." Strategic renewal concerns "revitalizing the company's operations by changing the scope of its business, its competitive approach, or both" (Zahra, 1996).

Other scholars have also categorized the domain of corporate entrepreneurship in different ways. However, the categories mostly lie within the three categories conceptualized by Zahra (1996). Covin and Miles (1999), for instance, propose four forms of corporate entrepreneurship entailing sustained regeneration, organizational rejuvenation, strategic renewal, and domain redefinition. Sustained regeneration refers to the continuous introduction of new products and services and new market entrance. Organizational rejuvenation is defined as changing internal processes, structures, or capabilities. Strategic renewal means the redefinition of a company's relationship with its markets and industry competitors by fundamentally changing the way it competes. These actions fundamentally reposition the firm in the market. Finally, domain redefinition is related to the creation of a new product-market arena that has not been recognized or actively exploited by other companies. Kuratko and Audretsch (2009) also add another category to the group: business model reconstruction. It refers to designing or redesigning a firm's core business model to enhance operational efficiencies or differentiate the company from its competitors in ways valued by the market. Similarly, Sharma and Chrisman (1999) define corporate entrepreneurship as "the processes whereby an individual or a group of individuals, in association with an existing organization, create a new organization or strategic renewal or innovation within that organization" They emphasize three main categories of corporate entrepreneurship encompassing corporate venturing, strategic renewal, and innovation in products and services.

Some scholars differentiate internal and external corporate venturing. In internal corporate venturing, new businesses reside within the internal boundaries of a firm, yet they may act as semi-autonomous entities (Morris et al., 2010). External venturing concerns "the creation of new businesses by corporations in which a corporation leverages external partners in an equity or non-equity inter-organizational relationship" (Schildt et al., 2005). Firms use governance modes such as corporate venture capital, non-equity alliance, joint venand acquisitions for external corporate tures, venturing. Corporate venture capital refers to the development of partnerships through investments in partners for financial and strategic purposes. Unlike corporate venture capital involving ownership in the relationship with partners, a non-equity alliance is concerned with the development of a new business with partners based on contracts. It also differs from joint ventures in that the latter leads to the formation of a new legal entity by partners for pursuing opportunities. Acquisition refers to the internalization of a new venture by purchasing the majority of the share capital of a venture (Schildt et al., 2005). Finally, licensing means gaining access to the knowledge, innovations, technologies, and discoveries of other firms in return for a fee (Yang et al., 2009).

Scholars also distinguish between domestic and international venturing (Yiu et al., 2007; Yiu & Lau, 2008; Zahra et al., 2000). International venturing is related to a firm's venturing activities for exploiting entrepreneurial opportunities outside its home market (Zahra et al., 2004). Undertaking international venturing activities is considered to be more difficult than domestic venturing (Yiu et al., 2007; Zahra & Hayton, 2008). This is mainly because firms in international markets are faced with the liability of foreignness arising from constraints, lack of knowledge of the target markets' institutional and business environments, and lack of legitimacy in foreign markets (Zaheer, 1995). International markets may also be more competitive than domestic markets (Etemad & Wright, 2003), which may make international venturing more challenging in particular for firms operating in developing countries (Yiu et al., 2007). Despite the difficulties, globalization and the existence of entrepreneurial opportunities in international markets have stimulated companies to undertake international venturing and expand internationally (Zahra & Hayton, 2008; Zahra et al., 2004).

Overall, the literature review shows that scholars have mainly focused on innovation, corporate venturing (domestic and international), and strategic renewal as the

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main components of the corporate entrepreneurship construct. This construct has been used both as a single meta-construct (Bojica & Fuentes, 2012; Heavey & Simsek, 2013; Heavey et al., 2009; Ling et al., 2008; Romero-Martínez et al., 2010; Simsek, 2007; Simsek & Heavey, 2011; Simsek et al., 2007; Simsek et al., 2009; Thorgren et al., 2012; Zhang et al., 2008) and as individual components (Yiu et al., 2007; Yiu & Lau, 2008; Zahra et al., 2000) in the literature. Yet, it is mostly used as a single meta-construct because these dimensions are supposed to be different, but complementary and mutually supportive concepts. For example, renewing the competitive approach may increase the benefits of venturing activities, and new product development may make strategic renewal activities more beneficial (Heavey et al., 2009; Simsek, 2007; Simsek & Heavey, 2011; Simsek et al., 2007). As such, "treating individual components of corporate entrepreneurship as independent ignores their potential complementarity" (Simsek & Heavey, 2011).

Corporate entrepreneurship encompasses the actual entrepreneurial acts or market-oriented results, and differs from constructs such as entrepreneurial orientation, which are "predispositions of firms with respect to their strategy-making processes, practices, and activities," that stimulate corporate entrepreneurship (Simsek & Heavey, 2011; see also Dess & Lumpkin, 2005). Intrapreneurship is more focused on the individual or team as intrapreneurs are defined as "those who take hands-on responsibility for creating innovation" (Sharma & Chrisman, 1999; see also Pinchot, 1985).

#### Corporate entrepreneurship: antecedents and outputs

Studies show that corporate entrepreneurship can play an important role in achieving higher levels of corporate performance (Yiu & Lau, 2008; Zahra, 1991, 1995), growth (Zahra, 1993; Zahra & Covin, 1995), and profitability (Covin & Slevin, 1991). A summary of the most important prior studies on the antecedents of corporate entrepreneurship is provided in Appendix 1. In terms of their level of analysis, as shown in Figure 1, these studies can be categorized into four groups:

- 1. *Top management team* (Behrens & Patzelt, 2015; Glaser et al., 2015; Hayton, 2005; Heavey & Simsek, 2013; Ling et al., 2008; Naldi et al., 2015; Simsek, 2007; Wang et al., 2015; Zahra, 1996; Zahra et al., 2000)
- 2. *Firm* (Behrens & Patzelt, 2015; Kellermanns & Eddleston, 2006; Nason et al., 2015; Simsek et al., 2009; Thorgren et al., 2012; Yiu et al., 2007; Yiu & Lau, 2008)

- 3. Network/dyad level (Turner & Pennington III, 2015)
- 4. *Environment* (Heavey et al., 2009; Romero-Martínez et al., 2010; Simsek et al., 2007; Zahra, 1991, 1993)

Previous research has mainly argued the origins of corporate entrepreneurship from the knowledge-based view (Grant, 1996), as summarized in Appendix 1. This view mainly considers knowledge as the most important and strategic resource in firms. The main premise of this theory is that corporate innovative activities are essentially a function of firms' capabilities to effectively combine and coordinate internal and external knowledge resources. Zahra (1991), for example, concludes that scanning, referring to formal efforts for collecting, analyzing, and interpreting data from the external environment, increases a firm's level of corporate entrepreneurship. Hayton (2005) argues that diversity of human capital in the top management team enhances corporate entrepreneurship by facilitating knowledge acquisition and triggering learning. Yiu and colleagues (2007) posit that firm-specific ownership advantages such as technological capabilities and business and institutional ties foster corporate entrepreneurship. Yiu and Lau (2008) suggest that a firm's political, social and reputational capital enhance the firm's engagement in corporate entrepreneurship. Simsek and colleagues (2009) argue that a company's alert information system increases corporate entrepreneurship by providing relevant information in a timely and pro-active manner. Thorgren and colleagues (2012) contend that relational capital among partners through knowledge transfer promotes corporate entrepreneurship. Finally, Heavey and Simsek (2013) conclude that the size, diversity, and network size of the top management team increase the level of corporate entrepreneurship.

# Discussion and Suggestions for Future Research

The critical literature review reveals that, despite significant insights provided by prior research, as shown in Figure 2, future research can address the following five research avenues, which build on the existing theoretical lenses.

#### 1. Need for more capability-oriented models

Prior studies have mainly focused on top management team characteristics and actions (Heavey & Simsek, 2013; Ling et al., 2008; Simsek, 2007), structural factors (Burgers et al., 2009; Zahra, 1991), and business environment (Simsek et al., 2007; Zahra, 1993). This literature, however, has paid less attention to organizational

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Figure 2. Potential paths for future research

capabilities. The need to build linkage between unpacked capabilities and corporate entrepreneurship has been reinforced in more recent reviews and studies (Phan et al., 2009; Yang et al., 2009). Capabilities refer to the ability of a firm to combine different resources together and make them conduct advantageous tasks and activities (Grant, 1991). They are also defined as "complex bundles of skills and accumulated knowledge, exercised through organizational processes that enable firms to coordinate activities and make use of their assets" (Day, 1994). As the building boxes of capabilities are organizational routines and processes (Sarkar et al., 2009), they can better tease apart corporate practices though which firms can enhance their rate of corporate entrepreneurial activities. In particular, one of the main challenges firms face in undertaking corporate entrepreneurship is the generation of new knowledge (Teng, 2007; Zahra et al., 2009). Corporate entrepreneurship relies on new knowledge for doing things differently, or doing different things, manifesting in the forms of innovation in products and services, processes, systems, strategies, and markets (Teng, 2007). As such, knowledge-based capabilities, such as absorptive capacity (Zahra, 2015) or networking capabilities (Sakhdari et al., 2014a), for acquisition, integration, development, and exploitation of new knowledge can be as well important

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as the structural factors, dominant in the literature, in explaining why some firms are more entrepreneurial than others. Moreover, corporate entrepreneurship is vying with ongoing business operations for catching corporate attention (Burgelman & Valikangas, 2005). Thus, from an attention-based view (Ocasio, 1997), a channelling mechanism to focus organizational capabilities on corporate entrepreneurship may be necessary (Sakhdari et al., 2014b) but is less theorized in the literature.

#### 2. Need for more social models

Given that corporate entrepreneurial outputs are knowledge-intensive, firms need to develop new knowledge for pursuing corporate entrepreneurship (Teng, 2007). Scholars have traditionally focused on internal development of knowledge (Brouwer et al., 1993; Hoskisson & Hitt, 1988). However, internal development of new knowledge is accompanied by high resource and development expenses, high levels of risk, and timing issues (Eisenhardt & Schoonhoven, 1996; Teng, 2007). Recently, scholars have suggested sourcing new knowledge from other players in the market such as suppliers, customers, research centres, and competitors as a complementary and effective approach for companies pursuing corporate entrepreneurship (Sim-

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sek et al., 2003; Teng, 2007; Zahra et al., 2009). This research stream, which has recently gained more prominence, posits that innovative activities are mainly a function of firms' capabilities to effectively combine *internal* and *external* knowledge resources (Chesbrough, 2003; Grant, 1996; Kogut & Zander, 1992).

In this vein, scholars have addressed the importance of partnering relationships for filling a firm's knowledge gaps and undertaking corporate entrepreneurship. Yiu and colleagues (2007), for example, suggest that network ties with customers enhance corporate entrepreneurship and international venturing activities in firms. Rothaermel and Deeds (2006) contend that prior network experience helps firms to better benefit from their network ties for innovative activities. Researchers have also investigated the role of key players' social capital in external knowledge sourcing and the pursuit of corporate entrepreneurship. Heavey and Simsek (2013), for instance, show that the network size of top management teams has a positive impact on corporate entrepreneurship.

Prior studies hint at the importance of inter-firm relationships and external knowledge access in fostering corporate entrepreneurship. This literature, however, has adopted a static approach, and has done little to unpack networking capabilities for the formation and management of partnering relationships (Sarkar et al., 2009). Moreover, empirical results are mixed with regard to the impact of the number of business partners on corporate entrepreneurial activities, in particular in the context of developing countries and among smaller firms (Lin et al., 2014; Yiu & Lau, 2008; Wu, 2011). As such, investigating organizational and contextual moderators can be a compelling path for future research (Sakhdari & Farsi, 2016). Finally, recent studies have adopted a network/dyad level of analysis and argued how mechanisms for sharing knowledge in an organizational network can enhance corporate entrepreneurship (Turner & Pennington III, 2015). The literature lacks insights into how and why different sources of knowledge can be integrated (Kogut & Zander, 1992) at a network level to enhance corporate entrepreneurial activities. For example, Dyer and Hatch (2006) indicate that firm mechanisms for sharing knowledge with partners differentiate innovative performance of firms involved in different networks.

#### 3. Need for contextualization

Institutions are formal (rules and regulations) and informal (norms and values) frameworks that affect the behaviour of individuals and firms by determining the

rules of the game (Peng, 2009). Apart from industry conditions and corporate capabilities, according to the industry-based perspective (Porter, 1980) and resource-based view (Barney, 1991), a firm's behaviour is also a reflection of its institutional frameworks or contexts. These frameworks can constrain or (if well developed) facilitate human and corporate behaviours (Peng, 2003; Peng et al., 2009). Institutional contexts vary based on their levels of market orientation or development. Institutional market orientation refers to the extent to which an institutional context adheres to freemarket policies (Shinkle et al., 2013), as measured by the level of freedom in such areas as trade, investment, financial, business operations, and property rights (Kane et al., 2007).

Scholars have recently argued for the importance of different levels of institutional market orientation in action-output relationships. This stream of research suggests that firms need different capabilities and strategies for rationally pursuing their interests in different contexts with distinctive levels of institutional market orientation (Lin et al., 2009; Luk et al., 2008; Peng, 2003; Peng & Heath, 1996; Shinkle et al., 2013; Shinkle & McCann, 2014). Yet, less effort has been made in the literature of corporate entrepreneurship to contextualize corporate entrepreneurial activities. Yiu and Lau (2008), for instance, do not reach significant results for the impact of the number of network ties on corporate entrepreneurial activities in the contexts of developing countries and call for future research to further investigate these connections in the context of developing contexts. Similarly, more recent studies suggest that researchers should contextualize theorizing in entrepreneurship (Bruton et al., 2008; Hitt et al., 2011; Welter, 2011; Zahra, 2007) to highlight the boundary conditions of merging theories and models across different institutional contexts. Sakhdari, Burgers, and Davidsson (2014), for example, indicate that the impact of a firm's absorptive capacity on corporate entrepreneurship can be subject to the firm's institutional context.

#### 4. Need for more process models

The literature on corporate entrepreneurship lacks process models of corporate entrepreneurial activities. There are two general approaches to corporate entrepreneurship. The first one is an output-oriented approach considering corporate entrepreneurship as a number of market results such as innovation in products and services and venturing (Simsek, 2007; Zahra, 1996). This approach, which is more dominant in the literature, is consistent with the common defini-

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tion of entrepreneurship as "new entry" (Davidsson, 2004; Wales et al., 2015). The second approach considers corporate entrepreneurship as a process entailing different phases (Burgelman, 1983; Hornsby et al., 1993). Process models can better tease apart the needed steps to enhance the levels of corporate entrepreneurship. Yet, there are very few process models explaining the process of corporate entrepreneurship. In particular, less effort has been devoted to theorizing the process of sub-dimensions of corporate entrepreneurship such as venturing and strategic renewal. For example, one of the rare process models of venturing is suggested by Burgelman (1983), and there is a dearth of research on process models of corporate entrepreneurship.

#### 5. Need for more individual-level research

Although corporate entrepreneurship is in essence a firm-level construct, it manifests itself in the actions and behaviours of employees (Ren & Guo, 2011; Stevenson & Jarillo, 1990). In his seminal paper, Burgelman (1983) posits that corporate entrepreneurship mainly results from entrepreneurial behaviours undertaken by employees at lower levels of companies. Yet, surprisingly less attention has been given to the organizational mechanisms enabling firms to better stimulate entrepreneurial behaviours by their employees. In this vein, one path for future research can be investigating factors encouraging employees to disclose their underground ideas (Sakhdari & Bidakhavidi, 2016). Individuals at lower levels of firms, such as those operating in R&D departments, tend to undertake bootlegging behaviour to reduce uncertainty associated with their ideas (Masoudnia & Szwejczewski, 2012), show the technological and market potential of their ideas (Criscuolo et al., 2013), and establish legitimacy for subsequent resource acquisition (Kannan-Narasimhan, 2014). How firms can utilize the underground behaviours for corporate entrepreneurship is under-investigated in the literature of corporate entrepreneurship.

Another potential avenue for future studies is the way firms can mitigate *exploration–exploitation* tension at individual levels (Gibson & Birkinshaw, 2004). Indeed, a basic tension firms face is whether to attend their employees towards exploratory activities for future viability or in exploitative activities to ensure existing viability (March, 1991; Van de Ven & Engleman, 2004). Exploratory activities are mainly related to the development of new knowledge and capabilities whereas the

exploitative operations are more concerned with the utilization of current capabilities and stock of knowledge (Katila & Ahuja, 2002). These activities are competing with each other for organizational attention (Burgelman & Valikangas, 2005; Burgelman, 1983). Yet, firms need both exploratory and exploitative activities for higher performance and innovative activities: the socalled ambidextrous firms (Raisch et al., 2009; Jansen et al., 2005). Indeed, although exploration and exploitation can be viewed as trade-offs for firms (Gupta et al., 2006), the dominant view is that such activities are distinct, yet complementary, modes of activity (Hill & Birkinshaw, 2014). Accordingly, attention management concerning the allocation of employees' efforts and attention towards both exploratory and exploitative operations is proposed as the most essential step for boosting corporate entrepreneurship (Ren & Guo, 2011; Van de Ven, 1986). Yet, surprisingly less attention has been given to the contextual mechanisms enabling firms to mitigate the tension between exploration and exploitation at individual levels, which can be a compelling path for future research.

#### Conclusion

Overall, the literature review presented in this article reveals that, despite a large body of informative research on corporate entrepreneurship, there is a dearth of research on more capability-oriented, social, contextualized, and process models and individual-level research of corporate entrepreneurship. The suggested paths for future research presented here may provide interesting insights into why some firms are more entrepreneurial than others.

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Appendix 1. Key studies on the antecedents of corporate entrepreneurship (Page 1 of	3)
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Authors	Key Results	Antecedent	Theoretical Lens	Measure	Dimensions
Zahra (1991)	Scanning the business environment promotes corporate entrepreneurship by providing relevant knowledge of industry trends and changes.	Firm/ environment	Knowledge-type lens	New survey scale	Meta-construct (innovation, venturing)
Zahra (1993)	Environmental hostility and hospitable business environment positively affect, and static environments negatively affect, corporate entrepreneurship.	Environment	Normative theory	New survey scale	Individual (innovation, venturing, renewal)
Zahra (1996)	There is a positive connection between executive stock ownership and long-term institutional ownership, and corporate entrepreneurship.	Top management team	Agency theory	New survey scale	Individual (innovation, venturing, renewal)
Zahra, Neubaum, and Huse (2000)	Executives and outside directors' stock ownership, being different persons and the medium size of the board positively influence corporate entrepreneurship.	Top management team	Agency theory	Adding international venturing	Individual (innovation, local and international venturing)
Hayton (2005)	Diversity of human capital in top management team (facilitating knowledge acquisition and triggering learning) enhances corporate entrepreneurship.	Top management team/firm	Knowledge-based view	Zahra (1996)	Individual (innovation, venturing)
Kellermanns and Eddleston (2006)	Willingness to change, generational involvement, and perceived technological opportunities increase corporate entrepreneurship in family business.	Firm	Entrepreneurial thinking	Zahra (1996)	Meta-construct (innovation, venturing, renewal)
Yiu, Lau, and Bruton ( 2007)	Firm-level ownership advantages (such as business and institutional ties) foster corporate entrepreneurship.	Firm/ environment	Knowledge-based view	Zahra (1996), Zahra et al. (2000)	Individual (innovation, local and international venturing, renewal)
Simsek (2007)	Risk-taking propensity and pursuit of entrepreneurial initiative mediate the relationship between CEO tenure and performance.	Top management team	Upper echelons perspective	Zahra (1996)	Meta-construct (innovation, venturing, renewal)

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Appendix 1. Key studies on the antecedents of corporate entrepreneurship (Page 2 of 3)	

Authors	Key Results	Antecedent	Theoretical Lens	Measure	Dimensions
Simsek, Veiga, and Lubatkin (2007)	Discretionary slack mediates the relationship between environmental perceptions and corporate entrepreneurship. The relationship between discretionary slack and corporate entrepreneurship is moderated by market sensing capacity.	Firm/ environment	Organizational/ agency theories	Zahra (1996)	Meta-construct (innovation, venturing, renewal)
Ling, Simsek, Lubatkin, and Veiga (2008)	CEO transactional leadership through enhancing top management team's behavioural integration, risk propensity, and decentralization affects corporate entrepreneurship.	Top management team	Leadership theory	Zahra (1996)	Meta-construct (innovation, venturing, renewal)
Yiu and Lau (2008)	Political, social, and reputational capital foster corporate entrepreneurship and relative performance.	Firm	Knowledge-based view	Zahra et al. (2000)	Individual (innovation, local and international venturing)
Simsek, Lubatkin, Veiga, and Dino (2009)	An entrepreneurial alert information system that provides relevant information in a timely and pro-active manner fosters corporate entrepreneurship.	Firm	Knowledge-based view	Zahra (1996)	Meta-construct (innovation, venturing, renewal)
Heavy, Simsek, Roche, and Kelly (2009)	Managerial uncertainty preference and environmental dynamism moderate the relationship between decision comprehensiveness and corporate entrepreneurship.	Top management team/ environment	Strategic decision- making theory	Zahra (1996)	Meta-construct (innovation, venturing, renewal)
Romero- Martinez et al. (2010)	Privatization improves corporate entrepreneurship when firms are operating in highly competitive industries.	Firm/ environment	Agency theory	Zahra (1996)	Meta-construct (innovation, venturing, renewal)
Thorgren, Wincent, and Örtqvist (2012)	Relational capital among partners through knowledge transfer promotes corporate entrepreneurship.	Firm	Knowledge-based view	Zahra (1996)	Meta-construct (innovation, venturing, renewal)
Heavey and Simsek (2013)	Top management team's size, diversity, and network size raise the level of corporate entrepreneurship.	Top management team/environ ment	Knowledge-based view	Zahra (1996)	Meta-construct (innovation, venturing, renewal)

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Appendix 1. Key studies on the antecedents	of corporate entrepreneur	ship (Page 3 of 3)

Authors	Key Results	Antecedent	Theoretical Lens	Measure	Dimensions
Burgers and Covin (2014)	Structural differentiation affects corporate entrepreneurship, moderated by environmental dynamism and firm size.	Firm	Structural contingency theory	Zahra (1996)	Meta-construct (innovation, venturing, renewal)
Wei and Ling (2015)	CEO characteristics impact corporate entrepreneurship.	Top management team	Human and social capital theories	Zahra (1996)	Meta-construct (innovation, venturing, renewal)
Turner and Pennington III, 2015)	The greater the ability, motivation, and opportunity for knowledge sharing through enhancing learning in an organizational network can enhance innovation.	Dyad/ network	Knowledge-based view	New scale	Single dimension of innovation
Glaser, Fourné, and Elfring (2015)	Top managers spanning ties increase exploratory innovation.	Top management	Social network theory	Jansen et al. (2006)	Single dimension of innovation
Nason, McKelvie, and Lumpkin (2015)	Firms of different sizes use corporate entrepreneurship for different purposes.	Firm	Resource-based view	Meta-analysis	Different dimensions (innovation, venturing, renewal)
Naldi, Achtenhagen, and Davidsson, (2015)	Different dimensions of entrepreneurial management differently affect SMEs' international venturing.	Top management/ firm	Stevenson's theory of entrepreneurial management	Zahra et al. (2000)	Single dimension of international corporate venturing.
Behrens and Patzelt (2015)	Past project failure experience, the firm's growth rate, and hierarchical level impact managers' decisions on terminating corporate entrepreneurship projects.	Top management/ firm	Attention-based view	Zahra (1996)	Corporate entrepreneurship projects (innovation, venturing, renewal)
Wang, Chung, and Lim (2015)	The alignment of CEO incentives with shareholder interests and adoption of CEO monitoring mechanisms will enhance international corporate entrepreneurship	Top management/ firm	Agency theory	New scale	Single dimension of international corporate venturing.

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