

THE INFLUENCE OF DIRECTOR HUMAN AND SOCIAL CAPITAL  
AND FIRMS' ENTREPRENEURIAL ORIENTATION  
ON CORPORATE ENTREPRENEURSHIP

A DISSERTATION IN  
Entrepreneurship and Innovation

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by  
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ABSTRACT

This dissertation explores the link between corporate governance and corporate entrepreneurship. Surprisingly, our understanding of how boards of directors influence corporate entrepreneurship decisions and actions has been limited to date. To address this gap, the current study develops a resource dependence theoretical framework to investigate how corporations leverage directors' experience and networks to enhance organizational rejuvenation efforts. Entrepreneurial orientation also is examined as a contextual factor in the director capital-corporate entrepreneurship relationship. After collecting an original dataset of 2,289 firm-year observations from 524 U.S. corporations and creating a new measure of organizational rejuvenation, I implemented a hybrid methodological approach to simultaneously test the within- and between-firm influences of the variables of interest. The analytical results demonstrate surprising reverse effects of director human capital, social capital, and the contextual influence of entrepreneurial orientation on firms' corporate entrepreneurship initiatives. These findings support prior theoretical arguments that directors serve a dual role: not only monitoring and controlling firm decisions but also serving an important advice and counsel function.

## APPROVAL PAGE

The faculty listed below, appointed by the Dean of the Henry W. Bloch School of Management, have examined a dissertation titled “The Influence of Director Human and Social Capital and Firms’ Entrepreneurial Orientation on Corporate Entrepreneurship,” presented by Andrew C. Burkemper, candidate for the Doctor of Philosophy degree, and certify that in their opinion it is worthy of acceptance.

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## CHAPTER 1

### INTRODUCTION

Does a public corporation's board of directors matter for building an entrepreneurial company? Can corporations leverage directors' experience and networks to be more entrepreneurial? Or, do directors only monitor and control executive decisions to protect shareholder interests? Too often, researchers and practitioners only consider the board's oversight function (Hillman and Dalziel, 2003; Johnson, Daily, and Ellstrand, 1996). However, directors also offer key resources through their advice and counsel role (Daily, Dalton, and Cannella, 2003; Hillman, Withers, and Collins, 2009). One aspect of corporate entrepreneurship focuses on rejuvenating internal structures and processes to improve competitive standing (Covin and Miles, 1999). This organizational rejuvenation is a large undertaking for established firms. Thus, corporations should benefit from involving directors in the decision-making process. Otherwise, firms leave potential resources on the boardroom table.

Resource dependence theory emphasizes how the board of directors links the firm to the external environment and facilitates organizational changes (Hillman, Cannella, and Paetzold, 2000). Prior research has used a resource dependence framework to investigate directors' influence on firm performance (Hillman, 2005; Martin, Gozubuyuk, and Becerra, 2015; Nicholson and Kiel, 2007); however, it has largely overlooked how directors may affect the firm's corporate entrepreneurship initiatives (Corbett, Covin, O'Connor, and Tucci, 2013; Phan, Wright, Ucbasaran, and

Tan, 2009). Additional exploration of the corporate governance-corporate entrepreneurship link can uncover important nuances in board composition and corporate entrepreneurial efforts. I investigate this link by focusing on director capital and organizational rejuvenation.

Organizational rejuvenation focuses on internal corporate entrepreneurship (Covin and Miles, 1999). Decision-makers assess and revamp the inner-workings of the corporation to make it more flexible and entrepreneurial. This internal innovation of processes, structures, and capabilities can improve business strategy execution and lead to better competitive standing and performance (Covin and Miles, 1999). Firms implement organizational rejuvenation by altering major aspects of internal operations to deliver on existing corporate strategies (Dess, Ireland, Zahra, Floyd, Janney, and Lane, 2003). In this dissertation, I argue that director human capital and social capital have a meaningful influence on the firm's organizational rejuvenation decisions. Director human capital includes the experiences and skills that board members bring to the decision-making process (Johnson, Schnatterly, and Hill, 2013). Director social capital refers to board members' social relationships – including ties to other firms, personal relationships with corporate leaders, and social standing – that affect the decision-making process (Johnson et al., 2013). For public corporations, directors are charged to bring their experiences and connections to the boardroom to discuss and influence corporate decisions. Organizational rejuvenation can be one of these important decisions from which the corporation benefits by including directors in the discussion.

The investigation of these specific variables contributes to the broader corporate entrepreneurship and corporate governance research areas. First, prior researchers divide corporate entrepreneurship into the two primary domains of corporate venturing and strategic entrepreneurship (Morris, Kuratko, and Covin, 2010). Corporate venturing includes the creation, addition, or investment in new businesses; strategic entrepreneurship focuses on large-scale corporate innovations that facilitate a sustainable competitive advantage over the long-term (Kuratko and Audretsch, 2013). Organizational rejuvenation is one of the five constructs of strategic entrepreneurship (the remaining four constructs are sustained regeneration, strategic renewal, domain redefinition, and business model reconstruction) (Morris, Kuratko, and Covin, 2007). Of these five, organizational rejuvenation is the sole construct that focuses on internal innovations. Prior research has largely addressed the external constructs, particularly strategic renewal (Agarwal and Helfat, 2009), so a deeper dive into organizational rejuvenation can provide a strong contribution to the corporate entrepreneurship literature.

Second, prior researchers divide corporate governance into the four predominant streams of agency theory, stewardship theory, stakeholder theory, and resource dependence theory (Daily et al., 2003; Nicholson and Kiel, 2007). Agency theory addresses the conflicting interests of shareholders and managers resulting from the separation of ownership and control. Thus, the primary role of the board is to monitor managers' actions and decisions to protect shareholder interests (Daily et al., 2003; Shleifer and Vishny, 1997). Stewardship theory, on the other hand, frames directors and

managers as stewards whose motives are aligned with those of shareholders (Davis, Schoorman, and Donaldson, 1997). In this view, directors and managers understand that serving shareholders' interests also serves their own interests (Daily et al., 2003). Next, stakeholder theory focuses on the nature of the corporation's relationships with many constituent groups and how these relationships affect managerial decision making (Donaldson and Preston, 1995; Freeman, 1984; Jones and Wicks, 1999). In this view, no particular stakeholder group is predominant over other stakeholders, instead positing that the interests of all stakeholder groups have intrinsic value (Jones and Wicks, 1999). Finally, resource dependence theory posits that directors provide access to resources that the firm requires (Daily et al., 2003; Pfeffer and Salancik, 1978). Thus, directors influence the firm's decision-making process through the resources that they bring to bear. Director human capital and social capital are two of these resources provided by board members. Prior corporate governance research has largely addressed director demographics, board size, board independence, and CEO duality through agency, stewardship, and stakeholder theoretical frameworks (Daily et al., 2003) but has lacked attention to resource dependence theory. Therefore, a closer look at director human and social capital using a resource dependence framework can provide a meaningful contribution to the corporate governance literature.

Why is it important to investigate the link between corporate governance and corporate entrepreneurship? Currently, there is a gap in understanding how the firm's corporate governance and structure choices can affect the implementation of corporate entrepreneurship initiatives (Corbett et al., 2013). "Scholarly investigation of how

organizations can attract, cultivate, and manage human capital in a way that allows for continuous corporate entrepreneurship efforts within the corporation” is an important area for future research (Corbett et al., 2013). Phan et al. (2009) agree that the link between corporate governance and corporate entrepreneurship has lacked examination by prior studies, calling for a better understanding of how the composition of boards of directors and the role of outside directors can enable corporate entrepreneurial efforts. Further, it has been suggested that future research pertaining to corporate entrepreneurship should focus less on tangible assets such as physical, financial, and labor resources – areas that have already received a great deal of attention – and instead should focus more on intangible assets such as human, social, and intellectual capital (Dess et al., 2003).

Given these calls to advance our understanding of the link between corporate governance and corporate entrepreneurship, this dissertation argues for the importance of director human and social capital in fostering organizational rejuvenation within the organization. It also investigates how entrepreneurial orientation serves as an important contextual factor. Entrepreneurial orientation – previously defined as an organization’s processes, practices, and decision-making activities that lead to new entry (Lumpkin and Dess, 1996) and that capture a firm’s commitment to innovation, proactiveness, and risk taking (Zahra and Neubaum, 1998) – has been shown to result from the behaviors and attitudes of individuals and organizations (Anderson, Kreiser, Kuratko, Hornsby, and Eshima, 2015) and also has been argued as an important stimulant to effective corporate entrepreneurship (Dess and Lumpkin, 2005). Thus, prior research has provided initial



evidence of the contextual role that entrepreneurial orientation plays in the relationship between corporate governance and corporate entrepreneurship. The following research question serves as the motivation for this dissertation:

*What is the role of director human and social capital in facilitating organizational rejuvenation and how does the entrepreneurial orientation of the firm moderate this relationship?*

### **A Practical Example**

Before moving on to the next chapter, a practical example from a major corporation highlights this link between corporate governance and corporate entrepreneurship. Recent decisions made at Microsoft Corporation present a relevant case study. It is clear that large, entrepreneurial corporations (e.g., Google, Apple, Amazon, Samsung) have emerged as ruthless competitors in recent years while Microsoft has continued to miss many short-term opportunities and has struggled to improve its rate of innovation (Kempin, 2013). Some argue that Microsoft's difficulties have occurred, in part, due to its board of directors being dominated by founders and seasoned company executives who have focused more on financial and procedural issues than long-term strategy and innovation (Kempin, 2013). To truly turn the firm around, it has been suggested that "Microsoft's shareholders need to overhaul their board and elect directors with technology foresight who will force the changes needed in the company's senior leadership team" (Kempin, 2013). In 2014, the firm did just that (Keizer, 2014).

The first major change occurred in early 2014 when Satya Nadella, a 22-year veteran of the company, replaced Steve Ballmer as Chief Executive Officer of Microsoft Corporation, concurrent with Bill Gates stepping down as the Chairman of the Board and becoming a regular director. The 2014 Board of Directors Letter to Shareholders discussed the CEO role as “demanding, requiring mastery of complex, rapidly evolving business models and the ability to lead a highly technical organization... into its next chapter of innovation and growth” (Microsoft, 2014). Further, the letter discussed how the firm “regularly adds directors to infuse new ideas and fresh perspectives in the boardroom... to create a balanced Board with diverse viewpoints, deep expertise, and a strong technology-specific knowledge base” (Microsoft, 2014).

Nadella immediately focused on overhauling the current board of directors, creating the biggest change to the board since Microsoft went public in 1986 (Keizer, 2014). Four well-established directors who were on the board when Nadella was named the new CEO departed Microsoft by the end of the year, making room for five new directors (including Nadella). Fifty percent of the board turned over in less than one year. The new directors included the Chief Executive Officer of Visa, the Chief Financial Officer of Kraft Foods Group, the President of ValueAct Capital, and a global wireless industry pioneer. Nadella targeted these individuals for their global commerce and enterprise technology expertise, financial and operational experience, investment expertise, and deep experience in the consumer, retail, and mobile communications industries (Microsoft, 2014). The board overhaul clearly was made to reorient the organization’s strategy toward entrepreneurial and innovative actions. “The moves are

intended to reinvigorate growth at a company that's struggled to adapt to the rise of mobile devices, away from the shrinking personal computing arena" (Jinks and Bass, 2014). These dramatic changes at Microsoft Corporation provide just one example of the critical role that directors can have in creating a more entrepreneurial and innovative environment and stronger focus on corporate entrepreneurship. The remainder of this dissertation is structured as follows:

Chapter 2 provides the theoretical development for the relationship between director capital, entrepreneurial orientation, and organizational rejuvenation and also introduces the model and hypotheses of the dissertation. Chapter 3 transitions to the research method, providing information on the sample, data collection, and measures for the dependent and predictor variables. Chapter 4 highlights the model specification and results of the empirical testing. Finally, Chapter 5 provides a broader discussion of the results, implications for theory and practice, limitations of the current study, and suggestions for future research.

## CHAPTER 2

### THEORETICAL DEVELOPMENT

#### **Introduction**

This chapter advances the theoretical justification for the relationship between director capital, entrepreneurial orientation, and organizational rejuvenation. It begins by highlighting the importance of corporate entrepreneurship and then transitions to the antecedents and outcomes of corporate entrepreneurship. After laying this groundwork, the next section discusses the two domains of corporate entrepreneurship: corporate venturing and strategic entrepreneurship. Organizational rejuvenation fits in the strategic entrepreneurship domain, and I devote the following section to it. The next section discusses how director human and social capital fit with corporate entrepreneurship. I then develop resource dependence theory as an appropriate theoretical framework for the relationships of interest. The final sections discuss the relationships between variables and offer the hypotheses to be tested in subsequent stages.

#### **Importance of Corporate Entrepreneurship**

“Entrepreneurial thinking and acting is changing the way business is conducted at every level... Companies cannot be static – they must continually adjust, adapt, and redefine themselves” (Morris et al., 2010, p. 3). Indeed, entrepreneurship and innovation – from new start-ups and established corporations alike – remain the driving forces for

the United States economy and countries all over the world (Marcus and Dent, 2015). During the 21st century in particular, corporate entrepreneurship has become critical for established companies to combat problems related to rapid growth in the number of new competitors, ineffective traditional management approaches, the departure of top employees for more innovative roles, and issues with productivity and efficiency (Kuratko, 2013). Corporate entrepreneurs have been acknowledged as important drivers of organizational performance by recognizing opportunities, developing a team, bringing together resources, and creating something valuable (Brush, 2014).

Corporate entrepreneurship has been identified as a critical factor for high levels of organizational performance (Covin, Slevin, and Heeley, 2000; Hornsby, Kuratko, Shepherd, and Bott, 2009; Kuratko, Montagno, and Hornsby, 1990; Zahra, 1991; Zahra and Covin, 1995). Established organizations can leverage a corporate entrepreneurship strategy to maintain a competitive advantage over rival firms (Corbett et al., 2013; Covin and Kuratko, 2010; Ireland, Hitt, and Sirmon, 2003) by rejuvenating, renewing, and redefining organizations, markets, and industries (Covin and Miles, 1999). By diversifying inputs and outputs through internal development, firms focus on piecing together new resource combinations to extend their competencies and to pursue new opportunities (Burgelman, 1983). This commitment to creating new business opportunities through product innovation, process innovation, market developments, and strategic renewal improves firms' competitive standing and financial performance (Zahra, 1991).

## **Antecedents and Outcomes of Corporate Entrepreneurship**

Previous literature has provided a wealth of frameworks for the antecedents and outcomes of corporate entrepreneurship. The construct has been investigated at length as both an independent and dependent variable in the literature, allowing for multiple testing scenarios in which corporate entrepreneurship either influences key variables or is influenced by other variables. In perhaps the most complete summation to date, Ireland, Covin, and Kuratko (2009) synthesized three decades of prior research, including nine theoretical models, in their conceptualization of corporate entrepreneurship strategy. This model incorporates the antecedents, elements, and outcomes of corporate entrepreneurship strategy. The antecedents include external environmental conditions and individual entrepreneurial cognitions. The elements consist of an entrepreneurial strategic vision, a pro-entrepreneurship organizational architecture, and entrepreneurial processes and behavior. Important outcomes include competitive capability and strategic repositioning. This article provides an excellent jumping-off point for future research efforts focused on corporate entrepreneurship.

Hitt, Ireland, Sirmon, and Trahms (2011) provided a similar input-process-output model specific to strategic entrepreneurship, piecing together the resource inputs, orchestration processes, and multilevel outcomes that are central components of the strategic entrepreneurship construct. The authors state that strategic entrepreneurship helps firms to “create and sustain a competitive advantage while simultaneously identifying and exploiting new opportunities” (Hitt et al., 2011, p. 57). The inputs of the model include environmental factors, organizational resources, and individual resources.

The orchestration processes consist of structuring, bundling, leveraging, and value creation and appropriation. Important outputs include value creation for customers, competitive advantage, wealth creation, and benefits for individuals, the organization, and society.

A final noteworthy review of the antecedents and outcomes of corporate entrepreneurship was provided by Zahra, Randerson, and Fayolle (2013), in which they discussed the evolution and contributions of prior literature. Important antecedents to corporate entrepreneurship include national cultures (Hayton, George, and Zahra, 2002), industry conditions (Zahra, 1991, 1993, 1996a), organizational structure (Covin and Slevin, 1988; Zahra, 1991), organizational culture (Zahra, 1991), incentives (Zahra, 1991), managerial systems (Zahra, 1991), and firm ownership (Zahra, 1996a). Other internal organizational factors that influence corporate entrepreneurship activity include management support, work discretion, rewards and reinforcement, time availability, and organizational boundaries (Hornsby, Kuratko, and Zahra, 2002). On the other side, critical outcomes of corporate entrepreneurship include competitive advantage, organizational performance, profitability and growth (Zahra, 1991, 1993, 1996b), organizational learning (Yang, Narayanan, and Zahra, 2009), knowledge creation (Dushnitsky and Shaver, 2009), and the development of capabilities (Sapienza, Autio, George, and Zahra, 2006; Yiu, Lau, & Bruton, 2007; Zahra, Nielsen, and Bogner, 1999). Now that I have highlighted where corporate entrepreneurship fits in the larger theoretical framework, I will discuss the two distinct domains of corporate entrepreneurship.

## **The Two Domains of Corporate Entrepreneurship**

Various definitions of corporate entrepreneurship have been suggested in the literature over the years (see Table 1). Initial conceptualizations of corporate entrepreneurship included two distinct phenomena: corporate venturing and strategic renewal. Corporate venturing creates new businesses within established organizations, whereas strategic renewal enacts significant changes to organizations' strategies or structures (Guth and Ginsberg, 1990; Sharma and Chrisman, 1999). Morris et al. (2010) more recently built upon these phenomena by proposing two primary domains of corporate entrepreneurship: (1) corporate venturing and (2) strategic entrepreneurship.

### *Corporate Venturing Domain*

Corporate venturing involves the creation, addition, or investment in new businesses (Kuratko and Audretsch, 2013; Morris et al., 2010) and is divided into three primary methods. Internal corporate venturing is an approach in which new businesses are created and owned by the corporation, and these new businesses may either be included within the current corporate structure or be housed outside of the corporation as semi-autonomous units. External corporate venturing occurs when the corporation invests in or acquires new businesses outside of the current company. Often, these new businesses are young start-ups or early growth-stage firms that compete directly with the corporation or add valuable talent and resources to the established organization. The third method, cooperative corporate venturing, occurs when new businesses are jointly



created and owned by the corporation along with external partners or companies. All three of these methods focus on new business creation.

Table 1. Prior definitions of corporate entrepreneurship

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|                         |  |
|-------------------------|--|
| Burgelman, 1983         | “The process whereby firms engage in diversification through internal development. Such diversification requires new resource combinations to extend the firm’s activities in areas unrelated, or marginally related, to its current domain of competence and corresponding opportunity set” (p. 1349).  |
| Guth and Ginsberg, 1990 | “Corporate entrepreneurship encompasses two types of phenomena and the processes surrounding them: (1) the birth of new businesses within existing organizations, i.e. internal innovation or venturing; and (2) the transformation of organizations through renewal of the key ideas on which they are built, i.e. strategic renewal” (p. 5).   |
| Zahra, 1991             | “Corporate entrepreneurship refers to formal and informal activities aimed at creating new business in established companies through product and process innovations and market developments. These activities may take place at the corporate, division (business), functional, or project levels, with the unifying objective of improving a company’s competitive position and financial performance. Corporate entrepreneurship also entails the strategic renewal of an existing business.” (p. 262). |
| Covin and Miles, 1999   | “Corporate entrepreneurship is engaged in to increase competitiveness through efforts aimed at the rejuvenation, renewal, and redefinition of organizations, their markets, or industries. Corporate entrepreneurship revitalizes, reinvigorates, and reinvents. It is the spark and catalyst that is intended to place firms on the path to competitive superiority or keep them in competitively advantageous positions” (p. 50).  |

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| Sharma and<br>Chrisman, 1999                 | “Corporate entrepreneurship is the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization... Strategic renewal refers to the corporate entrepreneurial efforts that result in significant changes to an organization's business or corporate level strategy or structure... Corporate venturing refers to corporate entrepreneurial efforts that lead to the creation of new business organizations within the corporate organization” (p. 18-19).                 |
| Zahra, Neubaum,<br>and Huse, 2000            | “CE, the sum of a company’s venturing and innovation activities (Guth & Ginsberg, 1990), can help the firm acquire new capabilities (Stopford & Baden-Fuller, 1994) and improve its performance (Lumpkin & Dess, 1996)” (p. 947).  |
| Ireland, Covin, and<br>Kuratko, 2009         | “We define CE strategy as a vision-directed, organization-wide reliance on entrepreneurial behavior that purposefully and continuously rejuvenates the organization and shapes the scope of its operations through the recognition and exploitation of entrepreneurial opportunity” (p. 21).   |
| Phan, Wright,<br>Ucbasaran, and Tan,<br>2009 | “Corporate entrepreneurship (CE) refers to the process of organizational renewal and relates to two distinct but related phenomena (Guth and Ginsberg, 1990). First is innovation and corporate venturing (CV) activities... Second, CE embodies renewal activities that enhance a corporation’s ability to compete and take risks, which may or may not involve the addition of new businesses to a corporation... It may involve strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation, and business model reconstruction (Covin and Miles, 1999)” (p. 198-199). |

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*Strategic Entrepreneurship Domain*

Strategic entrepreneurship, on the other hand, focuses on “organizationally consequential innovations that are adopted in the pursuit of competitive advantage” (Kuratko and Audretsch, 2013). It takes a broader approach than new business creation,

focusing instead on large-scale innovations inside and outside the firm that enhance organizational performance over the long-term. This domain is comprised of five constructs: (1) sustained regeneration, (2) organizational rejuvenation, (3) strategic renewal, (4) domain redefinition, and (5) business model reconstruction. The first four constructs were proposed by Covin and Miles (1999) as the forms of corporate entrepreneurship, and business model reconstruction has since been proposed as the fifth construct of strategic entrepreneurship (Morris et al., 2007). Table 2 provides a summary of these five constructs of strategic entrepreneurship.

Table 2. The five constructs of strategic entrepreneurship (Covin and Miles, 1999; Morris, Kuratko, and Covin, 2007)

| <b>Construct</b>               | <b>Key Goals and Attributes</b>   | <b>Basis for Competitive Advantage</b>  |
|--------------------------------|---|---|
| 1. Sustained regeneration      | <i>Focus: new products or new markets.</i> Regularly and continuously introduce new products and services or enter new markets. Embrace change and willingly challenge competitors in battles for market share. | Capitalizes on latent or under-exploited market opportunities using the firm's valued innovation-producing competencies.      |
| 2. Organizational rejuvenation | <i>Focus: the organization.</i> Sustain or improve competitive standing by altering internal processes, structures, or capabilities. The focus and target of innovation is the organization itself.             | Creates value for the firm's customers and sustains/improves the firm's ability to effectively implement its chosen strategy. |

| <b>Construct</b>                 | <b>Key Goals and Attributes</b>  | <b>Basis for Competitive Advantage</b>   |
|----------------------------------|--|--|
| 3. Strategic renewal             | <i>Focus: environmental context and strategy.</i> Redefine the organization's relationship with its markets or industry competitors by fundamentally altering how it competes. The focal point is the firm within its environmental context. New business strategies differ significantly from past practices. | Better leverages the firm's resources or more fully exploits available product-market opportunities. Deliberate and major repositioning actions energize the firm and redefine its competitive strategy and industry position. |
| 4. Domain redefinition           | <i>Focus: creation and exploitation.</i> Proactively create a new product-market arena that others have not recognized or actively sought to exploit.  | Takes the competition to a new arena where the organization's first or early mover status could create a sustainable competitive advantage.  |
| 5. Business model reconstruction | <i>Focus: core business models.</i> Redesign core business models to differentiate the firm from competitors in the industry.  | Reassesses current capabilities and revamps the value proposition for customers.   |

Sustained regeneration focuses on regularly introducing new products or services and entering new markets to exploit under-developed market opportunities (Covin and Miles, 1999). Firms employing an approach of sustained regeneration tend to support innovation, embrace change, and challenge competing firms for market share. One of the main goals of sustained regeneration is to gain a competitive advantage in existing markets – either a firm's current market or an existing market new to the firm – by quickly learning and adapting to the market and the organization's competitors (Dess et al., 2003).

Strategic renewal involves a fundamental alteration of how the organization competes and how it interacts with industry competitors and markets (Covin and Miles,

1999). Firms focused on strategic renewal tend to develop new business strategies significantly different from past practices, take deliberate repositioning actions, and leverage the firm's resources differently or more fully to exploit other product-market opportunities. One of the main goals of strategic renewal is to revitalize the firm by creating strategies that align the organization with its external environment (Covin and Miles, 1999) and by repositioning itself to exploit current competitive advantages while exploring for new advantages for future success (Dess et al., 2003; Ireland, Hitt, and Vaidyanath, 2002).

Domain redefinition focuses on proactively creating a new product-market arena that others have not yet recognized or sought to exploit (Covin and Miles, 1999). Firms employing an approach of domain redefinition tend to exploit market opportunities in a preemptive fashion, create the early structure of an industry, and completely redefine how the competitive process will unfold. One of the main goals of domain redefinition is to establish first mover advantages by exploring what is possible versus exploiting what is already available (Dess et al., 2003).

Business model reconstruction involves the redesign of a firm's core business models to make operations more efficient or to differentiate the organization from competitors in the industry (Kuratko and Audretsch, 2009). Firms focused on business model reconstruction tend to reassess their current capabilities and how they might revamp the value proposition for their customers (Miles, Munilla, and Darroch, 2009). One of the main goals of business model reconstruction is to focus on who the true

customers are, what they value, and how value can be delivered at reasonable costs (Kuratko and Audretsch, 2009; Magretta, 2002).

The next section discusses the strategic entrepreneurship variable of interest for this dissertation, organizational rejuvenation.

### **Organizational Rejuvenation**

I define organizational rejuvenation as the firm's ongoing changes to internal structures, processes, and capabilities to improve strategy execution (Covin and Miles, 1999; Dess et al., 2003; Kuratko and Audretsch, 2009). One of the main goals of organizational rejuvenation is to become more entrepreneurial through processes and structures by implementing internal and administrative innovations rather than external product or service innovations (Dess et al., 2003). The target of innovation is the organization itself (Covin and Miles, 1999). This makes organizational rejuvenation unique from the other constructs of strategic entrepreneurship, which focus on entrepreneurial efforts external to the firm. Corporations do not need to completely overhaul their firm-level strategies, markets pursued, or product lines in order to be entrepreneurial (Kuratko and Audretsch, 2009). Rather, implementing changes to internal business structures or major aspects of operations within the firm can facilitate strategy execution and improve competitive standing (Dess et al., 2003). Firms also pursue organizational rejuvenation by reallocating internal resources and reconfiguring the firm's value chain (Covin and Miles, 1999). It can involve a fundamental redesign of the entire corporation, major restructuring efforts, or administrative innovations that

improve organizational flexibility, efficiency, or communication across units (Kuratko and Audretsch, 2009). Firms employing organizational rejuvenation introduce new process innovations to create and exploit opportunities (Kreiser and Davis, 2009; Stopford & Baden-Fuller, 1990). Organizational rejuvenation can stem from intended or emergent change, minor or complete rearrangement of organizational structure, and top-down or bottom-up initiation (Adenfelt and Lagerstrom, 2006). Table 3 provides examples of organizational rejuvenation efforts that firms can implement when altering their internal structures, processes, and capabilities. The following section highlights how directors influence corporate entrepreneurship decision-making as a result of their human and social capital.

Table 3. Examples of organizational rejuvenation

|                     |  |
|---------------------|--|
| Internal Structures | <ul style="list-style-type: none"> <li>• Realign or create new business segments/divisions (Adenfelt and Lagerstrom, 2006; Kuratko and Audretsch, 2009).</li> <li>• Reconfigure the firm's internal value chain (Covin and Miles, 1999; Dess et al., 2003).</li> <li>• Formalize cross-functional teams to facilitate problem solving and communication (Kuratko and Audretsch, 2009).</li> <li>• Introduce a flatter organizational chart to improve communication to and from the top.</li> <li>• Reallocate internal resources to remain flexible (Covin and Miles, 1999).</li> <li>• Implement a lean workforce through remote working arrangements, flexible schedules, or contract positions.</li> </ul> |
| Internal Processes  | <ul style="list-style-type: none"> <li>• Reevaluate and change a major aspect of internal operations (Covin and Miles, 1999; Dess et al., 2003).</li> <li>• Create formal and informal networking opportunities to share ideas across units (Kuratko and Audretsch, 2009).</li> </ul>  |

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|                       |   |
|-----------------------|---|
| Internal Capabilities | <ul style="list-style-type: none"> <li>• Articulate connection between individual job functions and firm-level strategies.</li> <li>• Recognize and reward employees for innovative process improvements.</li> <li>• Align employee performance incentives with desired organizational outcomes.</li> <li>• Formalize employee goal-setting and performance evaluations.</li> <li>• Develop workforce skills through formal training and mentoring programs.</li> <li>• Revamp human resource practices to facilitate continuous growth and development for employees (Covin and Miles, 1999; Dess et al., 2003).</li> <li>• Formalize cross-training opportunities to teach new skill-sets to employees.</li> <li>• Implement new information technology systems (Covin and Miles, 1999).</li> <li>• Improve inventory and distribution systems (Dess et al., 2003).</li> <li>• Seek employee input on how to execute existing firm strategies.</li> </ul> |
|-----------------------|---|

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### **Director Human Capital, Social Capital, and Corporate Entrepreneurship**

Research to date has generally ignored the role that the board of directors plays in promoting corporate entrepreneurship efforts within the organization (Corbett et al., 2013; Phan et al., 2009). Prior research has investigated the role of multiple levels within the corporation – including individuals, middle managers, top management teams, and chief executive officers – in fostering an entrepreneurial approach, but it has lacked a specific focus on how directors help to set the tone for corporate entrepreneurship. This is a surprising literature gap given how central directors are in the strategic planning and decision-making processes of the firm, and according to Forbes and



Milliken (1999, p. 502), “understanding the nature of effective board functioning is among the most important areas of management research on the horizon”.

Why do directors matter for corporate entrepreneurship? In short, directors serve as valuable resources to organizations that are focused on implementing corporate entrepreneurship practices, bringing to bear their previous industry expertise, entrepreneurial experience, and personal relationships, among many other human and social capital resources. I define director human capital as “the skills and experiences that individual directors bring to the decision-making process” (Johnson et al., 2013, p. 240) and director social capital as the ties to external organizations and network connections that individual directors bring to the decision-making process (Johnson, Schnatterly, Bolton, and Tuggle, 2011). This human capital and social capital of directors can be leveraged by the corporation to identify new opportunities, enhance firm performance, and develop competitive advantages over time (Ireland et al., 2003). The board of directors sets the stage for how the organization will be led and provides the framework for the decision-making process. This group of decision makers, though small in size, has a large impact on setting the short- and long-term strategies for continued growth. More specifically, directors guide and encourage the senior management team to enable corporate entrepreneurship through sustained regeneration, organizational rejuvenation, strategic renewal, domain redefinition, and business model reconstruction. To return to the earlier example, Microsoft’s investor relations website states that “good corporate governance encourages accountability and transparency, and promotes good decision-making to support our business over decades”

(microsoft.com/investor, 2015). The organization's corporate governance guidelines underscore the critical role that board members serve in establishing organizational objectives, overseeing business affairs and integrity, and working with management to determine the firm's mission and long-term strategy (Microsoft Corporate Governance Guidelines, 2015).

In essence, these directors are valuable resources for the firm, and resource dependence theory provides an appropriate lens for evaluating the relationship between corporate governance and corporate entrepreneurship (Hillman and Dalziel, 2003). "Resource dependence theory asserts that as a firm's external environment changes, so does the need for linkages with that environment. Therefore, the composition of the board may be strategically altered in order to provide the benefits of reduced uncertainty for firms in a different environment *and* to facilitate strategic change" (Hillman et al., 2000, p. 242). Microsoft's drastic overhaul of its board of directors in 2014 is a practical illustration of the important role that directors – as resources for the firm – play in facilitating change and corporate entrepreneurship efforts within the organization. The following section introduces the resource dependence theoretical framework.

### **Resource Dependence Theory**

"Boards of directors serve two important functions for organizations: monitoring management on behalf of shareholders and providing resources" (Hillman and Dalziel, 2003, p. 383). Prior literature has investigated these board functions through two separate theoretical frameworks: agency theory and resource dependence theory.

Agency theory considers the conflicts of interest that arise in organizations due to the separation of ownership and control (Hillman and Dalziel, 2003; Jensen and Meckling, 1976). Thus, a primary role of directors is to monitor the actions and decisions of managers to protect the interests of shareholders. Resource dependence theory, on the other hand, focuses on the board of directors as a provider of resources for the firm (Hillman and Dalziel, 2003; Pfeffer and Salancik, 1978), primarily by leveraging the directors' human and social capital to influence firm strategy, decisions, and performance.

Even though agency theory has been the predominant theoretical framework for corporate governance to date, resource dependence theory provides an equally important perspective of the primary functions of corporate boards. In fact, empirical evidence actually suggests that resource dependence theory is a more successful lens for understanding boards than agency theory (Hillman et al., 2009). "In future research scholars may yield more productive results by focusing on the assistance directors provide in bringing valued resources to the firm and in serving as a source of advice and counsel for CEOs" (Daily et al., 2003, p. 375) instead of focusing on directors' monitoring and control function. In particular, additional studies are needed to disentangle the types of human and social capital on boards that matter for organizational performance and competitive advantage (Hillman et al., 2009). Table 4 provides some examples of how corporate governance definitions have evolved over time, more recently placing a stronger focus on resource dependence theory. Based on

these calls for further research, this study implements a resource dependence theoretical framework to investigate the influence of board capital on corporate entrepreneurship.

Table 4. Prior definitions of corporate governance

|  |  |
|--|--|
| Donaldson, 1990  | “Corporate governance is the structure whereby managers at the organizational apex are controlled through the board of directors, its associated structures, executive incentive, and other schemes of monitoring and bonding” (p. 376).   |
| Shleifer and Vishny, 1997                              | “Our perspective on corporate governance is a straightforward agency perspective, sometimes referred to as separation of ownership and control. We want to know how investors get the managers to give them back their money” (p. 738).  |
| La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 2000 | “Corporate governance is, to a large extent, a set of mechanisms through which outside investors protect themselves against expropriation by the insiders” (p. 4).   |
| Daily, Dalton, and Cannella, 2003                      | “We define governance as the determination of the broad uses to which organizational resources will be deployed and the resolution of conflicts among the myriad participants in organizations. This definition stands in some contrast to the many decades of governance research, in which researchers have focused primarily on the control of executive self-interest and the protection of shareholder interests in settings where organizational ownership and control are separated.” (p. 371). |
| Aguilera and Jackson, 2010                             | “Corporate governance may be defined broadly as the study of power and influence over decision making within the corporation” (p. 487).  |
| Tihanyi, Graffin, and George, 2014                     | “Corporate governance is the system by which companies are directed and controlled... [the] leadership systems, managerial control protocols, property rights, decision rights, and other practices that give organizations their authority and mandates for action” (p. 1535).  |

Resource dependence theory posits that the board of directors helps to reduce uncertainty by connecting the organization with its external environment (Hillman et al., 2000; Pfeffer and Salancik, 1978). The board serves as the link between the organization and the critical resources needed to enhance performance (Nicholson and Kiel, 2007; Pfeffer, 1973). This provision of resources function aids the firm in several ways, such as strengthening legitimacy, providing expertise, offering advice and counsel, connecting the firm to outside stakeholders and relationships, and helping with firm strategy and decision-making (Hillman and Dalziel, 2003). Directors' ability to bring these resources to bear stems from their human and social capital (Hillman, Nicholson, and Shropshire, 2008). "The primary antecedent of the board's provision of resources examined in previous literature is board capital... [which includes] directors' expertise, experience, knowledge, reputation, and skills" (Hillman and Dalziel, 2003, p. 386) as well as directors' social ties to external organizations and networks of relationships (Hillman and Dalziel, 2003). As a result, prior scholars have modeled resource dependence theory in the following temporal path: board capital, provision of resources for the firm, and firm performance.

A strong link between resource dependence theory and strategic entrepreneurship has already been established in the literature. Ireland et al. (2003) discussed three critical resources for engaging in strategic entrepreneurship: financial capital, human capital, and social capital. Financial capital is a tangible asset whereas human and social capital are intangible assets. Dess et al. (2003) noted the prevalence of previous research on tangible assets and the importance of future research efforts on intangible assets like

human and social capital. This study investigates the role of director human capital and social capital, drawing upon an excellent review of the board composition literature by Johnson et al. (2013). “Human capital characteristics are the skills and experiences that individual directors bring to the decision-making process... Such experiences affect what directors pay attention to and how they frame decisions” (Johnson et al., 2013, p. 240). The most commonly used human capital variables in the literature to date are industry experience, CEO experience, venture capital experience, financial expertise, human capital heterogeneity, and organizational tenure (Johnson et al., 2013). In addition to human capital, “directors’ social relationships affect how both individual directors and the board as a whole function. Broadly, social capital can be divided into three types: directors’ ties to other firms, personal relationships with firm managers, or social standing” (Johnson et al., 2013, p. 243). The most commonly used social capital variables in the literature to date are director interlocks, board seats held, external directorships, affiliated directors with business ties, appointed directors, degrees from elite educational institutions, and other social standing variables such as status, prestige, stigma, and reputation (Johnson et al., 2013). The following sections build on previous literature and argue for the relationships between director capital, entrepreneurial orientation, and organizational rejuvenation. Figure 1 presents the model of studied relationships.

## The Relationship between Director Capital and Organizational Rejuvenation

### *Director Human Capital*

As noted before, director human capital stems from “the skills and experiences that individual directors bring to the decision-making process” (Johnson et al., 2013, p. 240). Prior research has linked director human capital with the provision of resources and subsequent firm performance (Hillman and Dalziel, 2003). Director human capital also predicts the strategies, structures, and policies recommended and supported by the board (Dalziel, Gentry, and Bowerman, 2011). This suggests that directors’ knowledge, skills, and experience can directly or indirectly affect firm-level decisions regarding internal innovative changes.

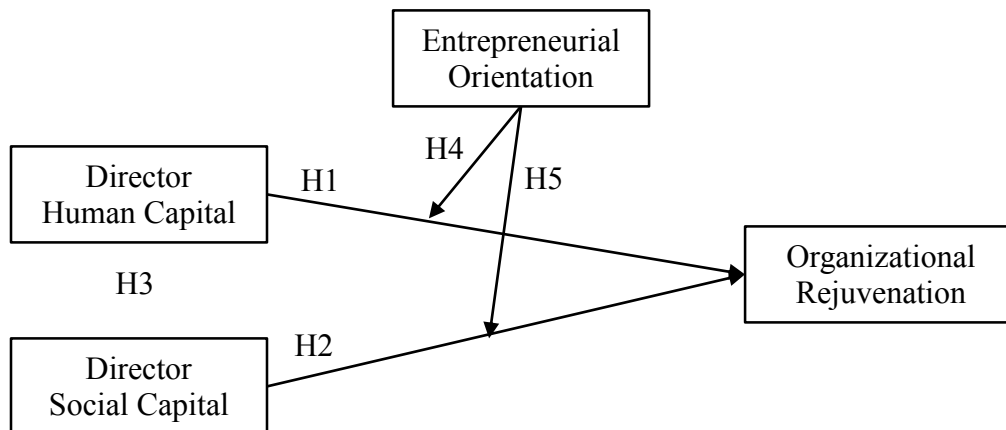


Figure 1. Model of studied relationships

In this study, I focus on whether a director is or has been a CEO. Directors with CEO experience rely on this role-specific expertise and knowledge to influence the focal

firm's decision-making process (Stevenson and Radin, 2009). These directors understand all of the factors that must be considered when altering internal business structures and processes to enhance competitive standing. For instance, directors who have served as CEOs likely have realigned their organizations' divisions or departments to become more flexible or have created cross-functional teams to identify organizational process improvements. In addition, CEOs have the unique opportunity to consider recommendations from several stakeholders before having to make the final decision on how to move forward. This final decision authority prepares CEOs to make meaningful contributions as directors on other boards. Johnson et al. (2013) argue that directors' experiences and skills affect their cognitions and decisions. Directors with CEO experience have a broader view of the total organization than those without that experience. Thus, they may be better equipped to see the value in altering internal structures and processes to create a more entrepreneurial firm.

Organizational rejuvenation focuses on altering three internal aspects of the firm: its structure, processes, and capabilities (Covin and Miles, 1999). For this study, I focus on the structural aspect. Directors participate in firm decision-making at a strategic level and rarely get involved with the small or tactical decisions made throughout the organization. Thus, directors likely will have stronger influence on decisions regarding the firm's internal structure than its processes or capabilities because the structure of the firm has a more strategic impact for the entire organization. In particular, directors who have served as CEOs likely have experience with realigning the structure of their firms to improve competitive standing. This previous experience contributes to the decision-



making process at the focal firm and influences how the corporation alters its internal structure. Therefore, I hypothesize:

*Hypothesis 1: Higher levels of director CEO experience (human capital) lead to higher levels of organizational rejuvenation within the firm.*

### *Director Social Capital*

As noted before, director social capital includes the ties to external organizations and network connections that individual directors bring to the decision-making process (Johnson et al., 2011). Prior research has demonstrated that social capital affects the advice and counsel offered by directors (Carpenter and Westphal, 2001; Westphal, 1999) and also influences decision-making (Johnson et al., 2013; Oh, Labianca, and Chung, 2006). In particular, “directors’ social capital is a conduit for the flow of resources, information, and advice both into and out of the organization” (Johnson et al., 2013, p. 245-246). Directors’ ties to external firms can bring new ideas to the focal organization (Johnson et al., 2013), provide channels of communication (Burt, 1980; Haunschild and Beckman, 1998), and access to other important resources (Boeker and Goodstein, 1991; Hillman et al., 2008; Mizruchi and Stearns, 1994; Pfeffer, 1972).

In this study, I focus on directors with concurrent board memberships at other organizations, also known as director interlocks. Directors who serve on at least two boards at the same time “may develop beliefs about appropriate courses of action by observing firsthand the decision making of their peers at other firms” (Westphal, Seidel, and Stewart, 2001, p. 719). These ties to external firms can result in decision-making

scripts that directors reflexively enact at the focal corporation (Scott, 1995; Westphal et al., 2001). Concurrent board members have more ties to external organizations and better access to relevant information than those who are not currently serving on another board. Therefore, they may be better equipped to provide timely information for strategic decision-making (Cao, Simsek, and Jansen, 2015; Peng and Luo, 2000).

I argue that these additional ties to external organizations allow directors to learn how other firms evaluate and implement organizational rejuvenation within their ranks. Concurrent board memberships can “serve as conduits for accessing new, valuable, strategic information and resources to the firm... [and] innovation often arises from incorporating knowledge from outside the firm” (Cao et al., 2015). This social capital also gives directors exposure to new approaches and perspectives to help foster innovation at the focal firm (Cao et al., 2015). Perhaps most importantly, directors tied to other corporations gain access to private information and knowledge that competitors do not have (Cao et al., 2015; Uzzi and Dunlap, 2005). This private information about other firms’ internal structures and capabilities can be leveraged by the focal firm to rejuvenate its internal innovations. Thus, I hypothesize:

*Hypothesis 2: Higher levels of concurrent board memberships (social capital) lead to higher levels of organizational rejuvenation within the firm.*

Extending the first two hypotheses, I expect that director human capital and social capital will have different levels of influence on firms’ organizational rejuvenation efforts depending on the nature of firms studied. Based on the sample frame of the S&P

500, I expect that directors' human capital (what they know) will have a stronger influence on corporate decision-making than their social capital (who they know). Larger and more established firms have more complexity across business units and divisions, emphasizing the importance of directors' previous knowledge, skills, and experiences during the decision-making process. Prior research has found that S&P 500 boards "generally value human capital in their chairs but view social capital through a somewhat more complex lens" (Krause, Semadeni, and Withers, 2016, p. 1990). On the other hand, smaller and younger firms face the liability of newness (Politis, 2005; Stinchcombe, 1965) and rely heavily on social networks and connections, emphasizing the importance of directors' ties to external organizations and other directors. Previous research has demonstrated that social capital is valuable for managing organizational dependence on external constituencies (Krause et al., 2016; Westphal and Milton, 2000), a dependence that is much more likely for smaller and younger firms than for larger and more established corporations. Therefore, I hypothesize:

*Hypothesis 3: Director human capital has a stronger effect on organizational rejuvenation than does director social capital.*

### **The Moderating Role of Entrepreneurial Orientation**

Entrepreneurial orientation is a firm-level, strategic mindset and perspective about entrepreneurship reflected in the firm's processes and corporate culture (Dess and Lumpkin, 2005). It is "a strategic construct that reflects the extent to which firms are innovative, proactive, and risk taking in their behavior and management philosophies; or

stated more concisely, are entrepreneurial in their strategic posture” (Anderson, Covin, and Slevin, 2009, p. 218). Several other definitions have been proposed in the literature (see Table 5), but I adopt the perspective of entrepreneurial orientation as a strategic posture at the corporate strategy level for this dissertation. Entrepreneurial orientation plays a significant role in shaping the firm’s growth and adaptation (Cao et al., 2015; Covin and Slevin, 1989) and in stimulating effective corporate entrepreneurship and organizational performance (Dess and Lumpkin, 2005). However, prior research has suggested that the relationship between entrepreneurial orientation and firm performance depends on other factors like the environment, structure, and strategy (Dess and Lumpkin, 2005; Dess, Lumpkin, and Covin, 1997). Further, the organizational context is a contributing factor to the firm’s entrepreneurial orientation posture (Cao et al., 2015; Covin, Green, and Slevin, 2006).

Table 5. Prior definitions of entrepreneurial orientation

|                        |   |
|------------------------|---|
| Miller, 1983           | “An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is <i>first</i> to come up with ‘proactive’ innovations, beating competitors to the punch... We can tentatively view entrepreneurship as a composite weighting of these three variables” (p. 771). |
| Covin and Slevin, 1991 | “Entrepreneurship is described as a dimension of strategic posture represented by a firm’s risk-taking propensity, tendency to act in competitively aggressive, proactive manners, and reliance on frequent and extensive product innovation” (p. 7).   |

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|   |   |
|---|---|
| Lumpkin and Dess,<br>1996                                   | “An EO refers to the processes, practices, and decision-making activities that lead to new entry... Thus, it involves the intentions and actions of key players functioning in a dynamic generative process aimed at new-venture creation. The key dimensions that characterize an EO include a propensity to act autonomously, a willingness to innovate and take risks, and a tendency to be aggressive toward competitors and proactive relative to marketplace opportunities. All of these factors – autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness – may be present when a firm engages in new entry” (p. 136-137).  |
| Zahra and Neubaum,<br>1998                                  | “EO is defined as the sum total of a firm’s radical innovations, proactive strategic action, and risk taking activities that are manifested in its support of projects with uncertain outcomes (Lumpkin & Dess, 1996; Miller, 1983; Wiklund, 1998; Zahra, 1991, 1996a)... EO, consequently, captures a firm’s commitment to innovation, proactiveness and risk taking (Wiklund, 1998)” (p. 125).  |
| Anderson, Covin,<br>and Slevin, 2009                        | “EO is a strategic construct that reflects the extent to which firms are innovative, proactive, and risk taking in their behavior and management philosophies; or stated more concisely, are entrepreneurial in their strategic posture (Covin and Slevin, 1989)” (p. 218).   |
| Anderson, Kreiser,<br>Kuratko, Hornsby,<br>and Eshima, 2015 | “We define EO as a second-order, firm-level construct comprised of two lower-order dimensions: entrepreneurial behaviors (encompassing innovativeness and proactiveness), and managerial attitude towards risk (risk taking). We define entrepreneurial behaviors as the firm-level pursuit of new products, processes, or business models (e.g., innovativeness) with the intended commercialization of those innovations in new product/market domains (e.g., proactiveness). We define managerial attitude towards risk as an inherent managerial inclination—existing at the level of the senior manager(s) tasked with developing and implementing firm-level strategy—favoring strategic actions that have uncertain outcomes (Miller, 1983)” (p. 1582-1583). |

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The value of director human capital for a corporation could vary depending on the organizational context (Cao et al., 2015). Thus, I suggest that the firm's entrepreneurial orientation serves as a contingency variable for the relationship between director human capital and organizational rejuvenation. Hypothesis 1 argued that higher levels of director CEO experience lead to higher levels of organizational rejuvenation within the firm because those CEO directors likely have experience with realigning the structure of their firms to improve competitive standing and, as a result, can better influence the focal firm's decision-making process. I expect that in firms with a stronger entrepreneurial orientation, the benefits of director CEO experience for the firm's organizational rejuvenation will be even stronger. Firms committed to a corporate-level strategy of entrepreneurial orientation likely are more adept at seeking and implementing director feedback because they understand the importance of continuous innovation. These firms value the skills and experience that CEO directors have gained elsewhere and actively include the directors in the decision-making process, enhancing the positive effect of director human capital on the firm's organizational rejuvenation. On the other hand, firms with a weaker entrepreneurial orientation may not take full advantage of the resources offered by their directors. Thus, I hypothesize:

*Hypothesis 4: The firm's entrepreneurial orientation positively moderates the relationship between director human capital and organizational rejuvenation.*

Further, Hypothesis 2 argued that higher levels of concurrent board memberships lead to higher levels of organizational rejuvenation within the firm because directors

with more ties to external organizations and more frequent access to relevant information are better equipped to provide timely information for strategic decision-making. I expect that in firms with a stronger entrepreneurial orientation, the benefits of concurrent board memberships for the firm's organizational rejuvenation will be even stronger. Corporations that value an entrepreneurial orientation strategic posture should be more alert to the value of directors' knowledge and information obtained from other firms. Thus, firm leaders should be more willing to include directors in the decision-making process, enhancing the positive effect of director social capital on the firm's organizational rejuvenation. Therefore, I hypothesize:

*Hypothesis 5: The firm's entrepreneurial orientation positively moderates the relationship between director social capital and organizational rejuvenation.*

## CHAPTER 3

### RESEARCH METHOD

#### **Introduction**

This chapter discusses the research method undertaken to investigate the relationship between director capital, entrepreneurial orientation, and organizational rejuvenation. It begins by explaining the sample of S&P 500 firms and the data collection process. The next section highlights the development of a new measure for the dependent variable, organizational rejuvenation. A discussion of the predictor variables follows, providing the rationale for the measures of director human capital, director social capital, and firm entrepreneurial orientation.

#### **Data Collection and Sample**

To test the hypotheses, I collected publicly available data on established corporations for a span of multiple years. Prior research has suggested that there is quite a gap of studies – particularly in the corporate entrepreneurship literature – that employ a longitudinal design; thus, there is a need to address this shortcoming in future studies (Zahra et al., 2013). Including longitudinal data in this study allowed me to test the key research questions over time by evaluating the temporal stability of the relationships of interest. I used the Standard & Poor’s 500 stock market index as the sample for this study. “The S&P 500 is widely regarded as the best single gauge of large-cap U.S. equities... and includes 500 leading companies and captures approximately 80%



coverage of available market capitalization” (S&P Dow Jones Indices, LLC). This index provides an ideal sample to test the hypotheses because the firms are well-established corporations with similar corporate governance mandates and board practices.

Common trade-offs to consider when selecting a sample include one versus multiple countries and even one versus multiple industries. For this study, I have chosen a U.S. sample based on the breadth and depth of data availability and multiple industries to enhance the potential generalizability of the findings. Even though choosing a single industry can help to narrow the focus and provide more specific recommendations, I believe – for this study – that there is more value in testing these relationships across industries and over a longer period of time. However, I acknowledge that this intentional focus on S&P 500 firms introduces a sample selection bias because the final sample does not fully represent the entire population of public U.S. firms. This is a limitation of the study that could adversely affect causal inference. The sample is spread across 24 industry groups and 63 industries according to the Global Industry Classification Standard (GICS). See Table 6 for a listing of the 24 industry groups.

Given the fluid nature of directors joining and leaving boards at any given time as well as the potential lag in their ability to influence organizational rejuvenation, it is important to consider these key variables for more than just one year. Therefore, I chose a sample frame of S&P 500 companies from 2010 to 2014, resulting in an unbalanced panel dataset with five years of data on the variables of interest.

Table 6. Global Industry Classification Standard industry groups and codes

| <b>Code</b> | <b>Industry Group</b>              | <b>Code</b> | <b>Industry Group</b>                           |
|-------------|------------------------------------|-------------|---|
| 1010        | Energy                             | 3030        | Household & Personal Products                   |
| 1510        | Materials                          | 3510        | Health Care Equipment & Services                |
| 2010        | Capital Goods                      | 3520        | Pharmaceuticals, Biotechnology, & Life Sciences |
| 2020        | Commercial & Professional Services | 4010        | Banks   |
| 2030        | Transportation                     | 4020        | Diversified Financials                          |
| 2510        | Automobiles & Components           | 4030        | Insurance                                       |
| 2520        | Consumer Durables & Apparel        | 4040        | Real Estate                                     |
| 2530        | Consumer Services                  | 4510        | Software & Services                             |
| 2540        | Media                              | 4520        | Technology Hardware & Equipment                 |
| 2550        | Retailing                          | 4530        | Semiconductors & Semiconductor Equipment        |
| 3010        | Consumer Staples                   | 5010        | Telecommunication Services                      |
| 3020        | Food, Beverage, & Tobacco          | 5510        | Utilities                                       |

The initial sample frame contained 2,495 firm-year observations from 570 firms. During this period, 40 firms were acquired by or merged with other companies (or went private in the case of Dell Inc.), reducing the sample size to 2,455 firm-year observations. A closer examination of these mergers and acquisitions revealed the following merger/acquisition completion dates: 12 transactions in 2010, eight in 2011, nine in 2012, six in 2013, and five in 2014. In addition, the 40 firms represented 29 different industries (four-digit SIC), and the largest overlap of any particular industry was just three firms. Therefore, it appears that the missing completely at random assumption can be made, in which there is nothing systematic happening that makes some data more likely to be missing than others. In addition, firms that were added to the S&P 500 list (or went public) after 2010 did not have data from a previous year to

calculate the dependent variable, further reducing the sample size to 2,361. Finally, accounting for missing data on the cash control variable and one duplicate value resulting from the Merck-Schering merger, the final sample contained 2,289 firm-year observations from 524 companies. Table 7 shows the summary statistics and correlation matrix for the final sample. Given the panel design, the correlation matrix pools the firm and year effects and displays pairwise correlations between the variables.

### **Dependent Variable – Organizational Rejuvenation**

A primary contribution of this dissertation is the development of a new archival measure of organizational rejuvenation, one of the five constructs in the strategic entrepreneurship domain of corporate entrepreneurship (Morris et al., 2010). As a brief recap, organizational rejuvenation focuses on altering internal structures, processes, and capabilities in the organization to maintain or improve competitive standing (Covin and Miles, 1999). In this case, the target of corporate entrepreneurship is the organization itself. The development of this new measure of organizational rejuvenation contributes in two primary ways. First, prior research has tended to focus on subjective, survey-based measures of corporate entrepreneurship, often neglecting the potential value of archival data. Although subjective measures obtained by surveying corporate managers are relevant and impactful, this study adds to previous methods by measuring corporate entrepreneurship with objective, secondary data.

Table 7. Summary statistics and correlation matrix

|                        | Mean | S.D. | 1            | 2            | 3           | 4           | 5           | 6           | 7           | 8     | 9            | 10          | 11   |
|------------------------|------|------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------|--------------|-------------|------|
| 1. Org. Rejuvenation   | 0.03 | 0.06 |              |              |             |             |             |             |             |       |              |             |      |
| 2. Board Tenure        | 8.76 | 3.32 | -0.04        |              |             |             |             |             |             |       |              |             |      |
| 3. Log Cash            | 6.75 | 1.52 | <b>-0.04</b> | <b>-0.14</b> |             |             |             |             |             |       |              |             |      |
| 4. CEO Experience      | 0.60 | 0.16 | <b>-0.04</b> | <b>-0.22</b> | <b>0.19</b> |             |             |             |             |       |              |             |      |
| 5. MeanCEO             | 0.60 | 0.15 | <b>-0.04</b> | <b>-0.23</b> | <b>0.20</b> | <b>0.95</b> |             |             |             |       |              |             |      |
| 6. DevCEO              | 0.00 | 0.05 | -0.02        | 0.01         | 0.01        | <b>0.33</b> | 0.00        |             |             |       |              |             |      |
| 7. Concurrent Seats    | 1.72 | 0.68 | 0.01         | <b>-0.22</b> | <b>0.16</b> | <b>0.29</b> | <b>0.30</b> | 0.04        |             |       |              |             |      |
| 8. MeanConcurrent      | 1.72 | 0.64 | 0.01         | <b>-0.24</b> | <b>0.18</b> | <b>0.30</b> | <b>0.32</b> | -0.00       | <b>0.93</b> |       |              |             |      |
| 9. DevConcurrent       | 0.00 | 0.25 | 0.01         | -0.00        | -0.01       | 0.03        | -0.00       | <b>0.11</b> | <b>0.36</b> | -0.00 |              |             |      |
| 10. Entre. Orientation | 0.25 | 0.11 | -0.00        | <b>-0.08</b> | <b>0.22</b> | <b>0.05</b> | <b>0.06</b> | -0.01       | 0.03        | 0.03  | -0.02        |             |      |
| 11. MeanEO             | 0.25 | 0.10 | 0.00         | <b>-0.09</b> | <b>0.23</b> | <b>0.05</b> | <b>0.06</b> | -0.00       | 0.03        | 0.04  | -0.00        | <b>0.96</b> |      |
| 12. DevEO              | 0.00 | 0.03 | -0.01        | -0.00        | -0.00       | -0.01       | 0.00        | -0.03       | -0.02       | 0.00  | <b>-0.07</b> | <b>0.27</b> | 0.00 |

N = 2,289. Correlations significant at the  $p < .05$  level are in bold.

Second, the five constructs of strategic entrepreneurship – sustained regeneration, organizational rejuvenation, strategic renewal, domain redefinition, and business model reconstruction – have received much attention in theoretical models in prior studies, but researchers have struggled to empirically test these constructs given the lack of specific measures for these variables. This study adds to existing literature by suggesting a straightforward way to empirically measure and test one of these strategic entrepreneurship constructs.

The new measure of organizational rejuvenation used in this study reflects a modified Herfindahl-Hirschman Index (HHI), which shows the distribution of a variable by measuring the degree of concentration across units (Owen, Ryan, and Weatherston, 2007). The HHI is commonly used as a statistical measure of market concentration, which is calculated by squaring the market share of each firm competing in a particular market and then summing those results. The resulting HHI has a range of near zero to 1.0. In the case of market share, lower HHI values signify lower concentration (strong competition in the market), and higher HHI values signify higher concentration (weak competition in the market). The HHI also is a useful measure for within-firm concentrations (Acar and Sankaran, 1999), as it is used in this dissertation.

This study introduces a business segment HHI as the first step for the dependent variable, organizational rejuvenation. Each firm in the S&P 500 reports business segment revenue as part of the required annual statements. For instance, Microsoft reported five business segments in its fiscal year 2014 annual report: devices and consumer licensing, devices and consumer hardware, devices and consumer other,

commercial licensing, and commercial other. The business segment HHI is calculated by squaring each business segment revenue percentage and then summing those results. The resulting measure for any particular year has a range of near zero to 1.0. Lower values signify less concentrated business segments; higher values signify more concentrated business segments. In other words, values approaching 1.0 for any particular year represent firms that rely heavily on just one business segment. In the case of Microsoft, the 2014 business segment HHI was 0.31.

The final measure of organizational rejuvenation represents the absolute value of change in business segment HHI year-over-year. Business segments represent the internal structure of the firm, the focus of organizational rejuvenation. Corporate leaders evaluate the status of their firms and decide how to implement internal innovations to company structure. This could include the reallocation of resources from one business segment to another to make the firm more flexible or efficient. It may also involve the creation or elimination of business segments altogether to improve the firm's entrepreneurial position and competitive standing. Thus, the year-over-year change in business segment HHI – the internal structure of the firm – serves as a good measure for organizational rejuvenation.

This proposed new measure for corporate entrepreneurship merits a further discussion regarding construct validity, or the degree to which the operationalization adequately captures the conceptual domain of the theoretical construct. Table 8 provides the original language used to develop the organizational rejuvenation construct in three noteworthy corporate entrepreneurship articles: Covin and Miles (1999), Dess et al.

(2003), as well as Kuratko and Audretsch (2009). These scholars suggested that organizational rejuvenation alters internal structures, processes, or capabilities; renews core attributes of the firm's internal operations; incorporates process, administrative, and structural innovations inside the firm; facilitates the transfer of core competencies and communication across divisions; reengineers major business processes; and even introduces a fundamental redesign of the entire organization. This conceptual domain matches well with Statement No. 131 from the Financial Accounting Standards Board, which defines a business segment as a firm component that is regularly evaluated by organizational decision makers to determine how to allocate resources and to assess firm performance (see Table 8). In other words, senior management members have the discretion to choose the business segments that make sense for their firm decision-making process, and they decide how to best allocate the limited resources and make judgement calls across the firm's internal structure and operations.

This study's operationalization of organizational rejuvenation accounts for both sides of the theoretical construct: not only how the firm is internally structured but also how these internal operations and attributes are redesigned and rejuvenated by firm decision-makers. The business segment HHI provides a yearly snapshot of the internal structure degree of concentration – to what extent the firm relies on multiple business segments – and the year-over-year change provides the bigger picture of how firms are implementing organizational rejuvenation – to what extent the firm is altering its internal structures, processes, capabilities, and core operational attributes. As suggested by Kuratko and Audretsch (2009), organizational rejuvenation can result from a single

internal innovation that has widespread implications for the firm or from multiple smaller innovations that collectively enhance organizational efficiency or effectiveness. Microsoft’s discussion of business segments in its 2013 and 2014 annual reports provides a recent example of the former (see Table 8). The corporation overhauled its organizational structure and business segments in 2014 during its transformation to a devices and services company. As a result, all five business segments that drove decision-making in 2013 were replaced with five brand new segments in 2014.

I acknowledge that business segment revenues can be affected by many factors other than intentional corporate entrepreneurship decisions, but the firm’s deliberate reporting of its major business segments provides a good measure of internal structure. This variable was hand-collected from 10-K statements in the U.S. Securities and Exchange Commission EDGAR database. Table 9 provides an example of this measure for Microsoft, Apple, and Google in fiscal year 2014.

Table 8. Conceptual domain of the organizational rejuvenation construct

|                              |  |
|------------------------------|--|
| Covin and Miles, 1999, p. 52 | <ul style="list-style-type: none"> <li>• “The organization seeks to sustain or improve its competitive standing by altering its internal processes, structures, and/or capabilities</li> <li>• The focus of innovation is the organization per se</li> <li>• Efforts to sustain or increase competitiveness through the improved execution of particular, pre-existing business strategies”</li> </ul> |
| Dess et al., 2003, p. 355    | <ul style="list-style-type: none"> <li>• “Improving the firm’s ability to execute strategies</li> <li>• Often entails changes to value chain activities</li> <li>• Process and administrative innovations</li> <li>• Become more entrepreneurial through processes and structures</li> <li>• Radical administrative routines and operating policies</li> </ul>   |



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|  |   |
|--|---|
| <p>Kuratko and<br/>Audretsch, 2009,<br/>p. 9</p>   | <ul style="list-style-type: none"> <li>• Renew one or more major aspects of the firm’s operations”</li> <li>• “Core attributes associated with the firm’s internal operations</li> <li>• Create a superior organizational vehicle through which the firm’s strategy can be implemented</li> <li>• Achieve competitive advantage without changing strategy, product offerings, or served markets</li> <li>• Fundamental redesign of the entire organization</li> <li>• Major business process reengineering projects</li> <li>• Single innovations that have sweeping implications for the firm</li> <li>• Multiple smaller innovations that collectively contribute to significantly increased organizational efficiency or effectiveness at strategy implementation</li> <li>• Administrative innovations designed to facilitate inter-unit communications or the transference of core competencies”</li> </ul>            |
| <p>Financial Accounting<br/>Standards Board,<br/>Statement No. 131<br/>(SEC requirement)</p> | <ul style="list-style-type: none"> <li>• “Operating segments are components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker in deciding how to allocate resources and in assessing performance. Generally, financial information is required to be reported on the basis that it is used internally for evaluating segment performance and deciding how to allocate resources to segments.”</li> </ul>   |
| <p>Microsoft Annual<br/>Report, 2013</p>   | <ul style="list-style-type: none"> <li>• “Our segments provide management with a comprehensive financial view of our key businesses. The segments enable the alignment of strategies and objectives across the development, sales, marketing, and services organizations, and they provide a framework for timely and rational allocation of development, sales, marketing, and services resources within businesses.</li> <li>• During the periods presented, we operated our business in five segments: Windows Division, Server and Tools, Online Services Division, Microsoft Business Division, and Entertainment and Devices Division. In July 2013, we announced a change in organizational structure as part of our transformation to a devices and services company. As we evolve how we allocate resources and analyze performance in the new structure, it is possible that our segments may change.”</li> </ul> |

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|                               |   |
|-------------------------------|---|
| Microsoft Annual Report, 2014 | <ul style="list-style-type: none"> <li>“During the first quarter of fiscal year 2014, we changed our organizational structure as part of our transformation to a devices and services company. As a result, information that our chief operating decision maker regularly reviews for purposes of allocating resources and assessing performance changed. Therefore, beginning in fiscal year 2014, we reported our financial performance based on our new segments: Devices and Consumer Licensing, D&amp;C Hardware, D&amp;C Other, Commercial Licensing, and Commercial Other.”</li> </ul> |
|-------------------------------|---|

Table 9. Organizational rejuvenation measure for fiscal year 2014

| <b>Company-Defined Segments</b> | <b>2013 Revenue</b> | <b>Squared</b> | <b>2014 Revenue</b> | <b>Squared</b> |
|---------------------------------|---------------------|----------------|---------------------|----------------|
| <b>Microsoft</b>                |                     |                |                     |                |
| Windows division                | 24.2%               | 0.0585         |                     |                |
| Server and tools                | 26.3%               | 0.0691         |                     |                |
| Online services division        | 4.3%                | 0.0018         |                     |                |
| Microsoft business division     | 32.0%               | 0.1027         |                     |                |
| Entertainment and devices       | <u>13.2%</u>        | <u>0.0175</u>  |                     |                |
| Devices and consumer licensing  |                     |                | 21.6%               | 0.0464         |
| Devices and consumer hardware   |                     |                | 13.3%               | 0.0177         |
| Devices and consumer other      |                     |                | 8.3%                | 0.0069         |
| Commercial licensing            |                     |                | 48.2%               | 0.2320         |
| Commercial other                |                     |                | <u>8.7%</u>         | <u>0.0075</u>  |
| Total                           | 100%                | 0.2496         | 100%                | 0.3106         |
| <b>Year-over-year change</b>    |                     |                |                     | <b>0.0610</b>  |
| <b>Apple</b>                    |                     |                |                     |                |
| Americas                        | 36.7%               | 0.1348         | 35.7%               | 0.1273         |
| Europe                          | 22.2%               | 0.0491         | 22.4%               | 0.0501         |
| Greater China                   | 14.9%               | 0.0221         | 16.3%               | 0.0267         |
| Japan                           | 7.9%                | 0.0062         | 8.2%                | 0.0067         |
| Rest of Asia Pacific            | 6.5%                | 0.0043         | 5.7%                | 0.0032         |
| Retail                          | <u>11.8%</u>        | <u>0.0140</u>  | <u>11.7%</u>        | <u>0.0138</u>  |
| Total                           | 100%                | 0.2305         | 100%                | 0.2278         |
| <b>Year-over-year change</b>    |                     |                |                     | <b>0.0027</b>  |

| <b>Company-Defined Segments</b> | <b>2013<br/>Revenue</b> | <b>Squared</b> | <b>2014<br/>Revenue</b> | <b>Squared</b> |
|---------------------------------|-------------------------|----------------|-------------------------|----------------|
| <b>Google</b>                   |                         |                |                         |                |
| United States                   | 44.6%                   | 0.1988         | 42.6%                   | 0.1818         |
| United Kingdom                  | 10.1%                   | 0.0102         | 9.8%                    | 0.0096         |
| Rest of world                   | <u>45.3%</u>            | <u>0.2055</u>  | <u>47.6%</u>            | <u>0.2260</u>  |
| Total                           | 100%                    | 0.4144         | 100%                    | 0.4175         |
| <b>Year-over-year change</b>    |                         |                |                         | <b>0.0031</b>  |

### **Predictor Variables**

#### *Director Human Capital*

*Director CEO experience.* A useful conceptualization of human capital is the experience and skills that directors bring to the board (Stevenson and Radin, 2009). Director human capital has previously been measured by industry experience, entrepreneurial experience, CEO experience, venture capital experience, financial expertise, experience with specific activities (e.g., prior experience with approving acquisitions, deciding on international issues, firing the CEO), director experience diversity, and organizational tenure, among many others (Johnson et al., 2013). For this study, director human capital is operationalized as director CEO experience. Directors who have served as CEOs have the relevant experience, knowledge, and influence to make strong contributions to the board of directors. In particular, prior or current CEO directors should have previous experience with improving their firms' ability to execute business strategies, encouraging process and administrative innovations, changing core attributes of internal operations, and even fundamentally redesigning the organizational structures of their firms. They also likely have strong decision-making capabilities and

resource allocation experience that can benefit decisions made by the focal firm. In line with prior calls to improve the consistency and measurement of board characteristics (Johnson et al., 2013), in this study director CEO experience is a firm-level ratio measure that captures the number of directors who have served as CEO divided by total board size. This variable was hand-collected from proxy statements in the U.S. Securities and Exchange Commission EDGAR database.

### *Director Social Capital*

*Concurrent board memberships.* A useful conceptualization of social capital is the investment in social relations through ties that board members have to others (Stevenson and Radin, 2009). Director social capital has previously been measured by director ties to other firms (e.g., single ties, double ties, interlocks), personal relationships and affiliations (e.g., affiliated directors with business ties, directors appointed by the CEO, personal/family ties to the CEO), and social standing (e.g., status, prestige, stigma, reputation), among many others (Johnson et al., 2013). For this study, director social capital is operationalized as concurrent board memberships at public, private, and nonprofit organizations. Directors who serve on multiple boards have increased network connections as well as better access and exposure to information (Kor and Sundaramurthy, 2009). In line with prior calls to improve the consistency and measurement of board characteristics (Johnson et al., 2013), this study adopts the measure of average concurrent board memberships (Kor and Sundaramurthy, 2009) which is the total number of other board seats concurrently held by the focal firm's

directors divided by total board size. This variable was hand-collected from proxy statements in the U.S. Securities and Exchange Commission EDGAR database.

### *Entrepreneurial Orientation*

*Entrepreneurial orientation* is defined as “a strategic construct that reflects the extent to which firms are innovative, proactive, and risk taking in their behavior and management philosophies; or stated more concisely, are entrepreneurial in their strategic posture” (Anderson et al., 2009, p. 218). Miller (2011) noted the tendency for researchers to use the same measures of entrepreneurial orientation over and over based on instruments that were originally created decades ago, and he suggested that future research should incorporate new approaches and measurements. In addition, very few entrepreneurial orientation studies have included longitudinal or panel data in their research methods, thus ignoring the temporal stability of the relationships between entrepreneurial orientation and its drivers and outcomes (Miller, 2011).

The use of objective entrepreneurial orientation measures from secondary data presents a viable alternative to the subjective, survey-based measures that have proliferated in the literature to date. Measuring entrepreneurial orientation with secondary data, particularly via computer-aided text analysis, could help to reduce researcher inference and interpretation of interview responses, allow for replication and comparison across studies, and reduce issues with managerial biases and nonrespondent bias associated with survey data (Lyon, Lumpkin, and Dess, 2000). In addition, content analysis allows for the measurement of phenomena directly at the organizational level

(instead of collecting and aggregating many employee surveys for every organization), facilitates longitudinal analysis due to the commonly available organizational narratives in annual reports and corporate websites, and lowers the likelihood of biases from recall or demand characteristics (McKenny, Short, and Payne, 2013). However, there are important trade-offs when using secondary data, including measurement error and construct validity concerns. Data collection could be affected by human error in the coding process, inconsistent judgement of variable coding, inconsistent reporting of data across firms, and even issues with measures not capturing their intended constructs, among others.

For this study, entrepreneurial orientation is measured at the firm-level based on Short's dictionary of terms for the innovativeness, proactiveness, and risk taking dimensions (Short, Broberg, Cogliser, and Brigham, 2010). This newer measure of entrepreneurial orientation is gaining acceptance as a viable alternative to the more commonly used subjective measures (Allison, McKenny, and Short, 2013; Engelen, Neumann, and Schmidt, 2013; Engelen, Neumann, and Schwens, 2015; Mousa, Wales, and Harper, 2015; Short et al., 2010; Wolfe and Shepherd, 2015; Zachary, McKenny, Short, Davis, and Wu, 2011). Following prior studies, I entered the dictionary terms into the Linguistic Inquiry and Word Count (LIWC) program to perform a computer-aided text analysis of firms' entrepreneurial orientation. For each firm-year observation, LIWC analyzed the business section of the annual report (Form 10-K, Part I, Item 1) to identify the frequency of entrepreneurial orientation terms that were used to describe general business operations. This business section allows corporations to discuss items

such as company background, business strategy, business organization and segments, products and services, markets and distribution, customers, competition, research and development, intellectual property, geographic operations, organizational culture, and employees, among other general business operations. LIWC provides the resulting values as a percentage of overall content, which normalizes potential differences based on shorter or longer narratives. This study adopts the measure of entrepreneurial orientation as the average value of innovativeness, proactiveness, and risk taking for each firm-year observation. This variable was collected from 10-K statements in the U.S. Securities and Exchange Commission EDGAR database.

### **Control Variables**

The selection and inclusion of control variables has received increasing attention in the literature (Atinc, Simmering, and Kroll, 2012; Spector and Brannick, 2011). Scholars suggest that “the automatic or blind inclusion of control variables in multiple regression and other analyses...is widespread and can be considered an example of practice based on a methodological urban legend” (Spector and Brannick, 2011, p. 287). Controls should be carefully considered and should have logical reasons for including them in the research model. As a result, I have limited the inclusion of controls in this study to two variables: board tenure and firm cash. However, limiting the number of controls could create an issue with omitted variables. Random effects models operate under the assumption that the independent variables are not correlated with the firm-level disturbance or the error term. Omitted variables that create a correlation between

an independent variable and the firm-level disturbance would result in endogeneity (Certo, Withers, and Semadeni, 2016). This is a potential limitation of including a select few control variables.

*Board tenure* is the average number of years on the focal board for all directors in a particular firm-year observation. When considering the effects of director human capital and social capital on organizational rejuvenation, it is probable that board tenure has a meaningful influence on decisions made by the firm. For instance, longer board tenure may encourage directors to keep the status quo whereas shorter board tenure may motivate directors to consider new ideas and try alternative approaches. This variable was hand-collected from proxy statements in the U.S. Securities and Exchange Commission EDGAR database. In addition, firm size likely has a meaningful effect on corporate decision making at the board of directors level. For example, larger corporations with better access to financial resources may be more willing to restructure or add to their internal operations than smaller corporations with less financial resources. *Firm cash* is the log transformed cash for each firm-year observation (any immediately negotiable medium of exchange including cash and equivalents). This variable was collected from Compustat.



CHAPTER 4  
ANALYSIS AND RESULTS

**Introduction**

This chapter begins by highlighting the model specification and discussing the hybrid approach used to analyze the data. The hybrid approach uses random effects models to estimate both the within- and between-firm effects of each independent variable. The chapter concludes with the results of the hypotheses tests.

**Model Specification**

The research model for this study uses the following equation:

$$\text{OrgRej}_{it} = \beta_1 \text{MeanCEO}_i + \beta_2 (\text{CEO}_{it} - \text{MeanCEO}_i) + \beta_3 \text{MeanConcurrent}_i + \beta_4 (\text{Concurrent}_{it} - \text{MeanConcurrent}_i) + \beta_5 (\text{MeanCEO}_i * \text{MeanEO}_i) + \beta_6 [(\text{CEO}_{it} - \text{MeanCEO}_i) * (\text{EO}_{it} - \text{MeanEO}_i)] + \beta_7 (\text{MeanConcurrent}_i * \text{MeanEO}_i) + \beta_8 [(\text{Concurrent}_{it} - \text{MeanConcurrent}_i) * (\text{EO}_{it} - \text{MeanEO}_i)] + \Lambda \text{BoardTenure}_{it} + \Lambda \log \text{FirmCash}_{it} + u_i + e_{it}$$

The equation predicts Organizational Rejuvenation for firm  $i$  at time  $t$  in a time-series cross-sectional model in which CEO = Director CEO Experience; Concurrent = Concurrent Board Memberships; and EO = Entrepreneurial Orientation. Board Tenure and log Firm Cash are control variables with coefficient estimates  $\Lambda$ . In addition,  $u$  is the firm-level disturbance and  $e$  is the error term.

Rather than limiting the data analysis to only a fixed effects *or* random effects model which would restrict interpretation to only within-firm variation *or* combined

within- and between-firm variation, this study adopts a hybrid approach (Allison, 2005; Certo et al., 2016). Researchers generally have three choices for analyzing panel data: random effects models which combine within- and between-firm variation, fixed effects models which only use within-firm variation, and a hybrid approach which separates out the within-firm and between-firm variation (Certo et al., 2016). A major advantage of a random effects model is keeping both types of variance in the analysis, improving overall model efficiency and statistical power. However, this approach collapses together the between- and within-firm variance into the same coefficient, which does not allow for a separate investigation of the between- and within-firm relationships. Another disadvantage of a random effects model is the potential correlation between independent variables and the group-level disturbance resulting from omitted variables, which contaminates the between-group variance and creates endogeneity at the firm level. Alternatively, a fixed effects model discards the between-firm information and only uses within-firm variation. Although this eliminates the potential bias resulting from a correlation between independent variables and the group-level disturbance, a major disadvantage of a fixed effects model is that it is less efficient because it gets rid of the between-firm information (Certo et al., 2016).

“The chief advantage of Allison’s hybrid approach involves the ability to compare and contrast within- and between-firm influences of independent variables by examining  $\beta_1$  and  $\beta_2$ ” (Certo et al., 2016). Following this technique, I split each Level 1 independent variable (director CEO experience, concurrent board memberships, and entrepreneurial orientation) into two variables: reflected below as “mean” and “dev”

variables. The mean value is the group mean of the independent variable that reflects the between-firm effect, whereas the dev value is a group-mean centered variable that represents the within-firm effect of the independent variable. Thus, the hybrid approach separates out and reports both the between-firm and within-firm estimates resulting from these split variables. Table 10 provides an example of these mean and dev variables for the first corporation in the sample, Abbott Laboratories.

Table 10. Group mean and group-mean centered variables for Abbott Laboratories

| <b>Year</b> | <b>Director CEO Experience</b>      | <b>MeanCEO</b>        | <b>DevCEO</b>        |
|-------------|-------------------------------------|-----------------------|----------------------|
| 2010        | 0.6667                              | 0.7661                | -0.0994              |
| 2011        | 0.8000                              | 0.7661                | 0.0339               |
| 2012        | 0.7273                              | 0.7661                | -0.0388              |
| 2013        | 0.8182                              | 0.7661                | 0.0521               |
| 2014        | 0.8182                              | 0.7661                | 0.0521               |
|             | <b>Concurrent Board Memberships</b> | <b>MeanConcurrent</b> | <b>DevConcurrent</b> |
| 2010        | 2.5833                              | 2.2712                | 0.3121               |
| 2011        | 2.5000                              | 2.2712                | 0.2288               |
| 2012        | 2.0000                              | 2.2712                | -0.2712              |
| 2013        | 2.2727                              | 2.2712                | 0.0015               |
| 2014        | 2.0000                              | 2.2712                | -0.2712              |
|             | <b>Entrepreneurial Orientation</b>  | <b>MeanEO</b>         | <b>DevEO</b>         |
| 2010        | 0.3900                              | 0.3600                | 0.0300               |
| 2011        | 0.3733                              | 0.3600                | 0.0133               |
| 2012        | 0.3200                              | 0.3600                | -0.0400              |
| 2013        | 0.3700                              | 0.3600                | 0.0100               |
| 2014        | 0.3467                              | 0.3600                | -0.0133              |

After splitting the Level 1 independent variables into group mean and group-mean centered variables, the hybrid approach uses a random effects model to estimate the between- and within-firm effects of each predictor variable. The group-mean centered estimates are identical to fixed effects model results (even though a random effects model is used), and the model provides additional information on the between-firm effects (Certo et al., 2016). Including the group-mean centered variables in the equation controls for unobserved heterogeneity at the firm level (Wooldridge, 2010) and accounts for omitted firm-level variables that may confound the relationship between the independent variables and organizational rejuvenation (Antonakis, Bendahan, Jacquart, and Lalive, 2010). Based on the possibility of omitted variables that may influence the results between firms, I have included an industry fixed effect (four-digit Standard Industrial Classification code) in the model. In addition, a year fixed effect controls for unobserved variance in organizational rejuvenation as a function of time (Gompers, Kovner, Lerner, and Scharfstein, 2008) and controls for contemporaneous correlation (Certo and Semadeni, 2006). I removed extreme outliers that were more than three standard deviations above or below the mean of the residuals, used clustered standard errors, and estimated all models using Stata 14.2 (StataCorp, 2016).

### **Results of Hypotheses Tests**

Table 11 presents the results of the hybrid approach. Model 1 is a baseline model with only control variables. Model 2 presents the main effects of director CEO

experience and concurrent board memberships on organizational rejuvenation. Model 3 tests the full research model by including the interaction terms.

Hypothesis 1 predicted that higher levels of director CEO experience lead to higher levels of organizational rejuvenation within the firm. Although the within-firm effect was insignificant (DevCEO  $\beta = -0.0042$ ,  $p = ns$ ), the results show a significant between-firm effect (MeanCEO  $\beta = -0.0253$ ,  $p = 0.004$ ). Contrary to the hypothesis, higher levels of director CEO experience on the board have a negative effect on organizational rejuvenation across firms. Thus, firms with a higher percentage of CEO directors on their boards have lower levels of organizational rejuvenation than do firms with a lower percentage of CEO directors. As a result, this reverse finding does not support Hypothesis 1.

Hypothesis 2 predicted that higher levels of concurrent board memberships lead to higher levels of organizational rejuvenation within the firm. In this case, both the within-firm and between-firm effects were insignificant (DevConcurrent  $\beta = -0.0016$ ,  $p = ns$ ; MeanConcurrent  $\beta = 0.0017$ ,  $p = ns$ ). As a result, I did not find support for Hypothesis 2.

Table 11. Results of hybrid approach

|                                | Organizational Rejuvenation    |                                  |                                 |
|--------------------------------|--------------------------------|----------------------------------|---------------------------------|
|                                | Model 1                        | Model 2                          | Model 3                         |
|                                | $\beta$ (s.e.)<br>[p-value]    | $\beta$ (s.e.)<br>[p-value]      | $\beta$ (s.e.)<br>[p-value]     |
| Focal Board Tenure             | -0.0006<br>(0.0003)<br>[0.091] | -0.0007*<br>(0.0003)<br>[0.034]  | -0.0007*<br>(0.0003)<br>[0.038] |
| Log Firm Cash                  | -0.0012<br>(0.0010)<br>[0.223] | -0.0009<br>(0.0010)<br>[0.357]   | -0.0009<br>(0.0010)<br>[0.358]  |
| MeanCEO                        |                                | -0.0253**<br>(0.0087)<br>[0.004] | -0.0324<br>(0.0199)<br>[0.104]  |
| DevCEO                         |                                | -0.0042<br>(0.0134)<br>[0.757]   | -0.0031<br>(0.0134)<br>[0.817]  |
| MeanConcurrent                 |                                | 0.0017<br>(0.0019)<br>[0.383]    | 0.0051<br>(0.0048)<br>[0.290]   |
| DevConcurrent                  |                                | -0.0016<br>(0.0038)<br>[0.679]   | -0.0015<br>(0.0038)<br>[0.680]  |
| MeanEO                         |                                |                                  | -0.0025<br>(0.0586)<br>[0.966]  |
| DevEO                          |                                |                                  | 0.0463<br>(0.0279)<br>[0.097]   |
| MeanCEO $\times$ MeanEO        |                                |                                  | 0.0318<br>(0.0750)<br>[0.672]   |
| DevCEO $\times$ DevEO          |                                |                                  | 0.4682<br>(0.4284)<br>[0.274]   |
| MeanConcurrent $\times$ MeanEO |                                |                                  | -0.0133<br>(0.0168)<br>[0.429]  |
| DevConcurrent $\times$ DevEO   |                                |                                  | -0.1823*<br>(0.0849)<br>[0.032] |

| Organizational Rejuvenation |                                  |                                  |                                 |
|-----------------------------|----------------------------------|----------------------------------|---------------------------------|
|                             | Model 1                          | Model 2                          | Model 3                         |
|                             | $\beta$ (s.e.)                   | $\beta$ (s.e.)                   | $\beta$ (s.e.)                  |
|                             | [p-value]                        | [p-value]                        | [p-value]                       |
| Constant                    | 0.0358***<br>(0.0085)<br>[0.000] | 0.0479***<br>(0.0099)<br>[0.000] | 0.0476**<br>(0.0181)<br>[0.009] |
| Year Fixed Effect           | Yes                              | Yes                              | Yes                             |
| Industry Fixed Effect       | Yes                              | Yes                              | Yes                             |
| R-square                    |                                  |                                  |                                 |
| within                      | 0.005                            | 0.006                            | 0.009                           |
| between                     | 0.436                            | 0.451                            | 0.453                           |
| overall                     | 0.170                            | 0.175                            | 0.178                           |
| <i>N</i>                    | 2,242                            | 2,242                            | 2,237                           |
| Number of firms             | 522                              | 522                              | 521                             |

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Mean variables reflect between-firm effects; dev variables reflect within-firm effects.

Hypothesis 3 predicted that director human capital has a stronger effect on organizational rejuvenation than does director social capital. After running Model 2, I performed a Wald test with the null hypothesis that the coefficients for MeanCEO and MeanConcurrent were simultaneously equal to zero, in addition that the coefficients for DevCEO and DevConcurrent were simultaneously equal to zero. The results rejected the null hypothesis for MeanCEO and MeanConcurrent ( $\chi^2 = 7.96$ ,  $p = 0.0048$ ), indicating that the coefficients were not equal; however, the results failed to reject the null hypothesis for DevCEO and DevConcurrent ( $\chi^2 = 0.03$ ,  $p = ns$ ). Although the within-firm variables were not significantly different, the results of the Wald test show that the between-firm variables are statistically different predictors of organizational rejuvenation (MeanCEO  $\beta = -0.0253$ , MeanConcurrent  $\beta = 0.0017$ ). Director CEO

experience has a statistically larger coefficient than concurrent board memberships, which provides support for Hypothesis 3 between firms.

Hypothesis 4 predicted that the firm's entrepreneurial orientation positively moderates the relationship between director CEO experience and organizational rejuvenation. In this case, both the within-firm and between-firm effects were insignificant (Dev  $\beta = 0.4682$ ,  $p = ns$ ) (Mean  $\beta = 0.0318$ ,  $p = ns$ ). As a result, I did not find support for Hypothesis 4.

Hypothesis 5 predicted that the firm's entrepreneurial orientation positively moderates the relationship between concurrent board memberships and organizational rejuvenation. Although the between-firm effect was insignificant (Mean  $\beta = -0.0133$ ,  $p = ns$ ), the results show a significant within-firm effect (Dev  $\beta = -0.1823$ ,  $p = 0.032$ ). Contrary to the hypothesis, the interaction of concurrent board memberships and entrepreneurial orientation has a negative effect on organizational rejuvenation within firms. Figure 2 plots this interaction of DevConcurrent and DevEO on organizational rejuvenation using a 95% confidence interval band, demonstrating a decrease in organizational rejuvenation as board social capital and entrepreneurial orientation increase within the firm. In addition, Figure 3 plots the average marginal effect of DevConcurrent on organizational rejuvenation across a range of DevEO values using a 95% confidence interval band. As a result, this reverse finding does not support Hypothesis 5.



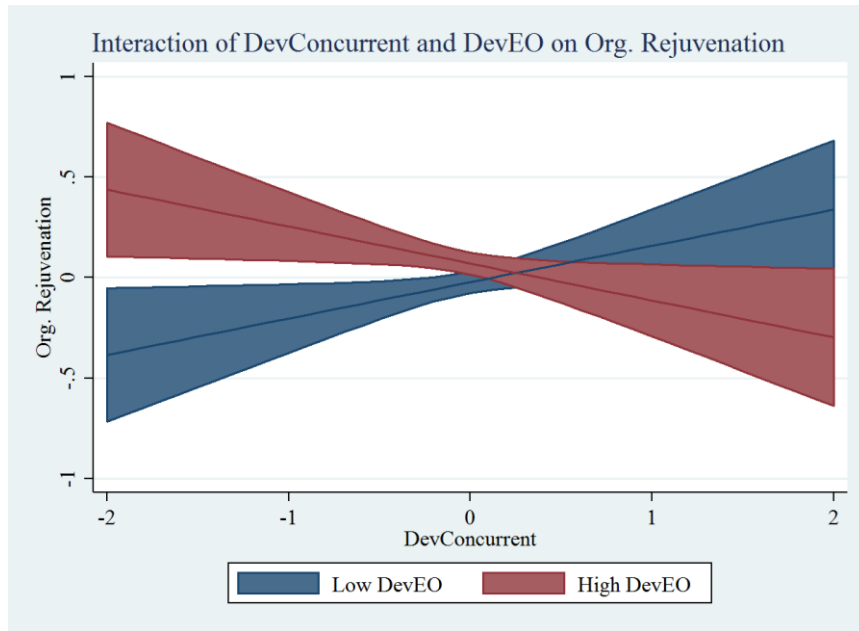


Figure 2. Interaction of DevConcurrent and DevEO on Organizational Rejuvenation (95% confidence interval)

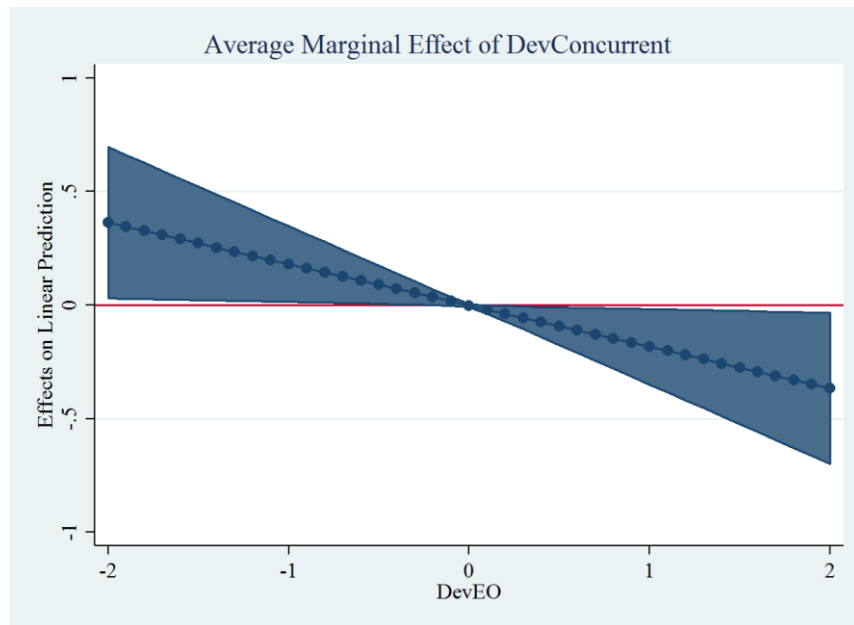


Figure 3. Average marginal effect of DevConcurrent on Organizational Rejuvenation across level of DevEO (95% confidence interval)

## CHAPTER 5

### DISCUSSION AND CONCLUSION

#### **Introduction**

This chapter begins by discussing the findings of the director capital-organizational rejuvenation relationship and then considers the moderating role of entrepreneurial orientation. The next section highlights a number of theoretical and practical implications of the dissertation. Finally, a discussion of the study's limitations follows, laying the groundwork for future research opportunities related to corporate governance and corporate entrepreneurship.

#### **Discussion of Findings**

Corporate governance and corporate entrepreneurship are increasingly recognized as critical factors in achieving a competitive advantage and enhancing firm performance (Corbett et al., 2013; Covin and Kuratko, 2010). Yet, our understanding of how boards of directors influence corporate entrepreneurship decisions and actions has been limited. In this dissertation, I developed a resource dependence theoretical framework to suggest that corporations can leverage directors' experience and networks to be more entrepreneurial. Although directors serve an important monitoring and controlling function on behalf of shareholders (Daily et al., 2003), they also serve as valuable resources in the firm's decision-making process. By introducing a new measure of organizational rejuvenation, I investigated whether or not director human

capital and social capital had a meaningful influence on firms' ongoing changes to internal structures, processes, and capabilities.

### *Director Capital and Organizational Rejuvenation*

Surprisingly, higher levels of director CEO experience on the board have a negative effect on organizational rejuvenation across firms. Thus, corporations with more CEOs on their boards of directors exhibit less organizational rejuvenation than firms with fewer CEO directors. I expected that CEO directors' previous experience with realigning their organizations for more flexibility and having the final decision-making authority on strategic issues would transfer over as a positive influence on the focal firms' organizational rejuvenation decisions. However, the analytical results suggest the opposite effect. Perhaps boards with stronger CEO experience are less likely to recommend drastic structural changes because they have been successful with a more conservative approach in their firms. This could result from an unwillingness to think outside of the box. In addition, not all CEO experience is the same, particularly when considering the divergent nature of the roles in different industries. CEOs of firms in rapidly evolving industries likely take a different approach to organizational rejuvenation than those of corporations in a more stable environment. Some prior studies have found that previous CEO expertise did not have a significant effect on directors' ability to influence decisions (Stevenson and Radin, 2009) and did not have a meaningful impact on high-level corporate decisions within the responsibilities of the board (Fahlenbrach, Low, and Stulz, 2010). In the case of this study, stronger CEO

experience among directors had a significant negative effect on firms' organizational rejuvenation efforts. This is an intriguing finding that can be further explored in the corporate entrepreneurship literature.

Another interesting result is that director social capital does not have any significant direct effect on firms' organizational rejuvenation. I expected a higher rate of concurrent board memberships would expose directors to new approaches and perspectives to help foster innovation at the focal firm (Cao et al., 2015). Prior research has demonstrated that social capital affects the advice and counsel offered by directors (Carpenter and Westphal, 2001; Westphal, 1999) and also influences decision-making (Johnson et al., 2013; Oh et al., 2006). Directors who concurrently serve on another board observe firsthand the decision making of their peers (Westphal et al., 2001, p. 719), resulting in decision-making scripts that directors may reflexively enact at the focal corporation (Scott, 1995; Westphal et al., 2001). Perhaps this study's insignificant effect of concurrent board memberships stems from the fact that more does not necessarily mean more relevant. Directors who concurrently serve on other boards certainly increase the number of interactions with other decision makers, but board decisions made at other organizations may not be related to corporate entrepreneurship in general or organizational rejuvenation in particular. In addition, directors who serve on boards that have a difficult time making a decision may be less willing to suggest potential solutions at the focal firm.

As expected, director human capital has a stronger effect on organizational rejuvenation than does director social capital. This finding has interesting implications

for decision makers of large, established corporations. Based on the sample frame of the S&P 500, I expected directors' human capital (what they know) to have a stronger influence on corporate decision-making than their social capital (who they know). Larger and more established firms tend to have more complexity across business units and divisions, emphasizing the importance of directors' previous knowledge, skills, and experiences during the decision-making process. On the other hand, smaller and younger firms face the liability of newness (Politis, 2005; Stinchcombe, 1965) and tend to rely heavily on social networks and connections, emphasizing the importance of directors' ties to external organizations and other directors. Perhaps a future research study could further explore this difference between human and social capital with a sample frame of newer, smaller firms like the Inc. 500, the fastest-growing private companies in the United States. It would be interesting to see if director social capital has a stronger effect than human capital on decision-making in these smaller firms.

#### *Director Capital, Entrepreneurial Orientation, and Organizational Rejuvenation*

Prior research has demonstrated that entrepreneurial orientation helps to shape the firm's growth and adaptation (Cao et al., 2015; Covin and Slevin, 1989) and to stimulate effective corporate entrepreneurship and organizational performance (Dess and Lumpkin, 2005). In addition, the organizational context is a contributing factor to the firm's entrepreneurial orientation posture (Cao et al., 2015; Covin et al., 2006). Thus, the entrepreneurial orientation of firms should be a relevant contextual factor in how director human and social capital influence firms' corporate entrepreneurship decisions.

I expected that in firms with a stronger entrepreneurial orientation, the benefits of director capital for the firm's organizational rejuvenation would be even stronger. Firms committed to a corporate-level strategy of entrepreneurial orientation should be more adept at seeking and implementing director feedback because they understand the importance of continuous innovation. However, the interaction of director CEO experience and entrepreneurial orientation had no significant effect on firms' organizational rejuvenation, whereas the interaction of concurrent board memberships and entrepreneurial orientation had a negative effect on organizational rejuvenation.

Surprisingly, higher levels of social capital and entrepreneurial orientation negatively influence organizational rejuvenation within firms. Perhaps the benefits of being exposed to other directors' perspectives and decision-making styles are outweighed by the drawbacks of less attention to and focus on the focal firm. Directors may be stretched too thin with competing obligations and priorities for several board commitments. Prior research has demonstrated that directors serving on multiple boards are too busy to adequately focus on the focal firm (Ferris, Jagannathan, and Pritchard, 2003; Jackling and Johl, 2009; Johnson et al., 2013) and are associated with poorer firm performance (Johnson et al., 2013). Alternatively, directors concurrently serving on multiple boards may find it more difficult to reach consensus on the best path forward for the focal firm. Greater exposure to strategic decision making at external firms could lead to conflicting viewpoints and recommendations among directors on the focal board, resulting in indecisiveness and a bias toward the status quo. As entrepreneurial orientation gets stronger and the average level of concurrent board service increases

within firms, perhaps firm decision-makers are less inclined to pursue organizational rejuvenation because they are more focused on being innovative and proactive externally – in ways that do not rejuvenate the internal processes, structures, or capabilities of the organization itself.

### **Implications**

This dissertation contributes to literature and practice in four primary ways. First, there is a significant gap in understanding the link between corporate governance and corporate entrepreneurship, in particular how a firm's board and structure choices can affect the execution of corporate entrepreneurship initiatives (Corbett et al., 2013). Scholars recently have called for additional research to uncover how the composition of boards of directors, the role of outside directors, and firms' efforts in attracting and cultivating the right human and social capital among their directors can enable continuous corporate entrepreneurial efforts and improved performance (Corbett et al., 2013; Phan et al., 2009). Prior studies have uncovered significant corporate entrepreneurship findings by investigating samples of lower-level employees, middle managers, top management teams, and even CEOs (Behrens and Patzelt, 2016; Byrne, Delmar, Fayolle, and Lamine, 2016; Hornsby et al., 2002; Hornsby et al., 2009; Hughes and Mustafa, 2016; Ling, Simsek, Lubatkin, and Veiga, 2008), but there is a lack of research at the board of directors level of analysis. This dissertation contributes to the literature gap by demonstrating that board composition matters for firms' corporate entrepreneurship initiatives. In addition, the contextual influence of entrepreneurial

orientation on the relationship between corporate governance and corporate entrepreneurship provides an interesting result that can be further explored in future research efforts.

Second, prior corporate governance research has focused extensively on agency theory but has lacked attention to resource dependence theoretical frameworks (Daily et al., 2003). The agency approach has emphasized the monitoring and controlling functions that directors provide on corporate boards instead of highlighting the equally important advice and counsel roles that directors bring to bear during their board service. “Boards of directors serve two important functions for organizations: monitoring management on behalf of shareholders and providing resources” (Hillman and Dalziel, 2003, p. 383). Resource dependence theory argues that directors are providers of resources for the firm (Hillman and Dalziel, 2003; Pfeffer and Salancik, 1978) by leveraging their human and social capital to influence firm strategy, decisions, and performance. In addition, firms can strategically alter board composition to enable necessary strategic changes and decisions (Hillman et al., 2000). Scholars have called for additional studies that disentangle the human and social capital of directors from a resource dependence theoretical framework (Hillman et al., 2009). “In future research scholars may yield more productive results by focusing on the assistance directors provide in bringing valued resources to the firm and in serving as a source of advice and counsel for CEOs” (Daily et al., 2003, p. 375) instead of focusing on directors’ monitoring and control function. This dissertation contributes to the literature by



extending a resource dependence framework that investigates the different effects of director human capital and social capital on firms' organizational rejuvenation efforts.

Third, prior studies have significantly advanced the five constructs of strategic entrepreneurship in theoretical models (Morris et al., 2007), but researchers have struggled to empirically test these constructs given the lack of specific measures. This study adds to existing literature by introducing a straightforward way to empirically measure and test organizational rejuvenation, which is the firms' ongoing changes to internal structures, processes, and capabilities to improve strategy execution (Covin and Miles, 1999; Dess et al., 2003; Kuratko and Audretsch, 2009). The target of innovation is the organization itself (Covin and Miles, 1999). Prior research has largely addressed the strategic entrepreneurship constructs external to the firm, particularly strategic renewal (Agarwal and Helfat, 2009), so the investigation of internal firm changes through organizational rejuvenation serves as a meaningful complement to the existing strategic entrepreneurship literature. In addition, prior studies that use subjective, survey-based measures have produced highly relevant and impactful results, but there is a lack of research that incorporates objective, archival measures of corporate entrepreneurship. This dissertation contributes to the literature by introducing a new archival measure of organizational rejuvenation. This objective measure from readily available secondary data on U.S. public corporations can be used in future research studies to continue investigating antecedents to and outcomes of firm-level corporate entrepreneurship.

Fourth, this dissertation offers interesting practical implications for corporate managers. The analytical results indicate that a higher percentage of directors with CEO experience has a negative effect on the firm's organizational rejuvenation efforts. In addition, as the average number of concurrent board seats increases and the firm's entrepreneurial orientation gets stronger, the firm's organizational rejuvenation decreases. As a result, corporate CEOs who intend to shake things up internally and make changes to organizational structures, processes, and capabilities may want to intentionally seek out director candidates who do not have CEO experience and are not concurrently serving on several other boards of directors. Further, the analytical results show that director human capital has a stronger effect on organizational rejuvenation than does director social capital, supporting the notion that what directors know is more meaningful for large, established corporations than who they know. Corporate CEOs and senior management members should keep in mind that the skills and experiences directors bring to the decision-making process have a stronger effect on organizational rejuvenation than their ties to external organizations and network connections.

### **Limitations and Future Research**

As with all research, this dissertation has its limitations. First, although the research design allows for the evaluation of relationships over several years, it does not provide the ability to draw direct causal inferences among the variables. The reality is that numerous factors influence firms' corporate entrepreneurship decisions and actions;

therefore, the findings from this study add new insights to the director capital and corporate entrepreneurship knowledge domains but do not suggest causation.

Second, the sample includes only large, publicly traded corporations in the United States. This not only presents a selection effect but also precludes generalizability of the findings to small, private firms. Future research could investigate the role of director human and social capital in promoting corporate entrepreneurship in smaller, younger organizations.

Third, the sample frame immediately follows a severe financial crisis and recession in the United States economy. The Great Recession lasted, officially, from December 2007 to June 2009 and continued to be felt months later. Corporate decisions during the sample frame of 2010 to 2014 certainly were influenced by this major event. Perhaps future research that investigates the time period before, during, and after the financial crisis could uncover significant insights related to this dissertation's variables of interest.

Fourth, the new measure of organizational rejuvenation proposed in this study reflects changes in business segment revenue. Although the degree of business segment concentration can serve as a good measure for internal structures and capabilities of each firm, I acknowledge that changes in business segment revenues are affected by many other factors in addition to intentional organizational rejuvenation. This is a limiting aspect of the publicly reported information, which only includes business segment breakouts in terms of revenue.

Fifth, it is likely that the exact measures chosen for director human capital and social capital made a difference in the subsequent results. As noted earlier, previous operationalizations of these director capital variables have differed greatly from study to study. This dissertation implemented director CEO experience and concurrent board memberships as the variables of interest, but perhaps other operationalizations such as industry experience, financial expertise, business ties, or director social standing would yield alternative outcomes. This offers interesting avenues for future research.

Sixth, the entrepreneurial orientation measure is derived from public-facing language chosen by each firm. It is possible that corporate managers intentionally convey a certain image in the annual report business section by carefully selecting the language used to describe the firm. The business section covers items such as company background, business strategy, business organization and segments, products and services, markets and distribution, customers, and competition. This public reputation bias has been pointed out by prior research regarding letters to the shareholders from the CEO or Board Chair. However, the broader scope and length of the annual report business section makes it less likely that managers are deliberately crafting a public image of the firm.

Seventh, entrepreneurial orientation is just one of many potential moderators of the corporate governance-corporate entrepreneurship link. The investigation of other theoretically expected moderators presents numerous future research opportunities for the corporate entrepreneurship literature. Finally, an interesting outcome of this dissertation was that director human capital made a significant difference between firms

whereas director social capital and entrepreneurial orientation made a significant difference within firms. This difference could be further theorized and tested in future studies.

### **Conclusion**

Based on a prior literature gap of understanding how firms' corporate governance and structure choices affect the implementation of corporate entrepreneurship initiatives (Corbett et al., 2013), this dissertation addressed the following research question: *what is the role of director human and social capital in facilitating organizational rejuvenation and how does the entrepreneurial orientation of the firm moderate this relationship?* Resource dependence theory asserts that directors influence the firm decision-making process through the resources that they bring to bear, namely their human and social capital. The results of this study suggest that director capital and firm entrepreneurial orientation do in fact influence corporations' organizational rejuvenation efforts. It is my hope that this dissertation advances the conversation on the important role that directors play in firm decision-making and extends the investigation of the corporate governance-corporate entrepreneurship link in future studies.

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