

Department of Industrial Engineering and Management

Strategic Management of Entrepreneurial Firms during Recession

Juhana Peltonen

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Juhana Peltonen

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Abstract

The existing research on strategic management and entrepreneurship provides relatively few prescriptions to entrepreneurial firms for navigating recessions. The key managerial problem in recession involves ensuring short-term survival while investing in future growth. However, decision-making during recessions occurs in a context of high uncertainty, which may hinder the ability of managers to take optimal strategic actions.

In this doctoral dissertation, I examine these issues mainly through the lenses of the behavioral theory of the firm, resource orchestration theory, and entrepreneurial bricolage. I employ survey and archival data on small and medium-sized Finnish software companies from 2007 to 2011.

The first essay examines when and why entrepreneurial firms adjust their workforces during recession. This study finds that these decisions are primarily driven by changes in sales. In addition, the results suggest that workforce adjustment decisions can spread through board interlocks. Taken together, the findings suggest that both short-run economic reasons and social influences explain firms' decisions to engage in countercyclical and procyclical strategies.

The second essay examines the performance implications of procyclical and countercyclical strategies during recession for firms with different strategic orientations. The findings suggest that countercyclical strategies lead to better performance, but the nature of the relationship is influenced by the degree of proactiveness in the firm's strategic orientation.

The third essay focuses on entrepreneurial bricolage, i.e., how firms obtain new valuable resources at seemingly minimal costs by combining resources of lower value. This essay advances quantitative research on bricolage by developing a novel measurement scale that addresses the weaknesses identified in prior scales. Combined, this dissertation informs theory and practice on the strategic management of entrepreneurial firms during recession by examining performance outcomes of within recession strategies, the factors that drive strategy adoption during recession, and the strategic alternatives that are available to decision-makers.

Keywords economic recession, behavioral theory of the firm, attention-based view, resource orchestration, retrenchment

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Tekijä

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Väitöskirjan nimi

Yrittäjämäisesti toimivien yritysten strateginen johtaminen taantuman aikana

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Nykyinen yritysstrategian ja yrittäjyyden tutkimus tarjoaa yrittäjämäisesti toimiville yrityksille (entrepreneurial firms) niukasti toimenpidesuosituksia, jotka koskevat taloudellisia taantumia. Taantuman aikana yrityksen johdon keskeisin haaste on varmistaa yrityksen selviytyminen lyhyellä aikavälillä ja samanaikaisesti panostaa tulevaisuuden kasvuedellytyksiin. Päätöksentekoon taantuman aikana liittyy kuitenkin paljon epävarmuutta, mikä saattaa heikentää päättäjien kykyä tehdä optimaalisia päätöksiä. Tässä väitöskirjassa tutkin tätä problematiikkaa pääasiallisesti behavioristisen yritysteorian (behavioral theory of the firm), huomiopohjaisen yritysteorian (attention-based view), resurssien orkestroinnin (resource orchestration) sekä bricolage-teorian näkökulmista. Hyödynnän kysely- sekä arkistoaineistoja pienistä ja keskisuurista suomalaisista ohjelmistoyrityksistä vuodesta 2007 vuoteen 2011.

Ensimmäinen essee tutkii milloin ja miksi yrittäjämäisesti toimivat yritykset sopeuttavat henkilöstönsä määrää taantuman aikana. Tämä tutkimus havaitsee, että näihin päätöksiin vaikuttavat pääasiassa muutokset tarkasteltavan yrityksen liikevaihdossa. Tämän lisäksi tulokset viittaavat siihen, että yritysten väliset hallitusjäsenten muodostamat verkostot toimivat kanavina, joiden kautta henkilöstön määrän sopeuttamiseen liittyvät toimitavat leviävät yritysten välillä. Kokonaisuutena tulokset viittaavat siihen, että yritysten strategiisiin päätöksiin toimia joko taloussykliä myötäilevästi (toimintaa supistavasti) tai sen vastaisesti (toimintaa laajentavasti) vaikuttavat sekä lyhyen aikavälin taloudelliset tekijät että sosiaaliset tekijät. Toinen essee tutkii miten yritysten strategisen päätöksenteon orientaatio vaikuttaa siihen, miten nämä taloussyklin myötäiset tai sen vastaiset strategiat vaikuttavat yrityksen tuloksellisuuteen. Tulokset viittaavat siihen, että taloussyklin vastaiset strategiat parantavat tuloksellisuutta, mutta tähän riippuvuussuhteeseen vaikuttaa yrityksen proaktiivinen strateginen orientaatio.

Kolmas essee keskittyy bricolage-käsitteeseen yrittäjyydessä. Käsite liittyy yritysten kykyyn luoda uusia arvokkaita resursseja minimaalisin kustannuksin yhdistelemällä muita vähemmän arvokkaita resursseja. Tämä essee edistää kvantitatiivista bricolage-tutkimusta kehittämällä sen mittaamiseen tarkoitettua skaalan, joka korjaa aiempien skaalojen heikkouksia. Kokonaisuutena tämä väitöskirja edistää strategisen johtajuuden ja yrittäjyyden teoriaa ja käytäntöä tutkimalla strategioiden vaikutusta tuottavuuteen, strategiseen päätöksentekoon vaikuttavia tekijöitä, sekä käytössä olevia strategisia vaihtoehtoja taantuman aikana.

Avainsanat taloudellinen taantuma, behavioristinen yritysteoria, huomiopohjainen yritysteoria, resurssien orkestrointi, säästötoimet

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Espoo 2014,

Juhana Peltonen

STRATEGIC MANAGEMENT OF ENTREPRENEURIAL FIRMS DURING RECESSION

LIST OF RESEARCH PAPERS

This dissertation consists of this summary and the following three research papers:

1. Peltonen, J., 2014. Board Interlocks and Entrepreneurial Firms' Decisions to Hire and Fire during Recession.
2. Peltonen, J., 2014. Resource Orchestration of Entrepreneurial Firms: Interaction Effects of Recession Strategy, Entrepreneurial Orientation, and Performance.
3. Rönkkö, M., Peltonen J., Arenius P., 2013. Selective or Parallel? Toward Measuring the Domains of Entrepreneurial Bricolage, in Andrew C. Corbett, Jerome A. Katz (Eds.) Entrepreneurial Resourcefulness: Competing With Constraints (Advances in Entrepreneurship, Firm Emergence and Growth, Volume 15), Emerald Group Publishing Limited, pp. 43-61.

Contributions of the author:

Essays 1 and 2 are single-authored studies. For Essay 3, the author jointly developed the questionnaire items with the first author, wrote the introduction, conducted and documented the data collection jointly with the first author, and acted as the corresponding author throughout the publication review process. The contributions of the first and second author were equal.

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CHAPTER 1:

PELTONEN, J., 2014. BOARD INTERLOCKS AND ENTREPRENEURIAL FIRMS' DECISIONS TO HIRE AND FIRE DURING RECESSION.

CHAPTER 2:

PELTONEN, J., 2014. RESOURCE ORCHESTRATION OF ENTREPRENEURIAL FIRMS: INTERACTION EFFECTS OF RECESSION STRATEGY, ENTREPRENEURIAL ORIENTATION, AND PERFORMANCE.

CHAPTER 3:

RÖNKKÖ, M., PELTONEN J., ARENIUS P., 2013. SELECTIVE OR PARALLEL? TOWARD MEASURING THE DOMAINS OF ENTREPRENEURIAL BRICOLAGE.

INTRODUCTION TO THESIS

1. BACKGROUND

The Financial Crisis and the subsequent global economic downturn referred to as the Great Recession have highlighted the need to better understand strategic management surrounding major and vaguely anticipated shocks (Agarwal, Barney, Foss, & Klein, 2009). Business failure statistics highlight that this managerial task is highly demanding; with the onset of the Financial Crisis, the number of bankruptcies more than doubled in the United States compared to the beginning of 2007, and increases of over 50% were not uncommon in other advanced economies (OECD, 2013: 19). In Finland, approximately 20% more companies¹ ceased in 2008 compared to 2007 (Statistics Finland, 2013a). Despite some efforts to synthesize research (e.g., Latham & Braun, 2011), there is currently no unified theory of management during recessions that investigates which managerial actions improve firm-level performance outcomes or what determines the actions that firms actually undertake. However, the broad nature of these issues calls into question whether a fully unified theoretical framework can or should exist.

There are, however, numerous theories in the fields of strategic management and entrepreneurship that address parts of this topic. The three essays presented in this thesis also build on different theories to address specific research questions. The essays all link to the body of strategic management literature that investigates the orchestration of strategic resources (Sirmon, Hitt, Ireland, & Gilbert, 2010; Sirmon, Hitt, & Ireland, 2007; Sirmon & Hitt, 2003; Helfat, Finkelstein, Mitchell, Peteraf, & Singh, 2007) of entrepreneurial firms under the suddenly increasing environmental uncertainty and hostility caused by the onset of recession.

While the broad managerial issues related to recessions are difficult grasp from a theoretical standpoint, recessions as a phenomenon of economic life are easier to approach. Recessions are declared by observable declines in macroeconomic variables (e.g., NBER, 2014; Rémond-Tiedrez, 2009). Economic contractions are an integral part of economic life: a boom is always followed by a bust. For example, the National Bureau of Economic Research has documented 33 business cycles in the US since 1854. Since 1945, the average duration of a business cycle has been 5.7 years (NBER, 2014). Despite their periodic nature, the duration and magnitude of business cycles have proven notoriously difficult to predict.

Beyond the macroeconomic variables, recessions are also a complex societal phenomenon, which affects business environment and decision-

¹ Limited liability companies, general partnerships, limited partnerships, and cooperatives.

making in many ways. Several scholars consider recessions essential to the process through which economies renew themselves and the point at which new goods, new methods of production, and new forms of industrial organization replace the previous (Caballero & Hammour, 1994; Schumpeter, 1934, 1942). Recessions themselves may also shift consumer preferences and even create generations of consumers that behave differently throughout their lifetimes (Flatters & Willmott, 2009; Hur, 2012). In other words, recessions are not only temporary quantitative economic declines that are difficult to predict but also involve qualitative changes in economic activity, which can include changes in both customer preferences and offerings of firms.

During a recession, all firms must strike a balance between cutting costs to survive in the present and investing in future growth (e.g., Gulati, Nohria, & Wohlgezogen, 2010; Latham & Braun, 2011; Pearce & Michael, 2006; Roberts, 2003). This tradeoff can justify different recession responses, i.e., within recession strategies (Latham & Braun, 2011), depending on the industry in question. For mature industries with modest long-term growth prospects, cutting costs and divesting assets to increase profitability and slack are common and often successful strategies (Hambrick & Schechter, 1983; Michael & Robbins, 1998; Pearce & Robbins, 1993). For entrepreneurial firms in growth industries, assuring that the firm is able to capture its share of future revenue should not be neglected (Guthrie & Datta, 2010; Morrow, Johnson, & Busenitz, 2004; Ndofor, Vanevenhoven, & Barker, 2013).

While high-level boundary conditions for a within recession strategy are not difficult to outline, identifying the means through which firms adjust their resources is a different matter. There is a broad range of approaches to the issue; in addition to acquiring, developing, or divesting internal resources (Barney, 1986; Maritan & Peteraf, 2011), firms can also adjust their use of external services, or better ‘make do’ with new combinations of mundane resources they have access to (Baker & Nelson, 2005). In addition, firms must consider the capabilities that their modified resource sets provide and how to utilize these capabilities in new entries in the changing marketplace (cf. Sirmon, Hitt, & Ireland, 2007; Sirmon, Hitt, Ireland, & Gilbert, 2011; Lumpkin & Dess, 1996).

Apart from better knowing what resource-related actions improve firm performance, what actions firms actually end up undertaking is a different matter. Understanding these processes, especially harmful decision-making biases under conditions of greater uncertainty and risk of failure, can result in important managerial recommendations. When adapting to performance feedback (Cyert & March, 1963), firms differ in which information they pay

attention to and how they react to it (Ocasio, 1997; Hoffman & Ocasio, 2001). In particular, social ties are highly important for decision-making in entrepreneurial firms, which can have both positive and negative consequences (Uzzi, 1997). However, there is little research on how the managers of entrepreneurial firms develop responses to performance declines and allocate the attention of its decision-makers. Unlike large public firms, the boards of entrepreneurial firms are likely to play a critical role in the process (Garg, 2013), and can give the firms a more external orientation in the process of examining strategic alternatives (Vissa, Greve, & Chen, 2010).

In sum, this overview highlights three perspectives that are important for the strategic management of entrepreneurial firms during recession. First, it is important to understand what the general strategic alternatives are for firms. Second, in order to compare the alternatives, information is required on their likely performance outcomes. Third, the decision-making context in adopting a strategy needs to be understood (Vaara & Durand, 2012), because it is not sufficient to know what actions are more beneficial than others, but the most suitable actions also needs to be undertaken. The following section refines these issues into more concise research questions, and outlines the theories they are related to.

2. RESEARCH QUESTIONS

Before proceeding to the research questions, I wish to highlight some reasons why it is important to study the management of entrepreneurial firms² in a recessionary context. Firstly, while more research on entrepreneurship is being conducted than ever before, there are several streams of literature particularly in the domain of strategic management that are highly relevant for entrepreneurial firms, but have predominantly been researched in a large firm context. To give a few examples, the behavioral theory of the firm (BTOF) (Cyert & March, 1963; Greve, 2008; Audia & Greve, 2006; Vissa et al., 2010) has been developed with large firms in mind, and it has been empirically studied almost exclusively in a

² Generally speaking, the field of entrepreneurship considers that 'entrepreneurial firms' embody 'entrepreneurship' or 'entrepreneurial behaviors'. However, there is no consensus on the definitions of these terms (e.g., Shane & Venkataraman, 2000; Alvarez & Barney, 2004). Yet, common to most definitions is some sort of theoretical departure from using existing resources to achieve previously known outcomes using previously known processes and practices. This departure may subsequently result in qualitatively novel ways of organizing economic activity. While the construct of an 'entrepreneurial firm' is not a simple dichotomy, industries where the rate of technological change and interfirm rivalry are high (e.g., the software industry), firms are arguably required to be at least somewhat entrepreneurial to thrive or simply to survive.

large firm context (Dew, Read, Sarasvathy, & Wiltbank, 2008). Meanwhile, the goals (or aspirations) of decision-makers, which are central to driving organizational adaptation according to the theory, can be highly different and heterogeneous for entrepreneurs (e.g., Shane, Locke, & Collins, 2003; Wiklund & Shepherd, 2003a). These kinds of generalizability issues related both to theoretical and empirical research can be identified in several other relevant streams as well. These include the role of boards of directors in decision-making (e.g., Garg, 2013), the performance outcomes of cost-cutting strategies (e.g., Morrow et al., 2004), and the strategies of managing resources (e.g., Baker & Nelson, 2005).

Furthermore, it should be highlighted that entrepreneurial firms are important sources of future economic growth and renewal (e.g., Ouyang, 2009; Schumpeter, 1934). The issue is also important from a short-term perspective because firms that fail during recessions (or any other time) are often small and young (OECD, 2013: 44–50). Given these academic and broader societal motivations, I study the following main research question:

How can entrepreneurial firms be managed surrounding a sudden economic downturn to increase their performance?

I begin decomposing this research question by observing that the public eye is biased towards reporting entrepreneurial successes, while the negative effects of recessions on entrepreneurial firms rarely receive publicity. For example, mass layoffs by large firms often receive media coverage, but accounted for a minority of private sector job cuts during the Great Recession in the US and EU (Helfand, 2010; Wymenga, Spanikova, & Derbyshire, 2011). CEOs of public companies issue statements justifying why they resorted to workforce downsizing, but less information is available on the reasons behind the layoffs of the ‘greater half’. This motivates my examination of the reasons that lead entrepreneurial firms to adjust their workforces during the onset of recession.

Essay 1 on the determinants of adapting workforce size in entrepreneurial firms during the onset of the Great Recession

Workforce adjustments are a clear and frequently used approach to adjust the resource portfolio of a firm (Datta et al., 2010). In this essay, I apply BTOF (Cyert & March, 1963; Greve, 2008; Audia & Greve, 2006; Vissa et al., 2010) and the attention-based view (ABV) (Ocasio, 1997; Hoffman & Ocasio, 2001; Ocasio, 2011) to investigate these actions. As the trigger for workforce adjustments, I examine the role of changes in sales. This

measure is perhaps the most sensitive to how a sudden economic shock impacts a firm. A drop in sales has also been reported to be the most important problem that small US businesses associated with the onset of the Great Recession (Şahin, Kitao, Cororaton, & Sergiu, 2011).

Existing research drawing from several theoretical streams suggests that retrenchment, including workforce reductions, may be harmful to the performance of entrepreneurial firms (Guthrie & Datta, 2010; Morrow, Johnson, & Busenitz 2004; Ndofor, Vanevenhoven, & Barker 2013). Assuming that countercyclical strategies³ are indeed beneficial in this context, what actions do managers actually undertake and when?

Prior research on retrenchment (e.g., Grinyer & McKiernan, 1990) has turned to BTOF (Cyert & March, 1963; Greve, 2008; Audia & Greve, 2006; Vissa et al., 2010) to explain what causes companies to adapt to performance shortfalls. This body of empirical research has mainly focused on rather large firms in mature industries. BTOF views firms as short-run adaptive performance feedback systems that gradually take stronger corrective actions if the difference between aspirational and realized performance grows.

ABV highlights that attention is situated, that is, the importance of the situation in which decision-makers find themselves, rather than the characteristics of the individuals themselves. One consequence of this view is that network ties can strongly influence the organizational adaptation of entrepreneurial firms (e.g., Uzzi, 1997), particularly when facing hostile environmental jolts (Venkataraman & Van De Ven, 1998). Yet, person-level network ties are abstracted away in contemporary BTOF research (e.g., Gavetti et al., 2007; Gavetti et al., 2012), and the social context is often examined through higher level, aggregate variables. This leads to the following research subquestion:

How do the network ties of decision-makers influence workforce adjustments in response to failure to meet sales aspiration levels in entrepreneurial firms?

Board interlocks (Mizruchi, 1996) form a particularly influential interorganizational network, which can spread various behaviors (e.g., Davis, 1991; Gulati & Westphal, 1999; Haunschild, 1993; Westphal et al., 2001). Board interlocks represent the ABV concept of attention structures

³ Paralleling Mascarenhas and Aaker (1989), here I consider a procyclical strategy to involve orchestrating the firm's resources and capabilities to be better aligned with the imminent state of the macroeconomic environment. This involves 'scaling down' in various areas of internal and external expenditures (e.g., in workforce size, R&D spending, and marketing) to protect the firm's profitability under harsher demand conditions. A countercyclical strategy refers to doing the opposite: orchestrating the firm's resources and capabilities in an expansive fashion during the recession, which may enable firms to position themselves for postrecession growth at a lower cost.

that shape the time, effort and attention focus of organizational decision-makers and determine how the firm legitimates and values issues and answers (March & Olsen, 1976; Ocasio, 1997).

As prior BTOF has found that belonging to a business group influences search patterns giving them an external orientation (Vissa et al., 2010), it is reasonable to assume that the same would apply to board interlocks. The importance of this external influence can be expected to grow as environmental uncertainty increases, as firm may economize on search by adopting actions from other organizations (DiMaggio & Powell, 1983; Milliken, 1987).

The deviation from prior performance can include steep declines in sales, which implies stronger pressure to downsize. Similarly, some firms may encounter somewhat surprising sales increases, which increase pressure to expand despite potentially fragile demand. Hence, either increases or decreases in sales should make the firm more susceptible to external social influences, including those spread by board interlocks.

Essay 2 on the performance implications of resource portfolio structuring actions and entrepreneurial orientation

Essay 2 examines the performance implications of countercyclical and procyclical with recession strategies. For a more refined analysis beyond this dichotomy, I draw on the resource orchestration literature (Sirmon, Hitt, Ireland, & Gilbert, 2010; Sirmon, Hitt, & Ireland, 2007; Sirmon & Hitt, 2003; Helfat, Finkelstein, Mitchell, Peteraf, & Singh, 2007). Resource orchestration advances resource-based theory (RBT) by providing a dynamic framework of how resources are used to create and capture value. According to RBT (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984; Penrose, 1959; Amit & Schoemaker, 1993; Barney, Ketchen, & Wright, 2011), firms are heterogeneous bundles of resources and capabilities, which explains observed performance differences among them (McGahan & Porter, 1997; Rumelt, 1991). According to RBT, a firm has a competitive advantage if it possesses valuable and rare resources (Barney, 1991). However, a firm must renew its resources and capabilities to remain competitive because competitive advantages can rarely be sustained (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997; Winter, 2003).

Resource orchestration examines the actions that managers take to employ firm resources effectively by structuring the firm resource portfolio, bundling resources into capabilities, and leveraging these capabilities to create value. Structuring a firm resource portfolio relates to acquiring (Barney, 1986), accumulating (Dierickx & Cool, 1989a), or divesting

resources. Firms can acquire or divest resources (e.g., business units, plants, human capital, or IPR) on strategic factor markets (SFMs) (Barney, 1986). In addition to making good decisions to structure resource portfolios and bundle resources into capabilities, firms must also leverage their capabilities to create value (Sirmon et al., 2007). Furthermore, these processes be synchronized and not viewed in isolation (Sirmon et al., 2007: 287); A firm should not modify its resource portfolio without understanding how the change affects its capabilities or how the new capability set will be utilized.

While this is an area that RBT has often ignored (e.g., Priem, Butler, & Li, 2013; Priem & Butler, 2001a, 2001b), firms can have different strategic orientations⁴ regarding how they leverage their capabilities. The strategic orientation that involves leveraging capabilities in an entrepreneurial fashion – which recessionary conditions warrant (Sirmon et al., 2007) – can be examined through the lens of the entrepreneurial orientation (EO) literature (Lumpkin & Dess, 1996; Covin & Slevin, 1989). The entrepreneurial orientation construct (EO) relates to the degree to which new firm entries are conducted in an entrepreneurial fashion, and it is typically considered to consist of three dimensions: innovativeness, proactiveness, and risk taking. The EO perspective suggests that when firms decide on adopting countercyclical or procyclical resource portfolio structuring strategies, they should consider their established ways of making new entries to make most use of their modified resource portfolios. Therefore, I examine the following subquestion:

How does an entrepreneurial firm's strategic orientation of leveraging its capabilities influence the firm's performance jointly with its resource portfolio structuring actions?

More specifically, recessions have implications on resource orchestration in two key areas: they influence what kinds of resource portfolios firms should have, and how firms should leverage the capabilities that the resources enable. The resource portfolio question can be analyzed by viewing how recessions affect SFMs. The price of the resources should correspond to expected future returns. However, during recessions (especially disturbances in credit markets), SFMs may become oversold as companies with good long-term prospects fail or are forced to divest assets due to short-run liquidity problems. This problem provides a rationale for

⁴ Drawing on Mintzberg (1973: 44) and Covin & Slevin (1989: 77), a firm's strategic orientation refers to its overall competitive orientation, that is shaped by the ways in which a firm makes important decisions and forms strategies. A firm's entrepreneurial (strategic) orientation (EO) is discussed in more detail in section 3.5.

countercyclical strategies (e.g., Greer, Ireland, & Wingender, 2001; Greer & Stedham, 1989; Pangarkar & Lie, 2004; Wan & Yiu, 2009) through which firms obtain resources at a discount during recessions and utilize them to create more value than their price would imply as the recession recedes.

However, for declining or mature industries, the long-term advantages of a countercyclical strategy may be difficult to grasp. Firms may face a persistent need to downsize with the declining market and act in SFMs primarily as sellers. Additionally, future returns from resources may be modest. Therefore, recessions may not create the same buying opportunities in SFMs for mature industries as they do for growth industries. Because these firms place less emphasis on future growth and more emphasis on survival and profitability, reducing their resources through retrenchment (Schendel, Patton, & Riggs, 1976; Hofer, 1980; Hambrick & Schecter, 1983; Pearce & Robbins, 1993) can be a more viable strategy to maximize performance. In addition to operating on SFMs, firms can structure their resource portfolios through internal accumulation (Dierickx & Cool, 1989a). SFM theory suggests that the investment costs of developing resources through accumulation should be approximately equal to acquiring similar resources through strategic factor markets (Barney, 1989; Dierickx & Cool, 1989b).

In simplifying terms, the above discussion captures a logic that is similar to a stock trader's most important rule: buy low, sell high. However, when firms and resources are in question, there are some important departures from this logic. First, firms are bundles of complementary resources (cf. Adegbesan, 2009). This implies a firm's past resource position can have a great impact on the synergies it can create with new resources. Second, firms are different in how they leverage their resources, which can both influence their ability to capture value from the resources that they have, and help them identify resources from SFMs that are valuable to them.

A firm's EO, which is considered to be fairly consistent over time, has an impact on both of these areas particularly in a recessionary context. Primarily, EO deals with how a firm makes new entries, including how capabilities can be used in new ways. EO may also influence a firm's ability to benefit more from 'oversold' SFMs by helping it identify more valuable ways to use new resources (or to form superior expectations). Furthermore, EO indirectly influences the accumulation of a firm's resources and capabilities. For example, pursuing an innovative and proactive strategy can give the firm new experiences that improve its knowledge-based resources.

Essay 3 on bricolage as a resource orchestration approach

Merely aligning accumulation, acquisition, and divestment actions with industry conditions and the business cycle does not account for qualitatively novel economic activity (cf. Schumpeter, 1934). As previously noted, recessions also change consumer behavior, and merely correctly timing actions that scale firm resources do not account for the processes that renew economies. Furthermore, this setting suggests that larger firms with ample resources would seemingly have a disproportionate advantage over smaller and younger firms with fewer resources when acquiring resources on SFMs. Yet, history is replete with examples in which established firms are bested by younger and smaller rivals with apparent initial resource disadvantages.

SFM theory accommodates this process partly through the concept of resource complementarity (Adegbesan, 2009). Firms that have resources with a greater degree of complementarity with a new target resource are able to create larger surpluses. This is one (partial) way of articulating Schumpeter's (1934) entrepreneurial role, which involves the introduction of new combinations.

Essay 3 addresses a resource portfolio structuring approach that lies between resource acquisition (Barney, 1986) and accumulation (Dierickx & Cool, 1989a): entrepreneurial bricolage (Baker, Miner, & Eesley, 2003; Baker & Nelson, 2005; Lanzara, 1999). Baker and Nelson (2005) define bricolage as 'making do by applying combinations of the resources at hand to new problems and opportunities'. Despite the potential of this concept to explain how resource-constrained firms appear to create valuable and rare resources from seemingly nothing, the measurement of entrepreneurial bricolage is underdeveloped, which hinders empirical research on the topic. The third essay addresses this gap and documents the process of developing a novel scale to measure entrepreneurial bricolage.

The most commonly used measurement scale for bricolage was developed in conjunction with the CAUSEE project (Davidsson, Steffens, & Gordon, 2011) and measures how commonly different elements of this definition manifest at the firm level (Senyard, Baker, & Steffens, 2010; Senyard, Baker, & Davidsson, 2009; Steffens, Baker, & Senyard, 2010; Senyard, Baker, Steffens, & Davidsson, 2014). One benefit of this approach is that it addresses how often bricolage takes place. However, theory developed on bricolage suggests that the breadth of areas in the firm's operation where bricolage manifests impacts growth outcomes (Baker & Nelson, 2005). Baker and Nelson (2005) refer to these areas of operation as the domains of bricolage. The research question of the third essay can be stated as follows:

How can entrepreneurial bricolage be measured through the domains in which it manifests?

According to Baker and Nelson (2005), bricolage may manifest in five different environmental domains that fall into three categories: (i) inputs (physical, labor, skills), (ii) customers/markets, and (iii) institutional and regulatory environments. Baker and Nelson (2005) further argue that if bricolage is undertaken in all domains (parallel bricolage), it is likely to create a bricolage identity or permissive community of practice, which hinders growth by reducing the firm's ability to identify and seize opportunities in broader markets. However, if bricolage manifests in fewer domains (selective bricolage) firms may be able to develop new resources at a minimal cost without suffering from the drawbacks of parallel bricolage. Testing this theory requires a scale that can distinguish the degree to which bricolage is parallel.

Particularly during recessions, entrepreneurial firms can be resource-strapped, which implies that the resources they are able to use for combination are seemingly very limited. On the other hand, many firms fail during recession freeing up their resources to SFMs. Under these circumstances, bricolage can be a viable option for entrepreneurial firms to overcome their resource constraints and make use of resources that other firms have been forced to abandon.

3. THEORETICAL BACKGROUND

There is currently no unified or broadly accepted theory of 'management during recession'. Instead, the limited number of studies that touch upon such conditions tend to apply a broad range of theories and focus on specific areas of strategy (e.g., Greer, Ireland, & Wingender, 2001; Mascarenhas & Aaker, 1989; Wan & Yiu, 2009). While holistic recession-centric approaches are yet to gain major traction in the scholarly community, the framework developed by Latham and Braun (2011) provides a promising step forward and a suitable lens for the main areas of inquiry in this dissertation. Latham and Braun (2011) propose that firm-level initial conditions (e.g., resources and capabilities) and their within recession performance (performance during a recession) significantly influence strategic decisions during recessions (within recession strategy). Subsequently, a firm's performance after a recession (post-recession performance) is significantly influenced by the firm's within recession

strategy and initial conditions. From the perspective of this framework, my theoretical review focuses on (i) selecting within recession strategies, (ii) performance implications of within recession strategies, and (iii) possible within recession strategies. These domains also map closely with the respective essays.

I examine the first domain through BTOF and ABV. The second domain is viewed through RBT, particularly resource orchestration, which also provides a common theoretical foundation for the essays (see Figure 1). Entrepreneurial orientation (EO) and its dimensions are considered in relation to how a firm leverages its capabilities. The third domain is addressed through entrepreneurial bricolage as a complement to research examining business turnarounds. In the remainder of this chapter, I provide a detailed overview of these theories.

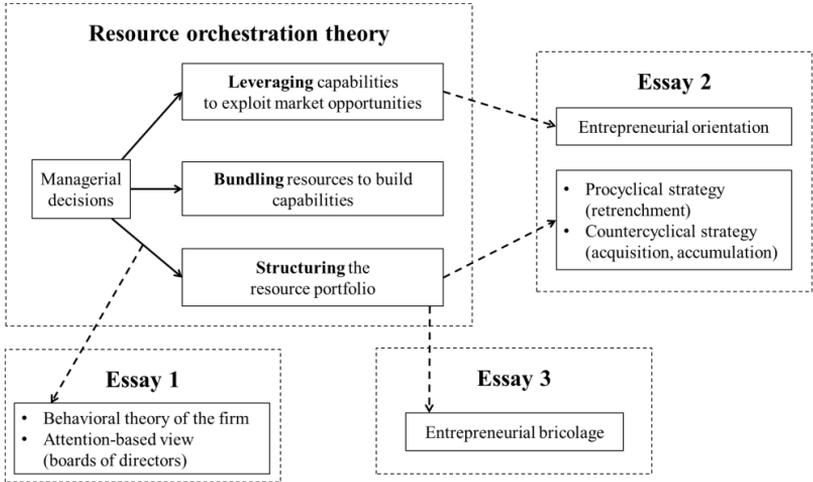


Figure 1. The relationships of the essays to resource orchestration and other literature streams.

3.1 The Behavioral Theory of the Firm and the Attention-Based View

The behavioral theory of the firm (BTOF) (Cyert & March, 1963; Greve, 2008; Audia & Greve, 2006; Vissa et al., 2010) is perhaps the most commonly utilized theory to examine organizational adaptation over the short term. BTOF argues that organizations are fundamentally averse to change and uncertainty; therefore, they undertake major changes only if required by significant and imminent reasons. According to this theory, organizations adapt to environmental changes incrementally based on

short-term feedback, and address issues sequentially according to an order of priority.

According to BTOF, an organization compares its realized performance to its aspirational performance. An organization can possess aspiration levels for areas including profitability, sales, market share, or production. Aspiration levels are a function of previous performance and goals as well as the performance of comparable organizations (Cyert & March, 1963: 162). Underachievement with respect to an aspiration level (or an immediate expectation of it) can trigger problemistic search (p. 169), the motivated search to identify (and take) actions to reach the aspiration level of performance.

Problemistic search gradually expands from a simple model of causality in which solutions are sought from areas that are within close proximity of the symptoms. If no solution is found, then problemistic search proceeds to more distant areas with higher levels of complexity and areas in which the organization has slack (p. 171). The search process ends when the firm reaches its aspiration level of performance or when it revises its aspiration level to match current performance. Organizational adaptation can also be driven by more than one aspiration level in the same area of interest. For example, a modest decline in profits below target can be remedied through additional risk-taking. However, if profits fall to level that threatens organizational survival, the dangers of risk-taking increasingly influence decision-making (Audia & Greve, 2006; March & Shapira, 1987, 1992).

BTOF assumes that problemistic search is biased by the manner in which an organization views the environment and processes information about it (Cyert & March, 1963: 162-171). Similarly, it can be expected that biases are introduced when organizations form their aspiration levels through social comparison (Festinger, 1954). However, BTOF acknowledges these biases to exist, it does little to elaborate how they are formed. The attention-based view of the firm (ABV) (Hoffman & Ocasio, 2001; Ocasio, 1997) complements BTOF in this area. According to the theory, firm behavior is a result of how firms channel and distribute the attention of their decision-makers. Therefore, small differences in how organizations focus their limited attention can result in inertia, inappropriate change, or successful adaptation. (Ocasio, 1997)

According to Ocasio (1997), the cultural and cognitive schemas that are available to decision-makers determine which environmental stimuli the firm attends to (issues) and which responses are applicable to them (answers) (Cohen, March, & Olsen, 1972). ABV highlights that attention is situated, which refers to the importance of the situation in which decision-makers find themselves, rather than the characteristics of the individuals

themselves. Furthermore, attention is distributed within the organization, that is, the foci of attention vary throughout the organization.

The central constructs of the ABV include the *attention structures* that shape the time, effort and attention focus of organizational decision-makers and determine how the firm legitimates and values issues and answers (March and Olsen, 1976; Ocasio, 1997). Attention structures relate closely to *procedural and communications channels*, which represent the situational contexts in which attention and action occur. They include formal and informal meetings, reports, and administrative protocols (Ocasio, 1997).

BTOF and ABV are applied in this dissertation in the context of entrepreneurial firm boards. Boards of directors are a central part of firm administration, and their role is to monitor the behavior of management and 'step in' when significant corrective action is needed. Hence they are an important part of problemistic search and also channel the attention of the organization. This approach extends prior research in the intersection of external organizational attention and problemistic search (Vissa et al., 2010).

3.2 Entrepreneurial Firm Boards

Boards of directors as a corporate governance mechanism have fascinated researchers for decades (see e.g., Daily, Dalton, & Cannella, 2003; Johnson, Daily, & Ellstrand, 1996; Mizruchi, 1996 for reviews). Much research effort has been devoted to applying agency theory (Jensen & Meckling, 1976; Fama & Jensen, 1983) to explain how the separation of ownership and control shapes organizational phenomena. Board research has focused mainly on large public companies, while small and medium firms have received much less attention (Daily et al., 2003; Huse, 2000; Machold, Huse, Minichilli, & Nordqvist, 2011). Yet the boards of small firms have long been considered an important organizational asset beyond their control function (Certo et al., 2001; Daily and Dalton, 1992). Researchers have examined their various value-added activities, such as securing resources (e.g., Guler, 2007; Hallen, 2008; Katila, Rosenberger, & Eisenhardt, 2008), providing legitimacy (e.g., Chen, Hambrick, & Pollock, 2008; Stuart, Hoang, & Hybels, 1999), and advice (e.g., Fried, Bruton, & Hisrich, 1998; Rosenstein, Bruno, Bygrave, & Taylor, 1993).

However, theory development on entrepreneurial firm boards has recently begun to receive more attention (Garg, 2013, 2014; Krause & Bruton, 2014). This recent work builds on the differences with public firm boards. For example, the separation between ownership and control is weaker in private firms, and therefore the alignment of financial incentives

between the management and owners of a firm is stronger (Garg, 2013). Boards of private firms are also likely to have better practical knowledge of the industry sector, whereas public firm directors typically come from other industries to improve independence (Davis & Cobb, 2010; Linck, Netter, & Yang, 2009). Despite these strengths, Garg (2013) argues that too much board monitoring in entrepreneurial firms may harm performance by inhibiting innovation, drawing executives' attention away from substantive tasks, and leaving them with a low sense of self-control.

In this dissertation I view entrepreneurial firm boards through the lens of the ABV, which is an approach that has been previously adopted in the context of public firm boards (e.g., Tuggle, Schnatterly, & Johnson, 2010; Tuggle, Sirmon, Reutzel, & Bierman, 2010). The ABV is a valuable theoretical lens in this context for two reasons. First, as central components of administration, boards can be considered a significant element of firm *procedural and communications channels*. Second, boards of directors can create links between organizations by forming interlocks. A board interlock occurs when a person who is affiliated with one organization sits on the board of directors of another organization (Mizruchi, 1996). Therefore, they act as *attention structures* (March and Olsen, 1976; Ocasio, 1997) that have an external orientation from the perspective of the focal firm.

The role of board interlocks in shaping the attention of entrepreneurial firm boards has received little of no research attention previously. It can however be expected, that the board becomes more active when the firm faces a risks of a downturn or poor performance and it's owners become concerned about the performance of their investments (Fiegener, 2005; Gabriellson, 2007). Therefore, board interlock networks might also influence how firms adapt when they deviate from prior performance levels, especially under the economic uncertainty that surrounds the onset of a recession.

3.3 Resource Orchestration

Resource orchestration (Sirmon et al., 2011, 2007; Sirmon & Hitt, 2003; Helfat et al., 2007) is theoretically grounded in the resource-based (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984; Penrose, 1959) and dynamic capabilities literatures (Eisenhardt & Martin, 2000; Teece et al., 1997; Winter, 2003) and examines the actions that managers take to employ the firm's resources effectively by structuring the resource portfolio, bundling resources into capabilities, and leveraging the capabilities to create value. The resource management model proposed by Sirmon, Hitt, and Ireland (2007) is the dominant model in this body of literature. It seeks to address

several issues within 'static' RBT, namely neglecting dynamism, environmental contingencies, and the role of managers.

Sirmon et al. (2007) distinguish between value creation for customers and wealth creation for owners (e.g., Coff, 1999). The former is achieved if the firm produces greater utility for customers than competitors do, which implies that the firm has a competitive advantage (Hoopes, Madsen, & Walker, 2003; Powell, 2001). The latter further requires that utility and costs be optimized through resource management. The resource management process model includes three levels, which address managerial action in developing resource and capability portfolios, and putting them into use. The first level, structuring the resource portfolio, essentially determines the origin of the firm's resources. This level captures the stream within RBT that considers accumulating resources through internal development (Dierickx & Cool, 1989a), strategic factor markets (Barney, 1986), or divestment.

At the second level, capabilities are formed (or bundled) by integrating resources within the firm's resource portfolio. This formation takes place through three main processes. First, stabilizing refers to making minor incremental improvements to existing capabilities, such as training employees. Second, enriching refers to extending and elaborating existing capabilities, such as integrating newly acquired resources into existing capabilities. Third, pioneering refers to creating completely new capabilities. Although pioneering can involve recombining existing resources, Sirmon, Hitt & Ireland (2007) argue that it often involves completely new resources.

At the third level of resource management, capabilities are leveraged to create value. This level involves exercising the option to apply firm resources to achieve a desired outcome, which is enabled by possessing capabilities (Winter, 2003). Sirmon et al. (2007) list three main leveraging strategies. The resource advantage strategy involves providing higher value to customers through a distinctive competence in an existing market. The exploiting market opportunities strategy involves configuring existing capabilities to target or create new opportunities, which are often adjacent to the markets in which the firm already operates. Finally, the entrepreneurial strategy involves producing new goods or services for new markets. Sirmon, Hitt & Ireland (2007) also elaborate on the processes that are required to pursue resource leveraging strategies.

Overall, Sirmon et al. (2007) argue that all elements of resource management must be viewed jointly because they are inherently linked in ways that often include organizational idiosyncrasies. Sirmon et al. (2007) also acknowledge the importance of the firm operating environment, which

they decompose by munificence and uncertainty. Environmental munificence refers to the 'scarcity or abundance of critical resources needed by (one or more) firms operating within an environment' (Castrogiovanni, 1991: 542). Environmental uncertainty (i.e., dynamism), on the other hand, is reflected by the regularity and amount of change occurring in the environment, including changes in industry structure, stability of market demand, and probability of environmental shocks (Sirmon et al., 2007: 275). Because the value of resources can vary across environmental contexts, the value-creating potential of the firm is affected along with the related resource management process.

Interest in resource orchestration has produced several empirical studies (Sirmon, Gove, & Hitt, 2008; Sirmon & Hitt, 2009; Ndofor, Sirmon, & He, 2011; Chadwick, Super, & Kwon, 2014; Holcomb, Holmes, & Connelly, 2009; Morrow, Sirmon, Hitt, & Holcomb, 2007). While these studies address only limited aspects of the Sirmon et al. (2007) model, they provide promising evidence that supports the key theses of the theory. For example, Sirmon and Hitt (2009) examine the relationship between human and physical resource investments and performance for banks that vary by the degree of sophistication of their services. While the study does not account for the environmental context, it suggests that resource investment and deployment decisions must be aligned.

Given the recent emergence of research on resource orchestration, there are also many empirical research gaps. Particularly relevant to this dissertation is resource orchestration in the context of extreme uncertainty, and Sirmon et al. (2007: 287) propose that an entrepreneurial leveraging strategy is likely to be required to create value for customers.

3.4 Business Turnarounds and Retrenchment

Research on business turnarounds (Pearce & Robbins, 1993; Robbins & Pearce, 1992; Hofer, 1980; Schendel et al., 1976; Morrow et al., 2004; Morrow et al., 2007; Trahms, Ndofor, & Sirmon, 2013) seeks to understand how firm performance declines can be reversed. The central concepts of the stream include the turnaround situation, where the firm's performance has gradually deteriorated (Bibeault, 1982; Hambrick & Schecter, 1983; Schendel et al., 1976). An additional boundary condition, which often remains unstated in recent research, is that the firm must attempt to reverse the decline rather than opt for liquidation (Hofer, 1980).

The cause of a turnaround situation can include any combination of internal (e.g., operating inefficiencies) or external (e.g., a recession) factors (e.g., Boyle & Desai, 1991; Finkin, 1985; Heany, 1985), which unfold and impact matters from the short-term (i.e., operational cause) to the long-

term (i.e., strategic cause). Additionally, the severity of the turnaround situation is considered an important construct, which relates to the probability of business failure provided that no action is taken by the firm (cf. Altman, 1968; Bibeault, 1982; Hofer, 1980). Depending on the nature of the turnaround situation (its cause and severity), the managers of a firm should select and implement a corresponding turnaround response (i.e., turnaround strategy). This process involves many behavioral processes within the firm, which can delay the implementation of corrective action (Audia & Greve, 2006; Greve, 2011; Grinyer & McKiernan, 1990).

A turnaround response is mostly understood to be one of several high-level distinguishable patterns of actions or sequential combinations of patterns. They are typically characterized through the timespan of their intended effects (operational vs. strategic turnaround responses) or their relationship to firm assets and markets (efficiency vs. entrepreneurial turnaround responses). Hofer's (1980) typology of operating responses, which includes cost retrenchment, asset retrenchment, and revenue generation, is utilized even in the most recent turnaround research. These approaches seek to improve short-term performance while largely ignoring long-term implications. Strategic (or entrepreneurial) turnarounds involve reformulating a firm's products, services, markets, or principal technologies (e.g., Pearce & Robbins, 1994, 1993).

Some studies suggest that retrenchment can reverse firm decline in mature manufacturing industries (e.g., Hambrick & Schecter, 1983; Robbins & Pearce, 1992). However, it may produce the opposite effect in high-growth and high-technology industries (Ndofor et al., 2013; Morrow et al., 2004; Guthrie & Datta, 2008).

Overall, the research on turnarounds is both theoretically and empirically fragmented and characterized by phenomenon-driven roots (Trahms et al., 2013). Given its focus on performance outcomes, the limited extent of integration with resource-based theory is surprising. In their review of the previous research, Trahms et al. (2013) call for greater integration with resource orchestration (e.g., Morrow et al., 2007). In this dissertation, I view retrenchment primarily as a form of resource portfolio structuring (Sirmon et al., 2007).

Additionally, the review by Trahms et al. (2013) notes that consideration of external social influences in the turnaround research, particularly in areas that investigates top management teams and boards of directors, is virtually missing. In other contexts, board interlocks have been demonstrated to influence corporate acquisition behavior (Haunschild, 1993), strategic alliance formation (Gulati & Westphal, 1999), and the use of imitation strategies (Westphal, Seidel, & Stewart, 2001). Given a

recession, the impact of external social influences may be amplified because uncertainty may promote mimicry (e.g., DiMaggio & Powell, 1983; Meyer & Rowan, 1977).

3.5 Entrepreneurial Orientation

The entrepreneurial orientation (EO) construct consists of several firm-level strategy characteristics that practitioners and scholars associate with entrepreneurship. The findings linking EO to firm performance are extensive (Rauch, Wiklund, Lumpkin, & Frese, 2009), but not without methodological weaknesses (e.g., Andersén, 2010; Wiklund & Shepherd, 2011). EO researchers have long argued that the relationship between EO and firm performance is context-dependent (Miller & Friesen, 1984). Particularly, research suggests that the relationship between EO and firm performance is stronger under environmental hostility (Covin & Slevin, 1989; Zahra & Covin, 1995; Zahra & Garvis, 2000) and low access to capital (Wiklund & Shepherd, 2005). However, findings of the moderating effect of environmental uncertainty (dynamism) are somewhat mixed (e.g., Lumpkin & Dess, 2001; Wiklund & Shepherd, 2005).

The majority of EO research considers the construct to consist of the degree of innovativeness, risk-taking, and proactiveness (Rauch et al., 2009), which relate to a firm's market-facing actions. The construct occupies a space not covered by trait-based, individual-level entrepreneurship research or the grand theories of organization studies. On the other hand, EO does not directly consider entrepreneurial opportunities, which removes it from the theoretical core of entrepreneurship studies (e.g., Eckhardt & Shane, 2003; Shane & Venkataraman, 2000, 2001; Venkataraman, 1997). However, EO's key value for scholarly discussion may be in its ability to differentiate between more and less entrepreneurial firms by focusing only on their pattern of actions or 'strategic posture'.

Miller (1983) is often considered to the beginning of EO research. The article makes three important contributions to current EO research. First, the paper shifts focus from an owner-manager to the firm level in order to understand entrepreneurial behavior. According to Miller (1983: 770):

'The entrepreneurial role stressed by Schumpeter is socially vital but it can be performed by entire organizations which are decentralized. It can easily exceed or even circumvent the contributions of one central actor... But what is most important is not who is the critical actor, but the process of entrepreneurship itself and the organizational factors which foster and impede it.'

Empirical research on EO's performance relationship and its moderators was subsequently conducted by Covin and Slevin (1988, 1989, 1990). Covin and Slevin (1989) advance the theoretical debate on EO (or 'entrepreneurial-conservation orientation') by arguing that EO as a firm's strategic posture is driven by its top management and top management styles as '*evidenced by firm's strategic decisions and operating management philosophy*' (p. 77). While they adopt the dimensions of entrepreneurial-conservation orientation directly from Miller (1983), they view EO as relating to a broader strategic context (cf. Mintzberg, 1973) instead of simply consisting of processes or actions as in Miller (1983). In addition to these refinements, Covin and Slevin (1989) deployed a nine-item operationalization of EO (the Miller/Covin and Slevin scale), which later became dominant in EO studies (Rauch et al., 2009).

Later, Lumpkin and Dess (1996) contributed to the theoretical articulation of EO in several ways. According to these authors, the essential act of entrepreneurship is new entry, i.e. the act of launching a new venture through a start-up firm, existing firm, or internal corporate venturing. A new entry can be accomplished by entering new or established markets with new or existing goods or services. An EO, on the other hand, refers to the 'processes, practices and decision-making activities that lead to new entry' (Lumpkin & Dess, 1996: 136).

Furthermore, unlike Covin and Slevin (1989), Lumpkin and Dess (1996) propose that all the dimensions of EO may vary independently and have differing effects on performance. This view challenges the dominant approach taken in empirical studies (Rauch et al., 2009), which considers EO a singular continuous variable (e.g., Covin and Slevin, 1989) and entrepreneurial firms exhibit higher levels across all dimensions of EO. This empirical question has received increasing attention (Kreiser, Marino, Kuratko, & Weaver, 2013; Hughes & Morgan, 2007; Lumpkin & Dess, 2001), and the findings suggest that the dimensions of EO indeed exhibit differing performance implications. A recent related research stream examines the curvilinearity of the EO-performance relationship using either the unidimensional construct (Su, Xi, and Li, 2011; Tang *et al.*, 2008; Wales et al., 2013) or each dimension (Kreiser et al., 2013; Dai, Maksimov, Gilbert, & Fernhaber, 2013). These results generally suggest that 'more is not always better'.

Despite these interesting empirical and theoretical developments, the EO literature is under theorized (Miller, 2011; Wiklund & Shepherd, 2011). It is especially surprising that there is a general shortage of empirical studies on EO based on RBT (for exceptions, see, e.g., Wales et al., 2013; Wiklund and

Shepherd, 2003). Recently, scholars have applied resource orchestration to EO (Chirico, Sirmon, Sciascia, & Mazzola, 2011; Messersmith & Wales, 2013; Wales et al., 2013).

This dissertation contributes to recent EO research by examining the curvilinear performance implications the proactiveness and innovativeness dimensions of EO while considering the role of resource portfolio structuring. From the perspective of resource orchestration (Sirmon et al., 2007; Helfat et al., 2007; Sirmon et al., 2011), I view EO as a pattern of leveraging capabilities when making new entries. For this purpose, the risk taking dimension of EO has considerable theoretical overlap with countercyclical strategies, and hence I refrain from developing hypotheses regarding it. This rationale is further elaborated in Essay 2.

3.6 Entrepreneurial Bricolage

That some small, resource-strapped firms are able to grow or thrive in hostile environments is seemingly paradoxical. From the perspective of earlier resource-based theory, a firm requires resources to obtain a competitive advantage, and the resources must be acquired or accumulated (e.g., Barney, 1986, 1991; Dierickx & Cool, 1989a). Combining complementary resources (e.g., Adegbesan, 2009; Ahuja & Katila, 2004) may be one approach for firms to alleviate their financial constraints during this process. However, obtaining the initial resources for this process is a nontrivial matter for new firms because their resource endowments tend to be modest. Furthermore, external conditions, such as a recession, may limit the resources available to firms. From the resource orchestration perspective, this issue relates to pioneering new capabilities without using new resources (Sirmon, et al., 2007).

Baker and Nelson (2005) propose bricolage as a solution that can create resources by applying combinations of the resources at hand to new problems and opportunities. Entrepreneurs engaged in bricolage disregard commonly accepted definitions of material inputs, practices and standards; they push conventional limitations and combine and reuse available resources for purposes other than those for which they were originally intended or used (Baker & Nelson, 2005). As a result, this approach can create ‘something’ from apparently ‘nothing’ (Baker & Nelson, 2005).

In other management research, bricolage is presented as a coping (Johannisson & Olaison, 2007) or a survival mechanism employed during sudden, unexpected situations (Pina e Cunha & Viera da Cunha, 2007). Outcomes related to bricolage can range from mundane and imperfect solutions to brilliant unforeseen results (Lévi-Strauss, 1966: 17). Bricolage is typically described on the level of individuals, tasks, and resources (Baker

et al., 2003; Baker & Nelson, 2005; Pina e Cunha, 2005; Lanzara, 1999). Hence, to examine the bricolage-firm performance relationship, inter-level mechanisms should be accounted for (Coleman, 1990). Research on this topic has mostly been dominated by case studies (Baker & Nelson, 2005; Baker et al., 2003; Lanzara, 1999), but studies that examine the relationships between bricolage, innovativeness, resources, and growth quantitatively are also emerging (Senyard et al., 2014, 2010, 2009; Steffens et al., 2010).

The existing quantitative studies of bricolage draw on the scale developed in the CAUSEE project (Davidsson et al., 2011). This scale measures the frequencies of actions and behavior that relate to the definition of bricolage proposed by Baker and Nelson (2005). However, we argue that further scale development is needed based on *how* bricolage manifests within a firm. In other words, considering whether bricolage has occurred in an organization or how common such occurrences are may not be sufficiently sophisticated for testing theory.

In particular, the case studies conducted by Baker and Nelson (2005) suggest that bricolage may manifest in five different environmental domains that relate to how the firm operates. If bricolage is undertaken in all five domains, it is likely to result in a bricolage identity or a permissive community of practice that hinders growth by reducing the firm's ability to identify and seize opportunities in broader markets. However, if bricolage manifests in fewer domains (selective bricolage), the resource-driven growth mechanism dominates. The lack of a scale that measures bricolage as outlined above represents a gap that this dissertation addresses.

4. DATA AND METHODS

The empirical context of this dissertation is Finnish software SMEs between 2007 and 2011. This industry is well suited for this study because it has generally enjoyed rapid growth but was not immune to the Great Recession. The median sales growth of software firms in 2008 was 17.1%, which contracted by 2.1% in 2009 and then grew by 7.9% and 5.3% in 2010 and 2011, respectively (Statistics Finland, 2013b)⁵. While the Finnish software industry is perhaps best known for games sold to customers (e.g., Rovio Entertainment and its Angry Birds franchise and Supercell with its top-grossing Clash of Clans game), software SMEs primarily operate in the B2B market but frequently sell their products internationally. Thus, while growth has been rapid, Finnish software SMEs were not shielded from credit or demand-related shocks to the global economy. Yet, the high share of services in their offerings provides continuity in sales (Rönkkö, Mutanen, et al., 2009; Rönkkö, Ylitalo, et al., 2009).

4.1 Archival Data

I utilized business register data extensively in Essays 1 and 2, because its broad accessibility in Finland for private companies avoids limitations of survey-based measures. Generally, a business entity must file its P&L statement and balance sheet to the Finnish Trade Register (Kaupparekisteri) annually. I utilized Bureau van Dijk's Orbis database to obtain these data for the study period. In addition, I obtained the entire history of the boards for the firms analyzed in Essay 1, including the names of CEOs and board members, their birth dates, and the starting and ending dates for each position held. I acquired these data through an intermediary (Asiakastieto Oy) that organizes and distributes data from the Trade Register.

Finnish law mandates that all limited companies have a board of directors and that changes to their composition be reported to the Trade Register immediately. This also provides access to individual-level board member data for small and unlisted firms. I utilize a combination of first names, last names, and birth dates to identify unique individuals within the board member data. I obtained additional data regarding regional changes in

⁵ Compared to the rest of the Finnish economy, revenues in the broader ICT services sector grew at approximately twice the rate of GDP growth prior to the recession and its revenue contraction during the recession was approximately half that of Finland's GDP. (Statistics Finland, 2013c)

employment from Statistics Finland's StatFin database and linked the companies to these data using their postal codes.

4.2 Survey Data

Essays 2 and 3 utilize survey data collected during different waves of the National Software Industry Survey (NSIS) (Rönkkö et al., 2010; Rönkkö, Peltonen, & Pärnänen, 2011; Rönkkö, Mutanen, et al., 2009a, 2009b). This survey has examined developments in the Finnish software industry since 1997; it has been conducted annually with a few early exceptions.

The NSIS aims to include all companies in Finland whose offerings are significantly related to software. The core of the software industry can be defined by industry code (NACE rev. 2 codes 62.01 'computer programming activities' and 62.02 'computer consultancy activities'); however, this classification does not include all firms of interest to the survey. Therefore, the survey has adopted an oversampling strategy, which also includes populations adjacent to the core software industry. This is primarily accomplished by including additional industry codes and manually screening industry association member lists and companies that have received funding from the Finnish Funding Agency for Innovation (Tekes). The sampling frame of the previous year's survey is also passed on to the next year to enhance consistency over time.

While this approach is effective in maximizing the number of responses from the firms of interest, it causes difficulties in assessing response rates and variation in nonresponse processes. To address this issue, Essays 2 and 3 utilize only the subset of NACE rev 2 codes 62.01 and 62.02.

The survey targets CEOs; if contact information is unavailable, other high-ranking executives are contacted in descending order. Prior to sending the survey package, a letter with endorsements from related industry associations and Tekes was sent to the firms. Companies were offered the option to respond either by traditional mail or an online questionnaire. To further increase the response rate, the survey package was followed by several reminders, and a mass tailored summary report was offered as a reward for responding.

4.3 Analytical Methods

Essay 1 predicts year-to-year workforce adjustments (change in personnel count) utilizing OLS regression with robust standard errors. The main independent variable is the unlagged year-to-year change in sales. For this variable, I adopt a spline approach (Greene, 2003) which has been used extensively in BTOF research (e.g., Greve, 2008; Vissa et al., 2010). The

spline approach enables separate estimation of direct and interaction effects of sales increases and sales decreases.

The influence of board interlocks is accommodated through an interlocked workforce adjustments variable. This variable represents the workforce adjustments of firms with which the focal firm possesses board interlocks. The board interlock structure was constructed using SQL queries to a database into which the board of director data were entered. These data were then combined with Trade Register data using company identifiers and aggregated at the focal firm level using statistical software (Stata IC version 10.1).

Essay 2 examines firm performance, which is operationalized as the sales CAGR during the period 2008-2011, which captures changes between the beginning of 2009 and the beginning of 2012. I utilize sales rather than profit-based measures to operationalize performance due to the study setting; high-tech firms may delay becoming profitable well into their lifecycles, while producing revenue can be more important in demonstrating the potential of a business. Furthermore, profits can be a very unstable measure for small and young firms (Shepherd & Wiklund, 2009).

The independent variables in the study are drawn from two surveys. The EO variables are based on the Covin and Slevin scale (Covin & Slevin, 1989), and they were collected during the summer of 2008 as part of the NSIS. Data on recession strategies were collected during the summer of 2009 in conjunction with the NSIS. The seven items included in the questionnaire represent different areas of firm operations, such as R&D, outsourcing, sales and marketing, and software development and support. The scale measures procyclical contraction at the negative end and countercyclical expansion at the positive end. The questions addressed changes during the past year, which closely overlaps with the recession in Finland.

The combination of these two surveys reduced the overall response rate to a level that is low even for top-management surveys (7.9%). While a low (combined) response rate alone does not imply nonresponse bias, its probability of existing increases, especially when combined with social desirability related to the variables of interest. To examine and correct for this possibility, I utilize the Heckman two-stage method (Heckman, 1979). During the first stage, I utilize exclusion restrictions that may reduce item difficulty and, hence, increase the likelihood of responding. For the first exclusion restriction, I utilize the log-transformed number of board members, including the CEO. A larger board may reflect a more active strategy process, and responding to strategy-related questions is less

difficult. For the second exclusion restriction, I utilize a dummy variable that reflected whether funding was received from Tekes. To receive funding, firms must articulate their business plans. I estimated the models both with 2SLS and FIML estimators and obtained similar results. Survival bias did not appear to affect the results because I failed to observe a significant first stage probit model that predicted missing data in the dependent variable.

Essay 3 employs confirmatory factor analysis to test the factorial validity of the bricolage scale. The three domain categories of bricolage were fitted as separate factors that were allowed to correlate. Scale development began by creating an initial item pool of 19 items, of which 12 items were modified and utilized in a pilot study based on a review from an external practitioner. The data for the pilot study were collected as part of the 2010 NSIS. Six items were dropped or modified after the pilot study, and new items were added to create a new battery of 13 items, which were administered through the 2011 NSIS. Of these items, 9 were included in the final scale. The items are distributed evenly across the three bricolage domains, and each domain of is measured by at least one item. The primary reasons for excluding items were severe skewness and lack of correlation with the other items. Table 1 summarizes the methodological approaches of each essay.

Table 1. Summary of methods

	Essay 1	Essay 2	Essay 3
Title	Board Interlocks and Entrepreneurial Firms' Decisions to Hire and Fire during Recession	Resource Orchestration of Entrepreneurial Firms: Interaction Effects of Recession Strategy, Entrepreneurial Orientation, and Performance	Selective or Parallel? Toward Measuring the Domains of Entrepreneurial Bricolage
Dependent variable	Workforce adjustment (one-year change in personnel count)	Firm performance, measured as 3-year CAGR	n/a
Primary hypothesis variables	Interlocked workforce adjustments (sum of workforce adjustments in alter firms having board interlocks with the focal firm), change in sales	Innovativeness, proactiveness dimensions of EO (Covin and Slevin scale), Countercyclical strategy (7 Likert items)	n/a
Survey data	-	Two surveys (2008 and 2009)	Two surveys (2010 and 2011)
Archival data	Finnish Trade Register (board of director data and financial data)	Finnish Trade Register (financial data)	Not used
Statistical methods	OLS regression	Heckman 2-stage model	SEM
Number of observations	238 focal firms (676 alter firms)	113 firms (second stage of Heckman model), 1582 (first stage of Heckman model)	315 in final analysis, 423 in pilot study

5. KEY FINDINGS

5.1 Workforce Adjustments in Entrepreneurial Firms

Essay 1 finds that greater short-run increases in firm sales are related to greater workforce increases. Somewhat surprisingly, short-run reductions in sales did not predict workforce reductions. On the contrary, I observe weak evidence of sales decreases leading to workforce increases. However, BTOF research offers a plausible explanation for this pattern; short-run declines in a growth industry may be perceived by firms as changes that can be remedied through additional risk-taking (e.g., Audia & Greve, 2006; March & Shapira, 1987, 1992) rather than threats to firm survival.

Moreover, I investigated the role of board interlocks in directing managerial attention. The results suggest that focal firm workforce adjustments are systematically influenced by workforce adjustments in alter companies with which the focal firm possesses board interlocks. Additionally, the magnitude of this effect is greater if the sales increase of the focal firm was greater. Figure 2 summarizes the hypothesized relationships and findings in Essay 1. I also conducted several robustness checks. For example, I excluded the possibility that M&A activity and interlocks formed by venture capitalists caused spurious correlations. Furthermore, I observe no evidence that board interlocks spread static aspiration levels (e.g., workforce size, revenue) in this context.

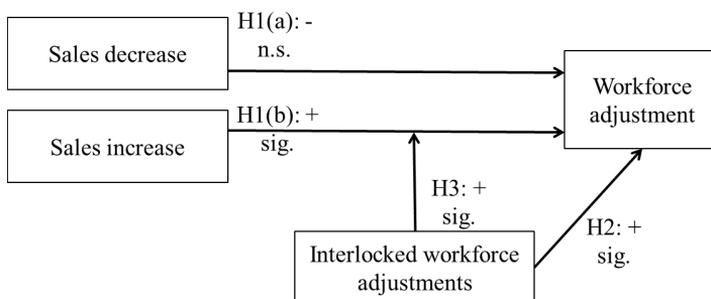


Figure 2. Summary of hypotheses and main findings in Essay 1.

5.2 Performance Implications of Resource Portfolio Structuring and Interactions with Entrepreneurial Orientation

Essay 2 finds that countercyclical strategies that relate to expanding firm resource portfolios relate to sales growth over a three-year time lag. I observe that the opposite applies to procyclical strategies, which relate to cost-cutting. In the empirical approach, procyclical strategies represent the

negative end of the countercyclical strategy scale. Additional robustness checks reveal that simply increasing or decreasing sales and marketing efforts did not explain differences in sales growth rates. However, both internal actions (changing R&D, software development, product support and maintenance, and sales and marketing costs) and outsourcing (changes in the use of software development services or other external services) explained differences in growth rates. While these results are consistent with existing studies of turnarounds and downsizing (Guthrie & Datta, 2010; Morrow, Johnson, & Busenitz, 2004; Ndofor, Vanevenhoven, & Barker, 2013), these data provide deeper insights for specific firm-level actions and consider the context of one of the greatest global economic crises in history.

The main contribution of this study comes from examining how performance is moderated by the firm strategic orientation. In particular, I test hypotheses related to the role of two dimensions of the EO construct: proactiveness and innovativeness. EO was measured during the summer prior to the escalation of the global financial crisis in the autumn of 2008. This reduces the likelihood that abnormal economic events interfere with the measurement of firm long-term strategic orientation.

I observe no relationship between pre-recession firm innovativeness and subsequent growth. However, firms with either high or low proactiveness benefit most from a countercyclical recession strategy, whereas firms that are moderately proactive suffer least from a procyclical recession strategy. The hypothesized relationships and main findings of Essay 2 are summarized in Figure 3.

I also conducted additional robustness checks. When measured as a unidimensional construct, EO exhibited no significant relationships with firm performance. I examined both linear and curvilinear effects as well as their interactions with recession strategy. These are all interesting non-findings, as there are many reasons to believe that an EO (as such) would be beneficial under the research setting. Furthermore, as with the innovativeness dimension, risk-taking was not associated with performance implications.

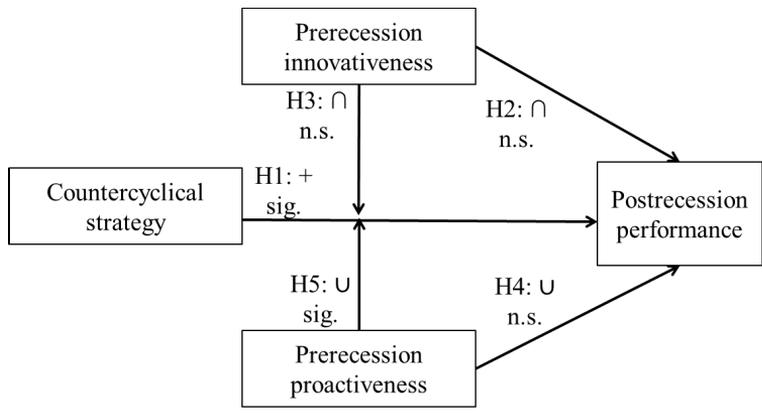


Figure 3. Summary of hypotheses and main findings in Essay 2.

5.3 Structuring the Resource Portfolio through Entrepreneurial Bricolage

We developed novel scale to measure entrepreneurial bricolage. From the perspective of resource-based theory and resource orchestration, the development of this scale highlights the range of actions between accumulation (Dierickx & Cool, 1989a) and acquisition (Barney, 1986) that firms undertake when they structure their resource portfolios. These potentially high-impact actions can be easily missed if resource portfolio structuring is measured only through financial ratios or questionnaires that seek to understand changes in investment on a more fine-grained level (e.g., as in Essay 2).

The nine-item scale is based on the domains of bricolage, which Baker and Nelson (2005) link to growth outcomes. This opens up the possibility to test the bricolage-growth relationship as articulated by Baker and Nelson (2005). The development of the scale by itself improves the generalizability of prior bricolage research conducted by Baker and Nelson (2005) who utilized snowball sampling to conduct their case studies. The results of Essay 3 indicate that small and medium software firms vary in terms of behaviors and practices associated with bricolage and that these behaviors vary according to dimensions (see Figure 4) similar to those suggested by Baker and Nelson (2005). This finding suggests that the bricolage behavior documented by Baker and Nelson (2005) was not specific to their research context. However, further research of the nomological validity of this construct is required.

Developing this scale also improves the empirical understanding of bricolage. As previously noted, several items were excluded or modified during the development process due to high degrees of skewness. In many cases, this may be due to social desirability. Bricolage can involve challenging the institutional/regulatory environment, and respondents may

be hesitant to provide accurate descriptions of these actions. Hence, developing items for this dimension of bricolage balanced addressing the phenomena of interest and obtaining the information in a way that would not discourage accurate responses.

In addition, the final scale exhibited high item uniqueness, and the measurement model was characterized by somewhat low loadings. This quality may represent a weakness of the scale or indicate that the sub-constructs are characterized by further dimensionality. Future research should therefore acknowledge that bricolage could manifest as a diverse collection of practices. While the data were provided by software companies, the scale itself was developed without a specific target industry in mind. In particular, the scale does not assume the existence of physical assets, which are commonly present in the cases examined by Baker and Nelson (2005).

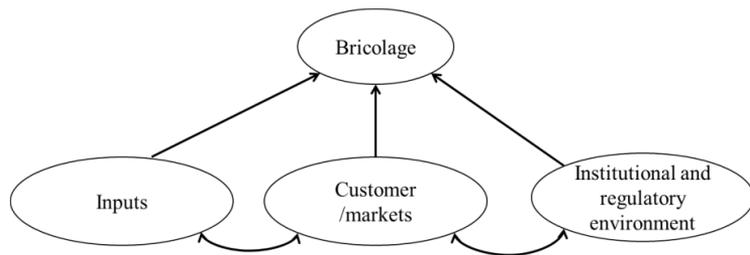


Figure 4. Outline of the measurement model in Essay 3 with statistically significant path relationships.

6. DISCUSSION

6.1 Contributions to the Literature

Taken together, this thesis makes several contributions to understanding on how entrepreneurial firms can be managed during the sudden onset of recession to improve their performance. In short and simplifying terms, this thesis finds that countercyclical strategies lead to higher sales growth in entrepreneurial firms. However, the nature of this relationship depends on the firm's strategic orientation. Especially, firms with high proactiveness (i.e. a strategic orientation of acting in anticipation of changes in the environment) benefit most from countercyclical strategies that expand the firm's resource base, possibly because they have the means to deploy the new resources to new market opportunities that the recession creates. Managers are however constrained in adopting recession responses for reasons other than obvious financial constraints. This thesis finds that boards of directors and the interlocks they form with other firm cause mimetic pressures on the focal firm. Especially when a firm's sales grow during the onset of recession, external influences may in some cases prohibit the firm from adopting a countercyclical strategy. Finally, the strategic options of the firm may not only include investing more to expand the resource base of the firm, or divesting resources to improve the financial position of the firm. Instead, firms should not ignore the common practice of combining low-costs resources in novel ways.

To elaborate on these findings on more detail, this dissertation was motivated by the observation that organization studies, particularly in the fields of strategic management and entrepreneurship, do not provide a coherent set of recommendations for managers facing vague and unanticipated shocks, such as the Great Recession (cf. Agarwal et al., 2009). This said, existing research does however contain relevant findings regarding such contexts, but their generalizability to a context of a sudden economic downturn where uncertainty (dynamism), hostility, and rapid change coincide should be considered cautiously. Latham and Braun (2011) provide a useful framework to approaching the contributions of this dissertation from a phenomenon-centric perspective. According to the framework, firm-level initial conditions (e.g., resources and capabilities) and performance during recession (within recession performance) significantly influence strategic decisions during the recession (within recession strategy) and subsequent firm performance (post-recession performance).

From this viewpoint, Essay 2 finds that relevant initial conditions can include the firm's proactiveness dimension of the EO construct. This construct is difficult to classify as a firm capability or resource. Yet, proactiveness influences post-recession performance by interacting with within recession strategy. In other words, a firm's pattern of resource and capability use prior to a recession influences the outcome of its countercyclical (expansive) or procyclical (retrenchment) strategies. In line with prior related literature (Guthrie & Datta, 2010; Morrow, Johnson, & Busenitz, 2004; Ndofor, Vanevenhoven, & Barker, 2013), this study also observes that countercyclical strategies improve performance.

Essay 1 addresses the selection of a within recession strategy, particularly workforce adjustments (the adaptation of a firm's personnel count). As expected, short-term performance influenced the within recession strategy. More importantly, the study suggests that firms may mimic each other's workforce adjustments and that this effect is stronger with greater sales increases. This study notes that improving post-recession performance not only requires identifying beneficial strategies but also resisting mimetic pressures that may jeopardize undertaking them. Though the study does not directly measure the activities of the board, it points out that increasing monitoring conducted by the board of directors may result in mimetic behavior.

Essay 3 investigates the available set of within recession strategies, which Latham and Braun (2011) categorize as countercyclical or procyclical. Essay 3 focuses on entrepreneurial bricolage, which may be a viable countercyclical strategy that creates new resources and capabilities with minimal investment and lower risk. By developing a novel measurement scale of bricolage, Essay 3 demonstrates that entrepreneurial firms broadly undertake behaviors related to bricolage. Yet, these behaviors cannot be captured easily by financial ratios or changes in functional expenditures, which are common measures in turnaround research. In the subsequent sections, I discuss the contributions of this dissertation from the perspectives of its main theory streams.

6.1.1 Contributions to the Behavioral Theory of the Firm and the Attention-Based View

This thesis generally supports the BTOF adaptive mechanism for explaining workforce adjustments in entrepreneurial firms during recessions as a function of changes in sales. Moreover, this thesis examines how organizational attention (Ocasio, 1997; Hoffman & Ocasio, 2001; Ocasio, 2011) influences this adaptation process. I examined board interlocks using individual-level data and combined these network data with data on

workforce adjustments in the interlocked firms. To the best of my knowledge, this research approach is currently unique to firms of all sizes. Furthermore, research on small firm boards is generally very limited due to data availability issues, which the Finnish regulatory environment enables to overcome.

Overall, the results suggest that board interlocks spread actions (i.e., workforce adjustments) not static aspiration levels (e.g., size, sales) or market information (changes in sales) that firms would react to. While these findings suggest that board interlocks influence search, an alternative explanation related to social aspiration levels exists, which this analysis cannot fully disentangle. In other words, firms may aspire to grow at a certain rate, and board interlocks provide the mechanism through which social aspiration levels related to growth propagate. This interpretation is supported by the observation that board interlocks appear to diffuse workforce adjustments irrespective of the sales changes of the focal firms. Furthermore, prior research suggests that the goals of entrepreneurial firms may be different from mature firms (cf. Shane, Locke, & Collins, 2003). On the other hand, the notion that board interlocks primarily influence search is supported by the moderating hypothesis; greater changes in sales produce stronger mimicry of workforce adjustments through board interlocks.

6.1.2 Contributions to the Literature on Entrepreneurial Firm Boards

By applying rare archival person-level board data, the results provide additional insight on how boards of entrepreneurial firms channel organizational attention and affect adaptive action. The results also inform future research on the monitoring function on entrepreneurial firm boards, though this study does not measure board monitoring directly. Previously Garg (2013) argued that too much board monitoring may hurt firm performance by inhibiting innovation, drawing executives' attention away from substantive tasks, and leaving them with a low sense of self-control. The findings of this dissertation are consistent with a finer-grained explanation to these outcomes that depends on the interorganizational contexts of the board members; deviation from past performance increases monitoring by the board, and causes adaptive behaviors to spread through board interlocks as the attention of decision-makers in the focal firm is directed increasingly towards the actions that other organizations undertake for various reasons.

Summarizing these findings from the perspective of Garg's (2013) proposition on monitoring and performance, my findings pertain to a specific scenario where managers may lose their sense of self-control and

attention focus as a result of excessive monitoring. The performance outcome may also be similar; when making decisions on workforce adjustment, having less attention to the context of the focal firm at the expense of having more attention to external organizations is likely to be harmful in most cases. Yet, variations in outcomes can also be expected; the external influence of boards may bias decision-making toward ‘procyclical’ workforce reductions or ‘countercyclical’ workforce increases (e.g., Greer, Ireland, & Wingender, 2001). The ultimate performance outcome of increasing monitoring would therefore depend not only on the board interlock network configuration, but also contextual factors of the focal firm that influence the performance outcomes of these actions.

6.1.3 Contributions to the Literature on Resource Orchestration and Turnaround Strategy

This study provides evidence to support one of resource orchestration’s most important claims; structuring, bundling, and leveraging processes should be synchronized (Sirmon et al., 2007: 287). This is accomplished by jointly examining the firm strategic orientation (the proactiveness and innovativeness dimensions of EO) and within recession strategies. Proactiveness and innovativeness relate to *how* the firm typically leverages its resources and capabilities. Within recession strategies relate to structuring the resource portfolio. Specifically, obtaining more resources (countercyclical strategy) or reducing them (procyclical strategy).

The findings of this study also clearly highlight the advantages of countercyclical strategies in high growth industries, which is consistent with previous studies of downsizing and retrenchment (Guthrie & Datta, 2010; Morrow, Johnson, & Busenitz, 2004; Ndofor, Vanevenhoven, & Barker, 2013). By studying smaller and unlisted firms outside the US, these findings increase the generalizability of prior research. The recession strategies were measured utilizing a questionnaire during the recession, which reduces the likelihood of recollection bias.

The main contribution of this study to the downsizing and retrenchment literatures is that the outcomes of recession strategies may vary according to firm strategic behavior or tendency to identify and respond to emerging opportunities in the marketplace (i.e., proactiveness). This study does not assume that these characteristics are constant on the industry level (Morrow et al., 2004) or assume that strategic actions (e.g., the number of new product introductions, alliances, and acquisitions) are alike (Ndofor et al., 2013).

Furthermore, by applying survey measures and an exploratory approach rather than financial measures, this dissertation captures countercyclical

strategies in more detail than many prior studies. By decomposing firm countercyclical strategies to a more detailed level, the analysis revealed that actions involving increasing (decreasing) internal investments and outsourcing are beneficial (harmful) for firm performance. Increasing sales and marketing efforts did not produce systematic performance effects.

The finding for outsourcing supports Sirmon et al. (2007), who propose that during periods of high uncertainty, firms can benefit from a 'resources as options' perspective with respect to the flexibility that these resources provide for responding to unforeseen opportunities and threats. The results of this study also suggest that internal resource accumulation may be the primary means through which proactiveness affects the performance of entrepreneurial firms under high uncertainty compared to outsourcing.

6.1.4 Contributions to the Literature on Entrepreneurial Orientation

This dissertation represents a non-result for the EO-performance relationship, which contrasts with prior studies that reported direct (e.g., Rauch, Wiklund, Lumpkin, & Frese, 2009) or curvilinear effects (Su et al., 2011; Tang et al., 2008; Wales et al., 2013) between EO (as an unidimensional aggregate construct) and performance. However, the dissertation also highlights one plausible explanation for the results; in the wake of an environmental 'jolt' (e.g., Audia, Locke, & Smith, 2000; Meyer, 1982) associated with a decline in environmental munificence (Castrogiovanni, 1991), the dimensions of EO have different implications on performance (Dai et al., 2013), which obscures the effects of the unidimensional EO construct. In particular, the growth implications of proactiveness depend on within recession strategy. Taken together, the results suggest that future research on EO should pay more attention to the performance implications of the individual EO dimensions in different contexts (cf. Lumpkin & Dess, 1996, 2001).

Within the EO literature, this dissertation extends the findings of recent studies that combine resource orchestration with EO (Chirico et al., 2011; Messersmith & Wales, 2013; Wales et al., 2013). Unlike prior studies, I explicitly measure actions that change the firm resource base rather than assuming that certain static firm characteristics influence its resource orchestration practices.

Finally, the theorizing in this paper highlights the unsettled difference between EO as a tendency and EO as behavior (Covin & Lumpkin, 2011), which also persists in empirical approaches to measuring EO. This distinction is because behavior is much more likely to lead to path-dependent resource configurations that may become liabilities when discontinuous change occurs. This may explain why there was no support

for the innovativeness-related hypotheses; the ability to launch a series of new products and services often requires significant prior investment. Making these investments requires making assumptions about the future, which may prove unrealistic because of the economic shock of the Great Recession. However, a proactive strategic orientation may be less likely to expose a firm to path-dependent liabilities resulting from an environmental shock.

The methodology for testing the EO-performance relationship is also relatively rigorous compared to oft-cited extant studies (Andersén, 2010); this dissertation employs lagged, objective performance data, controls for past performance, thoroughly examines survival bias, and analyzes the dimensions of EO separately. In addition, this study is rare (if not unique) in its examination of nonresponse bias using the Heckman (1979) procedure. Nonresponse analyses are documented in less than one-third of organizational studies that employ surveys (Werner, Praxedes, & Kim, 2007).

6.1.5 Contributions to the Literature on Entrepreneurial Bricolage

The bricolage literature suggests that entrepreneurial bricolage may help firms in hostile environments to create resources from seemingly nothing and enable them to grow (Baker & Nelson, 2005). However, for this benefit to be realized, bricolage must be used selectively. Baker and Nelson (2005) suggest that bricolage can lead to a nonprofessional, closed culture that limits growth if it is present across all environmental domains. In short, a moderate amount of bricolage may help firms grow in hostile environments but both too much and too little bricolage has negative implications.

Limited empirical research has been undertaken to test the relationship between entrepreneurial bricolage and firm growth quantitatively (for exceptions, see Senyard et al., 2009, 2010). These efforts have applied a scale of bricolage that measures how often bricolage takes place – not the breadth of areas in which it takes place. This limits the capability of existing research to distinguish the degree to which bricolage is selective or parallel, which increases the difficulty of testing the growth hypotheses proposed by Baker and Nelson (2005).

Our 9-item semantic differential scale has been used in an initial study to test the relationship between bricolage and firm growth with promising results (Peltonen, Rönkko, & Arenius, 2012). Given the current understanding of entrepreneurial bricolage, the scale we have developed is a useful tool for researchers interested in the antecedents and outcomes of bricolage in entrepreneurial firms. However, the scale must be applied in contexts besides the software industry to establish its generalizability.

Furthermore, because bricolage is a fundamentally multidimensional construct, further dimensionality in the three main domains that our scale focuses on may exist.

6.2 Practical Implications

This dissertation finds that the social context created by board interlocks influences decision-making related to hiring and firing in a recessionary context. I quantify this effect in the context of several financial variables like sales growth, profitability, and slack. In light of these findings, it is reasonable to assume that board interlocks may spread recession responses that are beneficial in a given industry but harmful in another. Managers should therefore focus on the context of their own firm and be aware of the systematic external influences that board interlocks (and possibly other social network ties) transmit – especially if the firm manages to grow despite the recession. Sometimes questioning ‘socially accepted’ responses to recessions particularly promoted by board members with close ties to other businesses can provide a starting point for selecting strategies that improve performance over the longer term. Arguably, there is no best practice recession strategy – each firm should tailor its approach based on their firm-specific information.

I also find that countercyclical recession strategies are beneficial. It is possible that the firms in the study sample continue to pursue their pre-recession strategic plans, which unintentionally makes their strategies countercyclical when they are merely continuing their strategic course (Mintzberg & Waters, 1985). Hence, the results of this study do not warrant recommending countercyclical strategies simply for the sake of benefitting from a recession. However, managers should seriously consider the justifications for cutting costs from pre-recession strategic initiatives especially if there is an unquestioned sense among the close peers that ‘cutting costs is what needs to be done in recession’. In particular, reducing outsourcing may be politically less sensitive but may result in a loss of critical strategic flexibility. Also merely increasing or decreasing sales- or marketing-related efforts does not systematically explain differences in sales growth rates.

This paper’s results concerning proactiveness imply that firms should assess their prior orientation toward changes in the market when selecting a recession strategy. In particular, firms that are overly optimistic about their ability to pursue market opportunities proactively may fail to obtain their expected results from a countercyclical strategy.

The development and testing of a scale of entrepreneurial bricolage suggests that bricolage is broadly practiced by firms and in different domains of their operations (Baker & Nelson, 2005). However, the implications of bricolage are largely unexplored in quantitative studies. Yet given the current state of knowledge, instead of trying to eliminate the practice, managers should rather have a healthy curiosity toward bricolage, and consider if the practice could be selectively used in some area to promote innovativeness and growth in their organizations.

Taken together, the findings of this thesis can be summarized through a crude analogy: The task of navigating a recession is like racing a car (firm) full of people (the board) to a new destination without a navigator. Sometimes the advice of the other passengers can be useful, but oftentimes the driver needs to keep his/her head to reach the destination and ignore the backseat drivers. In particular, most often the driver should drive at a speed (hire and fire) that matches the properties of the car (firm), and ignore the advice of those who prefer a faster or slower ride because their own cars can go faster or slower (properties of interlocked firms).

Sometimes the journey can go faster if the driver attempts to drive faster (countercyclical strategy). However, the value of this strategy depends on the abilities of the driver. If the driver is skilled at passing other cars and avoiding congestion (high proactiveness), driving faster can be a good approach. However, if the driver is only average, then driving slower (procyclical strategy) and leaving passing to the speeders does little harm for reaching to the destination without time-consuming setbacks. For the drivers that never pass other cars and navigate by following the tail of other cars (low proactiveness), driving much slower is damaging, because they eventually run out of other cars to follow. Instead, trying to follow faster cars makes more sense, but this will never enable them to drive by the most skilled drivers.

Finally, financially constrained travelers that do not have enough money to obtain a car and gasoline may need to think about their navigation strategy in a different way. They can for example try to lift their way to the destination on several cars. This way, they may be able to combine the driving and navigation skills of other people, and only pay for their coffee (bricolage). Sometime this can lead to being among the first to arrive at the destination, but the outcome can also be hours spent standing in the rain. On the other hand, this can lead to arriving at a completely different destination, which can be better than the one originally intended.

6.3 Limitations

No study is without limitations, and certain areas are highlighted here. In Essay 1, despite the use of several lagged control variables, the cross-sectional research approach may fail to capture consistent firm-level effects, particularly differing historical aspiration levels and risk preferences. This limitation points to the need to make simplifying assumptions about aspiration levels. Namely, that each firm considers negative growth a problematic issue that it must remedy.

The analytical approach does not explicitly consider the stage of the business cycle. It remains unclear how economic uncertainty and hostility affect the propensity of the entrepreneurial firm to engage in herd behavior, as the results suggest. A panel analysis would further enable accounting for how the stage of the business cycle affects the outcomes and examining fixed firm-level attributes, such as preferences to risks. Similarly, a panel approach would enable analyzing board member specific differences in risk preferences and, hence, enable untangling behaviors that spread from firm to firm from behaviors that spread from board members to firms. The analysis should also be extended to other industries. These approaches would not be limited by the availability of registry data in Finland; however, obtaining and processing these data would require significant additional funding.

Furthermore, Essay 1 suffers from the difficulty of making causal inferences due to the lack of time lags between key independent variables and the dependent variable. However, remedying this issue may be difficult because companies report their revenues annually, and in a fast-paced industry, companies cannot wait for a year to adjust their operations to meet demand. Hence, the conjecture that short-run sales changes drive short-run workforce adjustments rather than the opposite rests on theoretical reasoning.

Essay 2 suffers from a modest number of observations, which partly results from combining two surveys to create its unique longitudinal data set. While potential non-response bias was controlled for using the Heckman two-step approach, limitations to statistical power remain. Endogeneity resulting from self-selection into recession strategies can also influence the results. I attempted to identify suitable instrumental variables to address the issue without success. I particularly attempted to identify instrumental variables based on the board interlock approach in Essay 1 by attempting to demonstrate that firms mimic their more specific recession strategies from each other to some extent. Despite some promising initial progress, this effort proved to be unsuccessful.

A common limitation in all of the essays is the single country, single industry setting. While this approach controls for industry-specific effects, it nonetheless limits the generalizability of the results. Specifically, economic recessions affect different high technology and growth sectors very differently in different countries, especially with respect to the extent and duration of the downturn. Labor market regulations may also influence hiring and firing decisions in various national contexts, with direct implications to Essay 1 and, to a lesser extent, Essay 2. Furthermore, in Essay 1, laws and regulations concerning boards of directors vary among countries. In particular, Finland has fewer limitations on forming board interlocks than the United States. While Essay 1 took measures to control for these differences, the results should be considered in a broader context of managerial social networks of which boards of directors and board interlocks represent a special case. There are also differences among countries regarding the necessity of boards of directors in small and medium limited liability companies, which in Finland are required by law.

While we aimed to develop a scale that applicable to all industries, testing it in a single industry context remains perhaps the greatest limitation in Essay 3. Cultural differences may also challenge the applicability of the scale in different national and regional contexts, especially reporting issues such as challenging the institutional environment.

6.4 Avenues for Future Research

Considering the breath of managerial issues in entrepreneurial firms that relate to sudden economic downturns, this dissertation leaves many important avenues unexplored. In the following, I highlight some of these.

One important area of future research is examining how BTOF can be applied to entrepreneurial firms in general (Dew et al., 2008) – apart from small firms in established industries (Greve, 2011). As noted by Shane, Locke, and Collins (2003), entrepreneurs may possess very different motivations. Additionally, their dominant coalitions, which represent an interesting area of future research in BTOF on a general level (Gavetti et al., 2012), may change in ways that are uncommon in established firms (e.g., Hellmann & Puri, 2002). While there is no special reason to doubt the applicability of the core mechanisms of BTOF in such a context, more research is required to understand how entrepreneurial firms adapt to performance feedback. Essay 1 touches on this area superficially by suggesting that the actions, not static levels, may be more relevant in the process of adapting through problemistic search. The broad topic of how an entrepreneur's social network (Aldrich & Zimmer, 1986) shapes responses to sudden external shocks also remains relatively unexplored in

quantitative studies, perhaps because of the difficulty of obtaining individual-level data for unlisted firms that do not suffer from coverage biases. Future research in this area could inform entrepreneurs of the social ties that make them more prone to beneficial or harmful strategic adaptations during recessions.

Including the use of resource orchestration theory in turnaround research and understanding the potential of firm strategic orientation as an approach to leveraging capabilities in resource orchestration requires additional research. Promising approaches to data collection include content analyses of CEO letters to shareholders (Short, Broberg, Cogliser, & Brigham, 2010). However, these documents are unavailable for unlisted firms, and the demand for alternative approaches remains. Meanwhile, a fruitful avenue for future research may be to combine existing vast survey data sets on EO with archival measures that can be used to create proxy variables on resource portfolio structuring actions in different phases of the business cycle. Following this line of research could also lead to a closer theoretical integration of business turnaround, EO and RBT studies while remaining sensitive to changes in the business cycle. It should also be noted that EO is only one approach to understanding how a firm uses its capabilities to engage with its environment (e.g., Miles, Snow, Meyer, & Coleman, 1978).

A natural next step following Essay 3 is to test the bricolage-growth relationship utilizing the novel scale. A negative effect of broad, parallel bricolage would support Baker & Nelson's (2005) case study findings. If robust support for the bricolage-performance relationship can be observed, further research would also be needed to examine the value of bricolage as a within recession strategy. For example, it may prove to be practically difficult for a firm to adjust the extent to which it engages in bricolage rapidly. If this proves to be the case, recommending bricolage as a recession strategy to managers would be difficult even if particular levels of bricolage could be demonstrated to be useful. Furthermore, it is unclear whether bricolage prior to an external economic shock is beneficial. For example, organizations may be better at improvising in the new situation through bricolage (cf. Baker, Miner, & Eesley, 2003), or path-dependencies in bricolage activities (e.g., Baker & Nelson, 2005: 255) may produce a resource portfolio that is difficult to restructure in a changing environment, which might lead to competitive disadvantages. This is yet another example of how unexpected external shocks, such as the Great Recession, tested the boundary assumptions (Bacharach, 1989) of existing theories; the outcomes can only be resolved through additional empirical testing.

7. REFERENCES

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