SOCIAL INNOVATION IN VENTURE CAPITAL FIRMS:
STRATEGY, STRUCTURE, AND PERFORMANCE

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Social innovations are solutions related to humanistic needs and the betterment of mankind with the intent of creating social value and eventual societal level changes. Social innovation therefore broadens traditional views of innovation to include processes of societal transformations and human behaviors. These social innovations are becoming more commonplace across all sectors, including capital markets. Private equity and venture capital firms in the capital markets sector engage in social innovation by investing capital with the goal of delivering both economic and social value. Despite the critical importance of venture capital (VC) in the success of social innovations through socially responsible investing, there is a paucity of research in understanding the factors that affect the performance of these social VC firms. This research gap is addressed by asking the following primary research question: What is the role of strategic and structural factors in the performance of socially innovative venture capital firms?

The firm level research is theoretically based on the well-established design school. This framework highlights the overarching importance of strategy and structure in the accomplishment of firm goals. In the context of the venture capital industry, it was hypothesized that certain unique strategic and structural factors (i.e., stage of investment, age, size, and network relationships) would influence the performance of socially innovative VC firms. A moderated mediation model was proposed to examine these factors and their influence on performance variation. The sample of socially innovative VC firms was generated from the ThomsonOne Private Equity Database.
The research design and methodology followed a systematic and objective process. This included identification of the sample of 381 VC firms, collection of mission statements for each VC firm, development of key word list pertaining to social innovation for content analysis and the collection of archival data on each VC firm. Content analysis was then used to identify the degree to which the firm’s strategic orientation (mission statement) was related to social innovation. Finally, both traditional and more cutting edge statistical analyses (Preacher & Hayes, 2008) were used to evaluate the moderated mediation model.

The results of this study provide several key take-a-ways for both researchers and practitioners focusing on social venture capital. Firstly, results indicated that firms adopt distinct foci of social investing that direct their strategic orientation. These various foci have vastly differing effects on the firm’s overall performance, the strategic decisions they make, and the architecture of their structural design. It is therefore necessary to treat each focus area separately given differences in strategies, industry and investment focus, and market orientations. Secondly, including socially related language in the firm’s mission statement does not guarantee that a VC firm will actually implement a social orientation or seek to create the social value inherent in social innovation. Thirdly, certain investment strategies appear to be more advantageous depending on the size of the firm and the socialness of the firm’s orientation. Lastly, results supported that the adoption of a social orientation did not negatively influence firm performance. Overall, results suggest that pursuing a social orientation is viable and effective in delivering blended value strategies for VC firms engaging in social innovation.

These findings offers socially oriented venture capital firms insights into strategic and structural aspects that are important to their success in achieving positive exists of their portfolio companies, thus increasing both financial and social value.
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By

Raymond J. Jones III
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CHAPTER I
INTRODUCTION

Introduction

This dissertation is about social innovation occurring in the capital market sector. Specifically, the focus is on the social innovation of socially responsible investing (SRI) adopted by venture capital (VC) firms. Social innovations are those solutions related to humanistic needs and the betterment of mankind with the intent of creating social value and eventual societal level changes. This definition of social innovation helps to broaden traditional views of innovation to include collective processes of societal transformations and human behaviors. Social VCs engage in social innovation by directing their investments toward social enterprises seeking to create both financial and social value (Miller, Wesley, & Curtis, 2010). In an effort to answer the call for examination of the funding behaviors of social VCs (Austin, Stevenson & Wei-Skillern, 2006; Certo & Miller, 2008; Randjelovic, O’Rourke, & Orsato, 2003), this dissertation takes a design perspective focusing on the necessary infrastructures that enable the VC firm to carry their blended value goals forward, through implementation and execution of certain organizational elements (strategy and structure).

To understand social innovations and their emergence in the VC industry, it is necessary to first provide a background on traditional perspectives of innovation as foundation. Research on innovation and its commercial applications has been examined from a variety of lenses (Poole & Van De Ven, 2004; Fagerber et al., 2005). Economic perspectives based on new opportunity, growth, survival, and competitive advantage (Abernathy & Utterback, 1978; Freeman & Soete, 1997) seem to drive much of this research. The focus is on the underlying conditions that constrain and promote innovation in organizations both internally and externally, including
necessary resources, role of management, and variation in contexts (O’Sullivan, 2005). These aspects help to explain how innovation influences the economic state of individual organizations, countries, regions, and society as a whole.

One view is that innovation occurs when new ideas start to develop into new and divergent ways of thinking from the current norms (Adman & Hess, 2010). New ways of thinking motivate change in existing logics and create alternatives for economic and social benefits (Leca & Naccache, 2006). When workers, customers, clients, and organizations identify contradictions and misalignment in the current system, they seek remedies and alternatives to realign those logics. Thus, though technological advances are essential for economic development, the concept of innovation is broader, and includes social interaction between various actors (Van de Ven et al., 1999; Harrisson, Bourque & Szell, 2009). Innovation includes the social factor of collective action that becomes the driving force necessary to enable conditions for change and innovation (Porter, 1990; Emirbayer & Mische, 1998).

The traditional economic view of innovation and the innovation process is often linked to new technological advances. This perspective of innovation has its roots in Schumpeterian economics where innovation is essential to competitiveness (Schumpeter, 1939). The Schumpeterian perspective of innovation helps to bridge traditional and social innovation, especially within an organizational context. Schumpeter focuses on the entrepreneur as the initiator in the relationship between development and economic innovation in societal organization (Moulaert, 2008). Schumpeter’s social innovation occurs when the innovating entrepreneur alters the social linkages at the core of the enterprise, to improve functioning, to transform innovation into a social undertaking or to introduce a social rationale (Manoury 2002). In this view social innovation is considered as a structural change within in the larger society.
Innovation has been examined from both macro and micro perspectives. Schumpeter (1934) provides an outline for macro level innovative activities that contains five elements ranging from the introduction of new goods and methods of production, to the opening of new markets, identifying new sources for the supply of raw materials, and even the new or reorganization of an industry (i.e. creation of monopoly positions). These activities are based on fulfilling gaps in the larger economic market. At the same time they are social, requiring necessary interactions between actors at all levels to transform inventions to be transformed into innovations.

Drucker (1993) provides a list of steps essential to the innovation process from a more micro perspective, which also provides evidence of the social process of innovation. These steps include searching for new opportunities, analyzing of cost through the development of business planning, identifying and interacting with users to find out their needs, explicitly defining the opportunity or idea, and leading individuals to create and market the idea. Here the focus shifts to the micro-processes necessary to transform invention into innovation. Both micro and macro perspectives support the idea that innovation is a social process that involves interaction and learning of many actors (individuals, organizations, institutions, etc.), objects, and artifacts (McElroy, 2002; Harrisson et al., 2009).

The necessity of social interaction to transform invention is acknowledged yet this traditional economic view is only able to explain certain sets of social practices (McCallum et al., 2008). Despite covering a vast array of social interactions, the economic view is unable to address needs for development or change from narrow perspectives based on economic rationale, institutions, or practices (McCallum et al., 2008).
The idea of social innovation, while drawing on many aspects of the economic framework of innovation, is fundamentally different and provides an alternative to a pure economic view of innovation. The primary driver of social innovation is an interest in the well-being of individuals and the betterment of society (Pol & Ville, 2009). Social innovation rejects a traditional, economic/technological focused application of innovation for a broader view based on social interactions of knowledge, culture, community, and ultimately the reconfiguration of social relations (McCallum et al., 2008).

Social innovation also serves as an anchor in theoretical debates about the role of innovation in contemporary society (Hiller, Moulaert, & Nussbaumer, 2004). It challenges traditional concepts of technology and organizational innovation, and provides a framework for the innovative nature of socio-economic development (Moulaert, 2008). Thus, social innovation helps to broaden economic and technological perspectives on innovation to include societal transformations and human behaviors (Moulaert & Nussbaumer, 2005). This social motivation drives the development of new problem solving ideas to improve social conditions (Dawson & Daniel, 2010). Therefore, understanding how the relationships between the social and economic dimensions of innovation interact is important to accurately portray how and where social innovation fits with and complements organizational and management research.

Social Innovation in Organizational Contexts

The dynamic and competitive nature of the external environments enhances the need for organizations to have adaptive ability (Teece, 1997) in economic and social spheres. Consequently, organizations have exhibited an exponential increase in socially innovative activities, such as social entrepreneurship, corporate social responsibility (CSR), sustainability,
socially responsible investing, and eco-innovation to name a few. Organizational research relating to social innovation has seen two primary foci (Moulaert, 2008). First, researchers have examined the social relations of organizations, where technological innovation fails to take into account the importance of changes in institutional and social interactions. The second area of focus relates to how organizations are taking a more active role in society through the adoption of sustainable business models and outputs. Researchers in these areas have examined how organizations engaging in these activities make decisions and perform. In this research stream the focus is primarily on the singular activity or the heroic aspects of the individual entrepreneur (Dacin, Dacin, & Tracey, 2011), ignoring the broader social interactions inherent in these innovations.

The richness of the concept of social innovation is recognized in the literature; however, as Harrisson et al. (2009) state, the term is often over utilized and under defined. Thus, social innovations full potential and explanatory power in organizational studies has not been realized (McCallum, 2008; Moulaert, 2008). While posited as a potentially powerful concept, theoretical development of social innovation is limited (Pol & Ville, 2009; Dawson & Daniel, 2010; Lettice & Parekh, 2010) and empirical studies are often restricted to case based accounts of social innovation in specific spatial and temporal contexts. Furthermore, while it is acknowledged that social innovation includes three primary dimensions; a) satisfying of basic needs, b) changes in social relations, and c) empowerment (Moulaert, Martinelli, Swyngedouw, & Gonzales, 2005; Howald & Schwarz 2010), there is no consensus on its definition.

Research Gaps in Social Innovation

Indeed, when considering either research or the missions of numerous social innovation
centers scattered around the globe, it appears that despite some common themes, they have unique definitions that often fit with the research intent or the individual center’s mission. I therefore offer a synthesized definition that social innovations are nascent solutions related to humanistic needs and the betterment of mankind with the intent of creating social value and eventual societal level changes. This synthesized definition includes many of the core themes found across many other definitions. Later, these core theoretical themes that have emerged in this research literature are highlighted (provided in the second chapter of this dissertation).

Similarly it is important to provide a foundation for the concept of social innovation, i.e. history, dimensions, antecedents, outcomes, theoretical linkages, and research/empirical findings (see Chapter II). In addition to providing a detailed account of the foundation of social innovation I also compare and contrast social and traditional conceptualizations of innovation both through explanation and tabular format (see Chapter II).

Social Innovation in Management Research

A key gap in the literature relates to the role of social innovations in organizational research. It is important to identify how social innovation has been used in management literature as well as other related disciplines. As previously discussed, there have been two primary foci for social innovation emerging in organization research; a) the social character of the organization; and b) the active role of organizations in society. As several concepts fall under the scope of social innovation (i.e. business innovation, social enterprise, social entrepreneurship, CSR, social movements, etc.), it is necessary to explain their usage in prior literature, their differences from social innovation, and how they may be social innovations themselves. These organizational concepts can also be viewed of as processes through which social innovation may
occur. Prior research focus has primarily been restricted to one particular context or organization and does not involve the level of scaling, diffusion, and institutionalization needed for broader level changes in social interactions and society, the primary outcome variables of social innovation (Phills, Deiglmeier, & Miller, 2008).

Rationale for Study

The concept of social innovation has been around for centuries (Godin, 2012) and in practice for even longer (i.e., revolution, heresy, etc.). Recent examples of social innovation are seen in organizations pursuing socially related benefits utilizing market based, for profit organizational forms and practices. Much of the academic work in this area is related to topics such as CSR, social enterprise, and/or social entrepreneurship (Dawson & Daniel, 2010). These emerging fields of inquiry appear at the intersection of organization theory, strategy, and entrepreneurship research. Researchers in this area often focus on individual actions, examining who these individuals are, potential differences from traditional businesses and entrepreneurs, and how they manage their socially innovative projects to address social needs. Despite the increase of research on social topics, there is a need for greater understanding of social innovation in organizational contexts.

Current academic research on the concept of social innovation in management literature focuses on the differences and intersections between traditional business innovation and social innovation (Dawson & Daniel, 2010). Although, this emphasis on individual action has added to our knowledge base, there is still a gap in understanding the various forms through which social innovation occurs. Of specific use, would be to take a macro perspective of social innovation and consider the various organizational design processes that drive social innovation, including
strategy, structure, networks, and markets. This vein of research would focus on the various forms of social innovations.

While there is research on organizations engaging in social innovation, there is still a debate about the value that these social innovations create (Orlitzky, Schmidt, & Rynes, 2003). This debate is drawn from a traditional economic view, i.e., organizations in the market should focus on creating profit (Friedman, 2007). Much of the research evidence reveals the effect of social innovative business practices on financial performance is mixed (Orlitzky, 1999). Socially innovative practices have found to have no effect on performance (Hamilton, Jo, & Statman, 1993), where others found that such practices can improve financial performance (Kurtz, 1997; Kempf & Osthoff, 2007; Stateman, 2000). These mixed results offer a unique gap in the research, which I intend to address by examining the role of organizational design in social innovation.

Volberda and Bosch (2004) provide a framework based on the necessity to develop capabilities and capacity for innovation, which includes starting at the organizational level. This framework highlights that for innovation to occur, there must be changes to organizational forms, management principles, practices, and process that are new to firms, industries, or sectors (Lewin & Volberda, 2004). This framework supports the premise of this dissertation that social innovation can and does occur at the organizational level, and can be diffused throughout the broad ecosystem to achieve larger level scalability (Mulgan, 2006).

The focus on design directs attention toward social innovation as an experimental process (Fairweather, 1967). It also draws attention to the broad spectrum of institutional activities supporting social innovations beyond entrepreneurial action, and the extent to which the institutions enable and/or constrain social innovation processes. Thus, design represents an
interesting heuristic to explore the concept of social innovation (Mulgan, 2007). Following this call (Mulgan, 2006; Robinson, 2006), I examine the effectiveness of alternate design in firms adopting social innovation.

Organizational Design Perspective

Theoretical support for examining social innovation at the organizational level is drawn from Chandler’s (1962) design school. This framework highlights how strategy emerges from a planned and explicit mission based on certain goals that are necessary to focus efforts and define the organization (Mintzberg, 1990). The strategic process is a set of commitments, decisions, and actions required for a firm to achieve competitiveness and earn above-average profits (Hitt, Ireland & Hoskisson, 2007). Strategic management includes strategy formulation and strategy implementation. Implementation of a firm’s strategy integrates the use of strategy to create or improve a competitive position in the market and realignment of the firm’s assets (Bowman & Abrosini, 2003).

Various organizational structures may be used to successfully implement strategies. The ability to select a relevant strategy and match it with the appropriate structure is a characteristic of a firm’s effective strategic processes (Olson, Slater, & Hult, 2007). Organizations change their structures when inefficiencies force them to change (Chandler, 1962). Firm structure specifies the work that needs done and how to do it given the firm’s strategy (Donaldson, 2001). Organizational structure is the firm’s formal reporting relationships, procedures, controls, and authority in decision making. Structure can also include the internal configurations of organizational activities, such as firm age, size, and network structures in firms adopting social innovation, which is the focus of this dissertation. Structure helps to guide the use of strategy,
compare actual and expected results, and suggest actions to take to improve performance that is below expectations (Kaplan & Norton, 2001). Thus the role of organizational structure in strategy implementation and organizational outcomes is important. Similarly, identifying how socially innovative organizations design their organizational structures and strategies is essential for understanding their performance.

Research Questions

Based on the goals of understanding social innovation this research investigation addresses the following primary research question:

What is the role of strategic and structural factors in the performance of socially innovative (engagement in socially responsible investing) venture capital firms?

This research question leads to the following areas of inquiry:

1. What is the relationship between an explicit social mission and performance?
2. How do firms driven by social missions design their organizational strategy?
3. What aspects of organizational strategy influence the performance of socially innovative organizations?
4. What aspects of organizational structure influence the performance of socially innovative organizations?
5. How does strategy and structure interact to influence the performance of socially innovative organizations?

The primary research question relates to the influence of both internal and external organizational factors on firm performance (i.e. aligning a value based strategy with traditional based performance measures). In order to examine how value based strategies influence performance, the mission statements of a population of for-profit venture capital firms is examined to identify how firms driven by both economic and social values (i.e., a blended value
system based on socially responsible investing) perform. Since traditional financial measures of performance may not be appropriate or directly related to the socialness of a firm’s mission statement, the outcome variable in this study is more directly linked to the diffusion of social innovation. Specifically, the performance measure is focused on the success of the social enterprises that a social VC invests in. It is assumed that more social the mission statement (social mission) the social enterprises the VC will invest in. If the social enterprise being invested in is successful the VC is not only supporting the spread of social causes and innovation, but is also meeting their social and economic goals.

The second set of research questions provides more specifics related to the social mission, strategy, and structure in this design based model. Drawing from the theoretical logic of strategy leading structure, and in turn, influencing performance (Chandler, 1962), the second and third research questions address the potential relationship between the chosen strategy and structure, and how variations in this design will influence performance. The next research question highlights the importance that structural factors, such as liability of newness, small size, or networks may have on performance. Prior research provides evidences that these specific structural factors (i.e. size, age, and network) influence traditional performance measures, although their influence on performance of socially innovative organizations has yet to be examined. The last question examines how the interaction of firm strategy and structure will influence performance in socially innovative organizations. For clarity, Table 1 is provided to outline the specific theoretical constructs discussed in the research questions.
TABLE 1
Theoretical Construct Definitions

<table>
<thead>
<tr>
<th>Construct</th>
<th>Role</th>
<th>Operational Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Mission</td>
<td>Independent</td>
<td>The socialness of a VC firm’s mission statement as related to aspects of socially responsible investing and social innovation.</td>
</tr>
<tr>
<td>Organizational Strategy</td>
<td>Mediator</td>
<td>The various strategic decisions used to achieve the mission of the organization. Conceptualized as stage of investment and sources of financing.</td>
</tr>
<tr>
<td>Organizational Structure</td>
<td>Moderator</td>
<td>Structural factors that the organization can both management and occur naturally. Conceptualized as age, size, and network.</td>
</tr>
<tr>
<td>Firm Performance</td>
<td>Dependent</td>
<td>Financial Performance of the venture capital firm (this performance is derived from the success of the portfolio companies the VC invests in).</td>
</tr>
</tbody>
</table>

The Strategy-Structure Relationship

It is important to note that this investigation takes the position that both strategy and structure do influence performance. While there has been much back and forth about the sequence of strategy and structure (see Mintzber, 1990, 1991; Ansoff, 1991 for a review), many have concluded that both significantly matter (Hall & Saias, 1980; Miller, 1986; Lewin & Vorderda, 1999; Rodrigues, 2003; Slater, Olson, & Hult, 2006). The strategy-structure relationship is complex and iterative with both direct and indirect links from strategy to structure. Direct links include where structure can be explained by the nature and diversity of the products and the markets of the organization (Chandler, 1962; Channon, 1973; Rumelt, 1974). Indirect links focus on where structure is determined by characteristics of the technology employed (Perrow, 1967), by the nature and variations in the environment (Lawrence & Lorsch, 1967) and by size (Child & Mansfield, 1972). Additionally, structure can lead strategy by determining...
the introduction and subsequent development of strategy (Hall & Saias, 1980) or where structural characteristics act as filters and may limit the strategy that an organization can take (Weick, 1969; Miles, Snow, & Pfeffer, 1974). Again, this investigation is concerned with the importance of both strategy and structure to optimize efficiency, not on one leading the other (Chandler, 1962).

Research Context: Social Venture Capital Firms

To address the above research questions I examine venture capital firms that have adopted missions, strategies, and structures driven by both social and economic values. These venture capital firms have adopted a social return on investment (SROI) business model by explicitly declaring that the mission of the organization is to provide social impact through their investment portfolios. These firms are salient examples of social innovation occurring in the VC industry.

Venture capital firms raise funds from numerous investors and then invest those funds in private companies with the purpose of achieving significant investment returns (Dimov, Shepherd, & Sutliffe, 2007). VC firms can be found across different industries and invest in any number of different types of ideas or companies. Some VC firms invest in companies that are in the process of idea development (early-stage) to late-stage investments, companies with well-defined markets and product characteristics, or those seeking to expand their current business. Research on VCs has focused on every stage in the investment process, from investment selection (pre-investment) to deal structure, and post-investment processes. Common throughout this research is the core economic idea that the driver of VC firms is financial performance, earning returns for their investors and earning a profit themselves (Landstrom, 2007).
Quite distinct from this traditional view (that VC firms only focus on profits) is the view that VC firms can and do adopt socially innovative strategies directed at social and environmental well-being. These socially oriented VCs are receiving a substantial amount of popular press because of dramatic growth of the industry (Coster, 2011). For example, the green venture capital industry (i.e., investments directed at environmental sustainability such as CleanTech) has grown at a rate of 50% annually since the Kyoto Protocol went into effect (McCarthy, 2006; Hashmi, 2010). It is, therefore, somewhat surprising that academic research has just started to scratch the surface of social venture capital with only a handful of studies examining the nature and strategies of these blended value oriented VC firms (Randjelovic et al., 2003), especially given the importance that VC funding plays in the advancement of social innovation (Lerner, 2009). Prior research evidence reveals that while VC funding may be a small percentage of R&D funding of large companies, each VC dollar of spending is several times more potent in spurring innovation (i.e., patenting) than one dollar of corporate R&D spending (Lerner, 2009). Additionally, it is often only VC firms that are willing to take on higher risk investments in new innovations (which socially related enterprises are categorized as high risk investments). Therefore, without VCs adopting a socially innovative mission based on a blended value system (i.e., concerned with both economic and social outcomes), growth, diffusion, and sustainability of these social enterprises seeking social innovations of their own will be significantly constrained.

While social innovation occurs at the societal level, it starts with entrepreneurial firms identifying opportunities and alternatives to current, failing, or conflicting dominant logics at the organizational level. These venture capital firms are entrepreneurial, as they have recognized and pursued the opportunity to engage in social innovation.
Building from the design school perspective, the theoretical model (Figure 1) indicates that the organizational (social) mission will have a direct effect on a firm performance (i.e., performance of portfolio company). While the traditional strategic paradigm highlights that organizational mission can influence performance (Porter, 1980; Pearce & David, 1987; Bart & Baetz, 1998), there is little discussion on how it can influence performance when measured across a blended value orientation. The theoretical model predicts that a social mission will have a direct effect on organizational strategy. Further, as strategy and structure both influence the way in which an organization operates, its capabilities, and the functional depiction of the organizations strategy (Miles, Snow, Meyer, Coleman, 1978), it is proposed in this dissertation that organizational strategy will mediate the relationship between social mission and firm performance. Finally, drawing from an understanding that new organizations may have certain liabilities (Freeman, Carroll, & Hannan, 1983) and that adoption of socially innovative strategies, structures, and performance measures is itself a new opportunity (even if the organization is not new in the traditional sense), it is reasonable that certain structural factors relating to the newness of these organizations and this new business model may also influence the strategy, structure, performance relationship. Specifically, drawing from a liability of newness perspective (Freeman, Carroll, & Hannan, 1983), factors such as organizational size and age are proposed to moderate these relationships. Additionally, given the fact that collaboration is seen as a primary success factor for social innovation (Mulgan, 2007) it is also reasonable that the organizations network may moderate the relationship between strategy, structure and organizational performance. Through collaboration, these organizations may be able to draw from their network to overcome the liabilities that are inherent in entrepreneurial and socially innovations organizations (Granovetter, 1973).
Contributions

By examining of how social innovation occurs among a population of venture capital organizations this research has the potential to offer several theoretical contributions. First, is the addition of social innovation to organizational, strategy, and entrepreneurial research. A second contribution is the advancement of understanding by integrating existing theoretical frameworks to examine social innovation. Finally, there are current gaps in funding, advice, support and other systematic approaches to creation and diffusion of social innovation. This sample of social venture capital firms provides a salient example of how capacity building through funding and support for the creation and diffusion of social innovation. At the same time these firms are systematically measuring success and engaging in the mechanisms necessary for erosion of sector boundaries through integration of private, public, and philanthropic support, another key mechanism for the successful creation and diffusion of social innovation (Lettice & Parekh, 2010). By examining antecedents and enablers of social innovation in venture capital firms my research will advance understanding of a fairly new topic.
Practically speaking, this research offers several contributions for venture capital firms seeking a blended value mission. First, is helping to identify the organizational mechanisms that support social innovation. Thus, the findings may serve to guide VCs in their decision making by identifying strategic mechanisms that may enable a blended value, while simultaneously identifying those structural aspects that can also act as barriers to success. These guidelines will help socially oriented venture capital firms to successfully achieve eventual positive exists of their portfolio companies.

Organization of Content

This dissertation is presented in five chapters. Following this first chapter, which introduces the motivations and rationale for the study, as well as the research questions, the second chapter begins with a historical overview of social innovation. Following, a review of the current state of the concept is offered. Relevant perspectives, which are used to examine and explain social innovations are discussed (i.e. dimensions, processes, antecedents, outcomes, theoretical perspectives), as well as how the concept is related to and important for the management research. Various categories of innovation are then introduced to demonstrate that social innovation, while similar, is separate and distinct. An organizational-level perspective is selected as the most appropriate perspective for the current study, as social innovation emerges through entrepreneurial firms identifying opportunities and alternatives to current failing or conflicting dominant logics. The chapter concludes with a discussion of the relationship between environmental, organizational, and individual factors influence on social innovative outcomes and the presentation of hypotheses supporting these specified relationships.

In chapter III, the research design and methodology used in the study are discussed. The operationalization of the study variables are first presented followed by a discussion of the
sample of organizations used for the study, which are selected from a population of venture
capital firms. Then, the measures used in the study and the methodological procedures are
outlined. Finally, analysis of the pilot study analysis and the preliminary findings are presented.
Chapter IV consists of the results from the study, and the final chapter contains a discussion of
the results. This includes implications for managers and researchers, as well as limitations,
conclusion, and suggestions for future research.
CHAPTER II
LITERATURE REVIEW

Introduction and Overview

The purpose of this chapter is to provide a literature review on social innovation and appropriately situate the research within the existing knowledge base. It includes theoretical perspectives on social innovation, internal dimensions of social innovation, and how social innovation can influence management research, specifically related to socially responsible investing. In addition, the chapter provides the research model, the research questions, and hypotheses suitable for empirical testing.

This chapter begins with a historical depiction of the evolution of social innovation. This includes examining the ways that social innovation is used as a theoretical perspective, current state of the field, antecedents, dimensions, outcomes, and other theoretical perspectives used to examine the phenomenon. A design based perspective is offered as an appropriate framework to examine social innovation. The similarities and differences between social innovation and other types of innovation and management concepts are also presented. This allows social innovation to be positioned within socially responsible investments of venture capital firms.

Next, the four research questions are addressed. The primary research question relates to influence of both internal and external organizational factors on organizational performance. The research questions are specifically related to the mission, strategy, and structure, in this design based model. Drawing from the theoretical logic of strategy leading structure and in turn influencing performance (Chandler, 1962), the research questions address the potential relationship between the chosen strategic mission and the realized and implemented strategic content, and how variations in this design influence performance. The next research question
highlights the interaction of strategy with structural factors, such as size, age, or networks, and the influence performance. Only contextual factors that have been shown to previously impact traditional performance measures (i.e. size, age, and network) are considered. In summary, this chapter provides the theoretical foundation to support the investigation of social innovation in venture capital firms.

Scope of Study

While there is a vast array of background knowledge and literature to draw on relating to social innovation, several gaps were found in past research. Firstly, there is a lack quantitative analysis that identifies factors affecting social innovation or the social innovation process. Secondly, there is a lack of research that analyzes the role of different actors (i.e. policy makers, funders, universities, and business) in supporting the social innovation process. While some factors of social innovation may include strong leadership, clear mission, sensitivity to markets and users, and lean or flexible design (Mulgan, 2007), more research is needed to further our understanding of the precise ways in which social innovation occurs and can best be supported.

While social innovation is thought to occur at the societal level, it starts with the actions of individuals and organizations. The design school (Chandler, 1962) provides a useful framework for examining how socially innovative venture capital firms address implementation and design issues, by aligning both strategy and structural elements to deliver social and economic value that is scalable beyond their individual investment.

Social innovation does occur within and across many different sectors and contexts, and comes in many different forms, but given the increase in both practice and research on social and value based concepts of the market, the need to examine social innovation from an
The setting for this research is the venture capital industry. Venture capital firms that have adopted a social innovative mission and engage in socially responsible investing are selected and the effect of their strategies and structures on performance is examined. This investigation examines strategic and structural components that are relevant in traditional design models as well as in venture capital research.

Historical Foundations of Social Innovation

The term social innovation is not a truly new term, but one that has recently reemerged. Within in the last decade, it has increased in popularity and usage both in popular and academic media. Many reference social innovation as an alternative to the more taken-for-granted notion of innovation as relating to technology. To illustrate the origins of the term, Godin (2012) provides one of the most extensive historical outlines of social innovation to-date. This outline provides evidence that usage of social innovation can be dated back to the early nineteenth century, almost a century before innovation was linked to technological or economic advances. To understand the current state of social innovation, it is necessary to draw on these historical foundations to provide a framework for the roots of the term and its evolution to its current meanings and usage.

In the late 18th and early 19th centuries innovation had negative connotations as it implied both a change to the established order or deviant behavior that was forbidden and punishable (Godin, 2012). This conceptualization of innovation was related to religious heresy
and later to political revolutions in England in the late 18\textsuperscript{th} and early 19\textsuperscript{th} centuries. The term social innovator referred to social reformers and individuals that were accused of overthrowing the established order and continued to be used in a negative light, especially in relation to the ideologies of socialism. Sargant (1858) published Social Innovators and Their Schemes, which was a discussion of the negative and infectious doctrine of socialism, where it was promoted as a system in which welfare is the solution to social problems (Smith, 1883). These negative understandings of social innovation and the social innovator continued until the early 20\textsuperscript{th} century where the term took on a positive connotation as it is applied today.

Social innovation had somewhat of a different meaning in France during the 19\textsuperscript{th} century. According to Godin’s (2012) outline, many French writers of the time viewed social innovation as a positive attempt to improve the social condition for mankind. The primary premise of these writings was that social innovation had a very human element and could be thought of as innovation for the people (Godin, 2012). Thus, social innovation included transformation of various aspects of society, including; education, legislation, individual rights, and equalities.

Social innovation stressed the positive notions of the revolutionary character of change, which was necessary to transform and improve society as a whole. There were two primary domains (education and labor) where social innovation actually was occurring in France. Comte (1841) in several of his writings heralds the induction of a system of education for all as one of the greatest social innovations. A second area was related to labor legislation, including labor laws and working conditions (Stell, 1884). It is to be noted that changes in these areas are not technical or economic in nature, but are related to improvement of society from a humanistic perspective.
Around this same time in the 19th century, the French also considered famous literary figures to be social innovators. Writers such as Rousseau, Voltaire, Montesquieu and others, gave revolutionary ideas to improve society and mankind. The 20th century also added others to the list such as Mahatma Gandhi, Karl Marx, and Theodor Roosevelt (Godin, 2012). The business man was also categorized as a social innovator who shared characteristics of social reform. An example of this is Nelson O. Nelson, an American business man and reformer that launched cooperatives plans, profit sharing with employees, cooperative credit societies, industrial-education projects and many more socially related innovation in business (McQuaid, 1975).

There was also a shift (away from individuals) toward organizations and governments as social innovators. Thorp (1942), the director of economic research for Dun & Brandstreet, expressed the idea that government is centrally involved in social innovation and that the government is responsible for some of the most significant changes to the national and global economic system (1942). Additionally, many see the modern enterprise and management of the organization as a social innovation itself (Drucker, 1987). The private sector was at the very forefront of modern day social innovations through its directing of individuals toward an effective, purposeful, and productive group through unifying goals (Drucker, 1987).

The view that social innovation included both individuals, and organizations, gave way to an even broader view that social innovation could be anything or any invention relating to social matters; whether it be the color of ink, the soviet communist system, divorce, the ice cream shop, the Republic, or changes in individual manners (Godin, 2012). While not all of these innovations have lead to revolutionary improvement for mankind, they have caused some change at the society level. They reinforce the view that social innovators oppose traditional ways, are
unorthodox, nonconformist, creative, experimentive, and even entrepreneurial. While this last view has helped in diffusion of the term social innovation, it has also hindered advancement of a theory of social innovation.

Traditions and Social Innovation

Social innovation is primarily used in three ways. The first and most predominant is as a phenomenon that occurs in various contexts, examined through the lenses of existing perspectives. The second, uses social innovation as an alternative framework from traditional economic and technological innovation. Lastly, social innovation is related to the concept of change and more specifically, used an interchangeable term with social change. These conceptualizations of social innovation are not dissimilar and have varying overlapping elements, most specifically related to the idea of change. Innovation of any kind is not just a reform of an old or existing idea, but is aimed at creating something new or better (Drucker, 1957). Social innovation is therefore directed at public interests and social issues (Drew, Klein, & Hulsbergen, 2008). Hence, the introduction of anything new that effects change on some societal level could be considered social innovation.

Building from its current understanding as a positive concept, social innovation has been used in the literature as a reaction to technological innovation (Godin, 2012). As technological innovation increases it has certain consequences on society, intentional and unintentional as well as positive and negative. How society reacts to changes in technology can be considered a social innovation. When social innovation does not keep pace with technological innovation there is a lag, which if not corrected or adjusted for, can result in large scale maladjustments that can have negative effects on numerous sectors in society (Ogburn, 1922).
Social innovation is inherently human, in that it seeks to involve what is best for people (Weeks, 1932). These most notably include changes, modifications, or introduction of new politically related institutions and process, educational methods, and theories of organization and productivity (see Godin 2012 for a detailed list of alternatives to technological innovations) (Drucker, 1957; Mesthene, 1969). As an alternative or response to technological innovation, social innovation is related to a change caused by the maladjustment of individuals to their environment (i.e., social change) (Wolfe, 1929).

Adams and Hess (2010) provide a useful list of factors differentiating social and traditional innovation. Building on their list, I offer Table 2 to highlight differences across attributes such as the drivers and location. There are also several similarities, in the action and process: inventions are created, tested, adopted, and then diffused through the system (Rogers, 1995; Mulgan, 2006).

**TABLE 2**
Contrast and Similarities in Traditional and Social Innovation

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Traditional Innovation</th>
<th>Social Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drivers</td>
<td>Shareholder value, Market Position (Hall, 1999)</td>
<td>Social wellbeing (Biggs et al., 2010, Moulaert, 2008)</td>
</tr>
<tr>
<td>Location</td>
<td>Organizations, Industries (Poole &amp; Van de Ven, 2004)</td>
<td>Cross-sector (Harrisson et al., 2009)</td>
</tr>
<tr>
<td>Action</td>
<td>R&amp;D, Invention, Diffusion, Adoption (Rogers, 1995)</td>
<td>Identification, Experimentation, Diffusion, Adoption (Fairweather, 1972, Hazel &amp; Onaga, 2003)</td>
</tr>
<tr>
<td>Interventions</td>
<td>Organizational Capabilities (Teece, 2009)</td>
<td>Capacity Building (Biggs et al., 2010; Mulgan, 2007; Moulaert, 2008)</td>
</tr>
<tr>
<td>Governance</td>
<td>Internal (Pisano, 1991)</td>
<td>Participatory / Collaborative (Swyngedouw, 2006; Moulaert, 2008; Moulaert &amp; Nussbaumer, 2005)</td>
</tr>
</tbody>
</table>

*Adapted from Adams and Hess (2010)
While there is a significant amount of research discussing social innovation, it lacks a unified definition (Pol & Ville, 2009), although, most have an agreed upon understanding of the core dimensions and antecedents of social innovation (Mulgan, 2007). Finally, there is a very limited research on social innovation that is linked to theory. Due to this lack of conceptual clarity social innovation is criticized as merely a normative and qualitative concept that does not lend itself to empirical analysis (Lapierre, 1977). The following section provides a review of the current state of social innovation research.

Research in Social Innovation

Based on Higgins and Green (2006) and Busenitz et al. (2003), a search was conducted for all published articles on social innovation by using both Academic Search Complete and ABI/Inform databases to search for articles, regardless of time period or journal (as the topic is relatively nascent and research is published in a wide variety of publication types) in which social innovation was used in the title or abstract up to the end of August 2012.

This search resulted in 199 articles (results were the same in both searches). Of these articles 50 were directly related to the topic of social innovation as phenomenon or framework. Nine articles mention the term in relation to a discussion of social entrepreneurship. 83 articles refer to social innovation in a discussion related to topics such aspects of change. The remaining 57 articles only mention the term social innovation, but do not discuss the concept at all and instead focus on a completely unrelated concept. Only one article used quantitative empirical analysis (Marcy & Mumford, 2007), and the rest were either conceptual in nature or used qualitative case study based analysis to examine social innovation. While not complete, this list provides one of the most comprehensive searches on social innovation research to date.
Additional searches were conducted to capture other relevant sources, which includes, books/book chapters, popular media, and publications from foundations or centers explicitly related to social innovation. This additional search found 23 books explicitly dedicated to topic of social innovation. There was also numerous social innovation centers affiliated with universities, cities, government organizations, NGO’s, and not-for-profit organizations across the globe. While the conceptual development of social innovation from an organizational perspective is relatively new (65 of the related peer reviewed articles were in organizational or management related journals), the practical application of social innovation is evidenced from the many social innovation centers around the globe.

Antecedents of Social Innovation

With any given social system or institutional structure there are multiple parties that may have competing goals and needs (Marcy & Mumford, 2007). These parties or actors can include individuals, organizations, communities, or entire populations who interact in a social system. These competing goals often result in a misalignment of interests and value systems (Greenwood & Suddaby, 2006) creating disadvantages and even marginalizing actors in the system as resources are scarce and certain actors may be more powerful in a given social interaction. These disadvantages and the marginalization become the primary drivers motivating actors to seek change, or social innovation.

The marginalization of actors reflects the alienation and deprivation from a system where the taken-for-granted norms continually exclude certain individuals and communities (Moulaert, 2008). Social innovation is sparked by a response to adjust, change, or even prevent these
contradictions and inequities from continuing (De Muro, Di Martino & Cavola, 2007; Christianens, Moulaert & Bosmans, 2007; Falk & Ryan, 2007).

These competing goals and needs can come in many different forms and in many contexts. Social innovation can occur as a response to contradictions, such as environmental crisis (Biggs et al., 2010), segregation, social and financial inequalities, health concerns, behavioral problems related to affluence (i.e. obesity, bad diets, substance abuse), and mismatches between growing GDP and welfare (Mulgan, 2007; Vieta, 2010). The market based responses to these issues include the inclusion of deprived citizens into the labor markets, democratization of policy decisions and governance structures of the social systems through co-production and co-construction of new policies by cross-sector stakeholders (i.e. governments, market forces, and civil society actors) (Vaillancourt, 2009).

Dimensions of Social Innovation

Social innovation most often appears in the literature as a descriptive metaphor rather than a clearly defined term (Howaldt & Schwarz, 2010). Though social innovation often occurs within the context of social change, it can be seen as an interface between social reflection and action. This interface between reflection and action occurs as social innovation involves identification of the societal problems and targeted action to address those complex problems (Howaldt & Shwarz, 2010; Harrisson et al., 2009; Le Ber & Branzei, 2010; Mulgan, 2007). Starting with the idea of identification of the problem, social innovation is most notably a reaction to social or economic crisis (Moulaert, Martinelli, Swyngedouw & Gonzalez 2005), misalignments between the advances of technological innovation and humans (Harrisson, 2008), and higher level contradictions with in the current institutional arrangements and dominant logics
(Greenwood & Suddaby, 2006). These higher level contradictions, often occurring at the institutional or system level, offer the potential motivating factors that influence actors to seek change (Greenwood & Suddaby, 2006). Such action is not intended to revolutionize the entire system or institutional field, but helps promote new and/or alternatives ways of providing social justice and realignment of the social values embedded in the current system (Harrisson et al., 2009). This action then goes through many phases. Specific attributes of action allow it to be distinguished as social innovation (e.g., related to humanistic needs and the betterment of mankind with the intent of eventual societal level change).

The primary distinguishing attribute of social innovation is the goal of constant improvement for individuals and communities from a humanistic point of view. These changes are not merely new technological changes that may make life easier, but involve a true re-evaluation of the rules, norms, and values between the actors and institutions. Thus, social innovations are new social arrangements of the actor/institution interactions (Harrisson et al., 2009). Societal transformation is achieved when social innovation promotes cooperation among citizens, democracy based decision making, empowerment of the citizens and share-holders, participation, social justice, solidarity, a good society and social cohesion (Etzioni, 2004). For change to emerge, three primary conditions are required; a) the building of capacity through combinations and mobilization of existing/new resources and capabilities (Biggs et al., 2010; Mulgan, 2007; Moulaert, 2008); b) the collaboration of actors across multiple domains and sectors for diffusion to occur (Biggs et al., 2010; Harrisson et al., 2009; Rogers, 1995); and c) the scalability and sustainability of these new social innovations (Mulgan, 2007). Figure 2 is provided as a simple model for how these primary dimensions interact to support the creation and diffusion of social innovation. Both capacity building and collective action occur
simultaneously and are necessary to ensure that social innovations become scalable, allowing diffusion through the social system. Each dimension of the model is discussed.

**FIGURE 2**
Conceptual Model of Social Innovation

**Building Capacity**

Social innovation is related to the practices that enable conditions for addressing complex social issues (Adam & Hess, 2010). The way in which these issues are addressed should adhere to the view that the problems and the solutions are larger than one individual or organization (Phills et al., 2008). Though other concepts (i.e. charity, philanthropy, corporate social responsibility, and not-for-profits) take this actionable approach to addressing similar social issues, social innovation is distinct. It involves the development of capacities through investment in resources, primarily human capital. This human capital investment can lead to such outcomes as voluntary activities, employment, new businesses, and more importantly, the empowerment of those directly affected (Le Ber & Branzie, 2010; Adams & Hess, 2010). As part of this capacity build up, social innovation adopts an investment model, rather than focusing on deficit. This asset model enables focus on the actual assets and the empowerment of the organizations, communities, or individuals closest to the problem, rather than just focusing on a quick fix to the problem. This empowerment helps establish a more systemic solution to the problem (as those in need of a solution are actively involved in the solution). Social innovation is a new way to
increase the capacities of organizations by leveraging existing resources to solve social problems more effectively. By pooling together resources and capabilities to address complex social problems from within (Harrisson, Chaari, & Comeau-vallee, 2012), social value is created that can internally drive productivity of change.

*Collaboration and Boundary Spanning*

Social innovation occurs as a boundary spanning activity, bridging sectors to draw upon collective support and resources. In this way social innovation draws on the collective agency between government, community, and market sectors to develop the infrastructure necessary to serve social and economic objects, which are not mutually exclusive (Adam & Hess, 2010). Often this process occurs in local spatial contexts, where interactions between actors and institutions are the strongest. This allows the ability to develop communication channels for new social relations and alternatives (Moulaert, 2008). These communication channels enable actors to participate in the necessary comparative analysis of new and alternative institutional structures. This process reinforces the coalition building between the change agents and supporting actors (Moulaert, 2007).

The creation of a network or innovation system includes the brokers, entrepreneurs, and institutions that are able to link together the necessary resources and capabilities to grow new ideas to scale (Burt, 1992, 2000; Kenny & Meaton, 2007; Mulgan, 2007). Cross-sector partnerships (in addition to building the necessary capacity for societal change) become the most likely place where the expression of social innovation can deliver solutions (Seitandi, 2008; Teets, 2012) because they emerge where markets and/or governments fail (Austin et al., 2006) or where there is opportunity for change (Crane & Matten, 2007). These cross-sector partnerships
then become a primary social problem-solving mechanism (Waddock, 1989). Inter-organizational and cross-sector collaboration helps to increase the capacities more effectively by pooling together resources, skills and knowledge. The social innovation process is rooted in the exchange of knowledge, values, and access to resources based on the expertise and diversity of actors across the innovation system (Harrisson, Chaari, & Comeau-vallee, 2012).

**Scalability and Sustainability**

Finally, with a goal of societal change, the concern becomes the scalability of the innovation (i.e. whether it can spread across systems and fields to become a workable solution to the given problem). Included in that workable solution is the ability to sustain the changes (Muglan, 2007). The idea here is that the new practice can grow, be replicated, and potentially franchised at a system level and is not just a small scale solution that does not work across the system (Muglan, 2006). This process of growth, scalability, or diffusion is not new to innovation, but in the context of social innovation it is somewhat different because the goals differ. Traditionally, diffusion or scaling of an innovation stems from the need for increased efficiencies, market position, or shareholder value (Rogers, 1995) and is supported by the organization. In the social context, these economic goals are not the drivers, rather it is the well-being of communities or groups of individuals, who are unable to make changes or implement innovations alone.

The collaboration of cross-sector partners is instrumental to attaining scalability in the social innovation process. The broader the network and the more influential the partners, the more friendly the environmental conditions for social innovation to replicate and diffuse becomes (Dawson & Daniel, 2010). As resources are needed for diffusion, it requires
governmental policy changes, new markets, and the more importantly the willingness of these sectors to pay for the change. Therefore, to enact and filter-up (Muglan, 2007), social innovation must have a combination of support from institutional hierarchies and boundary spanning networks.

Figure 2 illustrates how the dimensions interact to support the creation and diffusion of social innovation. It is first necessary to build the necessary capacity (i.e. resource mobilization, awareness, etc.). This is primarily done through some means of collective action. Though it may occur in many different forms from bottom-up to top-down, it is necessary for the idea and experimentation to occur in a boundary spanning arena. Without acceptance across the entire social system the social innovation cannot reach the threshold required for true scalability of the innovation (i.e., where it is accepted and eventually legitimized as an alternative or new model for social interaction).

Other Factors in Social Innovation

There are other complexities involved in social innovation. Multiple actors exist and they may be initiating different levels of action and change simultaneously. Further multiple interactions between many actors to identify and experiment with new solutions in dynamic or hostile environments makes social innovation a very complex process (Marcy & Mumford, 2007).

Framing

Equally as important to social innovation is the alignment of individual interests, values, and beliefs with the social movement organization’s activities, goals, and ideologies (Snow et al.,
1986), a concept called framing. Without this alignment, divergent values remain segregated and the problem remains unidentifiable. Collaborative partnerships need to have some sense of the other actors’ interpretations that are guiding actions (Le Ber & Branzei, 2010; Goffman, 1974; Kaplan, 2008; Snow et al., 1986). At the core of social innovations are incremental and radical changes in current contradictory logics (Hardy et al., 2006) and each partner has their own initial interpretation of the alternative or innovation being proposed (Fiol & O’Connor, 2002). Framing enables relational coordination mechanisms to help partners negotiate and renegotiate shared understandings of the issues and identify convergences in goals, approaches, and outcomes (Le Ber & Branzei, 2010). Frames are therefore the collectively negotiated understandings that punctuate a sense-making process by providing shared interpretations of people, events, or settings. The shared interpretations help to motivate both individual and collective agency (Benford, 1993) and pattern subsequent action for those involved (Gamson, 1995). They also provide adherents and opponents with compelling accounts that both motivate and justify their beliefs and actions (Le Ber & Branzei, 2010). If the purpose of social innovation is value creation (Austin et al., 2006) then frames and framing processes help clarify the divergent expectations and approaches to the value creation process (King, 2007; Waddock, 1989).

**Agency**

Another practical challenge of social innovation involves the complexity of multiple distributed actors simultaneously trying to work toward a common goal from different perspectives (i.e. bottom-up or top-down implementation). Distributed agency combines the material artifacts, rules, and routines held by actors across multiple domains in time and space (Garud & Karnoe, 2004). It is the task of concerned actors to make sense of the current complex
logics (Greenwood, Diaz, Li, & Lorente, 2010). This sense making is accomplished through reframing potential conflicting pressures and persuading others in the field that alternative arrangements are available, as mentioned above (Garud & Karnoe, 2003). Part of this reframing process is to collectively convene (Dorado, 2005). Hence, the dispersed agency is brought together, to allow for experimentation with potential institutional changing innovations (Whittle et al., 2011). Agency of the individual alone often cannot deliver the necessary strategic resources needed for implementation of new processes or policies (Voß, Smith, & Grin, 2009). Therefore, to create an environment supportive of social innovation, actors must convene to create the necessary collective agency through partner generation, network development, and resource accumulation to strategically overcome institutional or cultural inertia (Calsyn, 2003; De Muro, Di Martino, & Cavola, 2007; Moore & Westley, 2011).

**Design**

The element of design becomes an important concern when trying to build capacity, collaborative relationships, and scalable/sustainable solutions to social problems. Social innovations redesign current social systems in a way that the values of the actors in the system are being changed (Doi & Yamada, 2011). When changing or designing new systems, multiple strategic areas must be addressed. These include framing (or designing) the issues in such a way that will motive and mobilize distributed actors to action (Le Ber & Branzei, 2010). Additionally, design of actual strategies is important to the change process. Long-range strategies must be supported by short-range tactical actions (Kozlowski, 1987). Design often includes structural elements regarding the nature of change, and the various supportive processes. In the case of social innovation, it may also include a response based on the evolution of shared
responsibilities among individual and collective stakeholders across governments, markets, and civil society (Vaillancourt, 2009).

Another aspect of this structural design would be governance (Moulaert et al., 2005). Governance in social innovation can involve the interactions of collaborative partnerships, bottom-up and/or top-down mobilization (Moulaert et al., 2007), citizen participation and empowerment, resource management through the recombining of existing and new ideas (i.e. bricolage) (Levi-Strauss 1966), financial supporting roles (e.g. venture capital) (Biggs et al., 2010), and incubation and experimentation (Fairweather, 1972). Therefore, the management and design of social innovation is very complex with multiple interactions and actors trying to collectively achieve success.

**Legitimacy**

Social innovation studies change in the context of social problems and the necessary content and processes needed to make that change (Pettigrew, 1985). Social innovation is complex and often harder to initiate change due to the wide network of stakeholders and the intractable nature of issues (Hall & Vredenburg, 2003; Lettice, & Parekh, 2010). Therefore, a primary task is to create legitimacy for the social innovation, so it can be repeated and scalable. Traditional aspects of legitimacy are concerned with the perceptions that actions and organizational conduct falls within the accepted system of norms, values, beliefs, and definitions (Suchman, 1995). To achieve scalability and sustainability of the social innovation, actors seek legitimacy through framing and collaboration so that the innovation can diffuse through the system (Rogers, 1995). Other practical actions that can be taken include involving leaders who visibly encourage and reward successful innovation (Biggs et al., 2010) and promoting
innovation through awareness building and attachment with local ecosystems (Harrisson,Chaari,
& Comeau-Vallee, 2012). The goal here is about creating a supportive environment to enable new solutions to become routines that are eventually institutionalized as new norms.

Social Innovation as a Process

Social innovation has also been explained as a process. The social innovation process is not dissimilar from other traditional perspectives of the innovation process (Mulgan, 2006). In his seminal work on social innovation, Fairweather (1967) compares the social innovation process to traditional innovation process (from initial model-building, to continuous evaluation of the newly developed solutions, and widespread adoption). This process model of initiating, developing, and scaling is supported in the literature (Mulgan, 2007). Mulgan (2006) further outlines some core aspects involved in each stage of this process. In this first stage actors are defining the problem and indentifying potential solutions based on the idea that needs and solutions should be tied to possibilities. Some of these actions may include the design of new organizational or institutional forms, development of new knowledge, experimentation, boundary spanning to gain resources to determine the best solution, and even incentives to help promote acceptance (Mulgan, 2006, 2007). The initial part of the process should also consider development of plans for evaluation, so as to ensure the usability and potential scalability of the approach (Fairweather, 1967). Given the often dire nature of those being affected by the social problem, innovation speed, especially for social innovation, becomes a necessary element (Kessler & Chakrabarti, 1996). In the next stage, the need to pilot ideas quickly is another reason to include cross-sector partners with the resources and/or the capabilities to move quickly. This is one area where market forces and entrepreneurs operating in them often have the advantage in
piloting these programs. The entrepreneurs may have greater flexibility to adapt to the changing environment quicker than larger and more inert organizations (Ebben & Johnson, 2005). After many revisions and replicated attempts, the final step is the diffusion of the innovation, ensuring it can grow and expand. Social innovation in this final stage is not unlike the S-curve traditionally found in innovation research, where there is slow growth in the early stages, punctuated by the rapid takeoff, saturation, and maturity of the innovation (Christensen, 1992). The final stage involves the institutionalization of the new innovation, where it hopefully becomes embedded as a formalized routine that is widely adopted and legitimized throughout the social system (Meyer & Rowan, 1977; Fairweather, 1967; Moulaert, 2008).

Measurement and Outcomes in Social Innovation

In addition to factors that help to support social innovation it is also important to examine specific outcomes of social innovation and how to potentially measure those outcomes. When examining social innovation a primary difficulty is the identification of a tangible outcome. There may be no specific measureable artifacts (Harrisson et al., 2009), because the ultimate goal is creating social value (Le Ber & Branzei, 2010). Social value is the pursuit of societal betterment through empowerment and inclusion of the marginalized (Austin et al., 2006). Social value outcomes may then include, but are not limited to, improving life conditions, meeting unmet needs, creating justice, fairness, environmental preservation, improved heath, and even better education (Austin et al., 2006; Phills et al., 2008). From a business perspective, this would include creating social benefits that not only reach and positively impact their desired customers, but also add value in ways that drive economic opportunity and performance. Measurement of this dual value system becomes essential in the social innovation realm to ensure that the
solutions are reaching those in need and providing the potential economic support to sustain the created social value.

Despite the abstraction inherent in creating social value, organizations have tried to create methods for systematically measuring the success of social innovations. One primary way for measuring success is the diffusion and adoption of the innovation across the given social system (Rogers, 1995). Biggs et al. (2010) offers a practical framework for identifying adoption at a broader system level. The first step is to examine whether the innovation has become an identifiable entity (i.e. bridging organizations, and includes broader engagement and participation by stakeholders across the system). Second, whether the entity explicitly adopted an integrated approach, (is implicitly or explicitly founded on a social–ecological perspective and considers cross-sector interactions). Additionally, social innovation has to display flexibility and adaptiveness to respond to changing environmental conditions and stakeholder interests. The innovation should also be deemed by stakeholders to have a significant impact on improving conditions, or at a minimum, prevent further deterioration of current conditions. Finally, the domain of influence of the innovation has to cut across varying levels of analyses to benefit individual stakeholders, organizations, communities, and populations.

Of primary concern for this study is measurement of social innovation at the organizational level. The dual role of innovation is evident where organizations adopt social innovations themselves (i.e. socially beneficial processes) while simultaneously trying to create social value and solve social issues. Thus, organizations must implement performance based measures that can capture not only efficiencies and effectiveness of socially innovative internal processes, but also to measure the impact of potential solutions. A significant amount of research focuses on how to quantify the social value and benefits of these organizations (see Renneboog,
There are many different methods for the measurement of non-financial values. Methods are selected based on the approach that best suits the organization’s specific environment and requirements. These methods can include cost benefit analysis (Mulgan, 2010), social accounting (Gray et al., 1996), or social return on investment (Lingane & Olsen, 2004). Again, the importance here is that organizations involved in social innovation can quantify the effectiveness of adopting socially innovative processes at the same time ensuring they deliver the desired impact.

Theoretical Perspectives Relevant to Social Innovation

There are several domains in which social innovation has been examined and many different theoretical perspectives have been used. Moulaert (2008) outlines the primary domains of interest for social innovation research. These include organizational research (Mulgan, 2007), intellectual creation (Mumford, 2002), territorial development (Moulaert, 2008), and public administration (Moulaert, 2007). The following highlight the theoretical perspectives that have been utilized by researchers to study those domains and how they are related to the research questions proposed in this investigation.

Regime Theory

A perspective most notably used in relation to territorial development research, is urban
regime theory. This approach focuses on the growth of coalitions and the heuristic devices for the analysis of coalitions as socio-economic actors in urban areas (Moulaert, 2007). As related to this investigation, regime theory provides a useful framework in understanding how various movements and grassroots initiatives can be supported through more traditional means (i.e. social VC) in order to build enough capacity to create change.

Social Movement Theory

Similar to regime theory, social movement theory has also taken a bottom-up approach in examining the social innovation. Social movements build collective identities amongst actors to help develop structures supportive of the movement (Hensmans, 2003). Again, with the support and resources social VCs these movements may be able to gain more ground in achieving their goals.

Institutional Theory

Another theoretical perspective that seems to flow through the social innovation research is institutional theory. The links between organizations and institutions are used to explain the structuring and decoupling of new relations between actors and the way new logics are transformed in relation to societal level problems (Harrisson, 2008). In this research stream, social innovation is examined in the context of changing current institutional logics that have become accepted norms (Harrisson, 2008). Institutional theory provides a pragmatic approach to examining social VCs, as this new type of VC firm is breaking away from the current logics by adopting blended values. At the same time they are gain legitimacy from their peers as more of these social VCs emerge and are successful.
Population Ecology

Ecological approaches to firm survival stress the environmental and contextual factors that affect opportunity structures and in turn cause variation in organization populations (Aldrich & Wiedenmayer, 1993; Carrol, 1984; Romanelli, 1991). The considerations of social and economic conditions from an ecological perspective are closely aligned with the notion of triple-bottom-line of social, environment and economic impact that are essential in social innovation. Conceptually, both population ecology and social innovation converge in their consideration of these three separate but interrelated systems.

Salimath and Jones (2011) provide a population ecology framework that offers a unique explanation for the shift toward these social changes. The basic premise of Salimath and Jones’ (2011) framework hinges on the idea that organizations that can withstand environmental pressures will survive or be selected into the population, while the rest will be selected out or face mortality.

Transformative social innovations are often characterized by a period of experimentation and limited diffusion, however, once the innovation is seen as successful, similar to other types of innovation, there is a potential for sudden increase in adoption rates (Rogers, 1995; Biggs et al., 2010). The initial response to these innovations comes through incremental changes and experimentations to existing approaches. More radical and innovative responses are attempted, when those incremental changes are insufficient. A population perspective provides a vantage point to examine how and if the VC industry is actually shifting to social innovative models where blended values are becoming the norm.
Communities of Practice

A consistent theme in social innovation is the collaboration and boundary spanning of actors across sectors within a given social system (McElroy, 2002). Researchers have adopted a communities of practice approach to explain how individuals organize around an idea to create and integrate new ideas and knowledge. Intellectual and social capital must be combined in order to build the capacity necessary to enhance learning and increase awareness of the social innovation. When discussing these communities of practice social innovation, researchers often express them as networks that are not bound by the core organizational boundaries, but are able to bridge to outsiders in order to disperse knowledge as well as gain alternative perspectives (Allee & Taug, 2006; Brown & Duguid, 1991). Adopting a communities of practice approach can provide useful insight into how these new forms of VC firms are collectively identifying and experimenting with new approaches and models in order to achieve their blended value goals.

Social Innovation in Management and Organizational Research

Some claim that the modern organization may be the greatest social innovation, as organizations are the primary sources of wealth and well-being in society (Drucker, 1987; Von Glinow, 2005). The evolution toward new organizational forms and the adoption of socially driven missions and outcomes illustrates the duality of social innovation. The following section provides an overview of how social innovation has been examined in organizational research, some related concepts, and the similarities and differences between those concepts.

In organizational research social innovation has been examined from two primary spheres of interests (Moulaert, 2008). One perspective is improving the interactions between actors and their institutions through the development of efficiencies and relationships that help to improve
the well-being of mankind. The focus is on building capacity for change through social capital resources (McElroy, 2002). New societal norms (i.e. justice, solidarity, and cooperation) are promoted as alternatives to the current norms between actors and the social system (Harrisson, 2008). Social innovation from this change perspective is influencing the process of economic development through representation structures and inclusion based norms (Gershuny, 1982; Vallancourt, 2009). The organizational environment supports changes in the social system affects the diffusion of social innovations (Howald & Schwarz, 2010).

A second focal area for social innovation in organizational research emphasizes how economic organizations can function better or can change to promote positive effects for social outcomes. Examples of this include adoption of fair business practices and improving/supporting workers’ rights through organizational processes and design (Rao & Pasmore, 1989) or the adoption of sustainable business practices (Salimath & Jones, 2011). Social innovation includes the modernization of industrial/organizational relations and human resource management (Pot & Vass, 2008). This humanistic view within organizational research focuses on the development and utilization of skills and competences of the potential workforce to increase value as well as enhance labor productivity. The benefits from technological innovation are captured through the proper organization, dynamic management, commitment and involvement of the workforce (Pot & Vass, 2008). In this view, organizations adapt new forms, strategy, and cultures to support the changes in technological innovation (Herbig & Jacobs, 1997). The focus of research inquiry in both spheres has primarily been limited to what is happening in one particular context or organization. To provide more detailed illustrative answers, several related topics within organizational/management research are disuse that may be considered social innovations themselves.
Social Entrepreneurship

In line with Schumpeter’s definition of entrepreneurship as creating value through innovation, many see social entrepreneurship as creating social value through innovation (Novkovic, 2008). These individuals use their entrepreneurial skills to achieve a social purpose and create social change. Social entrepreneurship may include the individuals, organizations, groups, or networks that seek sustainable, large scale changes in current norms by which governments, non-profits, and business address social problems (Kistruck & Beamish, 2010), which are similar to the goals of social innovation. Though social entrepreneurship may involve innovation, it often cannot be scaled-up, which is a necessity for large scale social innovation (Mulgan, 2007). Social entrepreneurship has stressed the importance of goals and characteristics at the individual level and how those individual level factors influence the decisions of the entrepreneurs (Austin et al., 2006; Mair & Marti, 2006; Young, 2001), whereas social innovation seeks change that extends beyond the individual or organization, to occur at the institutional, system, or societal level.

Corporate Social Responsibility

Corporate social responsibility (CSR) concerns the integration of social and environmental issues into both operations and interaction with stakeholders such as customers, suppliers, employees, citizens, neighborhoods and the community in general (Harrisson et al., 2009). CSR practices are often a response to market based pressures to legally and ethically consider other stakeholders and the broader society in general in their strategies, structures, and performance measures (Carroll, 1991). An example of organizations engaging in social innovative initiatives is their involvement in the well-being of their communities. Though social
engagement is beneficial to stakeholders, there is much debate about the motivations and whether CSR initiatives can actually change existing social structures or models (Margolis, Elfenbein, & Walsh, 2007). Often these initiatives are neither the primary focus nor are they ingrained in the daily operations of the organization. Such ancillary involvement lacks the dedication necessary for large scale change (McDonald & Oates, 2006). Regardless, as a result of CSR practices these organizations have shifted from a commitment to profits alone (Friedman, 2007) to being more humanistic.

Social Economy

The social economy is primarily concerned with a few core principles such as inclusiveness, participation, collective responsibility, empowerment, and a more democratic society that promotes social justice and equal opportunity (Molloy, McFeely, & Connolly, 1999; Harrisson et al., 2009). The social economy encompasses both market and non-market components, which include co-operatives, self-help projects, credit unions, housing associations, cross-sector partnerships, community enterprises and business (Vaillancourt, 2009). The stakeholders of the social economy are positioned in both civil society and the market in order to build social capacity and respond to un-met needs (Amin, 2002). The social economy provides opportunities to engage in the various stages of local economic regeneration (Molloy, McFeely, & Connolly, 1999). It is often associated with the third sector (non-profit) organizations, whose mission is to satisfy the social and economic needs of local communities and their members (Amin, 2002). The idea of the social economy (similar to the mission of social innovation) is to promote change and well-being. Researchers have examined this in cross-sector partners and
how stakeholders can build necessary capacity to implement social innovations (Le Ber & Branzei, 2010).

Social Change

Social change refers to an alteration in the social order to move society forward (Harper, 1993). It refers to the changes in socio-economic structures, as well as changes in social institutions, behaviors, and relations (Giddens, 2006). The key difference is that social innovation is associated with planned and coordinated actions to establish new social practices through collective action in pursuit of common goals (Greenhalgh et al., 2004; Howaldt & Schwarz, 2010). While social change is more unintentional and evolves out of the natural shifts and evolutions in social systems (Giddens, 2006).

Socially Responsible Investing and Social Return on Investment

Businesses are under increasing institutional pressures to produce goods and services that positively affect their social and environmental stakeholders (Alsmadi, 2007). These pressures stem from regulatory structures, governmental agencies, laws, courts, professions, scripts and other societal and cultural practices. They exert conformance pressures (DiMaggio & Powell, 1983) toward increasing social responsibility, fundamentally changing the way businesses operate (Lubin & Esty, 2010). Socially responsible practices are becoming more institutionalized across industries due to international standards and stock indices; as well as at the organizational level due to the development of new positions (i.e., Chief Sustainability Officer) and performance measures for socially responsible activities and investments.
Organizations and managers engaging in socially responsible activities require a way to quantify the social value of these projects. Social return on investment (SROI) describes the social impact of a business’ operation in dollar terms, relative to the investment required to create that impact exclusive of its financial return to investors (Lingane & Olsen, 2004). While numerous methods exist, promoted by researchers and practitioners, there is no consensus on a single standard measure of SRIO that works across different organizations, industries, and sectors (Lingane & Olsen, 2004).

In a related, but somewhat different vein is socially responsible investing (SRI). SRI has emerged as a fast growing segment of the financial service industry involving over $2 trillion in professionally managed assets in the U.S. alone (Social Investment Forum, 2011). SRI has been defined as a process of integrating personal values and societal concerns into investment decision-making (Scueth, 2003). While the origins of the concept can be dated several hundred years ago, its current form emerged with the impassioned political climate since the 1960’s when more attention was paid to committing resources for social causes.

There are several key areas within the capital market industry where this is taking place. One of the first areas emerged in the mutual fund industry where portfolio managers would include or exclude companies from portfolios by screening, based on social and/or environmental criteria (Laufer, 2003). Another recent type of SRI is found in the venture capital (VC) industry. VC firms invest in entrepreneurs whose missions a socially or environmentally related impact (Randjelovic, O’Rourke, & Orsato, 2003). A primary focus of SRI research is on identifying if these SRI practices can produce the same level of financial performance as traditional investment strategies.
Following the above review on social innovation in organizational and management research, I present the theoretical framework for this dissertation. The framework draws on prior well established organizational theory as well as numerous concepts discussed in this review.

Proposed Theoretical Framework

As the goal of this investigation is to understand how socially innovative organizations configure strategic and structural components to promote both social well-being and financial returns to stakeholders, I adopt an organization design contingency perspective to examine social innovation in the capital market sector (i.e., venture capital firms). This perspective provides a useful framework in understanding the role of design in achieving socially innovative goals.

Pettigrew (1987) highlights that the study of organizational change should include examination of context, content, and process. Though social innovation involves change across levels, this research is focused on the organizational level as the unit of analysis. While the ultimate goal of social innovation is change at the system or societal level, these innovations start with individuals, organizations, or groups of organizations identifying the problem and adopting the novel solutions to build the capacity necessary for scalability and diffusion.

In the last decade there as has been an increasing emphasis on social responsible investment, presumably due to client pressure and the potential for profitable return on investment. Because of this success, venture capital firms have begun to direct their investments into entrepreneurial ventures that demonstrate various aspects of socially related missions (Ranjelovic, O’Rourke, & Orsato, 2003). Despite the emergence of this new type of social venture capitalist (growth in terms of the number of VC’s investing in this area) there is very little research on this system level change.
I contend that the adoption of socially related investment strategies is a social innovation. It is concerned with a change in the capital market that shifts the focus away from pure profit motivations. It is also concerned with helping impact driven organizations build capacity through capital investments. To explain this duality of social innovation in the capital market a design framework is used to examine the adoption of socially driven investment strategies at the organizational-level (i.e., strategy, structure, and performance). Hypotheses are offered to answer the research question: What is the role of strategic and structural factors in the performance of socially innovative venture capital firms?

Organizational Design

Support for social innovation is derived from the Design school (Chandler, 1962). This framework highlights how strategy emerges from a planned and explicit mission that is necessary to focus efforts and define the organization based on certain goals (Mintzberg, 1990). The strategic process involves a set of commitments, decisions, and actions required for a firm to achieve competitiveness and earn above-average profits (Hitt, Ireland & Hoskisson, 2007).

Various organizational structures may be used to successfully implement strategies. The ability to select a relevant strategy and match it to an appropriate structure is essential for efficiency (Olson, Slater, & Hult, 2007). Organizations change their structures when inefficiencies force them to change (Chandler, 1962). Firm structure specifies the work that needs done and how to do it given the firm’s strategy (Donaldson, 2001). Structure helps to guide the use of strategy, indicate how to compare actual and expected results, and suggest actions to take to improve performance that is below expectations (Kaplan & Norton, 2001). Thus, the role of organizational structure in strategy implementation and organizational
outcomes is important. Similarly, identifying the effect of organizational structure and strategy on performance of socially innovative organizations is important. Next, I provide a brief review of the design framework that is relevant to this investigation.

Organizations are characterized by three primary sets of activities: 1) identifying and disseminating the collective aims of an organization, 2) regulating the flow resources in and out of the organization, 3) identifying the governance roles and functions of members of the organization (Aldrich, 1999). These functions are designed to align the various aspects of the organizations (i.e. strategy and structure) to build a system that can be efficient and innovative (Thompson, 1967). The development and design of organizational forms has been explained by numerous perspectives such as: ecological theory (Hannan & Freeman, 1977), institutional theory (DiMaggio & Powell, 1983), industrial organization theory (Mason, 1949; Bain 1959; Porter, 1980), transaction cost theory (Williamson, 1975), behavior theory of the firm (Cyert & March, 1963), contingency theory (Lawrence & Lorsch, 1967), and strategic choice theory (Miles & Snow, 1978; Mintzberg, 1979).

All these perspectives provide varying assumptions about why and how organizations are formed and the specific constraints that enable organizational action. Of interest to this investigation is the design of socially innovative organizational forms and the specific choices organizations make regarding the selection of strategic content and the structural elements to help realize those strategies. Therefore, this research draws on Mintzberg’s (1979) perspective of deliberate and emergent strategies in an attempt to identify how socially driven organizations achieve favorable performance.

A significant amount of work under this design lens relates to the development of organizational forms from a structural perspective. This research includes the structure of
ownership rights (i.e. sole proprietorships, corporations, limited partnerships, etc.) (Alchian & Demsetz, 1972), basic structural types (i.e. U-Form, H-Form, and M-Form) (Williamson, 1975), centralization, bureaucratization, and different governance structures (Lawrence & Lorsch, 1967). As evidenced in the prior research, structure is not a static solution for the firm, but interacts with other organizational elements (strategy and the environment) constantly changing to meet the goals and requirements of the organization mission (Barney & Ouchi, 1986). How organizational forms are developed and may or may-not reflect the rationalities of efficiencies necessary for success and survival (Harrisson, 2008).

Organizational actors are motivated not only by more than just optimum productivity, but also by normative rules and goals by which they are measured and are expected to follow (Harrisson, 2008). New organizational forms may originate out of the necessity to adapt to changes in the environment (Tushman & Romenlli, 1985) or through the desires of managers and their strategic orientations (Mintzber, 1979). While this strategic choice perspective allows for adaptation of organizational form by managers, environmental and contextual factors also affect those decisions. The influence of these factors is especially evident in environments that are heavily deterministic in terms regulatory and normative pressures. These mimetic pressures can influence decision making and structure to comply with environmental norms (Harrisson, 2008). The existing market sector logics support investments with a high potential for returns, but do not support goals or missions outside that the financial norm (Friedman, 2007).

With the new institutional logic of SRI, individuals and organizations have started to focus on socially responsible investments along with traditional financial outcomes (Carroll, 1991). With the advent and growth of SRI in the capital market and the fact that profits stem from investments outside traditional high growth areas (i.e. technology, communications, etc.)
social innovation emerges as an important phenomenon. Both structure and strategy (Miller, 1986) are relevant to organizational level performance in socially innovative organizations.

It has been heavily debated as to whether seeking social values in the capital market can be financially rewarded (Porter & van der Linde, 1995; 1995b; Schaper, 2002; Nidumolo, Prahalad, Rangaswami, 2009). Some have argued that implementing socially innovative practices can help to identify new opportunities, and foster an environment of innovation within the firm and should eventually lead to improved financial performance (Porter & van der Linde, 1995; Schaper, 2002; Nidumolo, Prahalad, Rangaswami, 2009). An example given by Porter and van der Linde involved the Dutch flower industry. The industry polluted the ground water with pesticides used in the growing process, and therefore stricter regulations were added to the industry. To address these regulations, members of the industry initiated closed-loop systems, which lowered the risk of insect infestations, therefore, lowering the amount of pesticide chemicals needed; it also recycled water, thereby reducing water consumption. By investing in a sustainable practice, the firms in the Dutch Flower Industry were able to reduce their negative environmental impact; thus permanently reducing the cost of operations. The example of the Dutch Flower industry illustrates how adoption of social innovative practices can improve organizational performance. Therefore, if a firm is able to successfully implement and operationalize a socially responsible mission it may be successful in other areas of the market place.

Organizations (socially oriented or not) are concerned with developing effective strategies to build competitive advantages and be financially solvent (Barney, 1991). Prior research indicates that when configurations of organizational characteristics (strategy and structure) fit with the external environment, they create competitive advantages (Van de Ven &
Drazin, 1985) and help achieve organizational goals (Ketchen, Thomas, & Snow, 1993). The fit between strategic and organizational characteristics and its positive effects on performance is the heart of the organizational design model (Zajac, Kraatz, & Bresser, 2002; Mintzberg, 1979; Miller, 1986; Chandler, 1962).

Drawing on this design based framework, I offer hypotheses in the next section that examine the relationships among those infrastructure components in socially innovative firms.

Hypotheses

Social Mission and Performance

So what is a socially innovative mission and how can it influence performance? An organizations strategic orientation defines the broad outlines for an organizations strategy (Slater, Olsen, & Hult, 2006). While superior performance often depends on the fit among organizational characteristics (i.e. strategy formulation, strategy content, and structure) (Miles & Snow, 1978, 1984), strategic orientations also influence performance by focusing efforts and defining the organization (Mintzberg, 1990). A firm’s strategic orientation is often operationalized through its mission and/or vision (Mintzberg, Ahstrand & Lampel, 1998; Miles & Snow, 1978; Slater et al., 2006).

An organizational mission defines the organization by identifying and communicating its fundamental purpose. A mission allows socially innovative organizations to achieve a vision in line with its values (i.e. social value creation). Having a mission is essential to the strategy making process and can have direct bearing on performance outcomes (Klemm, Sanderson, Luffman, 1991; Rarick & Vitton, 1995; Bright, & Godwin, 2010). Pearce and David (1987) found that there was variation in performance when a mission was clearly articulated and
included certain features. More specifically, higher performers prepared written corporate philosophy statements for public dissemination that emphasized the organizations' (1) basic beliefs, values, aspirations, and priorities, (2) self-concept, including competitive strengths, and (3) desired public image. Specific to social innovation, Strange and Mumford (2005) found that a clear and articulated vision or mission is necessary for success, as it motivates followers by providing a clear guide to the model for change and to deliver performance in a goal directed fashion.

While the behavioral benefits of having a mission are important, missions also provide several benefits to organizational performance (Bart & Baets, 1998). The second major theme concerning the performance impact of mission statements is that they narrow the organization's focus and result in resources being used more wisely. King and Cleland (1979), for example, state that the unanimity of purpose created by the mission statement provides a foundation for allocating resources and for interpreting organizational objectives into a work structure so that time, cost, and performance goals can be assessed and controlled. There have also been numerous studies that have found the mission statement to have directly and positively effected firm performance (Pearce & David, 1987). Campbell and Yeung (1991) reported that behavior standards specified in the mission statement of British Airways have dramatically improved the airlines performance. Similarly, Medley’s (1992) study found that mission statements (and mission development process) to an increase in donations to the World Wildlife Fund. While mission statements influence performance, Pearce and David (1987) found that it is the specific content of that mission statement matters and is most important to the long-term interests and survival of the firm (Pearce, 1982).
Some scholars argued that organizations should not spend time on anything other than increasing profits (Friedman, 2007) as it is not in the best economic interest of an organization and will not have a positive effect on performance (Hamilton, Jo, & Statman, 1993). Many have found mixed results in the realm of corporate social responsibility (Orlitzky, Schmidt, & Rynes, 2003). Interestingly, when examining social innovation in the VC industry, evidence from prior research indicates that socially responsible investing is profitable (Kurtz, 1997; Kempf & Osthoff, 2007; Stateman, 2000). It is therefore possible that the positive relationship between financial performance and socially responsible investing will also hold in the context of the venture capital market.

Like prospectors, social innovators are constantly searching for new opportunities in the environment (Conant et al., 1990; Mckee, Varadarajan, & Pride, 1989; Shortell & Zajac, 1990). Given the exponential growth in social venture capital (Randjelovic et al., 2003) several opportunities can be found. A clear social mission is necessary as it provides the deliberateness required to define and set boundary conditions that are present in high performing organizations and successful social innovations (Mintzberg & Waters, 1985). Thus:

H1: An explicit social mission will have a positive relationship with the performance of a social venture capital firm.

FIGURE 3
Hypothesis 1

Social Mission

Organizational Performance
(Performance of Portfolio Company)
Social Mission and Organizational Strategies

While social missions may have a direct relationship with organizational performance, it is also likely that social missions guide organizational strategies. Depending on the origin of the mission (top-down or bottom-up) different strategies may be effective.

When social innovation is in an organizational goal (top-down), an ideology strategy may be most useful as all members share the vision and prefer strategies that directly fulfill their ideology (Mintzberg & Waters, 1985). Problems, however, may arise if ideological change is necessary, as collective visions are difficult to change (Clarke, 1970; Mintzberg, 1983).

If social innovation is emerging from a bottom-up approach, which often occurs (Moulaert et al., 2007), the most useful strategy may be a consensus strategy, based on collective action as actors converge around common goals without central leadership (Mintzberg & Waters, 1985). Strategies for socially innovative organizations might take on several forms: entrepreneurial, with a clear mission but flexibility in the details of the strategy; umbrella strategies, with defined guidelines and decision making within boundaries; or even a process strategy, with basic structures and control systems allowing individual strategies for their business units. Formalized and directed strategies, allow for flexibility and learning, but also include some level of control (Mintzberg & Waters, 1985).

Socially innovative venture capital firms, follow similar review and investment processes as other venture capital firms (Reandjelovic et al., 2003; Silby, 1997). Researchers seek to explore the investment decision-making process in terms of the selection criteria applied (MacMillan et al., 1986; Muzyka et al., 1996; Shepherd et al., 2000; Tyebjee and Bruno, 1984; Wright et al., 1997). These investment decisions include reviewing new investments to determine if they meet the venture capitals firm’s generic criteria. Research evidence indicates
that VC firms use three basic criteria to select new investment opportunities (Reandjelovic et al., 2003). The first consideration is the concept of the investment i.e., the potential for earnings growth, the fit with the mission and goals of the venture capital firm, the stage of investment, the potential competitiveness of the product/service in the market, and the reasonableness of the capital requirements. A second consideration in the investment decision are the ability and skills of the portfolio company management. VC’s want to ensure that managers have the capabilities to run the business and can bring the idea to market. Finally, the VC is concerned with the potential for returns on investment. Even in social VC firms, financial returns are still a primary goal.

Venture capital firms raise funds from investors and then invest the funds in private companies with the purpose of achieving positive investment returns. Some VC firms invest in companies that are in the process of exploring ideas for which there are not yet developed commercial products or tested markets (i.e. early-stage companies), others prefer late-stage companies, i.e. those with well-defined market and product characteristics, seeking to expand or improve their established business. The less developed a prospective company, the higher the uncertainty that a VC firm faces in making its investment decision (Podolny, 2001).

Decisions to invest in early versus late stage ventures are likely to depend on the extent of perceived risk, and the expectation that there will be a proper risk–return balance. On one hand, while early-stage ventures have higher perceived risk, relevant industry (operations, marketing, general management) or prior entrepreneurial experience reduce this risk (March & Shapira, 1987). Prior experience may reduce risk because it is expected to add value to the venture. On the other hand, an investment decision needs an efficient allocation of capital and thus requires a proper risk–return balance. The estimation of the latter is facilitated by finance experience
especially in more established ventures. Later-stage ventures have well-defined product-market characteristics, allowing for a better estimation of the potential future payoffs and unsystematic risk. Later-stage investments, therefore, represent a context in which risk (including agency risk) can be better managed (Amit et al., 1998).

In the context of adopting socially innovative missions, investment stage provides an interesting component of the organizational strategy. As social innovation attempts to identify new alternatives to existing conditions, it is reasonable that these new ideas will emerge in the realm of new products/services or markets that have not been fully developed. The concept of social innovation is built on the idea of finding and creating new models, not the reorganization of the old (Mulgan, 2006). The relevance of the new stage of investment therefore becomes very important for social VC firms. While existing products/services may provide less risk for the both venture capital firm and their stakeholders, they may not deliver (social) values that socially oriented VC’s are seeking. Social VC’s seek new and socially related enterprises as a value added component, while traditional VC’s would characterize socially related enterprises as carrying more risk and as a potential liability (Randjelovic et al., 2003). Therefore, social VC’s will focus their investment decisions toward earlier-stage investments which enables them to realize their social goals. Thus:

H2a: An explicit social mission will have a positive relationship with early stage investments.

FIGURE 4
Hypothesis 2a
Venture capital firms are investment vehicles through which institutions, other organizations, and wealthy individuals invest in ventures that are not quoted on a stock market, and which have the potential for market growth (Mason & Harrison, 1999). Venture capital firms act as general partners, raising capital from limited partners, such as institutional investors (i.e. pension funds, insurance companies, and banks) to invest different portfolios of ideas, nascent companies, and even established growing companies. Venture capital is often divided into two types, classical and merchant. Classical venture capital refers to capital raised from investors (i.e. wealthy individuals and families) that are looking for a longer term investment and are willing to take on more risk, and funds are managed by entrepreneurs with specific industry experience and knowledge. Merchant venture capital refers to capital raised from intuitional sources with short-term investment horizons, and funds are managed by individuals with finance expertise and backgrounds, who mainly focus on later stage investments (Landstrom, 2007). The primary difference between the two types is a propensity for risk inherent in each stage of investment (early-stage = higher risk). These risk levels affect VC firm strategy, i.e., where and who to solicit for fundraising for their projects.

Institutional and individual investors have numerous motives that affect decisions to allocate capital and create a diversified portfolio. Typically a portfolio is optimally designed to provide an equal relationship between risk and rewards by allocating the capital across various investment types (Cumming & Johan, 2007). From the institutional investor’s perspective, all investments should have the objective of gaining maximum returns for an appropriate level of risk, but that does not necessarily mean that it may not also be combined with social concerns. The point here is the level of risk that the institutional investor is willing to take. Therefore, if a social VC fund is able to provide an appropriate level of risk and return ratio, this potentially
alternative investment would fit with a conventional justification for all investment decisions (Guyatt, 2006).

Institutional investors have limited information to appropriately judge the quality of VC firms and the level of risk in their investment portfolio. Therefore VC firms strive to project and maintain signals of their quality (Gompers, 1996). Social VC firms focus on new markets, new models, and potentially smaller, unknown, and higher risk investments. Such investments might be outside the scope of more traditional institutional investors that often seek more stable and predictable investments (Landstrom, 2007). While it may be plausible that institutional investors with larger asset bases may be more inclined to take on higher risk and invest in social VC’s, Cumming and Johan (2007) found no support for this in their investigation of why and when institutional investors invest in socially responsible private equity. They found that extremely large institutional investors direct their investments away from social VC’s. More importantly, they found that high net-worth individuals are more likely to invest in socially innovative organizations.

Despite risk perceptions, social VC’s must still raise the necessary capital to operate. If they cannot rely on the traditional institutional investor, they have to seek alternatives. A primary alternative are wealthy individuals or even groups of individuals that are sometimes called angel investors. Though they may directly invest in entrepreneurial firms, they often choose to invest through venture capital firms. These individuals may not have the time and/or specialized skill sets to carry out due diligence to screen investments, or constantly monitor and manage the organization they are investing in and therefore prefer to invest through VC firms (Cumming & Johan, 2007). Also, individual investors traditionally invest in early and seed-stage investments that have higher amount of risk (Emerson, 2003). This pattern fits with the hypothesized profile
of social VC’s. Therefore, it is expected socially oriented VC’s are more likely to seek and obtain financing from individual investors. Thus:

H2b: An explicit social mission will have a positive relationship with individual sources of funding.

FIGURE 5
Hypothesis 2b

Organizational Strategies and Performance

The next section focuses on the mediating role of organizational strategy in the mission and performance relationship. Strategies often follow an a priori goal (Mintzberg & Waters, 1985) or mission (Slater et al., 2006). Socially innovative organizations will seek opportunities that are consistent with their social mission. These organizations will inevitably adopt organizational strategies that align with their social mission. Thus, the content of strategy is generated from organizational goals and missions (Mintzber, 1990) and is operationally transmitted to organizational performance (Venkatraman, 1989). Hence, firms select strategies that align with the organization’s mission in order to achieve superior performance.

This transmission relationship implies that organizational strategy is an important mediator between mission and performance. As discussed, social missions are best executed via individual and early stage investment strategies and are more likely to lead to superior performance. Thus:

H3: Organizational strategy (early stage investments and individual based sources of funding) will mediate the relationship between the social missions and firm performance.
Organizational Strategy, Structure, and Performance

The design school recognizes the importance of organizational context (Mintzberg, 1973; Chandler, 1962). Researchers posit that strategy is not universally superior (Venkatraman, 1998) and that other factors, such as environment, organizational context, or structure interact with organizational strategies to influence performance (Harringan, 1983; Hofer, 1978; Ginsberg & Venkatraman, 1985).

While some structural components are subject to managerial discretion and can be formed to fit with strategies, others cannot be altered. Many organizations actively management both of these factors in an effort to realize their strategic goals and missions (Mintzber & Waters, 1985). Specific structural components interact with organizational strategies. For example; structural components such as age, size, and network are found to interact with organizational strategies and impact performance (Stinchcombe, 1965).

Due to the liability of newness, nascent organizations lack necessary resources to compete effectively in the market (Stinchcombe, 1965). Organizations try to overcome the constraints imposed by these liabilities (Selznick, 1957). Stinchcombe (1965) argued that power,
wealth, and prestige were factors that could help organizations to overcome these liabilities and formulate strategies that will allow the organization to be competitive (Lewin & Volberda, 1999).

Structural aspects of an organization such as size and network affect the performance of both new and established organizations (Sack, 2002). Structure is viewed as interaction and transmission variables, since it helps to realize organizational goals (Mintzberg, 1973). For example, lean organizations that are able to make decisions and adapt to environmental changes faster (Jenner, 1999). Organizations also build strong networks to increase access to resources, ideas, and even new opportunities (Gulati, 1989). Thus, structural components are relevant for both nascent and established organizations, and should be considered in an organizational design model (Miller, 1986).

Factors such as age, size, and network can impact the ability of firms to diffuse social innovations. Research has evidenced that organization size, age, and networks in venture capital firms often affect firm success (Kaplan & Schoar, 2005). While there has been a significant amount of research on the venture capital industry with regard to these structural elements (Landstrom, 2007), there is very limited of research on the structural aspects of social VCs.

**Age**

Younger firms suffer from liability of newness and low legitimacy (Stichcombe, 1968). On the other hand, organizational failure rates have been found to be negatively related to age (Carroll & Delacroix, 1982). The effect of age is often due to both external factors (such as low levels of legitimacy and the ability to develop strong network relationships with key environmental constituencies) and/or internal process (such as the ability to mutually coordinate
roles, responsibilities, and strategies within the organization) (Singh, Tucker, & House, 1986). As organizations grow older, they are more likely to develop those stronger relationships and become part of the external power hierarchy and gain endorsement by other key actors in the field (Stinchcombe, 1965), thereby gaining legitimacy. This legitimacy can increase their access to necessary resources for building capacity to support organizational goals.

This logic holds true in the venture capital industry, where older VCs have more skills and experiences and in turn experience significantly higher levels of performance (Kaplan & Schoar, 2005; Hochberg, Ljungqvist, & Lu, 2007). As the VC gets older it is able to participate in more rounds of funding, invest in more portfolio companies, and cumulate more total returns. During this process, VC firms develop networks, thus gaining access to resources. Network development and working with other VCs in the industry helps to enhance a VC’s reputation. In the VC industry, reputation is associated with the success of a VC firm's previous investments, which in turn affects the VC firm's ability to raise and invest new funds. For instance, the amount of money available to be invested in future portfolio companies is dependent, in part, upon a VC firms' past performances (return on investment) and association with initial public offerings (IPOs) (Gompers, 1996). In addition, VC firms that have made successful investments in the past are more desirable syndication partners (Lerner, 1994) and thus have access to more deals. All of these are functions of experience, which is correlated with age. Thus:

H4a: Firm age will moderate the relationship between strategy (early stage investment, individual sources of financing) and firm performance such that, when the firm is older performance will increase.

Size

The size of the VC firm typically refers to the amount of capital the VC has available to invest (Dimov & Milanov, 2010). Size is relevant to performance, when more capital is
available, there is more potential to invest in diverse and potentially high growth companies. Averitt (1968) posits that large, established firms, experience different economic processes than smaller, less dominant ones in any industry. Additionally, larger firms possess resources which could insulate them from competition in the market, set prices, control the supply and cost of raw materials, influence the state, and protect them from the uncertainties of the labor market (Tolbert, Horan & Beck, 1980). On the other hand, newer and smaller firms experience the full brunt of competitive forces, and also have fewer resources than large firms.

While larger organizations may be able to benefit from access to resources and insulation from market competition, they suffer from inertia and may not be able to adapt as quickly to environmental changes (Kelly & Amburgey, 1991). Smaller organizations on the other hand have the ability to be more responsive to environment shifts and may be able to adapt their strategies and operations more rapidly to take advantages in the market (Smith, Guthrie, Chen, 1989). Venture capital researchers reveal that while increases in size are important and are significantly and positively related to increases in performance, the relationship is concave (Kaplan & Schoar, 2005; Hochberg, Ljungqvist, & Lu, 2007). There is a point beyond which an organization can become too large and performance starts to decline. Thus:

H4b: Firm size will moderate the relationship between strategy (early stage investments, individual sources of financing) and firm performance such that, the relationship is curvilinear.

Network

Lastly, the role of networks in VC’s performance is significant not only for performance, but also for access to information (new opportunities), access to capital, and the development of their reputation (a key factor in VC performance) (Dimov & Milanov, 2010). A social VC’s
network becomes increasingly significant not only for performance, but also for the support and diffusion of social innovation.

Networks feature prominently in the VC industry. VCs tend to syndicate (i.e. co-invest) their investments with other VCs, rather than investing alone (Lerner, 1994). They build their networks through experience and industry connections as well as their current and past investments with other VCs. VCs also draw on their networks of service providers—head hunters, patent lawyers, investment bankers, etc. to help their portfolio companies succeed (Gorman & Sahlman, 1989). Many VCs demonstrate a preference for networks rather than arm’s-length, singular transactions (Lindsey, 2008; Hsu, 2006). The better-quality relationships and more influential network positions allow greater access to investment opportunity sets and access to information, essential factors in VC performance (Lindsey, 2008).

Syndication relationships are a natural starting point in the examination of VC networks, because they are easy to observe, and because there are good reasons to believe they affect the two main drivers of a VC’s performance, namely, the ability to source high quality deal flow (i.e., select promising companies) and the ability to nurture investments (i.e., add value to portfolio companies) (Dimov & Milanov, 2010; Hus, 2004).

VCs add value in many ways. These include addressing weaknesses in the business model or the entrepreneurial team (Kaplan & Stromberg, 2004), professionalizing the company (Hellmann & Puri, 2002), facilitating strategic alliances (Lindsey, 2005), and ensuring strong governance structures at the time of the IPO (Hochberg et al., 2007). Syndication networks may also help VCs add value to their portfolio companies. Syndication networks facilitate the sharing of information, contacts, and resources among VCs (Bygrave, 1987), for instance, by expanding the range of launch customers or strategic alliance partners for their portfolio companies. No less
important, strong relationships with other VCs likely improves the chances of securing follow-on VC funding for portfolio companies, and may indirectly provide access to other VCs’ relationships with service providers such as headhunters and prestigious investment banks. In addition to the numerous benefits that networks have for VC firms, they also fulfill a key success factor in the capacity building and collaboration necessary to support scalability of social innovations. Thus:

H4c: A venture capital firm’s network will moderate the relationship between strategy (early stage investments, individual sources of financing) and firm performance such that, when the network is larger firm performance will increase

FIGURE 7
Hypothesis 4

Summary

In summary, this chapter began with an overview of the historical background, identification of core dimensions, related supporting factors, and relevant theoretical frameworks used to examine social innovation. Justification was offered for the selection of the
organizational design perspective as an appropriate theoretical perspective to analyze the influence of socially innovative missions on performance.

The theoretical model and hypotheses were also provided. These relationships are seen in the full model in Figure 8. In the next chapter, the methodology used to examine the hypotheses presented is discussed.

FIGURE 8
Full Research Model
CHAPTER III

METHODS

Introduction

Chapter III provides a detailed explanation of the research design, the method of data collection and sampling, and the specific statistical techniques used to implement and test relationships based on the research questions presented in Chapter I.

Research Design

This section provides a detailed overview of the archival quantitative research methodology used to examine the relations between strategy, structure, and performance in social venture capital firms. The research design is presented as a four step process; 1) identification of the sample (Venture Capital firms), 2) collection of mission statements for each VC firm, 3) development of key word list for content analysis of VC mission statements, and 4) collection of data on each VC firm. It also includes a description of how each construct was operationalized for empirical investigation.

Data Collection and Sampling

Identification Venture Capital Firms

Prior literature on social VC is limited, and primarily either conceptual (Randjelovic et al., 2003; Pepin, 2005) or qualitative (Silby, 1997; Waddell, 1995), with small sample sizes. A single quantitative article was available that focused specifically on social VC firms (Miller & Wesley, 2010). Their work examined how the dual identity of social ventures can influence the investment decisions of social VCs and the specific decision criteria social VCs use to make
those investment decisions. Their sample consisted of 44 social VC funds drawn from a list of self-identified social VCs from the National Venture Capital Association (NVCA) members and from social VCs identified in the Research Initiative in Social Entrepreneurship (RISE) publication on double-bottom line VC (RISE, 2003). The NVCA members include approximately two thirds of the total known VC firms, and RISE includes 66 VC funds in 2003. While these lists provide external validity that the funds were indeed social VC funds (Hecht, 2008), the sample is small and potentially not representative of the entire population of social VC funds. The criticism that their sample is potentially non-representative is based on other lists of social VCs. For example, the U.S. Sustainable Investing Foundation’s (USSIF) identified 208 U.S. social VC funds in 2012 in their annual report on alternative social investing (USSIF, 2012).

Given the lack of empirical research on social VC, this investigation sourced VC firms from the ThomsonOne Private Equity (PE) Database. The PE database is one of the most commonly used archival data sources for venture capital research in both finance and management literature (Kaplan, Sensoy, & Stromberg, 2002; NVCA, 2012). It is based on both self-reported information as well as secondary data (i.e., press-releases and other news media) and is fairly comprehensive. These data include demographical and historical background information on the VC firm, funds they manage or currently are participating in, financing round information, amount of investment of all participating VCs, information on the sources of financing for each fund, as well as outcomes of the portfolio companies that received venture capital (i.e. went public, were acquired, shut down, still active investments). From the database’s inception in 1970 to October 2012, the data cover 54,722 financing rounds for 23,767 of portfolio companies by over 8000 venture capital firms. Kaplan, Sensoy, and Stromberg’s (2002)
evaluation of the database found it to be generally free from bias in terms of accuracy of the amount of financing and identification of all actual investments made by a VC firm. They did, however, identify some biases such as an oversampling of U.S. based VC firms, overstatement of the amount of financing actually disbursed, and some missing information for financing rounds.

For this study, the sample of venture capital firms is based on the following criteria (summarized in Table 3). Firstly, only firms that were categorized as VC firms in the ThomsonOne PE database were included in the sample. Following the ThomsonOne PE database’s definition, a VC firm was operationalized as an investment firm that includes startup/seed, early, expansion, and later stage deals or any non-venture stage investment made by traditionally venture focused firms (Thomson Financial, 2012). To ensure these criteria, the National Venture Capital Association’s methodology and categorization (see Appendix for specific search criteria) was used to search the ThomsonOne PE database. Secondly, VC firms that are headquartered in the U.S. and abroad were included. Similarly, firms were not restricted geographically in terms of investment focus. Data was drawn from firms that invest in the U.S. and internationally, so as to include social innovation occurring in emerging markets (Mulgan, 2007). Thirdly, the sample was not limited to privately held VC firms. Many VC funds are connected to banks, corporations, and governments, which may have a social mission. These corporate VC firms may vary from independent VC firms in terms of incentives and resources gained from connections with larger organizations (Zarutskie, 2010), was controlled for in the analysis. Fourth, as the advent of social VC is a relatively new phenomenon (within the last 10 years (Randjelovic et al., 2003)), it is important to be able to capture newer VC firms to avoid the risk of having a limited sample for investigation. Therefore, no limitation was imposed on the time period. The sample was also restricted to those VC firms that have an explicit mission (or
similar statement). Hence, firms without an identifiable statement were excluded from the sample. Finally, since this dissertation is concerned with for-profit entities, care was taken to exclude non-profit organizations that may have been classified as VC firms.

The analysis was conducted on the entire sample of VC firms drawn from the ThomsonOne PE database. Currently there is no internal search criterion in the database for social VC firms, and externally, the available lists of social VCs are limited in accuracy and completeness. Therefore, in order to effectively identify a social VC, content analysis of the firm’s mission statement was undertaken for all VC firms in the ThomsonOne PE database. Content analysis of mission statements (using calculated scores from key word lists relating to the meaning of social innovation and investment), allowed the creation of a continuous variable of social VC firms ranging from not social (mission includes no key words) to an upper-end containing multiple words from the key word lists.

Collection of Mission Statements

After the selection of VC firms from the ThomsonOne PE database, secondary data (i.e. VC company websites) was used to identify the mission of each VC firm. Only firms with an explicit mission (the independent variable) were included in the sample. Following guidelines of prior research on mission statements (Amato & Amato, 2011; Amato & Amato, 2002; Lee, Fairhurst, & Wesley, 2009); mission is operationalized to include corporate mission statements, vision statements, corporate purpose statements, statement of principles, corporate philosophy statements, strategy statements, and/or value statements.
### TABLE 3
VC Sample Inclusion Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Reasoning</th>
<th>Methodological Benefit</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC firm listed in the ThomsonOne Private Equity Database</td>
<td>No information available on VC firm otherwise. Comprehensive database includes demographic information on the VC firm, funds managed or are currently participating in, financing round information, sources of financing for each fund, outcome information on portfolio companies</td>
<td>One of the most commonly used archival data sources for venture capital research in both financing and management</td>
<td>Kaplan, Sensoy, &amp; Stromberg, 2002).</td>
</tr>
<tr>
<td>Firm must be classified as a venture capital firm</td>
<td>Not all private equity firms are venture capital firms and therefore are different in nature. Only firms classified as VC firms were included (See Appendix A for classifications of VC search in ThomsonOne PE Database)</td>
<td>Limiting to VC firms ensures that the firms are similar i.e., categorized as the same type</td>
<td>Cumming, 2005; Hsu, 2006; Hochberg et al., 2007; Lindsey, 2008; Zarutskie, 2010; NVCA, 2012</td>
</tr>
<tr>
<td>Includes all geographical locations</td>
<td>Firms can be located in the U.S or abroad, and invest in the U.S. or abroad. This is necessary as many socially innovative projects occur in emerging markets.</td>
<td>Not limiting sample size and potential variation based on geography</td>
<td>Mulgan, 2007</td>
</tr>
<tr>
<td>Includes both private and corporate VC firms (excludes Non-Profit)</td>
<td>Not all VC firms are private; many are connected to banks, corporations, and governments, which also have a social mission.</td>
<td>Not limiting sample size and potential for variation among VC type</td>
<td>Zarutskie, 2010</td>
</tr>
<tr>
<td>No time limitation</td>
<td>Social VC's are a relatively new phenomenon (last 10 years) and it is useful to capture as many social VCs as possible</td>
<td>Limiting by date has the potential to significantly reduce sample size</td>
<td>Sahlman, 1990; Randjelovic et al., 2003; Lindsey, 2008</td>
</tr>
<tr>
<td>VC Firm must be actively investing</td>
<td>The focus of this research is on active firms. The USSFI includes only active firms. Meaning they have invested some amount into at least one portfolio company</td>
<td>By only examining active VC firms the sample is current</td>
<td>Cumming, 2005; Hsu, 2006; Hochberg et al., 2007; Lindsey, 2008; Zarutskie, 2010;</td>
</tr>
<tr>
<td>Limited to VC firms with explicit mission statement</td>
<td>The firm must have some a statement that can be analyzed. Mission statement is operationalized to include mission statements, vision statements, corporate purposes, principles, philosophy, strategies, or value statements.</td>
<td>A statement must be present. Expanding mission to include several other statements follows prior research and does not limit the sample.</td>
<td>Amato &amp; Amato, 2011; Amato &amp; Amato, 2002; Lee, Fairhurst, &amp; Wesley, 2009</td>
</tr>
</tbody>
</table>
Not all firms may explicitly identify their mission as a mission statement, hence expanding the sample to include these other type of statements served the same purpose (Chun & Davies, 2001; Bartkus & Glassman, 2008; Ingenhoff & Fuhrer, 2010), and allowed inclusion of firms that could be discarded if the selection was limited to mission statements alone.

Content Analysis

Key Word List Development

Content analysis was used to identify the degree to which the firm’s mission statement was related to social innovation. Weber’s (1990) widely accepted process for content analysis was followed to develop the key word lists and analysis of the mission statements (Morris, 1994; Duriau, Reger, & Pfarrer, 2007; Short et al., 2009; Moss et al., 2010). This process includes four steps (outlined in Table 4); identifying the data to be sampled, coding, analysis of content, and interpretation of results. After the sample of VCs were gathered, per Weber’s (1990) procedures, the coding scheme for the key word list was defined. The key word list in this study is a user-defined dictionary of terms related to the topic and specific dimensions of the social innovation of social investing. While social innovation is often discussed as a broad term and can include almost any new invention, this study adopts prior methodology used in social investing research (Waddell, 1995; Randjelovic et al., 2003; Pepin, 2005; Scholtens, 2006; Cumming & Johan, 2007); as well practitioners (e.g. the USSIF) in categorizing whether a firm is social or not. Following the recommendations of Short et al., (2009), both deductive and inductive processes were used to develop the key words lists and ensure content validity.
Validity

Content validity is the degree to which a measure encapsulates the full domain of a particular construct (Nunnally & Bernstein, 1994). To ensure content validity, a formal definition of the construct (i.e. social investing) was first synthesized from existing literature. This definition was synthesized from a review of extant literature and practical usage in the VC industry. In general, socially investors or socially responsible investors (SRI) encourage corporate practices that promote environmental stewardship, consumer protection, human rights, and diversity. The areas of concern recognized by the SRI industry may be summarized as environment, social justice, and corporate governance—as in environmental, social, governance (ESG) issues. Other key aspects of SRI may include shareholder advocacy and community investing. The term socially responsible investing sometimes narrowly refers to practices that seek to avoid harm by screening companies included in an investment portfolio. However, the term is also used more broadly to include more proactive practices such as impact investing, shareholder advocacy and community investing. Based on this definition, a classification scheme was identified such that if a firm is to be considered social it must adopt one of four different types of investment strategies (environment, social, governance, or product/industry related factors).

Starting with a deductive process, discrete key words lists were draw from existing research as well as from Rodale’s (1978) The Synonym Finder for each of the four dimensions based. Following procedures by others (i.e. Doucet & Jehn, 1997; Kabanoff, Waldersee, & Cohen, 1995), an inductive process was also conducted to identify words that may not have been identified through a deductive process. This approach is consistent with the call for more engaged scholarship, where knowledge is best produced through cooperative relationships.
between theory and practice (Van De Ven & Johnson, 2006). Therefore, additional words were identified based on frequently used words relating to social responsible investing in VC firm statements. Finally, a panel of three experts was employed to determine the reliability of these key word lists. The experts helped to identify words that did not sufficiently relate to the construct and included additional new words to the initial list. Through this deductive and inductive process 171 initial words were identified, including 29 additional words identified by the raters. It should be noted that during this process several words were identified that did not seem to fit any of the four dimensions, as they were broader in scope (i.e. impact). Therefore, an additional dimension was included to capture these more general and broader words, which is labeled General.

To evaluate the presence of language consistent with a socially related mission in the mission statements of the sample of VC firms, a one sample t-test (compared to a test statistic of zero) was conducted for each dimension of social investing (Short et al., 2009). As indicated in Table 4, all dimensions were significant suggesting that language (consistent with a social investing orientation) was communicated in the firm mission statements across the sample.

<table>
<thead>
<tr>
<th>TABLE 4</th>
<th>Evidence of Language Representing Social Investing Dimensions in Mission Statements of VC Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>General</td>
<td>410</td>
</tr>
<tr>
<td>Environment</td>
<td>410</td>
</tr>
<tr>
<td>Social</td>
<td>410</td>
</tr>
<tr>
<td>Governance</td>
<td>410</td>
</tr>
<tr>
<td>Product</td>
<td>410</td>
</tr>
</tbody>
</table>

Note: The results of this table were based on computer-aided text analysis using the word list for social investing presented in Table 6. * p < .001
### TABLE 5
Procedures for Data Collection and Content Analysis

<table>
<thead>
<tr>
<th>#</th>
<th>Step</th>
<th>Outcome</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data Sampling - Identification of Data to be sampled</td>
<td>Venture Capital Firms</td>
<td>The final sample was identified based on the complete list of VC firms in the ThomsonOne PE Database, which is derived from the NVCA criteria. Mission statements for each of the VC firms in the final sample were collected from the VC firm website. Those firms that do not have an explicit mission statement were dropped from the final sample.</td>
</tr>
</tbody>
</table>
| 2  | Coding - Creation, testing, and implementation of a coding scheme to determine a key word list to be used for the final content analysis using Weber's (1990) process. | Final key word list related to the concept of social innovation | 1) Definition of the Recording Units (e.g., words) - Initial list was created from theoretical definitions and practical examples of concepts related to social innovation and its various dimensions. This can include words that naturally relate to the construct as well as synonyms to expand the wordlist. Rondale's (1978) The Synonym Finder was used to find synonyms.  
2) Editing of Initial Work List - Three experts reviewed the list for words that did not sufficiently relate to the construct.  
3) Assessment of the Accuracy and Reliability - Interpreter reliability was calculated using Holsti (1969) method; Proportion of Agreement Observed (PAO) = \(3 A/(nA+nB+nC)\) for 3 raters; where, \(A\) = number of agreed upon words by all raters and \(nA\), \(nB\), and \(nC\) = number of sufficiently related words per rater.  
4) Test of Coding Sample on Text - An initial analysis using DICTION 6.0 software was run. Convergent and divergent validity was determined by examination of a correlation matrix. |
| 3  | Analysis of Content - Identification of significant consistency in the final coding list | Identifying the degree that a VC mission statement is social | DICTION scores were used to determine the degree of socialness of the mission statement. OLS stepwise regression was used to test the first hypothesis and the Preacher and Hayes (2008) method was used to test the mediating and moderated mediating relationships, as well as the relationships in the complete model. |
| 4  | Interpretation of Results - Examination of the Predictive nature of the complete model | Determining if the results support the theoretical framework guiding the research endeavor |                                                                                                                                                                                                         |
Reliability

To enhance reliability, computer-aided text analysis (CATA) was used to minimize the error from human coders (such as rater fatigue or inadequate coder training). Similar to human coding schemes, CATA generally assesses content via word usage (Morris, 1994). Relying on text assumes that the insights about the authors’ mental models can be detected through the presence of, absence of, and frequency with which certain concepts are used in text (Carley, 1997). CATA is advantageous as multiple texts can be analyzed quickly with near perfect reliability and without coder bias (Stevenson, 2001).

The software used for the content analysis was DICTION 6.0 (Hart, 2000), which has been used successfully to address substantive research questions in other entrepreneurship contexts (Barringer et al., 2005; Short & Palmer, 2008; Short et al., 2010; Moss et al., 2011; McKenny et al., 2012). DICTION (Hart, 2000) was developed to analyze political speech and rhetoric (e.g., Hart & Jarvis, 1997). Behavioral researchers have noted its potential for the study of leadership (Bligh, Kohles, & Meindl, 2004), and accounting researchers have begun to apply DICTION to aid in the study of image management (Rogers, Dillard, & Yuthas, 2005) and communicative action (Yuthas, Rogers, & Dillard, 2002). DICTION focuses on the power of word choice and verbal tone (Hart, 1984). Though DICTION relies on word counts, the software package differs from others in a number of ways that may be attractive for management research. First, the software relies on word counts based on linguistic theory. The linguistic theories draw from work on general semantics (Johnson, 1946), political personality (Barber, 1992), language featuring movement and change (Osgood et al., 1957); pragmatism (Dewy, 1954); communitarian concepts (Etzioni, 1993); variety in word choice (Johnson, 1946), embellishment in speech (Boder, 1940), and complexity of language (Flesch, 1951). Second, DICTION also
utilizes elements of artificial intelligence. The software has self-learning capacity to remember user decisions and can accommodate for the presence of confounding homographs (words spelled the same but have different meanings).

Besides these unique benefits, DICTION also has the flexibility of other software programs, allowing users to specify their own custom dictionaries. These custom dictionaries can then be used in conjunction with, or independently of, the predefined dictionaries also available in the software. DICTION contains 31 predefined dictionaries containing over 10,000 search words that were developed based on numerous types of narrative texts, including business texts (i.e. annual reports, mission statements, and CEO speeches) and can be used to further analyze text. DICTION also includes five master variables that can be used for lexical analysis (to study vocabulary and word choice) and four calculated variables that can help to identify patterns in text.

Once the initial word lists were identified, a panel of three experts was used to identify the relevance of the words to the related constructs. The expert panel consisted to two academic scholars and a practitioner in the field of social investing. The scholars’ research focused on ethics related to human capital, social issues, environmental issues and sustainable organizations. The third expert in the panel is a Principal (mid-level investment professional position on “partner-track”) in a socially oriented private equity firm. A coding scheme was developed for the review of each word list based on a scale from 1 (not related) to 100 (completely related). This scale was then converted to a nominal scale, whereby any score over 50 was related and any score under was not related. To demonstrate interrater reliability, Holsti’s (1969) inter rater reliability (IRR) measure of Proportion of Agreement Observed (PAO), was used to ensure
consistency among raters. For the three raters, the PAO was calculated by the following equation:

$$\text{Proportion of Agreement Observed (PAO)} = \frac{3\times A}{nA+nB+nC}$$

where, $A =$ number of agreed upon words by all raters and $nA$, $nB$, and $nC =$ number of sufficiently related words per rater. While there is no agreed upon level of IRR, reliabilities of 0.7 to 0.8 are found acceptable in management research (Riffe, Lacy, & Fico, 2005; Krippendorff, 2004). Reliabilities were calculated for all five dimensions. All were above the generally accepted rule of thumb for interrater reliability coefficients i.e., the .70 heuristic for coefficient a (Ellis, 1994; Krippendorff, 2004; Riffe, Lacy & Fico, 2005) (see Table 7 for values). Once complete, the final word list consisted of 148 total words. A complete listing of the key words in each category is provided in Table 6.

Dimensionality

To assess the multidimensionality and construct validity of the social investing construct a correlation matrix of the DICTION scores was examined. Consistent with the understanding of a multidimensional construct, each dimension was found to be distinct, but related to the others (Edwards, 2000). Results of the correlation analysis indicate that while not all dimensions displayed a significant relationship with the other dimensions, each dimension was significantly related (at least $p<.05$) to at least one other dimensions, except for the Product dimension (see Table 7). All measures were also correlated less than .5 with any other measure, providing evidence from this sample that social investing is a multidimensional construct. While prior researchers do not specifically identify the multidimensionality of social investing, they suggest
that the dimensions of social investing are distinct and have very different outcomes (Hutton et al., 1998; Mackenzi & Lewis, 1999; Boerner, 2011).

**TABLE 6**
Word List for Social Investing Dimensions

<table>
<thead>
<tr>
<th>Social Investing Dimensions</th>
<th>Content Analysis Words with Expert Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Accountability, Corporate Social Responsibility, Ethics, Impact, Mission, Values, Stock Screening, Stewardship, Philanthropy</td>
</tr>
<tr>
<td>Governance</td>
<td>Anti-Corruption, Board Compensation, Board Composition, Executive Compensation, Shareholders, Stakeholders, Stakeholder Involvement, Top Management Compensation, Information Transparency, Auditors, Legal Compliance, Strategic Direction, Oversight, Shareholder Proposals, Disclosure, Governance</td>
</tr>
<tr>
<td>Product &amp; Industry</td>
<td>Affordable Health care, Alcohol, Ammunition, Defense, Ethical Medicine, Firearms, Gambling, Healthcare, Medicine, Military, Nuclear Power, Pharmaceuticals, Pornography, Tobacco, Weapons</td>
</tr>
</tbody>
</table>
TABLE 7
Intercorrelations of the Social Investing Dimensions to Assess Dimensionality

<table>
<thead>
<tr>
<th>Social Investing Dimension</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 General</td>
<td>0.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Environment</td>
<td>-0.09</td>
<td>0.741</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Social</td>
<td>0.306**</td>
<td>0.06</td>
<td>0.735</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Governance</td>
<td>-0.115*</td>
<td>0.114*</td>
<td>-0.063</td>
<td>0.786</td>
<td></td>
</tr>
<tr>
<td>5 Product/Industry</td>
<td>-0.056</td>
<td>0.055</td>
<td>-0.067</td>
<td>-0.011</td>
<td>0.786</td>
</tr>
</tbody>
</table>

Note: Holsti’s (1969) observed agreement proportions are shown in italics in the diagonal. The results of this table were based on computer-aided text analysis using the word lists for social investing presented in Table 6. *IRR on horizontal in italics. ** p < 0.01. * p< 0.05.

Constructs and Measures

Once the sample was identified, information on each VC firm was collected to create the variable database and examined for missing data. A firm was excluded in the final sample if more than 10% of the required information was missing (Hair et al., 2010). The information on each VC firm was gathered from the ThomsonOne PE database and related to each construct as detailed in Table 8.

Social Mission

A mission defines the broad outline for an organization’s strategy (Slater, Olsen, & Hult, 2006). This definition often includes a comprehensive concept that encompasses both goals (ends) and means (Andrews, 1980). Organizational mission statements have been examined in several different ways and can include both means and ends (Venkataraman, 1989). One perspective includes aspects of an organization’s mission and/or vision as an indicator of strategic orientation (Gupta & Govindarajan, 1984). As this investigation is focused on socially
innovative VC firms, a key factor to select the sample was whether the organization’s mission explicitly included language related to a social orientation. It is plausible that there are other situations where a firm does not have a mission yet still engages a socially innovative investment strategy. Similarly, there may also be firms that have a mission that is not socially oriented, yet invest in some social enterprises as part of their overall portfolio as a diversification strategy. Given these potential strategies for social investing, all VCs were included in the final sample.

Organizational Strategy

Stage of Investment

Venture capital firms operate in many different industries and focus their investments on various stages of investment (i.e. the state of the portfolio company). These stages can range from seed-stage, where there is just an idea, to later-stage, where the products/service has been developed, commercialized, and may already providing some revenue for the portfolio company. The ThomsonOne PE database has information on the level of investments in each stage for each VC firm. Stage of investment was measured as a continuous variable and calculated as the ratio of total investment amount in each stage (i.e. seed, early, expansion, late,) (Lindsey, 2008; Hus, 2006; Hochberg, Ljungqvist, & Lu 2007). The database provides information on stage of investment as an aggregate for each VC firm based on their total investments as well as for each fund and portfolio company.

Stage of Investment = \frac{\text{Total Amounted Invested in Early and Seed Stage}}{\text{Total Amount Invested}}

Stage of Investment = \frac{\text{Total Amounted Invested in Expansion Stage}}{\text{Total Amount Invested}}

Stage of Investment = \frac{\text{Total Amounted Invested in Late Stage}}{\text{Total Amount Invested}}
Sources of Financing

Venture capital is a professionally managed pool of capital that is invested in equity-linked securities of private ventures (Sahlman, 1990). Most often these organizations are structured as limited partnership, where the VC firm is the primary partner and other institutional investors (i.e., banks, pensions, funds, endowments, corporations, and individuals) make up the other limited partners. Traditionally, the majority of financing for VC (when they are raising capital for new funds) come from larger institutions looking for some equity type investments in their own portfolio and not individuals (Sahlman, 1990, Gompers & Lerner, 2001; Cumming & Johan, 2007). Although, with the emergence of higher risk opportunities, (including social and environmental oriented investments) these institutional investors often look for a more stable source of income, even from their equity based investments (Cummings & Johan, 2007). Therefore, within these higher risk investments, there has been an influx in high net worth individuals investing in venture capital (Gompers & Learner, 1999; Freear, Sohl, & Wetzel, 1995). Given this variation in investing, examination of the number of each type of investor in a VC firm’s funds was conducted. The database provides information regarding the type of investor for each fund, but does not provide the actual amount from each investor. Therefore, this variable was calculated as a ratio of the total number of individual/private investors out of all the investors providing financing, given that most VC receive have a mix of financing sources.

Type of Investor

Institutional Investor = Bank, Pension Funds, Corporation, Investment Banker, Other VC

Individual/Private Investor = Actual individual (often listed as a private trust or LLC)

Number of each type of Investor = \( \frac{\text{Number of individual investor}}{\text{Number from all investors}} \)
Organizational Structure

**Age**

Though there has been much debate in the literature about when an entrepreneurial firm actually starts (Shane & Venkataraman, 2000), in the VC industry, a firm has not started unless it has made an investment (Lindsey, 1994). The purpose of a VC firm is to raise capital to help its portfolio of companies to be successful (i.e., to create positive returns for the VC and other investors). Following past research on VCs, age is measured as simply the number of years since the firms first ever investment (i.e., vintage year) (Lindsey, 1994; Hochberg et al., 2007).

\[
\text{Age} = \text{Number of Years since first investment}
\]

**Size**

While size is often measured as the number of employees of an organization (Kimberly, 1976), in the VC industry this is not appropriate as firms do not typically have a large amount of variation in total number of employees. Instead, size most often depends on the total amount of committed capital. Thus, following prior methodology, VC firm size is measured as the total amount of committed capital investments (Lerner, 1994; Gompers & Lerner, 1998; Hochberg, et al., 2007; Dimov & Milanov, 2010). There is no limit to the amount of committed capital to be included in the sample; only that they have made an investment, no matter how small.

\[
\text{VC Size} = \text{the total amount of committed capital over the life of the firm}
\]

**Network**

The role of networks is prominent in the VC industry as well as in VC research. Networks are significant not only for a VC’s performance, but also for access to information
(new opportunities), access to capital, and the development of their reputation (a key factor in VC performance) (Dimov & Milanov, 2010). The term used for a VC network in the industry and in research is syndicate (Lerner, 1994). VC’s often tend to syndicate their investments with other VCs, rather than investing alone (Lerner, 1994; Hochberg et al., 2007). Therefore, a VC’s network is defined by their current and past investments into relationships with other VCs. A VC will draw on this network in both pre- and post-investment stages.

Following Hochberg et al. (2007), Lindsey (2008), and Hsu (2006) a simplified count was used to determine the relative importance of each firm’s network. The database provides information on the co-investors for each investment as well as identifying the lead investor for each deal. This methodology captures different aspects of a VC firm’s network: 1) the number of VCs with which it has a relationship, as a proxy for the information, deal flow, expertise, contacts, and pools of capital it has access to; 2) the frequency with which it is invited to co-invest in other VCs’ deals, thereby expanding its investment opportunity set; 3) its ability to generate such co-investment opportunities in the future by syndicating its own (being lead investor) deals today in the hope of future payback from its syndication partners.

Network Count = Total number firms a VC firm has co-invested with

Organizational Performance

VC firms structure their funds as closed-end, often 10-year, and limited partnerships. They are not usually traded, nor do they disclose fund valuations. The typical VC that has created a fund, spends its first 3 or so years selecting companies to invest in, and then nurtures them over the next few years (Ljungqvist, Richardson, & Wolfenzon, 2005). In the second half of the fund’s life, successful portfolio companies are exited via IPOs or sales to other companies,
generating capital inflows that are distributed to the fund’s investors. At the end of the fund’s life, any remaining portfolio holdings are sold or liquidated and the proceeds distributed to investors.

As the ThomsonOne PE database does not provide or make available data on those capital inflows from positive exits, I therefore adopt the exit rates; defined as the fraction of portfolio companies that are successfully exited via an initial public offering (IPO) or a sale to another company in the VC’s portfolio, as the primary performance measure for this investigation. Within the VC research and more specifically those studies which use the ThomsonOne PE database this is considered an acceptable measure of VC firm performance (Brander et al., 2002; Das et al., 2011; Gompers & Lerner, 1999, 2000; Hochberg et al., 2007; Sorenson, 2007).

\[
\text{Firm Performance} = \frac{\text{Number of Exits or Acquisitions of Portfolios Companies}}{\text{Total Number of Portfolio Companies}}
\]

Control Variables

Controlling for other known determinants of VC fund performance is necessary and has been found to help eliminate certain confounding variables that could influence the effect of the variables of interest (Kaplan & Schoar, 2005). Consequently I control for industry, location, and VC type, and text length.

Industry

Evidence from prior research indicates that different industry focus may have an influence on both VC firm strategy and performance (Gompers & Lerner, 1989; Kaplan & Schoar, 2005; Hochberg et al., 2007). Each VC firm received a code for their specific industry
focus as defined by the Venture Economics Industry Codes (VEIC). VEIC are proprietary codes developed by Thomson Reuters. This classification is developed based on what a portfolio company develops, manufactures, produces, provides, or resells. Each VC firm then is assigned an Industry Focus in the database when a fund has invested more than 60% of its known investments into a particular industry. Each VC will then be coded based on their Industry Focus VEIC. There are 17 specific VEIC that a firm could be coded into. It should be noted that there is a limitation to this measure as not all VC firms invest 60% or more into one particular industry and therefore no single VEIC classification was provided. As a control variable, each industry received a bivariate code, i.e., classified into a specific VEIC industry or not. In cases where no classification was provided the firm received a 0 coding.

Location

Location is controlled in VC research, as it may influence both performance and strategy (Gompers & Lerner, 2000; Lindsey, 2008; Hsu, 2006; Landstrom, 2007) and it is quite likely that it may influence the performance and/or strategies of social VC as well. Therefore, location was controlled by coding where the VC firm is actually located (i.e. U.S. based or not).

VC Type

While many VC firms and funds are set up as privately held entities, others are connected to banks, corporations, and governments, which may also have a social mission. As these corporate VC firms may vary from independent VC firms in terms of incentives and resources gained from connections with larger organizations (Zarutskie, 2010), this was also controlled in the analysis.
Examination of firm mission statements revealed that there was considerable variance in the length of the statements. The mean number of words used in the sample of mission statements was 67 words, with the shortest statement using only 2 words and the longest using 402 words. To control for such a wide discrepancy in text length across the sample, the detected social investing construct words were standardized by dividing them by the total number of words found in the text. This control method is similar to others used in content analytic studies and is appropriate when texts vary considerably in length (i.e., Doucet & Jehn, 1997; Emrich, Brower, Feldman, & Garland, 2001; Short et al., 2009).

The full model (see Figure 8) therefore consists of the continuous and multidimensional independent variable of social mission having a direct relationship with VC performance, also a continuous variable. An indirect relationship is also hypothesized, whereby the social mission-performance relationship is mediated by two organizational strategy variables, stage of investment and source of financing, both continuous variables. It is then hypothesized that the mediated relationship will be moderated by three continuous structural variables, age, size, and network providing the formation of a moderated mediation model.

Model Assessment

Statistical Analysis

As the research model involves direct effects as well as moderated mediation, appropriate statistical tools were used to assess these effects. Since the classic Baron and Kenny (1986) methodology was introduced over a quarter century ago, scholars have identified a range of problems with this technique and also offered a number of refinements to address the limitations.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Role</th>
<th>Measure</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Mission</td>
<td>Independent</td>
<td>Mission statement of the VC firm related to socially innovative outcomes. Identify social VC’s by mission statements using content analysis</td>
<td>Gepart, 1991; Wolfe, 1991; Pearce &amp; David, 1987</td>
</tr>
<tr>
<td>Stage of Investment</td>
<td>Mediator</td>
<td>Total Amounted Invested in Early Stage / Total Amount Invested</td>
<td>Lindsey, 2008; Hus, 2006; Hochberg, Ljungqvist, &amp; Lu, 2007</td>
</tr>
<tr>
<td>Sources of Financing</td>
<td>Mediator</td>
<td>Total Number of Individual Investors / Total Number of Investors</td>
<td>Gompers &amp; Lerner, 1999; Freear, Sohl, &amp; Wetzel, 1995</td>
</tr>
<tr>
<td>Firm Age</td>
<td>Moderator</td>
<td>Number of years since first investment</td>
<td>Lindsey, 1994; Hochberg et al., 2007</td>
</tr>
<tr>
<td>Firm Size</td>
<td>Moderator</td>
<td>Total amount of committed capital</td>
<td>Lerner, 1994; Gompers &amp; Lerner, 1998; Hochberg, et al., 2007; Dimov &amp; Milanov, 2010</td>
</tr>
<tr>
<td>Network</td>
<td>Moderator</td>
<td>Total number firms a VC firm has co-invested with</td>
<td>Lindsey, 2008; Hus, 2006; Hochberg, Ljungqvist, &amp; Lu, 2007</td>
</tr>
<tr>
<td>Venture Capital Firm</td>
<td>Dependent</td>
<td>Number of Exits or Acquisitions of Portfolio Companies / Total Number of Portfolio Companies</td>
<td>Brander et al., 2002; Das et al., 2011; Gompers &amp; Lerner, 1999, 2000; Hochberg et al., 2007; Sorenson, 2007</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry</td>
<td>Control</td>
<td>Venture Economics Industry Codes (VEIC)</td>
<td>Gompers &amp; Lerner, 1989; Kaplan &amp; Schoar, 2005; Hochberg et al., 2007</td>
</tr>
<tr>
<td>Location</td>
<td>Control</td>
<td>Headquarters and investment focus – US or Non-US</td>
<td>Gompers &amp; Lerner, 2000; Lindsey, 2008; Landstrom, 2007</td>
</tr>
<tr>
<td>VC Type</td>
<td>Control</td>
<td>Private or Institutional (i.e., bank, corporation, or government)</td>
<td>Zarutskie, 2010</td>
</tr>
</tbody>
</table>
The first limitation relates to the low power that the Baron and Kenny (1986) causal analysis provides. The method for assessing intervening variables set forth by Baron and Kenny is among the lowest in power, making it less likely to detect the intervening effect (Fritz & McKinnon, 2007). Second, their method is not quantifying what it is intended to test, the intervening effect. The indirect effect must be different from zero if both a and b are different from zero by a statistical significant criterion (Hayes, 2012). Therefore, instead of testing the intervening variable, this method infers its effect through evaluations of additional hypotheses, making error more likely. Third, consensus to this point has been to rely on the results of the mediation test before performing the Sobel test. This reliance is seen as a hindrance as this is irrelevant for what the test is evaluating. The Sobel test is an inferential technique that looks at the product of coefficients by estimating standard error of ab which then is used as a test statistic for testing null, that the indirect effect is 0 (Hayes, 2012). Additionally, another issue with the Sobel test is that it assumes normality, which is rarely the case.

Thus, a more recent statistical approach (Preacher & Hayes, 2008) was chosen to test the proposed relationships due to its increased usage and relevance in research, as well as for its ability to handle more complex evaluations simultaneously. The statistical technique they created builds on Muller et al. (2005), which offer a more robust analysis for models where both moderation and mediation are involved.

The technique requires the use of a macro named PROCESS that performs computational procedures in SPSS for path analysis-based moderation and mediation. The technique has a path analysis framework that expands existing tools by estimating coefficients using OLS regression, maximum likelihood logistics recession, generating direct and indirect effects in mediation and moderated mediation models, and testing for 2 and 3 way interactions with bias corrected and
percentile bootstrap confidence intervals. The use of bootstrapping is not to increase sample size, but to construct confidence intervals for conditional and unconditional indirect effects, as well as effect size inferences. The program allows for up to 4 moderators and 10 mediators simultaneously. By using the Preacher and Hayes technique, all proposed relationships can be assessed.

When analyzing a model that contains both an intervening variable between \( x \) and \( y \) and a moderating variable after the mediator, a moderated mediation test is performed (Muller et al., 2005). This type of test focuses on interactions between the moderator and mediating variables, without interaction of the predictor and its effect on the pathway between the mediator and criterion (Preacher et al., 2007; Muller et al., 2005). This type of analysis is referred to by Preacher et al. (2007) as the estimation of conditional indirect effects in which the indirect effect depends on the strength of the moderator. This approach is appropriate for the research design of this dissertation as it helps to gauge if mediation changes across different structural factors.

Hypotheses Testing

While the Preacher and Hayes (2008) analysis provides a useful technique in examining the full model proposed in this dissertation, it is also useful to identify the specific relationships of each stage of the hypothesized model, thereby identifying those relationships that are significant and enabling the development of a final model that is the most parsimonious (Kerlinger & Lee, 2000; Preacher & Hayes, 2008; Hair et al., 2010). Therefore, OLS regression analysis was conducted to identify those more fine grained individually significant relationships (see Table 9 for an outline of these procedures).
Direct Relationships

Hypothesis 1 addresses the positive relationship between social mission and performance for which a simple OLS regression analysis was conducted.

Mediation

Hypotheses 2 and 3 test two organizational strategies as mediators between strategic mission and outcomes. Testing for mediation indicates how much of the relationship between the independent and dependent variable is accounted for by the mediator, thus revealing whether it facilitates the relationship between the other two variables (Hair et al., 2010). Following MacKinnon’s (2000) multiple mediation model three separate regression equations were estimated. The first step involves identifying the direct effect between social mission and organizational strategy, which were conducted to test Hypothesis 1. The second step then involves regressing each of the organizational strategy variables on the performance variable. The second part of this step in the mediation analysis involves regressing each organizational strategy variable on the performance variable to ensure there is a positive significant relationship. Rather than performing separate regression analysis for organizational strategy, a single regression was entered simultaneously for each organizational strategy variable to correct for any multicollinearity among the variables. The final step in this mediation process will examine the effect of organizational strategy on the strategic mission and performance relationship. If both strategic mission and organizational strategy variables are still significant in predicting the outcome variable then partial mediation is supported. If strategic mission is no longer significant when organizational strategy is controlled, then full mediation is supported (Hair et al., 2010).
**Moderation**

Prior to testing the full moderated mediation model a simple moderation analysis was used to test the interactions of organizational strategies with organizational structure variables in the organizational strategy-performance relationship discussed in Hypotheses 4. Moderation is a two-way interaction that is computed as a product of the centered main effect variables (Aiken & West, 1991). Centering scores, also known as deviation scores, makes the mean 0 allowing for proper interpretations in comparing dependent and independent variables and higher-order interactions (Aiken & West, 1991).

**TABLE 9**
Procedures for Hypotheses Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Relationship</th>
<th>Statistical Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Social Mission → Firm Performance</td>
<td>OLS Regression Analysis</td>
</tr>
<tr>
<td>2a</td>
<td>Social Mission → Early Stage Investments</td>
<td>Mackinnon's (2000) Multiple Mediation (Adapted from Baron and Kenny (1986))</td>
</tr>
<tr>
<td>2b</td>
<td>Social Mission → Individual Sources of Financing</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Social Mission → Early Stage Investments &amp; Sources of Financing → Firm Performance</td>
<td></td>
</tr>
<tr>
<td>4a</td>
<td>Early Stage x Age → Firm Performance</td>
<td>Aiken &amp; West's (1991) Method for testing multiple moderations</td>
</tr>
<tr>
<td></td>
<td>Sources of Financing x Age → Firm Performance</td>
<td></td>
</tr>
<tr>
<td>4b</td>
<td>Early Stage x Size → Firm Performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sources of Financing x Size → Firm Performance</td>
<td></td>
</tr>
<tr>
<td>4c</td>
<td>Early Stage x Network → Firm Performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sources of Financing x Network → Firm Performance</td>
<td></td>
</tr>
</tbody>
</table>
Moderated Mediation

Hypotheses 4 address interactions of organizational strategies with organizational structure variables in the organizational strategy-performance relationship. This analysis allows for the estimation of the full model by simultaneously computing the direct effect of mission on performance, indirect effects of mission through organizational strategies, and the effects of structural factors on the relationship between organizational strategy and performance.

Limitations

As with any research design and methodology, there are a few limitations in the design and methodology of this study. An initial limitation stems from the data. While the ThomsonOne PE database is the most common data set used in VC research it does have some biases. Specifically, Kaplan, Sensoy, and Stromberg (2002) identified some biases, including an oversampling of U.S. based VC firms and missing information financing rounds. A second limitation relates to identification of the final sample. Other than the USSIF list of social VC firms, there is no comprehensive list of social VCs available. Using this list is potentially problematic as it is necessary to rely on the methodology of the USSIF and their identification process. The alternative to using this list would be to create a list of social VC firms. The primary issues with the creation of a new list is that there is no specific identifier in the ThomsonOne PE database for social VC, therefore, determining what makes a VC social would not be feasible using the ThomsonOne PE database alone. The creation of a new list of social VC firms may have validity issues in terms of identification codes for what actually makes a VC social or not. Given these limitations, this sample is drawn from the entire population of VC
firms from the ThomsonOne PE database and socialness of the mission is determined by
objective measures using content analysis.

Other limitations relate to the specific methods used, specifically computerized content
analysis. First, there natural language processing capabilities in a content analysis software
program may not be able to properly categorize ambiguous concepts (Morris, 1994).
Additionally, there is the inability to recognize the communicative intent of word usage when
relying on word frequency analysis (Krippendorff, 1980). There is also an inability to create a
completely exhaustive listing of key words (Pearce & David, 1987). Finally, there are issues with
transforming meanings into numbers that may not have meaning, which is why it is necessary
to ensure that there is sufficient theoretical rationale for the classification of the textual data
(Morris, 1994).

Another limitation relates to the nature of the research design. Determining the degree to
which a firm, especially a VC firm, is social, is quite complex. While mission statements do
signal certain goals to internal and external stakeholders, as well as driving the strategic
decisions of the firm, they are not the only tools that organizations use for making strategic
decisions. Additionally, it is quite conceivable that a mission statement may be created out of
formality and may not really reflect the true nature of the organization and its goals (Sattari, Pitt
& Caruana, 2011).

Summary

The methodology used to examine the relations between strategy, structure, and
performance in social venture capital firms followed a four step process; 1) identification of the
sample (VC firms), 2) collection of mission statements for each VC firm, 3) development of key
word list for content analysis of VC mission statements, and 4) collection of data on each VC firm. Data were drawn from the ThomsonOne PE Financial Private Equities database, as well as from available VC firm websites. Content analysis was used to identify the degree to which the firm’s mission statement was related to social innovation. Weber’s (1990) widely accepted process for content analysis was followed to develop the key word list and analysis of the mission statements (Morris, 1994; Duriau, Reger, & Pfarrer, 2007; Short et al., 2009; Moss et al., 2010). Weber’s process was utilized and includes four distinct steps (outlined in Table 4). This process enabled the development of a systematic and objective method to collect data, build a robust sample of VC firms, and develop the constructs of interest.

As prior literature on social VC is limited, and primarily either conceptual (Randjelovic et al., 2003; Pepin, 2005), qualitative (Silby, 1997; Waddell, 1995), or quantitative with small sample sizes (see Miller & Wesley, 2010). This investigation fills a gap with its methodological process. First, by sourcing the sample from ThomsonOne PE Database and not being limited to only those VC firms that are identified as social by external sources, sample size was increased compared to prior literature. Second, the measures used to develop constructs from the archival data have been employed in prior VC research and were found to be both valid and reliable measures (see Table 8 for details on the constructs). Third, the use of content analysis provides an objectively derived construct of socialness that has not been seen in prior research on social VCs. Content analysis allowed this researcher to make inferences by objectively identifying specified characteristics of the communication (i.e., socialness of the mission) and the firms strategic orientation (Holsti, 1969).

Hence, the analysis provided a replicable methodology to access deep individual or collective structures such as values, intentions, attitudes, and cognitions of the mission
statements (Carley, 1997; Huff, 1990; Kabanoff, 1996). Furthermore, it was also consistent with prior content analysis based research that examined the effect mission statements on firm performance (Cochran & David, 1986; David, 1989; Pearce & David, 1987), which was a primary goal of this study. Finally, the combination of using OLS regression analysis and the Preacher and Hayes (2008) method for examining the moderated mediation model enabled a fine grained analysis of the hypothesized individual relationships as well as the complete model.
CHAPTER IV
DATA ANALYSIS AND RESULTS

Introduction

This chapter provides data on the results of statistical analysis performed to test the hypotheses presented in Chapter II. First, information is presented on the characteristics of the sample. Second, the rationale and justification for undertaking necessary ex-post adjustments to some variables is provided. Third, results of the statistical analysis of the formal hypothesis testing are provided. Fourth, additional post-hoc analysis are presented. Finally, the chapter concludes with a summary of the results.

Sample Characteristics

The sample of venture capital firms was based on the search criteria previously outlined in Table 3 of Chapter III. Data on VC firms were sourced from the ThomsonOne PE Database. Following the ThomsonOne PE database’s definition, a VC firm was operationalized as an investment firm that includes startup/seed, early, expansion, and later stage deals or any non-venture stage investment made by traditionally venture focused firms (Thomson Financial, 2012). To ensure these criteria, the National Venture Capital Association’s methodology and categorization (see Appendix A for specific search criteria) was used to search the ThomsonOne PE database.

The sample of 381 VC firms was extracted from the initial set of 655 firms identified by the NVCA search criteria. A mission statement (or other related statement) was collected for each of the 381 firms to systematically identify whether a VC firm is social. This selection
method ensured a widely representative sample of social VC firms based on objective criteria, and was a more lengthy process than relying on an externally sourced list.

As explained below, a total of 245 firms were excluded from the initial set of 655 firms as they did not fit within the inclusion criteria. The reasons for exclusion were: 62 firms could not be accessed via the internet (they did not have a website) and therefore no formal statement was available; 68 firms did not have a mission statement or an English website from which an equivalent statement could be identified.; 115 firms were either non-profits, did not provide information specific to VC operations, or were no longer being active according to company webpage, and thus failed to meet inclusion criteria. There were 29 outliers that were excluded based on statistical parameters. VC firms that were over four standard deviations from the mean were considered as outliers and removed from the sample for analysis (Hair et al., 2009). This process resulted in a sample of 381 relevant VC firms.

In summary, the development of a systematic and objective process helped to build a robust and relevant sample of VC firms, before analyzing relationships between the constructs of interest. Interestingly, prior literature on social VC is based on limited sample size and further, has been criticized for not being representative of the entire social VC population (Silby, 1997; Waddell, 1995; Miller & Wesley, 2010). The lack of representativeness resulted from accepting a VC firm as being social because they were identified as such by external sources that may or may not have followed objective criteria for categorization. In contrast, the objective criteria followed to select the sample in this investigation not only resulted in a larger sample than prior VC research, but also eliminated potential sample selection bias from relying exclusively on external lists of social VC firms.
Table 10 through 12 provides information on VC firm characteristics of the final sample. As presented in Table 10, the sample primarily consisted of private equity VC firms (82.2%), with the remainder being affiliated with corporations (6%), banks (2.1%), governments (3.9%), or other affiliations, such as consulting or management company (3.9%). The sample consisted predominantly of U.S. based VC firms (79.8%). Additionally, 281 of the VC firms were members of one or more professional associations, such as the National Venture Capital Association, the primary professional association in the U.S. It is interesting to note, that membership was often a function of target investment location, e.g., if a firm invested in India, there were often a member of the Indian national VC association.

The average age of the firms was approximately 17 years from their first investment (i.e. vintage year). The average size of the firm, as measured by the amount of committed capital since firm inception, was over $529 million; with the smallest firm having $105 thousand and largest having over $8 billion in committed capital. On average, VC firms invested in almost 91 portfolio companies, with $5.8 million invested per company. While 79.8% of the sample was U.S. based firms, there was significant amount of capital being invested internationally. An average of $489 million was invested internationally, with some firms investing in 40 different countries.

Finally, as presented in Table 12, all 17 VEIC industry classifications in the ThomsonOne PE database were represented by the sample. Table 12 is organized by the mean amount invested in each industry in descending order. Portfolio companies relating to the internet and computer software were the two industries receiving the most investments, with 80% of the entire sample investing at least some capital to both. These two industries also received the most capital investments, with an average investment over $116 million.
### TABLE 10
Frequency of Firm Type\(^a\)

<table>
<thead>
<tr>
<th>Firm Characteristic</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Equity</td>
<td>314</td>
<td>82.2</td>
</tr>
<tr>
<td>Corporate VC</td>
<td>23</td>
<td>6</td>
</tr>
<tr>
<td>Bank Affiliated</td>
<td>8</td>
<td>2.1</td>
</tr>
<tr>
<td>Government Affiliated</td>
<td>15</td>
<td>3.9</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>3.9</td>
</tr>
<tr>
<td>US Based Firm</td>
<td>305</td>
<td>79.8</td>
</tr>
<tr>
<td>One or More Professional Association Affiliations</td>
<td>281</td>
<td>57.1</td>
</tr>
</tbody>
</table>

\(^a\) \(n=381\)

### TABLE 11
Descriptive Characteristics of Sample VC Firms\(^{ab}\)

<table>
<thead>
<tr>
<th>Firm Characteristic</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>16.7</td>
<td>12.826</td>
<td>0</td>
<td>112</td>
</tr>
<tr>
<td>Size</td>
<td>$539,195.14</td>
<td>$1,062,391.45</td>
<td>$105.00</td>
<td>$8,081,841.20</td>
</tr>
<tr>
<td>Number of Portfolio Companies Invested In</td>
<td>90.8</td>
<td>261.08</td>
<td>1</td>
<td>4613</td>
</tr>
<tr>
<td>Avg. Investment Per Portfolio Company</td>
<td>$5,866.03</td>
<td>$10,153.17</td>
<td>$58.27</td>
<td>$120,000.00</td>
</tr>
<tr>
<td>Amount of US Investments</td>
<td>$522,412.95</td>
<td>$1,034,727.95</td>
<td>$0.00</td>
<td>$4,245,239.30</td>
</tr>
<tr>
<td>Number of US Portfolio. Companies Invested In</td>
<td>65.13</td>
<td>100.54</td>
<td>0</td>
<td>701</td>
</tr>
<tr>
<td>Number of Countries Invested in Outside of US</td>
<td>2.88</td>
<td>4.59</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Amount Invested in Non-US Portfolio Co.</td>
<td>$489,265.03</td>
<td>$999,025.01</td>
<td>$0.00</td>
<td>$8,081,841.00</td>
</tr>
<tr>
<td>Number of Funds</td>
<td>6.39</td>
<td>8.674</td>
<td>1</td>
<td>117</td>
</tr>
<tr>
<td>Professional Association Affiliations</td>
<td>0.897</td>
<td>0.399</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Early/Seed Stage Investments</td>
<td>0.298</td>
<td>0.21</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Expansion Stage Investments</td>
<td>0.354</td>
<td>0.173</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Late Stage Investments</td>
<td>0.225</td>
<td>0.1601</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

\(^a\) \(n=381\), \(^b\) All dollar amounts presented in the thousands.
<table>
<thead>
<tr>
<th>Industry Type</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>$120,132.08</td>
<td>$279,832.22</td>
<td>312</td>
<td>$0.00</td>
<td>$2,330,025.10</td>
</tr>
<tr>
<td>Computer Software</td>
<td>$116,763.29</td>
<td>$247,396.24</td>
<td>311</td>
<td>$0.00</td>
<td>$2,030,841.90</td>
</tr>
<tr>
<td>Communications</td>
<td>$78,533.25</td>
<td>$164,364.93</td>
<td>247</td>
<td>$0.00</td>
<td>$1,377,250.70</td>
</tr>
<tr>
<td>Medical &amp; Health Care</td>
<td>$78,205.39</td>
<td>$150,139.65</td>
<td>254</td>
<td>$0.00</td>
<td>$1,082,656.40</td>
</tr>
<tr>
<td>Industrial &amp; Energy</td>
<td>$69,958.49</td>
<td>$401,888.57</td>
<td>248</td>
<td>$0.00</td>
<td>$6,168,264.40</td>
</tr>
<tr>
<td>Biotech</td>
<td>$68,478.91</td>
<td>$152,841.49</td>
<td>247</td>
<td>$0.00</td>
<td>$1,320,076.20</td>
</tr>
<tr>
<td>Semi-Conductor &amp; Electricity</td>
<td>$65,156.51</td>
<td>$143,156.19</td>
<td>256</td>
<td>$0.00</td>
<td>$1,422,266.10</td>
</tr>
<tr>
<td>Financial Services</td>
<td>$47,933.82</td>
<td>$292,506.14</td>
<td>167</td>
<td>$0.00</td>
<td>$3,748,810.00</td>
</tr>
<tr>
<td>Transportation</td>
<td>$37,407.23</td>
<td>$151,472.42</td>
<td>120</td>
<td>$0.00</td>
<td>$1,353,222.50</td>
</tr>
<tr>
<td>Consumer Related</td>
<td>$35,724.95</td>
<td>$148,503.72</td>
<td>224</td>
<td>$0.00</td>
<td>$1,792,869.10</td>
</tr>
<tr>
<td>Computer Hardware</td>
<td>$34,709.51</td>
<td>$97,339.91</td>
<td>249</td>
<td>$0.00</td>
<td>$1,215,873.40</td>
</tr>
<tr>
<td>Construction</td>
<td>$14,885.88</td>
<td>$56,840.08</td>
<td>91</td>
<td>$0.00</td>
<td>$515,999.00</td>
</tr>
<tr>
<td>Business Services</td>
<td>$14,117.71</td>
<td>$41,702.43</td>
<td>187</td>
<td>$0.00</td>
<td>$417,661.00</td>
</tr>
<tr>
<td>Other</td>
<td>$11,928.67</td>
<td>$33,029.02</td>
<td>98</td>
<td>$0.00</td>
<td>$195,649.40</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>$7,510.68</td>
<td>$15,331.98</td>
<td>116</td>
<td>$0.00</td>
<td>$110,974.50</td>
</tr>
<tr>
<td>Utilities</td>
<td>$6,071.84</td>
<td>$20,028.84</td>
<td>54</td>
<td>$0.00</td>
<td>$135,090.00</td>
</tr>
<tr>
<td>Agriculture, Forestry, &amp; Fishery</td>
<td>$1,974.02</td>
<td>$4,517.85</td>
<td>73</td>
<td>$0.00</td>
<td>$30,022.60</td>
</tr>
</tbody>
</table>

After VC firms were selected, the next step was to collect firm mission statements (or other representative statements where necessary), which were a formal declaration of the firm’s strategic orientation. Following prior research (Chun & Davies, 2001; Bartkus & Glassman, 2008; Ingenhoff & Fuhrer, 2010), Representative statements included vision, philosophy, and strategy statements, general statements describing the firm (often labeled “About Us”), and Other statements, which included letters and quotes from the managing partner, descriptive taglines from the firm website, and social responsibility statements. Table 13 highlights the distribution of the type of each mission statement collected. Type of statement was controlled as a categorical bivariate variable (1=mission statement, 0=not a mission statement) in subsequent analysis.
Construct Measures

The variables used in this study are based upon theoretically derived, previously validated measures. Each variable is described in detail in Chapter III in written and tabular form (see Table 8) and the full model can be seen in Figure 8 in Chapter II. In should be noted that in all analyses, statistical assumptions were tested and unless otherwise stated, data passed all tests. In summary, the primary independent variable in the research model was social mission, which was analyzed as a multidimensional construct consisting of five dimensions (general, environment, social, governance, and product/industry). The primary dependent variable was the ratio of positive exits by portfolio companies to the total number of companies invested in. The mediating variables consisted of stage of investments and sources of financing. The moderators included the age, size and network of the VC firm.

Ex-post Adjustment to Variables and Measures

Upon collecting these data from the ThomsonOne PE database some adjustments were necessitated, i.e., variable calculation, creation of new measures, and the omission of one...
construct due to data limitations. The next section provides an explanation for these adjustments.

Removal of Variable Due to Data Limitations

Removal of Construct

First, I begin with the one construct, source of financing, which was removed from the model. Data on sources of financing (i.e., limited partners) was limited and where available consisted of institutional type partners required to publicly disclose their investment activity (i.e., public corporations, governments, and other public institutions). Further adding to the bias toward public institutions, ThomsonOne PE database describes these data as Known LP Investors indicating that the data may not have information on all limited partners (LP) who invest in their listed VC firms. One reasoning for the data being limited to only known LP investors is because neither VC firms nor the LPs are required to disclose such information if they are privately held. In addition, this researcher had a phone conversation with a customer service representative with ThomsonOne PE data to discuss this issue in March 2013. The representative reiterated the point that their data on sources of financing (i.e., LP investors) is limited to those firms required to publically disclose investment information. In the final sample of 381 VC firms, only 178 had any LP investors listed and only 26 of those VC firms had an individual type LP investor listed. Due to this limitation and the lack of variance in the type of LP investor (i.e., all were public companies or government affiliated organizations) across the sample, the value of the construct was significantly reduced and therefore removed from the final analysis presented in Chapter IV.
Mean Centering of Variables

The ex-post adjustment was conducted on all the variables of interest in the model (social mission, stage of investment, age, size, network, performance). These variables were standardized by mean centering the variables in an effort to avoid potential autocorrelation between interaction effects of the independent and moderation variables as well as to improve data interpretation (Aiken & West, 1991; Cronbach, 1987; Smith & Sasaki, 1979; Yi, 1989).

Additional Measures Collected

The primary dependent variable firm performance is measured by the ratio of the number of exits (IPO or acquisition) of a VC firm’s portfolio companies to the total number of portfolio companies. Exit performance is the most accepted measure of VC firm performance for the ThomsonOne PE database (Brander et al., 2002; Das et al., 2011; Gompers & Lerner, 1999, 2000; Hochberg et al., 2007; Sorenson, 2007). In addition, two other performance indicators were captured, i.e., the ratio of active portfolio companies and the ratio of failed portfolio companies. If for example, the socialness of the mission is more significantly related to active companies, this could be an indicator that the majority of the portfolio companies are relatively new investments and have not gone through the entire investment cycle, which can take from 5 to 10 years (Gompers & Lerner, 1999). Given the potential value and information that these two additional performance measures might provide, (even though they are not part of the hypotheses testing for the proposed model), they were captured for use in potential post-hoc analysis.

Creation of Bivariate Industry Control Variable

The next variable that was adjusted ex-post was the industry control variable. Following
prior research it was proposed in Chapter III that industry be used as a control variable since
different industry focus may influence VC firm strategy and performance (Gompers & Lerner,
1989; Kaplan & Schoar, 2005; Hochberg et al., 2007). Therefore, industry was originally coded
using the VEIC classification provided in the ThomsonOne PE database. A VC firm would be
classified to a single industry if 60% or more of the committed capital for the firm was focused
in one particular industry. In cases where no classification was provided the firm received a 0
coding. After data collection, initial analysis revealed that only 89 firms had committed capital of
60% or more to a single industry. Industry focus was only found in 11 of the 17 VEIC categories
(See Table 14).

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial &amp; Energy</td>
<td>20</td>
</tr>
<tr>
<td>Medical &amp; Health Care</td>
<td>17</td>
</tr>
<tr>
<td>Internet</td>
<td>13</td>
</tr>
<tr>
<td>Bio-Tech</td>
<td>13</td>
</tr>
<tr>
<td>Computer Software</td>
<td>11</td>
</tr>
<tr>
<td>Consumer Related</td>
<td>5</td>
</tr>
<tr>
<td>Communications</td>
<td>3</td>
</tr>
<tr>
<td>Financial Services</td>
<td>3</td>
</tr>
<tr>
<td>Semi-Conductor &amp; Electricity</td>
<td>2</td>
</tr>
<tr>
<td>Construction</td>
<td>1</td>
</tr>
<tr>
<td>Business Services</td>
<td>1</td>
</tr>
</tbody>
</table>

*No firms had an industry focus in Transportation, Comp. Hardware, Manufacturing, Utilities, Ag./Forestry/Fishery

To further examine the effect that industry might have on final analysis a multiple
regression was run with the new industry bivariate variables on the primary dependent variable
VC firm performance (exits) to identify if specific industries were significant and therefore more
relevant as control variables. As Table 15 indicates, only six of the 11 industries were
significantly (and all negatively) related to firm performance. As the various industry foci do
explain some variance in VC firm performance it was important maintain them as controls in the final analysis. Given the small sample of firms that actually had an industry focus and the consistent negative relationship in the regression analysis, all industries were combined to create a single bivariate industry variable (i.e., 1=has industry focus, 0=no industry focus).

TABLE 15
Results of the Standardized Regression Analysis for Industry Effects

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio-Tech</td>
<td>-.170**</td>
</tr>
<tr>
<td>Communications</td>
<td>-.034</td>
</tr>
<tr>
<td>Computer Software</td>
<td>-.110*</td>
</tr>
<tr>
<td>Financial Services</td>
<td>-.068</td>
</tr>
<tr>
<td>Industrial &amp; Energy</td>
<td>-.219**</td>
</tr>
<tr>
<td>Semi-Conductor &amp; Electrical</td>
<td>-.063</td>
</tr>
<tr>
<td>Medical &amp; Healthcare</td>
<td>-.131*</td>
</tr>
<tr>
<td>Construction</td>
<td>-.065</td>
</tr>
<tr>
<td>Consumer Related</td>
<td>-.134*</td>
</tr>
<tr>
<td>Business Services</td>
<td>-.005</td>
</tr>
<tr>
<td>Internet</td>
<td>-.185**</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.139</td>
</tr>
<tr>
<td>( F )</td>
<td>5.372**</td>
</tr>
<tr>
<td>df</td>
<td>377</td>
</tr>
</tbody>
</table>

\( \text{n=378. *p<.05, **p<.001.} \)

Creation of Unidimensional Measure of Social Mission

It was recommend by this dissertation committee that even though the social mission construct was found to be multi-dimensional, based on prior research and from the data analysis
(see Table 7 in Chapter III); it may be useful to consider a single measure for social mission. Therefore, a single measure of social mission was created by combining all the words from the key word lists for each separate dimension (see Table 6 in Chapter III). The ensuing single dictionary was used in the DICTION software to create a single social mission measure. Analysis was conducted using both measures of social mission to identify any disparity between a multi-dimensional and unidimensional construct of social mission.

Calculation of Moderator Variables

Lastly, all three moderating variables (age, size, and network) were adjusted ex-post in order to simplify and make the variable more meaningful. Following recommendations by Lerner (1994) both age and size were modified into categorical variables by the creation of quartiles using z-scores ($z = \text{actual age} - \text{average age} / \text{standard deviation}$). Once quartiles were identified new age and size variables was created and coded from 0 to 3 to represent the four quartiles. Table 16 and 17 provide information on the distribution for each quartile of age and size.

<table>
<thead>
<tr>
<th>Code</th>
<th>Quartile</th>
<th>Number of Firms</th>
<th>Range in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>83</td>
<td>0 to 8</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>62</td>
<td>9 to 16</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>153</td>
<td>17 to 25</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>83</td>
<td>26 and Older</td>
</tr>
</tbody>
</table>
TABLE 17
Quartile Distribution of Firm Size

<table>
<thead>
<tr>
<th>Code</th>
<th>Quartile</th>
<th>Number of Firms</th>
<th>Range in Dollars(^{a})</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>66</td>
<td>$0 to $19999</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>95</td>
<td>$20000 to $99999</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>125</td>
<td>$100000 to $499999</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>97</td>
<td>$500000 and $Larger</td>
</tr>
</tbody>
</table>

\(^{a}\) Dollar amounts presented in thousands.

Following established measures of VC firm networks, a simplified count of the total number of firms a VC firm has co-invested with was collected (Hochberg et al., 2007; Lindsey, 2008; Hsu, 2006). Additionally, in line with these researchers work on VC networks, two other measures were collected: a) the number of times a VC firm has been lead investor, and b) the number of co-investment rounds. As both Hochberg et al. (2007) and Lerner (1994) discuss, these measures are also important in understanding the nature and size of a VC firm’s network. Given the importance of these additional measures, all three were combined to create a single construct VC firm network. To create the new construct, exploratory factor analysis (EFA) was used to identify the validity of the measure. Principal component analysis with a Varimax rotation yielded a single network factor (see Table 18). To assess the reliability of this construct, Cronbach’s alpha coefficient was calculated. As Table 18 indicates, the alpha coefficient for the construct exceeded the .80 lower bound for reliability measures in applied research (> .7) (Nunnally, 1978).
In summary, the ex-post adjustments to variables in the model were undertaken to provide a more fine grained interpretation of the results. These thoughtful and careful adjustments also enabled more in-depth analysis of each construct. Furthermore, they ensured that foreseeable limitations and potential bias from the data were addressed prior to the investigation so as to provide more meaningful results.

Descriptive Statistics

Table 19 presents the means, standard deviations, and correlation coefficients for the primary variables of investigation in this study. In the following paragraphs, a discussion of some descriptive statistics and bivariate correlations is provided.

Results of the bivariate (Pearson) correlations were somewhat mixed for the relationships between the multiple dimensions of social mission and the primary dependent variable, VC firm performance (exits). While four of the five dimensions of social mission were significantly related to firm performance, only the governance dimension was positive, whereas general, environmental, and social were all negatively related. It should be noted that the exact opposite relationship occurred in the correlations with the five dimensions and performance measure for active portfolio companies.
TABLE 19
Means, Standard Deviations, and Correlations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Mission (General)</td>
<td>.007</td>
<td>.018</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Social Mission (Environment)</td>
<td>.129</td>
<td>.071</td>
<td>-.001</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>3. Social Mission (Social)</td>
<td>.016</td>
<td>.027</td>
<td>.266**</td>
<td>.113^</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. Social Mission (Governance)</td>
<td>.008</td>
<td>.016</td>
<td>-.141**</td>
<td>.130^</td>
<td>-.086</td>
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</tr>
<tr>
<td>5. Social Mission (Product)</td>
<td>.005</td>
<td>.016</td>
<td>-.051</td>
<td>.002</td>
<td>-.072</td>
<td>-.037</td>
<td></td>
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<tr>
<td>6. Social Mission (Combined)</td>
<td>.156</td>
<td>.079</td>
<td>.155**</td>
<td>.914**</td>
<td>.342**</td>
<td>.212**</td>
<td>.168**</td>
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<tr>
<td>7. Exited Portfolio Companies</td>
<td>.312</td>
<td>.190</td>
<td>-.116**</td>
<td>-.130**</td>
<td>-.132**</td>
<td>.122**</td>
<td>.079</td>
<td>-.127</td>
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<tr>
<td>8. Active Portfolio Companies</td>
<td>.617</td>
<td>.242</td>
<td>.136**</td>
<td>.122**</td>
<td>.146**</td>
<td>-.131**</td>
<td>-.081</td>
<td>.113^</td>
<td>-.939**</td>
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<td>9. Failed Portfolio Companies</td>
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<td>.071</td>
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<td>-.089</td>
<td>-.072</td>
<td>.095</td>
<td>.041</td>
<td>-.076</td>
<td>.557**</td>
<td>-.692**</td>
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</tr>
<tr>
<td>10. Early &amp; Seed Stage</td>
<td>.298</td>
<td>.210</td>
<td>-.053</td>
<td>-.180**</td>
<td>-.030</td>
<td>-.184**</td>
<td>-.049</td>
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<td>-.308**</td>
<td>.287**</td>
<td>-.080</td>
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<td>11. Expansion Stage</td>
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<td>.174</td>
<td>.040</td>
<td>.005</td>
<td>.007</td>
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<td>-.028</td>
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<tr>
<td>12. Late Stage</td>
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<td>.016</td>
<td>.006</td>
<td>.125**</td>
<td>-.023</td>
<td>.115*</td>
<td>.003</td>
<td>.126*</td>
<td>.138**</td>
<td>-.153**</td>
<td>.040</td>
<td>-.457**</td>
<td>-.070</td>
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<tr>
<td>13. Age</td>
<td>16.70</td>
<td>12.82</td>
<td>-.062</td>
<td>-.114**</td>
<td>-.057</td>
<td>.025</td>
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<td>.615**</td>
<td>-.658**</td>
<td>-.571**</td>
<td>-.176**</td>
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<td>.013</td>
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<tr>
<td>14. Size</td>
<td>5359195.13</td>
<td>1062391.45</td>
<td>-.080</td>
<td>-.072</td>
<td>-.160**</td>
<td>.087</td>
<td>.117</td>
<td>-.061</td>
<td>.661**</td>
<td>-.674**</td>
<td>.478**</td>
<td>-.319**</td>
<td>-.014</td>
<td>.141**</td>
<td>.588**</td>
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<tr>
<td>15. Network</td>
<td>360.57</td>
<td>1080.084</td>
<td>-.014</td>
<td>.000</td>
<td>.102</td>
<td>-.032</td>
<td>-.026</td>
<td>.036</td>
<td>.107**</td>
<td>-.121**</td>
<td>.137**</td>
<td>-.029</td>
<td>-.021</td>
<td>-.029</td>
<td>.309**</td>
<td>.309**</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>16. Early x Size</td>
<td>-36872.701</td>
<td>229665.96</td>
<td>.040</td>
<td>.038</td>
<td>.099</td>
<td>.062</td>
<td>.056</td>
<td>.079</td>
<td>.064</td>
<td>-.063</td>
<td>.013</td>
<td>-.528**</td>
<td>.414**</td>
<td>.396**</td>
<td>.014</td>
<td>.007</td>
<td>.095</td>
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<tr>
<td>17. Early x Age</td>
<td>-.455</td>
<td>2.409</td>
<td>.045</td>
<td>.075</td>
<td>.075</td>
<td>.078</td>
<td>.020</td>
<td>-.107*</td>
<td>.114*</td>
<td>-.092</td>
<td>-.008</td>
<td>.430**</td>
<td>.190**</td>
<td>.284**</td>
<td>-.074</td>
<td>.100</td>
<td>-.002</td>
<td>.401**</td>
<td></td>
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<tr>
<td>18. Early x Network</td>
<td>-.7393</td>
<td>90.03</td>
<td>-.010</td>
<td>.089</td>
<td>.071</td>
<td>.082</td>
<td>.042</td>
<td>.096</td>
<td>.058</td>
<td>-.044</td>
<td>.062</td>
<td>-.587**</td>
<td>.303**</td>
<td>.305**</td>
<td>-.027</td>
<td>.031</td>
<td>.315**</td>
<td>.742**</td>
<td>.431**</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>19. Firm Type - Private Equity</td>
<td>.832</td>
<td>.373</td>
<td>-.028</td>
<td>-.005</td>
<td>-.027</td>
<td>.061</td>
<td>.014</td>
<td>-.030</td>
<td>.056</td>
<td>-.074</td>
<td>.117**</td>
<td>.004</td>
<td>-.100</td>
<td>.106**</td>
<td>-.046</td>
<td>.121**</td>
<td>-.099</td>
<td>-.028</td>
<td>.116**</td>
<td>.055</td>
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</tr>
<tr>
<td>20. U.S. Base Firm</td>
<td>.802</td>
<td>.598</td>
<td>.022</td>
<td>.041</td>
<td>.003</td>
<td>.069</td>
<td>.088</td>
<td>.058</td>
<td>-.148**</td>
<td>-.157**</td>
<td>.176**</td>
<td>-.024</td>
<td>-.103**</td>
<td>.162**</td>
<td>.007</td>
<td>.110**</td>
<td>.058</td>
<td>.007</td>
<td>.093</td>
<td>.076</td>
<td>.239**</td>
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</tr>
<tr>
<td>21. Mission Statement Collected</td>
<td>.21</td>
<td>.407</td>
<td>.434**</td>
<td>-.031</td>
<td>.109**</td>
<td>.065</td>
<td>.052</td>
<td>.083</td>
<td>-.245**</td>
<td>.213**</td>
<td>-.124**</td>
<td>.085</td>
<td>.033</td>
<td>-.075</td>
<td>-.059</td>
<td>.117**</td>
<td>.066</td>
<td>.055</td>
<td>.066</td>
<td>-.091</td>
<td>.154**</td>
<td>.186**</td>
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</tr>
<tr>
<td>22. Industry</td>
<td>.254</td>
<td>.424</td>
<td>-.003</td>
<td>.218**</td>
<td>.049</td>
<td>-.044</td>
<td>.114**</td>
<td>.213**</td>
<td>-.359**</td>
<td>.373**</td>
<td>-.278**</td>
<td>.123**</td>
<td>-.194**</td>
<td>.099**</td>
<td>.332**</td>
<td>-.297**</td>
<td>.130**</td>
<td>.145**</td>
<td>.095</td>
<td>-.006</td>
<td>.008</td>
<td>.054</td>
<td>.081</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Only two of the dimensions (environment and governance) were significantly (but negatively) correlated with early/seed stages of investment. There was a negative significant association between environment and firm age. Size was significant and negatively related with environment and positively associated with product/industry. Among, other correlations, Table 19 indicates that there is a positive significant association with having a single industry focus on environment and product/industry.

As indicated in Table 19 the combined social mission construct had similar correlations as the multiple dimensions. There was a negative significant association with firm performance (exit) and a positive significant relationship with the active performance measure. The combined measure also had a negative significant relationship with early/seed stage of investing. The same positive significant relationship was also found between the combined social mission measure and having a single industry focus.

The results of the bivariate correlations provide some initial insight into the relationships of interest. While the findings seem to be somewhat contrary to the hypothesized relationships, the results offer useful information as to nature the relationships of interest, as well as other potential relationships that were not part of the research model.

Hypotheses Testing

The research model in Figure 9 addresses the relationships among the variables and depicts the hypotheses analyzed. The following sections provide additional information on the statistical methods used to analyze the research model. The direct relationships are covered in the next section, followed by the indirect and moderated relationships.
FIGURE 9
Adjusted Research Model

Direct Relationships

Hypothesis 1 addressed the relationship between the social mission and firm performance (positive portfolio firm exits). Hypothesis 1 proposed that the social mission was positively related to VC firm performance. Hierarchical regression analysis was conducted to test the hypotheses and results are presented in Table 20. The first step in this analysis was to enter the control variables into the model (Model 1). In the next step all five dimensions of social mission were entered into the model with the control variables. As depicted in Model 2, while the overall
model was significant ($F = 11.753$, $R^2 = .228$, $p < .001$), only governance ($\beta = .092$, $p < .05$) and product/industry ($\beta = .125$, $p < .05$) was significant and positively related to VC firm performance (exits). Thus, Hypothesis 1 was supported. Additionally, the combined social mission variable was used as an independent variable in separate regression analyses (to allow testing hypothesized relationships with a unidimensional social mission construct). As depicted in Model 4 in Table 20, combined social mission was not significantly related to VC firm performance ($\beta = -.037$, n.s.).

Hypothesis 2 proposed a direct and positive relationship between social mission and investing in early stage portfolio companies by the VC firm. Multiple regression analysis was used to test Hypothesis 2 and results are presented in Table 20. As seen under the Early Stage model four of the five dimensions (general, environmental, governance, product/industry) of social mission were significant, but negatively related to early stage investments. Thus, no support is provided Hypothesis 2. Once again, the same analysis was conducted using the unidimensional social mission variable and the same results were found, combined social mission was significant, but negatively related to early stage investments ($\beta = -.230$, $p < .001$).

Indirect Relationships: Mediation

Hypothesis 3 proposed that the relationship between social mission and VC firm performance (exits) would be mediated by early stage investment. As noted in Chapter III, a mediator is a third variable that intervenes between the independent and dependent variable (Hair et al., 2009). A mediator accounts for the relationship (fully or partially) between the independent variable (social mission) and the dependent variable (VC firm performance (exits)).
### TABLE 20
Results of the Standardized Regression Analysis for the Mediated Effects

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Early Stage</th>
<th>Firm Performance (Exits)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Model 1</td>
</tr>
<tr>
<td>Private Equity Firm</td>
<td>.028</td>
<td>.013</td>
</tr>
<tr>
<td>U.S. Based Firm</td>
<td>.029</td>
<td>.007</td>
</tr>
<tr>
<td>Mission Statement</td>
<td>.134*</td>
<td>.098^</td>
</tr>
<tr>
<td>Industry</td>
<td>.136*</td>
<td>.146*</td>
</tr>
<tr>
<td>Social Mission (General)</td>
<td>-.127*</td>
<td>.011</td>
</tr>
<tr>
<td>Social Mission (Environmental)</td>
<td>-.165*</td>
<td>.066</td>
</tr>
<tr>
<td>Social Mission (Social)</td>
<td>-.041</td>
<td>-.065</td>
</tr>
<tr>
<td>Social Mission (Governance)</td>
<td>-.174**</td>
<td>.092*</td>
</tr>
<tr>
<td>Social Mission (Product/Industry)</td>
<td>-.090^</td>
<td>.125*</td>
</tr>
<tr>
<td>Social Mission (Combined)</td>
<td>-.230**</td>
<td></td>
</tr>
<tr>
<td>Early Stage</td>
<td>-.262**</td>
<td>-.275**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>.138</th>
<th>.069</th>
<th>.196</th>
<th>.228</th>
<th>.263</th>
<th>.296</th>
<th>.197</th>
<th>.272</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔR²</td>
<td>.032</td>
<td>.067</td>
<td>.068</td>
<td>.001</td>
<td>.075</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>4.355**</td>
<td>5.377**</td>
<td>22.091**</td>
<td>11.753**</td>
<td>25.826**</td>
<td>15.040**</td>
<td>17.77**</td>
<td>22.52**</td>
</tr>
<tr>
<td>df</td>
<td>358</td>
<td>362</td>
<td>363</td>
<td>358</td>
<td>361</td>
<td>357</td>
<td>362</td>
<td>361</td>
</tr>
</tbody>
</table>

---

*a n = 373

^ < .1, * < .05, ** < .001
Theoretically, a mediator facilitates the relationship between the other two variables (Hair et al., 2009). According to Baron and Kenny (1986), four conditions should be met for evidence of mediation. First, the independent variable(s) of interest (social mission) should account for significant variance in the dependent variable (VC firm performance). Second, the independent variable (social mission) must be significantly related to the proposed mediator (early stage investments). Third, the independent variable should account for significant variance in the dependent variable. If significant relationships exist in steps 1 through 3, then it is necessary to proceed to step 4; in step 4 multiple regression analysis is run with the independent variable and the mediator predicting the dependent variable. Some form of mediation is supported if the effect of the mediator on the dependent variable remains significant after controlling for the independent variable. If both the independent variable and the mediating variable still significantly predict the dependent variable then partial mediation is supported. If the independent variable is no longer significant when the mediator is controlled then findings support full mediation (Hair et al., 2009).

To determine whether early stage investments mediated the social mission VC performance relationship (Hypothesis 3), MacKinnon’s (2000) multiple mediation model (which is an extension of Baron and Kenny’s (1986) model for mediation), was used and three separate regression equations were estimated. The first step involved identifying the direct effect between the five dimensions of social mission and VC performance, which was conducted in the first analysis to test Hypothesis 1 as seen in Model 1. The second step involved regressing the dimensions of social mission on early stage investments, which was done for testing Hypothesis 2 (see Early Stage model). The third step then involved regressing of the early stage variable on the VC firm performance variable (exits) to ensure there is a significant relationship (Table 20,
Model 3, $\beta = -.262, p < .001$). The final step in this mediation process examined the effect of early stage on the social mission and VC performance relationship. Rather than performing separate regression analysis for each social mission dimension, a single regression was entered simultaneously for each dimension variable to correct for any multicollinearity among the variables. Results of this analysis (Table 20, Model 4, $R^2 = .296, F = 15.04, p < .001$) indicate that governance was 91% mediated (Table 20, Model 4, $\beta = .044, \text{n.s.}$) as the coefficient became non-significant by the including early stage investments in the model. Additionally, product/industry was only 23% mediated (Table 20, Model 4, $\beta = .101, p < .05$). Partial mediation was indicated by the coefficient remaining significant, but being reduced with the inclusion of early stage investments. These results provide support for Hypothesis 3. It should be noted that there was inconsistent mediation for both of these mediated relationships, as the direct effect of both dimensions to were positively related to VC performance and the effects from the social dimensions to early stage, and from early stage to VC performance were negative. In addition, inclusion of early stage investments into the model resulted in the environmental (Table 20, Model 4, $\beta = -.111, p < .05$) and social (Table 20, Model 4, $\beta = -.077, p < .1$) dimensions of social mission becoming significant, however, still remaining negatively related to VC firm performance (exits), as well as significantly increasing the total variance explained (Model 2, $R^2 = .227$ to Model 4, $R^2 = .296$) a change in $R^2$ of .068. These results provide some initial evidence that early stage investments, while mediating the relationships between governance and product/industry social dimensions and performance, maybe suppressor variable because of the inconsistent mediation, increase in the magnitude of the effect between the relationships between environmental and social dimensions and performance, and because of the increase in variance explained (MacKinnon, Krull, & Lockwood, 2000). A suppressor
variable is a variable that increases the predictive validity of another variable by inclusion in the regression equation as the suppressor removes irrelevant predictive variance (Conger, 1974).

As a robustness check of these mediating relationships an additional analysis was conducted by only including the two dimensions (governance and product/industry) of social mission that were mediated by early stage investments in the social mission-VC firm performance relationship. Once again, results indicate that early stage investment fully mediated the governance - VC firm performance relationship as the $\beta$ coefficient for governance (Table 21, Model 2, $\beta = .06$, n.s.) became non-significant when early stage investment was entered into the model. Additionally, the product/industry - VC firm performance relationship was fully mediated by early stage investment as the $\beta$ coefficient for product/industry (Table 21, Model 2, $\beta = .072$, n.s.) also became non-significant. A Sobel’s test was conducted as an additional robustness check on these mediating relationships. This is a specialized t-test that identifies if the reduction in the effect of the independent variable, after including the mediator in the model, is statistically significant (Sobel, 1982).

TABLE 21
Results of the Standardized Regression Analysis for the Mediated Effects of Significant Social Mission Dimensions Only

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Early Stage Investment</th>
<th>Firm Performance (Exits)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Firm Performance (Exits)</td>
<td></td>
</tr>
<tr>
<td>Social Mission (Governance)</td>
<td>-.184**</td>
<td>.114*</td>
</tr>
<tr>
<td>Social Mission (Product/Industry)</td>
<td>-.056^</td>
<td>.088^</td>
</tr>
<tr>
<td>Early Stage Investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.037</td>
<td>.013</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F$</td>
<td>7.065**</td>
<td>4.887*</td>
</tr>
<tr>
<td>df</td>
<td>368</td>
<td>370</td>
</tr>
</tbody>
</table>

$^a n = 373$

$^\wedge < .1$, $^* < .05$, $^{**} < .001$
As indicated in Table 22 the Sobel’s test for the mediation of the governance - VC firm performance relationship was significant (Sobel Z-test = 5.72**) and 91% of the total effect was mediated, which is above the 80% required for full mediation (Kenny et al., 1998). The Sobel’s test for the product/industry - VC firm performance was not significant and only 23% of the total effect was mediated, an indication that the relationship may be something other than mediation (Kenny et al., 1998). Therefore results provided support for Hypothesis 3.

**TABLE 22**
Mediation Statistics with Only Significant Social Mission Dimensions

<table>
<thead>
<tr>
<th>Mediation Relationships</th>
<th>Sobel Z-test</th>
<th>Std. Error</th>
<th>Total Effect Mediated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Mission (Governance) → Early Stage→ Exit</td>
<td>5.75**</td>
<td>.105</td>
<td>.91</td>
</tr>
<tr>
<td>Social Mission (Product/Industry) → Early Stage→ Exit</td>
<td>1.07</td>
<td>.284</td>
<td>.23</td>
</tr>
</tbody>
</table>

** < .001

Interaction: Moderation

Hypotheses 4a through 4c propose that the relationship between early stage of investment and VC firm performance (exits) will be moderated by the VC’s age, size, and network. To test these hypotheses for the moderating effects of age, size, and network with early stage investments, hierarchical regression was conducted with VC firm performance (exits) as the dependent variable. The first step involved entering the control variables (firm type, location, mission statement collected, and industry). As indicated in Table 23, Model 1, the control variables together accounted for over 19% of the variance in VC firm performance ($R^2 = .196$, $F = 22.09$, $p < .001$). The next step involved including the independent variable, early stage investment and the moderators into the model. In the final step, the interaction term was entered
into the model. It should be noted that for each moderator a separate regression analysis was conducted.

Across all regressions, the early stage investment was negatively related to VC firm performance (exits). Model 2 and 3 in Table 23 examined the interaction effects of VC firm age. Entering both early stage investment ($\beta = -0.193$, $p < 0.001$) and age ($\beta = 0.508$, $p < 0.001$) into Model 2 accounted for 48% of the variance in VC firm performance ($R^2 = 0.484$, $\Delta R^2 = 0.288$, $F = 56.38$, $p < 0.001$). Then when the interaction term, the product of early stage and age, was entered into Model 3 and provided almost no change to the model ($R^2 = 0.485$, $\Delta R^2 = 0.001$, $F = 48.35$, $p < 0.001$) and the interaction term was not significant ($\beta = -0.04$, n.s.). Thus, Hypothesis 4a is not supported.

Hypothesis 4b stated that that firm size would moderate the early stage investment-VC firm performance relationship, such that the relationship is curvilinear. The first step in examining the curvilinear relationship was to compare the means of the four size quartiles in relation to VC firm performance. The results of analysis in Table 24 indicate that the means do not follow a curvilinear pattern as they only increase with each quartile. If a curvilinear relationship was present, the means for the smallest and the largest quartile would be either both positive or both negative (Hair et al., 2009). Following Aiken and West’s (1991) recommendation for testing the moderation of quadratic function (curvilinear relationship) a quadratic by linear interaction term was included in the regression equation after controlling for the linear by linear interaction in the same regression equation. Results, as indicated in Model 6 in Table 23 ($R^2 = 0.507$, $\Delta R^2 = 0.311$, $F = 52.8$, $p < 0.001$), revealed that the quadratic term size$^2$ was not significant ($\beta = 0.022$, n.s.). In Model 7 the interaction term was entered to examine the interaction of the quadratic term and early stage investments.
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
<th>Model 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC Firm Performance Exit</td>
<td>Private Equity Firm</td>
<td>-.004</td>
<td>.029</td>
<td>.030</td>
<td>-.054</td>
<td>-.051</td>
<td>-.054</td>
<td>-.054</td>
<td>-.004</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>U.S. Based Firm</td>
<td>.103*</td>
<td>.103*</td>
<td>.103*</td>
<td>.067^</td>
<td>.071^</td>
<td>.068^</td>
<td>.067^</td>
<td>.108*</td>
<td>.112*</td>
</tr>
<tr>
<td></td>
<td>Mission Statement</td>
<td>-.202**</td>
<td>-.157**</td>
<td>-.157**</td>
<td>-.146**</td>
<td>-.138**</td>
<td>-.147**</td>
<td>-.146**</td>
<td>-.188**</td>
<td>-.188**</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>-.346**</td>
<td>-.154**</td>
<td>-.156**</td>
<td>-.176**</td>
<td>-.186**</td>
<td>-.177**</td>
<td>-.175**</td>
<td>-.323**</td>
<td>-.319**</td>
</tr>
<tr>
<td></td>
<td>Early Stage Investment</td>
<td>-.193**</td>
<td>-.166**</td>
<td>-.111*</td>
<td>-.020</td>
<td>-.110*</td>
<td>-.117*</td>
<td>-.235**</td>
<td>-.314**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>.508**</td>
<td>.503**</td>
<td>.549**</td>
<td>.529**</td>
<td>.545**</td>
<td>.545**</td>
<td>.022</td>
<td>.056</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td>.549**</td>
<td>.529**</td>
<td>.545**</td>
<td>.545**</td>
<td>.022</td>
<td>.056</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size^2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.074^</td>
<td>.030</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network</td>
<td></td>
<td>.040</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early x Age</td>
<td></td>
<td>-.040</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early x Size</td>
<td></td>
<td>-.132*</td>
<td>-.135*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early x Size^2</td>
<td></td>
<td>.040</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early x Network</td>
<td></td>
<td>-.133*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| R^2                | .196 | .484 | .485 | .506 | .514 | .507 | .507 | .268 | .277 |
| ΔR^2               | .288 | .001 | .310 | .008 | .311 | .000 | .06  | .010 |
| F                  | 22.09** | 56.38** | 48.35** | 61.66** | 54.37** | 52.8** | 46.132** | 21.25** | 19.08** |
| df                 | 363  | 361  | 360  | 361  | 360  | 363  | 360  | 349  | 348  |

a n= 367

2 Quadratic variable
Results indicated that when the interaction term for the quadratic term size² is entered into the model there is no change in the variance explained (R² = .507, ∆R² = .0, F = 46.132, p < .001) and the quadratic term size² remained non-significant (β = .056, n.s.) and the interaction term was also not significant (β = .040, n.s.). Thus, Hypothesis 4b was not supported by the results.

<table>
<thead>
<tr>
<th>Size Quartile</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>.00</td>
<td>-.2044</td>
<td>63</td>
<td>.14779</td>
</tr>
<tr>
<td>1.00</td>
<td>-.0945</td>
<td>95</td>
<td>.15312</td>
</tr>
<tr>
<td>2.00</td>
<td>.0560</td>
<td>122</td>
<td>.14766</td>
</tr>
<tr>
<td>3.00</td>
<td>.1481</td>
<td>98</td>
<td>.12027</td>
</tr>
<tr>
<td>Total</td>
<td>-.0013</td>
<td>378</td>
<td>.19002</td>
</tr>
</tbody>
</table>

Further analysis was conducted to determine if size moderated the relationship, such that the relationship was linear. As indicated in Model 4 in Table 23, when size is entered into the model, the variance explained was 50% (R² = .506, ∆R² = .31, F = 61.66, p < .001) and size (β = .549, p < .001) is positive and significantly related to VC firm performance. The addition of the interaction term (Model 5) only marginally increases the variance explained (R² = .514, ∆R² = .008, F = 54.37, p < .001) and the interaction term is negative and significant (β = -.132, p < .05). These results indicate that size negatively moderates the relationship between early stage investments and VC firm Performance.

To aid in the interpretation of the interaction effect of size on the early stage investment and VC performance relationship a graphical representation is provided in Figure 9. Based on the graphical depiction, the three largest quartiles of size (the largest firms) have the same effect, i.e.,
that as the amount of early stage investments increase, VC firm performance decreases. The interaction occurs between the smallest firms in quartile (Q1) and the second quartile (Q2); VC firm performance increases as investment in early stage investments increase for the smallest firms, but declines for the next quartile (Q2) of larger firms. Early stage investment seems to have a positive effect on performance of smallest firms.

FIGURE 10
The Moderating Effect of Size on the Association between Early Stage Investment and VC Performance (Exits)

Hypothesis 4c proposed that network would moderate the relationship between early stage investment and VC firm performance, such that when the network is larger firm performance will increase. Network was marginally significant ($\beta = .074, p < .1$) in relation to VC firm performance when entered into Model 8 ($R^2 = .269, \Delta R^2 = .06, F = 21.25, p < .001$). In Model 9 the interaction term with network was included and was negative and significantly ($\beta = -.133, p < .05$) related to VC firm performance. Thus, Hypothesis 4c was not supported as there was a negatively moderated relationship. To aid in the interpretation of the interaction effect of network on the early stage investment and VC performance relationship a graphical
representation is provided in Figure 10. The disordinal interaction effect indicates that as investment in early stage investment increases, performance decreased for firms with large and small networks, however, the decline was steeper for larger networks, indicating that small networks experienced a relatively smaller decline in performance.

**FIGURE 11**
The Moderating Effect of Network on the Association between Early Stage Investment and VC Firm Performance (Exits)

![Graph showing the moderating effect of network on the association between early stage investment and VC firm performance (Exits).]

**Full Model: Preacher and Hayes Technique**

As noted in Chapter III, scholars have identified potential problems with the Baron and Kenny (1986) methodology for assessing mediated relationships (Fritz & MacKinnon, 2007; Hayes, 2012). Therefore, the Preacher and Hayes (2008) technique was used to assess the full hypothesized model. This statistical technique builds on Muller et al. (2005), which offers a more robust analysis for models where both moderation and mediation are involved, as is the case in this dissertation.
Analysis of the full model was conducted using the two dimensions of social mission (governance and product/industry) that were significantly mediated by early stage investment, and were run in two separate models. Additionally, only the two moderators that had significant interaction effects (size and network) were included in the final models. The first step in the process involved a simple regression to identify the relationships between the dimensions of social mission on the mediator, early stage investment. As indicated in Table 25 governance was negative and significantly (β = -2.225, p < .001) associated with early stage investment, which was consistent with the results of the analysis for Hypothesis 2, fulfilling the first step in the mediation process. Interestingly, the product/industry dimension was negative, but not significantly (β = -.564, n.s.) related to early stage investment. This does not fulfill the requirements for mediation and is in contrast to results of the analysis conducted for Hypothesis 2. In addition, the overall model with VC firm performance (exits) as the dependent variable and social mission (product/industry) as the independent variable was not significant, providing no support for an overall moderated mediation model with the social mission dimension product/industry as the independent variable.

The next step involved conducting a regression with VC firm performance (exits) as the dependent variable that included both the mediator and the two moderators in order to examine the conditional indirect effects of the moderated mediation model. Results, presented in Model 1 of Table 25 indicated mediation as governance became non-significant (β = -.587, n.s.) and that only one moderator, the early stage-size interaction term, was marginally significant (β = -.075, p < .1). These results provide additional support for an overall moderated mediation model. The conditional indirect effect at different levels of firm size and network are provided for Model 1.
TABLE 25
Results of the Moderated Mediation Model

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Early Stage</th>
<th>VC Firm Performance (Exits)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Model 1</td>
</tr>
<tr>
<td>Social Mission (Governance)</td>
<td>-2.225**</td>
<td>.587</td>
</tr>
<tr>
<td>Social Mission (Product/Industry)</td>
<td>-.564</td>
<td>.020</td>
</tr>
<tr>
<td>Early Stage</td>
<td>-.034</td>
<td>-.011</td>
</tr>
<tr>
<td>Size</td>
<td>.115**</td>
<td>.109**</td>
</tr>
<tr>
<td>Network</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Early x Size</td>
<td>-.075^</td>
<td>-.088*</td>
</tr>
<tr>
<td>Early x Network</td>
<td>-.001</td>
<td>-.001</td>
</tr>
</tbody>
</table>

Conditional Indirect Effect at Specific Values of Moderatorsab

<table>
<thead>
<tr>
<th>Moderator Values</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>1.672</td>
<td>2.697</td>
</tr>
<tr>
<td>Network</td>
<td>-7.146</td>
<td>-1241.51</td>
</tr>
<tr>
<td>Conditional Indirect Effect</td>
<td>.356</td>
<td>.528</td>
</tr>
</tbody>
</table>

a Based on bootstrapped 95% bias corrected confidence intervals with 5000 resamples for conditional indirect effects. b Only significant moderator values are presented. ^p<.1, * p<.05, **p<.001

As recommended by Preacher et al. (2007), bootstrapped confidence intervals were generated (5,000 resamples) for the conditional indirect effects. Three combinations of moderator levels yielded a bootstrap 95% bias corrected and accelerated confidence intervals when size and network were at the mean (.1075, .7351), when size was one standard deviation above and network was at the mean (.1206, 1.1328), and when both size and network were one standard deviation above the mean (.0431, 2.2019). These results, based on the additional indirect effect explained, indicate that as size and network increase, the overall effect increases, consistent with finding from the hypothesis testing. It should be noted that based on the recommendations of Hayes (2009) there is no total effect or mediated effect presented, as the concern is only with conditional indirect effect.
Due to the early stage-network interaction term not being significant an additional model was run with only firm size as the moderator. As presented in Model 2 in Table 25, the size interaction term was again negative and significant ($\beta = -.088$, $p < .05$) and governance was again not significant ($\beta = .499$, n.s.), providing support for the overall moderated mediation model. Once again, bootstrapped confidence intervals were generated (5,000 resamples) for the conditional indirect effects. Two levels of size yielded a bootstrap 95% bias corrected and accelerated confidence intervals, at the mean size (.1302, .7384) and one standard deviation above the mean (-.1630, -.014). These results indicate that as firm size increases, governance indirectly influences VC firm performance via early stage investment in such a way that as early stage investments increase, VC firm performance decreases, again consistent with the hypothesis testing.

Post-Hoc Analysis

Due to the mixed results of the hypothesis testing, several post-hoc analyses were conducted in an effort to provide further insight into the results and to examine the potential for additional relationships that were not part of the research model. These analyses, while not originally a part of this dissertation, are intended to offer a more fine grained understanding of the theoretical and practical implications of the relationships.

The first post-hoc analysis examined the relationship between the different dimensions of social mission and two additional stages of investments. As presented in Chapter II, VC firms invest in portfolio companies that are at different stages in their life-cycle. There are typically three stages, 1) seed/early stages, i.e., exploring ideas for which there are not yet developed commercial products or tested markets; 2) expansion stage, i.e., those established firms looking
to expand and/or improve current business practices and market share; 3) late stages, i.e., those with well-defined market and product characteristics, seeking to achieve an IPO or acquisition (i.e., positive exit). While the focus of this dissertation was on the seed/early stage investments, analysis was conducted on the two later stages to determine if they were related to the dimensions of social mission. Table 26 provides the results of the analysis conducted on each stage. These results reveal that there is no relationship between any of the social mission dimensions and expansion or late stage investing.

A second post-hoc analysis examined the relationships between the dimensions of social mission and two other VC performance measures, a) the ratio of active portfolio companies to

### TABLE 26
Results of the Standardized Regression Analysis for the Direct Effects of Expansion and Late Stages

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Expansion Stage</th>
<th>Late Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Equity Firm</td>
<td>-.072</td>
<td>.069</td>
</tr>
<tr>
<td>U.S. Based Firm</td>
<td>-.094^</td>
<td>.126*</td>
</tr>
<tr>
<td>Mission Statement</td>
<td>.013</td>
<td>-.057</td>
</tr>
<tr>
<td>Industry</td>
<td>-.219**</td>
<td>-.099^</td>
</tr>
<tr>
<td>Social Mission (General)</td>
<td>.021</td>
<td>.014</td>
</tr>
<tr>
<td>Social Mission (Environmental)</td>
<td>.065</td>
<td>-.109</td>
</tr>
<tr>
<td>Social Mission (Social)</td>
<td>.019</td>
<td>-.096</td>
</tr>
<tr>
<td>Social Mission (Governance)</td>
<td>-.067</td>
<td>.044</td>
</tr>
<tr>
<td>Social Mission (Product/Industry)</td>
<td>.004</td>
<td>-.045</td>
</tr>
<tr>
<td>Social Mission (Combined)</td>
<td>-.246</td>
<td>.274</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Expansion Stage</th>
<th>Late Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expansion Stage</td>
<td>.065</td>
<td>.07</td>
</tr>
<tr>
<td>Late Stage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| R²                          | .065            | .07        |
| ΔR²                         |                 |            |
| F                           | 2.79*           | 2.7*       |
| df                          | 359             | 358        |

^ < .1, * < .05, ** < .001

A second post-hoc analysis examined the relationships between the dimensions of social mission and two other VC performance measures, a) the ratio of active portfolio companies to
total companies invested in, and b) the ratio of failed portfolio companies to total companies invested in. Active portfolio companies refer to companies that are still active in the VC’s portfolio and are still going through various rounds of financing seeking to someday achieve a positive exit. Failed portfolio companies refer to those companies that went defunct and are no longer viable businesses. These analyses also examined the mediating relationship of early stage investments on the social mission-VC firm performance relationship for each of the two different performance measures in an effort to identify if the same relationship in H1 through H3 were present with these additional performance measures.

Hierarchical regression analysis was conducted and results are presented in Table 27 for the analysis with active VC firm performance as the dependent variable. The first step in this analysis was to enter the control variables into the model (Model 1). The next step was then to enter all five dimensions of social mission into the model with the control variables. As depicted in Model 2, while the overall model was significant (F = 12.36, R² = .237, p < .001), only governance (β = -.095, p < .05), product/industry (β = -.124, p < .05), environmental (β = .051, p < .1), and social (β = .08, p < .1) dimensions of social mission were significantly related to VC firm performance (exits). These results are contrary to those with Exits as the dependent variable, as both governance and product were positively related to Exits and social was negatively and not significantly related to Exits. Additionally, the social mission combined variable was used as an independent variable in separate regression analyses to allow testing of the new relationships with a unidimensional social mission construct. As depicted in Model 4 in Table 27, social mission combined was not significantly related to VC firm performance (β = .023, n.s.), but has a positive relationship.
To determine whether early stage investments were a mediator of VC performance (active) predicted by social mission, MacKinnon’s (2000) multiple mediation model, an extension of Baron and Kenny’s (1986) model for mediation was undertaken, where three separate regression equations were estimated. The first step involved identifying the direct effect between the five dimensions of social mission and early stage of investment, which was conducted in the first analysis for Model 1. The second step involved regressing the dimensions of social mission on early stage investments (see Early Stage model). The third step then involved regressing of the early stage variable on the VC firm performance variable (active) to ensure there is a significant relationship (Table 27, Model 3, $\beta = .263$, $p < .001$). This result is also contrary to those results with Exits as the dependent variable, as early stage investments are now positively related to the Active performance measure. The final step in this mediation process examined the effect of early stage on the social mission and VC performance relationship. Rather than performing separate regression analysis for each social mission dimension, a single regression was entered simultaneously for each dimension variable to correct for any multicollinearity among the variables. Results of this analysis (Table, 27, Model 3, $R^2 = .299$, $F = 15.244$, $p < .001$) indicate that social mission dimension governance was fully mediated (Table 27, Model 3, $\beta = -.049$, n.s.) as the coefficient became non-significant by including early stage investments in the model. Additionally, the social mission dimension product/industry was partially mediated (Table 19, Model 4, $\beta = .101$, $p < .05$). Partial mediation was indicated by the coefficient remaining significant, but being reduced with the inclusion of early stage investments. These results are identical (except for being in the opposite direction) to the results of hypothesis testing from H1 through H3, with Exits as the dependent variable.
TABLE 27
Results of the Standardized Regression Analysis for the Mediated Effectsa

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Early Stage</th>
<th>Firm Performance (Active)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Model 1</td>
</tr>
<tr>
<td>Private Equity Firm</td>
<td>.028</td>
<td>.013</td>
</tr>
<tr>
<td>U.S. Based Firm</td>
<td>.029</td>
<td>.007</td>
</tr>
<tr>
<td>Mission Statement</td>
<td>.134*</td>
<td>.098^</td>
</tr>
<tr>
<td>Industry</td>
<td>.136*</td>
<td>.146*</td>
</tr>
<tr>
<td>Social Mission (General)</td>
<td>-.127*</td>
<td>.032</td>
</tr>
<tr>
<td>Social Mission (Environmental)</td>
<td>-.165*</td>
<td>.051^</td>
</tr>
<tr>
<td>Social Mission (Social)</td>
<td>-.041</td>
<td>.081^</td>
</tr>
<tr>
<td>Social Mission (Governance)</td>
<td>-.174**</td>
<td>-.095*</td>
</tr>
<tr>
<td>Social Mission (Product/Industry)</td>
<td>-.090^</td>
<td>-.124*</td>
</tr>
<tr>
<td>Social Mission (Combined)</td>
<td>-.230**</td>
<td></td>
</tr>
<tr>
<td>Early Stage</td>
<td></td>
<td>.263**</td>
</tr>
<tr>
<td>R²</td>
<td>.138</td>
<td>.069</td>
</tr>
<tr>
<td>ΔR²</td>
<td></td>
<td>.038</td>
</tr>
<tr>
<td>F</td>
<td>4.35**</td>
<td>5.37**</td>
</tr>
<tr>
<td>df</td>
<td>358</td>
<td>361</td>
</tr>
</tbody>
</table>

a n = 373

^ < .1, * < .05, ** < .001
TABLE 28
Results of the Standardized Regression Analysis for the Mediated Effects

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Early Stage</th>
<th>Firm Performance (Fail)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Model 1</td>
</tr>
<tr>
<td>Private Equity Firm</td>
<td>.028</td>
<td>.013</td>
</tr>
<tr>
<td>U.S. Based Firm</td>
<td>.029</td>
<td>.007</td>
</tr>
<tr>
<td>Mission Statement</td>
<td>.134*</td>
<td>.098^</td>
</tr>
<tr>
<td>Industry</td>
<td>.136*</td>
<td>.146*</td>
</tr>
<tr>
<td>Social Mission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>-.127*</td>
<td>.046</td>
</tr>
<tr>
<td>(Environmental)</td>
<td>-.165*</td>
<td>-.041</td>
</tr>
<tr>
<td>(Social)</td>
<td>-.041</td>
<td>-.061</td>
</tr>
<tr>
<td>(Governance)</td>
<td>-.174**</td>
<td>.078</td>
</tr>
<tr>
<td>(Product/Industry)</td>
<td>-.090^</td>
<td>.075</td>
</tr>
<tr>
<td>(Combined)</td>
<td>-.230**</td>
<td>-.230**</td>
</tr>
<tr>
<td>Early Stage</td>
<td></td>
<td>-.062</td>
</tr>
</tbody>
</table>

R²                  | .138        | .069    | .126    | .142    | .145    | .126    | .131    |
ΔR²                 |             | .017    | .003    | 0       | .005    |         |         |
F                   | 4.35**      | 5.37**  | 13.02** | 6.58**  | 6.07**  | 10.42** | 9.084   |
df                  | 358         | 361     | 363     | 362     | 361     | 358     | 357     |

^ n = 373
^ < .1, * < .05, ** < .001
It is interesting to note, that inclusion of early stage investments into the model resulted in the social mission dimension environmental (Table, 27, Model 3, $\beta = .094$, $p < .05$); social (Table 27, Model 3, $\beta = .092$, $p < .05$), and social mission combined (Table, 27, Model 5, $\beta = .084$, $p < .05$) also became more strongly related and significant with the active VC performance measure.

The next post-hoc analysis examined the relationship between the dimensions of social and the failed VC performance measures. As presented in Table 28 none of the dimensions of social mission were significantly related to the failed performance measure. Additionally, early stage investing was not significantly related to the failed performance measures.

The results presented in Table 20 in the formal hypothesis testing of H1 through H3 revealed that the social mission dimensions of environmental, social, and combined became more strongly (although remaining negatively) related to the VC performance (exits) when early stage investments was entered into the model. These results provide some indication that for these dimensions, early stage investments may act as moderator and not a mediator. Given these results, the next post-hoc analysis examined whether early stage does moderate the relationship between the three dimensions of social mission (environmental, social, and combined) and VC firm performance (exits).

Table 29 presents the results of this post-hoc analysis for the moderating effect of early stage investments. Hierarchical regression was conducted to identify the relationships of interest. As indicated in Model 3 (Table, 29, Model 3, $R^2 = .305$, $F = 17.47$, $p < .001$) the interaction between the social mission dimension social and early stage investment was significant (Table, 29, Model 3, $\beta = .138$, $p < .05$). Given these findings, an additional regression was conducted to examine the social-early stage interaction exclusively. Results again, indicate that the interaction is positive and significant (Table, 29, Model 5, $\beta = .131$, $p < .001$).
### TABLE 29
Results of the Standardized Regression Analysis for Post-Hoc Moderation Effects

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private Equity Firm</td>
<td>-.004</td>
<td>-.001</td>
<td>.002</td>
<td>.000</td>
<td>.001</td>
<td>-.001</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>U.S. Based Firm</td>
<td>.103*</td>
<td>.111*</td>
<td>.104*</td>
<td>.108*</td>
<td>.102*</td>
<td>.108*</td>
<td>.102*</td>
</tr>
<tr>
<td></td>
<td>Mission Statement</td>
<td>-.202**</td>
<td>-.173**</td>
<td>-.177**</td>
<td>-.168**</td>
<td>-.168**</td>
<td>-.171**</td>
<td>-.180**</td>
</tr>
<tr>
<td></td>
<td>Industry</td>
<td>-.346**</td>
<td>-.289**</td>
<td>-.271**</td>
<td>-.314**</td>
<td>-.307**</td>
<td>-.297**</td>
<td>-.278**</td>
</tr>
<tr>
<td></td>
<td>Social Mission (Env)</td>
<td>-.109*</td>
<td>-.114*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Mission (Social)</td>
<td>-.095*</td>
<td>-.070</td>
<td>-.104*</td>
<td>-.078^</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Mission (Com)</td>
<td></td>
<td></td>
<td>-.102*</td>
<td>-.084^</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early Stage Investment</td>
<td>-.288**</td>
<td>-.285**</td>
<td>-.268**</td>
<td>-.270**</td>
<td>-.284**</td>
<td>-.262**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early x Environmental</td>
<td></td>
<td>.041</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early x Social Mission (Social)</td>
<td>.138*</td>
<td>.131**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early x Social Mission (Com)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.100*</td>
</tr>
</tbody>
</table>

| R²                  | .196 | .284 | .305 | .273 | .290 | .272 | 281 |
| ∆R²                 | .089 | .021 | .078 | .017 | .077 | .009 |
| F                   | 22.09** | 20.43** | 17.47** | 22.64** | 21.01** | 22.52** | 20.12** |
| df                  | 363  | 360  | 358  | 361  | 360  | 361  | 360 |

a n= 367

^p<.1, * p<.05, **p<.001
Additionally, analysis was conducted for the unidimensional measure of social mission. Findings reveal that the social mission (combined) – early stage interaction was positive and significant (Table, 29, Model 7, $\beta = .100$, $p < .05$). These results indicate that for the unidimensional measure of social mission and the social mission dimension social, early stage positive moderates the relationship with VC performance (exits).

To aid in the interpretation of the interaction effect of early stage investment on social mission (social and combined) and VC performance relationship a graphical representation is provided in Figure 12 and Figure 13 respectively. Based on the graphical depiction in Figure 12, it is shown that as the amount of early stage investments rises, performance increases slightly with a higher degree of social mission.

FIGURE 12
Moderating Effect of Early Stage Investments on the Association between the Social Dimension of Social Investing and VC Firm Performance (Exits)

![Graph showing the moderating effect of early stage investments on the association between the social dimension of social investing and VC firm performance (exits).]

Figure 13 provides similar results, but in a much more dramatic fashion as the slope is significantly higher for both smaller and larger amounts invested in early stage investments. Again, with higher degrees of social mission and larger amounts of early stage investments, performance increases.
A final post-hoc analysis was conducted to examine whether the relationships between the different stages of investments (early, expansion, and late) and the three VC performance measures (exits, active, and failed) had significant and negative relationships with exits performance. All stages also had positive relationships with active performance, although, only early (Model 4, $\beta = .342, p < .001$), and expansion (Model 4, $\beta = .156, p < .05$) stages had significant relationships. Finally, there were no significant relationships between all three stages and failed performance.

Results of the post-hoc analysis revealed early stage investments, which mediated the relationship between some dimensions of social mission and VC firm performance (exits), moderated the relationship for other dimensions, such that when the amount of early stage investments increased performance increased. Additionally, the post-hoc analysis identified significant and positive relationships between certain dimensions of social mission and the active VC performance measure. Finally, there was a negative relationship with VC performance (exits) no matter the stage and a positive relationship for active performance, with all three stages. These results provide a further insight into how firms with a social mission design their strategy.
### TABLE 30
Results of the Standardized Regression Analysis for the Direct Effects of Investment Stage on VC Performance

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Firm Performance (Exits)</th>
<th>Firm Performance (Active)</th>
<th>Firm Performance (Failed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
</tr>
<tr>
<td>Private Equity Firm</td>
<td>-.005</td>
<td>.001</td>
<td>-.019</td>
</tr>
<tr>
<td>U.S. Based Firm</td>
<td>.102*</td>
<td>.101*</td>
<td>-.110*</td>
</tr>
<tr>
<td>Mission Statement</td>
<td>-.200*</td>
<td>-.174**</td>
<td>.163**</td>
</tr>
<tr>
<td>Industry</td>
<td>-.344**</td>
<td>-.345**</td>
<td>.367**</td>
</tr>
<tr>
<td>Early Stage</td>
<td>- .361**</td>
<td>.342**</td>
<td>.084</td>
</tr>
<tr>
<td>Expansion Stage</td>
<td>-.143*</td>
<td>.156*</td>
<td>.024</td>
</tr>
<tr>
<td>Late Stage</td>
<td>-.108*</td>
<td>.084</td>
<td>-.054</td>
</tr>
</tbody>
</table>

|                      | R²                        | .438                       | .527                      | .444                     | .526                     | .354                     | .365                      |
|                      | ∆R²                       | .086                       | .08                       | .008                     |                          |                          |                          |
|                      | F                         | 21.45**                    | 19.71**                   | 22.18**                  | 19.66**                  | 12.93**                  | 7.86**                   |
|                      | df                        | 362                       | 359                       | 362                      | 359                      | 362                      | 359                      |

\[a n = 373\]

\[^{^\wedge} < .1, * < .05, ** < .001\]

**Summary**

The purpose of this research was to examine the effect of having a socially related mission on organizational strategy, structure and firm performance in the venture capital industry. This chapter offered the research findings and analysis from the statistical testing of the proposed hypotheses. Overall, results showed that three of the main hypotheses were partially supported and one did not receive support (see Table 31 for summary). The data also supported a moderated mediation model, though not for all the hypothesized relationships.
Hypothesis 1 was supported as two of the five dimensions of social mission (governance and product/industry) were positively and significantly related to VC firm performances. This may be related to the more general nature (rather than focus on niche investments) of those dimensions, therefore a larger number of firms may include this type of language in their mission statements. Hypothesis 2 was not supported by the results as the four significantly related dimensions of social mission to early stage investments were negatively related. This provides some initial indication that even social VC firms are likely to diversify their investments across different stages of investments and may not solely focus on seed or early stage investment opportunities. Hypothesis 3 was supported as early stage investments did fully mediate the relationship between governance and VC firm performance (exits) and partially mediated the product/industry - VC firm performance relationship. Although, it should be noted that the mediating relationships in both cases were negative, indicating that as investments in early stage opportunities increased VC firm performance decreased.

Hypothesis 4 had three sub-hypotheses focusing on different aspects of firm structure. Hypotheses 4a, 4b, and 4c were not supported. Although, both size and network did have an
interaction effect, the effect was negative in both cases. This negative relationship most likely occurred because of the negative relationship that early stage investments had with VC firm performance. It was interesting to find that while size did not have a curvilinear relationship; size did have an interaction effect. Specifically, as early stage investments increased performance decreased for the three groups of larger firms. Alternatively, for the smallest sized firms, as early stage investments increased performance also increased.

Finally, this investigation did find support for the overall moderated mediation model for the indirect effect of social mission through organizational strategy on VC firm performance, which was conditionally based on the moderating effects organizational structure. While not as predicted in the hypothesized relationships, the overall model provides support for the more generalized assumption that both strategy and structure do matter in terms of firm performance in the context of VC firms.

In the next chapter, Chapter V, the research findings are discussed in relation to the theoretical arguments presented in Chapter II.
CHAPTER V

DISCUSSION

Introduction

The objective of this investigation was to empirically determine if there was a relationship between a firm’s social orientation (as measured by mission statements), organizational strategy, structure and firm performance in the context of venture capital firms. This chapter provides a discussion of the findings presented in Chapter IV, along with conclusions, implications, limitations, and recommendations for future research.

Overall, the results presented in Chapter IV support the central thesis concerning the positive association between a firm’s social orientation and VC firm performance. Specifically, results reveal that certain aspects of a socially related mission had a positive association with firm performance. Results also indicate that both organizational strategy and structure are important factors in VC firm performance. In addition to these main findings, other post-hoc tests and findings reveal further insights on the association between a firm’s social orientation and performance.

In the remainder of this chapter, the main findings of this investigation are first discussed, along with additional insights from the post-hoc findings. Potential contributions to this area of research and to managers are presented next. Finally, limitations of the research are addressed and directions for future investigations on the topic are provided.

Discussion of Main Findings

Before discussing this research’s main findings, I briefly recapitulate this study’s central thesis so that the results may be meaningfully discussed and interpreted from an appropriate
theoretical and a methodological perspective. After a brief outline of the study’s central thesis, findings are discussed for each hypothesis. Results from the post-hoc analysis are used to explain the results if they were contrary to hypothesized expectations. A revised model is provided based on the results of the hypothesis testing and the post-hoc analysis.

Apart from traditional expectations that organizations only focus on profits is the fact that they deliberately pursue socially innovative strategies directed at social and environmental well-being. These socially innovative organizations (venture capital firms) adopt missions driven by both social and economic values, however, it is expected that firms do not stop there, but must implement their strategy and adapt their structure to achieve performance goals that are based on social, environmental and economic values. Of interest in this investigation, therefore, was to identify if and how socially innovative VC firms design their organizational structures and strategies for effective performance. Therefore, the primary research question was:

What is the role of strategic and structural factors in the performance of socially innovative (engagement in socially responsible investing) venture capital firms?

The mission statements of a population of for-profit venture capital firms were examined to identify how socially responsible investing can affect both economic and social performance. Since traditional financial measures of performance may not be appropriate or directly related to the socialness of a firm’s mission statement, it was important to select an outcome variable that was more directly linked to the diffusion of social innovation. Specifically, the performance measure focused on the success of the social enterprises that a social VC invests in (i.e., positive portfolio firm exits). It is assumed that the more social the mission statement (social mission), the more likely that the VC will invest in social enterprises. If the social enterprise being invested in is successful, the VC is not only supporting the spread of social causes and innovation, but is also meeting their social and economic goals.
Theoretical support for examining social innovation at the organizational level was drawn from Chandler’s (1969) design school. This framework highlights how strategy emerges from a planned and explicit mission based on certain goals that are necessary to focus efforts and define the organization (Mintzberg, 1990). Various organizational structures may be used to successfully implement strategies. The ability to select a relevant strategy and match it with the appropriate structure is a characteristic of a firm’s effective strategic processes (Olson, Slater, & Hult, 2007). Firm structure specifies the work that needs done and how to do it given the firm’s strategy (Donaldson, 2001). Hence, both strategy and structure affect firm performance.

Building from the design school perspective, the theoretical model (see Chapter IV, Figure 9) indicates that the organizational (social) mission will have a direct effect on a firm performance (i.e., performance of a portfolio company). While the traditional strategic paradigm highlights that organizational mission can influence performance (Porter, 1980; Pearce & David, 1987; Bart & Baetz, 1998), there is little discussion on how it can influence performance when measured across a blended value orientation. The theoretical model proposed that a social mission would have a direct effect on organizational strategy. Further, as strategy and structure both influence the way in which an organization operates, its capabilities, and the functional depiction of the organizations strategy (Miles, Snow, Meyer, Coleman, 1978), it was proposed that organizational strategy would mediate the relationship between social mission and firm performance. Finally, drawing from an understanding that new organizations may have certain limitations and liabilities (Freeman, Carroll, & Hannan, 1983) and that adoption of socially innovative strategies, structures, and performance measures is itself a new opportunity (even if the organization is not new in the traditional sense), it is reasonable that certain structural factors relating to the newness of these organizations (and this new blended business model) may also
influence the strategy, structure, performance relationship. Specifically, drawing from a liability of newness perspective (Freeman, Carroll, & Hannan, 1983), factors such as organizational size and age were proposed to moderate these relationships. Additionally, given the fact that collaboration is seen as a primary success factor for social innovation (Mulgan, 2007) it is also reasonable that the organization’s network may moderate the relationship between strategy, structure and organizational performance. Through collaboration, these organizations may be able to draw from their network to overcome the liabilities that are inherent in entrepreneurial and socially innovations organizations (Granovetter, 1973).

The following sections present the results from testing each hypothesis, inconsistencies that emerged, and the insights gleaned from additional post-hoc analysis.

Social Mission and Performance

Hypothesis 1 addressed the relationship of a social mission and firm performance (positive portfolio firm exits). Social mission was measured as a multi-dimensional construct consisting of five dimensions related to social investing (environmental, social, governance, general, and product/industry). Results from the hierarchical regression analysis revealed that two dimensions of social mission (governance and product/industry) had a significant and positive relationship with VC firm performance, indicating support for Hypothesis 1. These results are in line with the central argument that strategic orientation (mission) would influence performance and support for only two dimensions is not necessarily surprising. There are two potential factors for the inconsistency between the results and the proposed hypotheses: a) broad terminology of key word lists and b) life span of VC investments and VC funds. The first, relates to the key word lists used to measure each dimension of social mission. A reexamination of the
key word lists for each dimensions (see Table 6, Chapter III) revealed that the dimensions could be broadly grouped together by terms. The first group (environmental and social dimensions) relate to very niche markets and VC firm orientations, consisting of such words as environmental, clean-tech, air pollution, energy storage, hybrid, water purification, social enterprise, urban planning, affordable housing, diversity, underserved to name a few. These terms would relate to very specific niche markets and may not generalize to a large population of the VC firm sample. Alternatively, the second grouping of dimensions (governance and product/industry) include more general terms that could even be included in the mission statements of VC firms that may not have a social orientation, i.e., compensation, shareholders, stakeholders, top management, disclosure, governance, strategic direction, healthcare, and medicine. It reasonable that these more general terms might be included in the mission statements of a broad range of VC types, not just those that are socially oriented. For example, included in the VEIC industry classification, is a code for the healthcare industry. Therefore, VC firms that invest in portfolio companies that are related to this industry could potentially include the term healthcare in their mission statement (a term included in the product/industry dimension), but these firms may not be socially oriented.

A second factor, life span of VC investments and VC funds, combined with the first issue of the broadness of terms offers a promising explanation for the results of the hypothesis testing. The life span of VC investments is typically between three to five years and the typical life span of a VC fund is around 10 years. Given this lifecycle, prior VC research has generally chosen a five to ten year time period prior to the date of the investigation in order to allow for a portfolio company to go through the entire lifecycle process (Sahlman, 1990; Hsu, 2006, Hochberg et al., 2007; Lindsey, 2008; Li, 2008; Dimov & Milanov, 2010). Additionally, VC funds make most of
their investments within first three years of the funds start, so without this interval there may not
be enough time for a portfolio company to exit the investment. As the advent of social VC is a
relatively new phenomenon (within the last 10 years (Miller & Wesley, 2010)), it was important
to capture all VC firms up to the present, in order to avoid the risk of having a very limited
sample of socially oriented firms for investigation. Based on this lifecycle issue and the fact that
social VC is a relatively new phenomenon, it is reasonable that more socially oriented firms (i.e.,
those that operate in niche markets and include specific terms in their mission statement), may
not have gone through the full lifecycle process and not had the exits that older more established
firm would have. Therefore, these more social firms would be less or negatively related (as
found in the results) to the exit performance measure, whereas those more general dimensions
would include a broader range of firms that are older and have had the chance to go through one
or several fund lifecycles.

As noted, environmental and social dimensions actually had negative, albeit non-
significant, relationship with VC performance (exits). Given these results and the potential of
time being a factor, a post-hoc analysis was conducted using the active and failed performance
measures as the dependent variables. The results of these analyses revealed that the governance
and product/industry dimensions of social mission were negative and significantly related to
performance among firms maintaining a higher ratio of active portfolio companies.
Alternatively, the environmental and social dimensions were positive and significantly related to
performance among firms currently managing a higher ratio of active portfolio companies. It
should be noted that no significant relationships were found between any of the social mission
dimensions and the failed performance measure. These results support the argument that the
more socially oriented the VC firm is, the more likely it is that they have not had to the time to
go through the full lifecycle process (because these firms are younger) and, therefore, not had the positive exits that older and more established firms (captured in the broader dimensions of social mission) would have. These results also indicate that being more socially oriented does not lead to failure or bad performance. Thus, these findings provide support that research on the performance of social VC’s in its infancy and will need to be revisited in the future after allowing for the complete lifecycle process to occur.

Social Mission and Organizational Strategy: Stage of Investment

While social missions may have a direct relationship with organizational performance, it was proposed that that social missions guide organizational strategies. Socially innovative venture capital firms, follow similar review and investment processes as other venture capital firms (Reandjelovic et al., 2003; Silby, 1997). These investment decisions include reviewing new investments to determine if they meet the venture capitals firm’s investment criteria. A primary decision that these firms make is about the stage of investment they will commit investments toward. As the goal of social innovation is to identify new alternatives to existing conditions, it is reasonable that these new ideas will emerge in the realm of new products/services or markets that have not been fully developed. The relevance of the new stage of investment therefore becomes very important for social VC firms. While existing products/services may provide less risk for the venture capital firm and their stakeholders, they may not deliver (social) values that socially oriented VC’s are seeking. Therefore, Hypothesis 2 proposed that social VCs will focus their investment decisions toward earlier-stage investments to enable and realize their social goals.
The results from the hypothesis testing did not support hypothesis 2 as four of the dimensions of social mission (general, environmental, governance, and product/industry) though significantly related to seed/early stage investments, had a negative relationship. These results indicate that as the socialness of the mission increases the amount invested in early stage investments decreases, the opposite of the hypothesized relationship. A post-hoc analysis was conducted to determine if any of the dimensions had a positive relationship with other investment stages, i.e., expansion or late stages. The results of the two regression analyses with expansion and late stage as the dependent variable revealed no significant relationships between any of the social mission dimensions and either of these other stages of investments. It was interesting to note that the dimensions general, environmental, social, and product/industry showed positive associations with expansion stage, although they were non-significant.

A possible reason for these results could stem from the idea of identifying new and emergent solutions (Mulgan, 2006) in social innovation and prior VC research suggesting that VC firms often maintain a specialization in a single stage or several connected stages in order to control for risk (Bygrave, 1987; Norton & Tenenbaum, 1993). The results, however, indicate that as a VC firm’s social orientation increases (by an increase in extent of social mission) they opt for a strategy based on diversification in order to reduce unsystematic risk (MacMillan, Siegel, & Narasimha 1986). This diversification strategy would include spreading investments over several different stages, industries, markets, and/or firms. Additionally, a diversification strategy in investment stage may not necessarily be a wholly intentional strategy, but one driven by the potential opportunities for investment themselves. Under this scenario a VC firm would make investment decisions, not necessarily based on risk or specialization, but on the fit with the mission and goals of the VC firm. Research on VC investment selection criteria time and again
supports the notion that fit should be and is a primary criteria used in the decision making process (MacMillan et al., 1986; Muzyka et al., 1996; Shepherd et al., 2000; Tyebjee and Bruno, 1984; Wright et al., 1997). Therefore, if a socially related opportunity presents itself, a socially oriented VC firm might choose to make an investment in that opportunity, not because it fits with prior investments, but because the opportunity fits with the firm’s mission. While it was argued that social innovations in the context of VC might be seen more in seed or early stage investments, it is worth noting that all venture capital investments are considered young investment in entrepreneurs trying to create new products, services, and markets (Gompers & Lerner, 2001). Therefore, entrepreneurs and social VCs may still be engaging in social innovation even in later stage investments.

Discussion of Mediators: Organizational Strategies (Stage of Investment)

An important area of discussion that stems from the regression results is the observed impact of the mediating variable investigated in the study. According to Baron and Kenny, a mediator is a third variable that intervenes between the independent and dependent variables (1986). A mediator accounts for the relationship between the independent variable (social mission) and dependent variable (VC firm performance exits), either fully or partially. Theoretically, a mediator facilitates the relationship between the other two variables (Hair et al., 2006). Strategies often follow an a priori goal (Mintzberg & Waters, 1985) or mission (Slater et al., 2006). Socially innovative organizations will seek opportunities that are consistent with their social mission and adopt organizational strategies that align with their social mission. Thus, the content of strategy is generated from organizational goals and missions (Mintzber, 1990) and is operationally transmitted to organizational performance (Venkatraman, 1989). Hence, firms
select strategies that align with the organization’s mission in order to achieve superior performance. This transmission relationship implies that organizational strategy is an important mediator between mission and performance. Social mission was proposed in Hypothesis 3 to be positively executed via early stage investment strategies and more likely to lead to superior performance.

Results of the mediation testing revealed that Hypothesis 3 was supported as two of the social mission dimensions (governance and product/industry) fulfilled the requirement for mediation, i.e., a direct relationship existed between the independent variable and the dependent variable (Baron & Kenny, 1986). The social mission dimensions that were mediated potentially had a significant relationship with the exit performance measure possibly due to the broadness of some key words and the portfolio company lifecycle issue.

It was interesting to find that there was inconsistent mediation, as the relationships between the indirect effects and direct effects had opposite signs (Mackinnon et al., 2000). Specifically, there were negative relationships for both the social mission dimensions - early stage relationship and the early stage – performance relationship, whereas there were positive relationships between the two social mission dimensions and performance relationship. This inconsistent mediation, in addition to strengthening the relationship between environmental and social dimensions and VC performance, indicated that early stage investments may be a suppressor variable that is helping to remove irrelevant predictive variance from the social mission – VC performance relationship.

To further examine the reasoning behind this inconsistent mediation, specifically the negative relationship between investment stage and performance, a post-hoc analysis was conducted to determine if different stages had similar relationships with VC performance and to
identify whether the relationships were the same for different VC performance measures (active and failed). The results indicated that all investment stages had a negative relationship with the VC performance (exits). Additionally, all stages had a positive relationship with the active performance measure and no significant relationship with the failed performance measure. These post-hoc results offer some perspective on the negative relationship of early stage investments and the possibility of strategy being a suppressor variable rather than a true mediator. These results indicate that even though stage of investments may be a factor in explaining firm performance, there are other more important factors. Hence, the value of this variable lies in its role in helping to clarify (i.e., remove irrelevant predictive variance) the relationship between a VC firm’s strategic orientation and their performance.

This idea (that stage of investment, while important to firm performance, is more valuable in the clarification of other relationships) finds support in prior research on the evaluation criteria used for investor opportunities. Several studies have identified other and more important factors in the performance of a portfolio company besides the investment stage (Tyebjee & Bruno, 1984; Fried & Hisrich, 1994; Gompers, 1995; Dimov, Shepherd, & Sutcliffe, 2007). Thus, research on VC investment criteria reveals that factors such as the quality of portfolio company management, the market trying to be penetrated, market niche/position, and the expected rate of return are much stronger predictors of portfolio company performance, and therefore VC performance, than investment stage. Interestingly, although investment stage is often found on the list of criteria used in VC investments decisions, it does not appear in the top five factors and often not even in the top ten, in terms of what is most important in making investment decisions (Tyebjee & Bruno, 1984; Fried & Hisrich, 1994; Gompers, 1995; Dimov, Shepherd, & Sutcliffe, 2007). Given this prior research, it is somewhat reasonable to assume that
stage of investment may be one type of strategy a VC decides to focus on, but is not the most important in terms of predicting performance.

As the relationship was strengthened when early stage was entered into the regression equation for both the environmental and social dimensions of social mission with VC performance, another post-hoc analysis was conducted to determine if early stage may be acting as a moderator. Results of this analysis revealed that for the social dimension as well as for the combined dimension, early stage positively moderated the relationship between social mission and performance, such that with larger amounts of early stage investments, performance increases for more socially orientation firms. These results support the argument that stage of investment is not the most important strategy in predicting performance, but does interact with other firm attributes to influence VC performance.

Discussion of Moderators: Age, Size, Network

The design school recognizes the importance of organizational context (Mintzberg, 1973; Chandler, 1962). Researchers posit that strategy is not universally superior (Venkatraman, 1998) and that other factors, such as environment, organizational context, or structure interact with organizational strategies to influence performance (Harrigan, 1983; Hofer, 1978; Ginsberg & Venkatraman, 1985). Some organizational structure attributes can also be determined by managerial discretion and can be formed to fit with strategies, others cannot be altered. Many organizations actively management both of these factors in an effort to realize their strategic goals and missions (Mintzber & Waters, 1985). Specific structural components interact with organizational strategies. For example; structural components such as age, size, and network are found to interact with organizational strategies and influence performance (Stinchcombe, 1965).
Similarly, factors such as age, size, and network can affect the ability of firms to diffuse social innovations. Research has also exhibited that organization size, age, and networks in venture capital firms often influence firm success (Kaplan & Schoar, 2005).

Younger firms suffer from liability of newness and low legitimacy (Stinchcombe, 1968). Likewise, organizational failure rates have been found to be negatively related to age (Carroll & Delacroix, 1982). The effect of age is often due to both external factors (such as low levels of legitimacy and the ability to develop strong network relationships with key environmental constituencies) and/or internal process (such as the ability to mutually coordinate roles, responsibilities, and strategies within the organization) (Singh, Tucker, & House, 1986). As organizations grow older, they are more likely to develop those stronger relationships and become part of the external power hierarchy and gain endorsement by other key actors in the field (Stinchcombe, 1968), thereby gaining legitimacy. This legitimacy can increase their access to necessary resources for building capacity to support organizational goals. This logic holds true in the venture capital industry, where older VCs have more skills and experiences and in turn experience significantly higher levels of performance (Kaplan & Schoar, 2005; Hochberg, Ljungqvist, & Lu, 2007). As a VC gets older it is able to participate in more rounds of funding, invest in more portfolio companies, and cumulate more total returns. During this process, VC firms develop networks, thus gaining access to resources. Network development and working with other VCs in the industry helps to enhance a VC’s reputation. In addition, VC firms that have made successful investments in the past are more desirable syndication partners (Lerner, 1994) and thus have access to more deals. All of these are functions of experience, which is a correlate of age. Thus, Hypothesis 4a stated that age would moderate the stage of investment - performance, such that as the firm got older performance would increase.
Results were not in line with expectations and did not support the hypothesized (H4a) interaction of age and stage of investment on VC firm performance. Though the interaction relationship was not supported, it should be noted that age did have a strong positive and significant direct effect on VC firm performance. This finding is consistent with the liability of newness argument discussed above, e.g., as the firm gets older it is likely to develop stronger relationships, build robust networks, participate in more syndication, and gain greater access to resources, thereby increasing legitimacy, all of which have been found to have positive effects on performance (Stinchcombe, 1968). The fact that the interaction between stage of investment and age was not significant provides some evidence that even though age can influence performance; stage of investment does not necessary vary with age. Drawing on the prior discussion relating to the diversification and specialization strategies (Bygrave, 1987; MacMillan et al., 1986), a firm may choose either of these strategies and while they may have greater success as they gain more experience and get older, performance, due to investing in any given opportunity, is independent of age. The success of an investment is related to the attributes of that specific opportunity and not contingent on the age of the firm (Norton & Tenenbaum, 1993).

Hypothesis 4b proposed that the size of a firm would moderate the stage of investment – performance relationship, such that the relationship would be curvilinear. Results of the analysis did not support a curvilinear relationship, but did support a linear moderation relationship. More specifically, there was a negative moderating relationship; as size increased and early stage investments increased, performance decreased. The interaction occurred between the first (the smallest sized firms) and second quartile, whereas when early stage investment increased for the smallest firms, performance also increased. This first quartile consisted of firms that have committed capital of less than $20 million. These results provide insight that early stage
investments may be better for smaller firms. While not statistically supporting a curvilinear relationship, conceptually, the take-a-way is that while VC firms may not purposefully control their size, as posited in Chapter II, there is a point at which the firm performance for early stage investments declines as the firm grows in size.

This finding conceptually supports prior VC research that while increases in size are important and are significantly and positively related to increases in performance, the relationship is concave (Kaplan & Schoar, 2005; Hochberg, Ljungqvist, & Lu, 2007). While there are several potential reasons for the negative interaction of size on the early stage-performance relationship, one plausible explanation again draws on the potential that larger firms maintain diversified portfolios by including very high risk early stage investments that provide minimal rewards (MacMillan, Siegel, & Narasimha 1986) and the need for smaller firms to gain legitimacy (Kaplan & Schoar, 2005; Hochberg, Ljungqvist, & Lu, 2007). Larger firms can afford to take on higher risk and losses are not as severely felt because they are more diversified across many stages, industries, and firm. Alternatively, smaller firms only have access to a limited number of investments, but may be more careful in the ones they choose to invest in. This selectiveness by smaller firms in turn may be necessary to develop stronger relationships, become part of the external power hierarchy, gain endorsement by other key actors in the field, and thereby gain legitimacy (Stinchcombe, 1968), which only comes from success.

The final moderating relationship, Hypothesis 4c, stated that a VC firm’s network will moderate the stage of investment – performance relationship, such that as firm network increases, performance will increase. This hypothesis was based on multiple findings in prior research, that a firm’s network is significant not only for performance, but also for access to information (new opportunities), access to capital, and the development of their reputation (a key
factor in VC performance) (Dimov & Milanov, 2010). Firms build their networks through experience and industry connections as well as their current and past investments with other firms. VCs also draw on their networks of service providers—head hunters, patent lawyers, investment bankers, etc. to help their portfolio companies succeed (Gorman & Sahlman, 1989). Many VCs demonstrate a preference for networks rather than arm’s-length, singular transactions (Lindsey, 2008; Hsu, 2006). The better-quality relationships and more influential network positions allow greater access to investment opportunity sets and access to information, essential factors in VC performance (Lindsey, 2008). Networks facilitate the sharing of information, contacts, and resources among VCs (Bygrave, 1987), for instance, by expanding the range of customers or strategic alliance partners for their portfolio companies. No less important, strong relationships with other VCs likely improves the chances of securing follow-on VC funding for portfolio companies, and may indirectly provide access to other VCs’ relationships with service providers. In addition to the numerous benefits that networks have for VC firms, they also fulfill a key success factor in the capacity building and collaboration necessary to support scalability of social innovations.

Results of the analysis for the moderating relationship of firm networks revealed that firm networks did significantly moderate the relationship, albeit negatively. This negative relationship appeared to be statistically produced because of the negative relationship that early stage investments had with performance, as networks had a significant and positive direct effect on VC firm performance. While there is an interaction, due to a greater slope of those firms with larger networks, as investment in early stage investment increases performance decreases for firms with large and small networks. Once again, a potential reasoning for these results is that stage of investment may not be as important, and the fact that these early stage investments may not have
had the opportunity to exit. Therefore, the size of the network would not necessarily have a positive interaction effect because early stage investments have not yet reached an exit stage. This inconsistency is therefore most likely a function of the negative effect of early stage investments on firm performance. It is still likely that syndication is a good strategy for VC firms and working to grow that network will often lead to new and better investment opportunities and performance.

Moderated Mediation Model

While not formally hypothesized, analysis of the full model was conducted based on the results from the hypothesis testing, meaning only the significant relationships identified in the formal hypothesis testing were included in the analysis. The results of this analysis did support the moderated mediation model, whereby social mission (governance dimensions only) had an indirect relationship with VC performance (exits) through the organization strategy of early stage investments, which then varied by the conditional effect of firm size. The rationale for excluding other variables of interest have been previously discussed and are not reiterated here, but what is important is that this model supports the overall argument that a firm’s strategic (social) orientation will guide its strategy and that aspects of organizational structure will then interact with the firm’s actual strategy to influence firm performance. Hence, both strategy and structure are important elements in predictability of overall firm performance for socially innovative firms.

Revised Model and Summary of Findings

Based on the originally proposed hypothesis, results of the hypothesis testing, and the
explanations of some inconsistencies, two new models are presented in Figure 14 and 15 showing the relationship between a unidimensional and multi-dimensional social mission construct, firm strategy, structure, and performance, respectively. Propositions are also offered to help explain these new models and provide direction for future research.

FIGURE 14
New Model with Unidimensional Social Mission Construct

The overarching take-a-way, consistent with prior design research, is that both strategy and structure matter for performance, even in socially innovative firms. When VC firms choose to engage in social innovation, the process appears to be quite similar to firms seeking financial success. Thus, they need a clearly articulated starting objective (such as having a social mission) and end goal (such as social, environmental, and economic performance). The actual implementation of social innovation objectives can occur through appropriate firm structures and strategies. Social innovation needs requisite architecture at the firm level through which it can be channeled and realized, such as the active involvement in the growth of and inclusion in external networks.
FIGURE 15
New Model with Multi-dimensional Social Mission Construct
A primary finding is that social firms need more time to go through the VC lifecycle before it is possible to make accurate predictions about their overall performance. Allowing portfolio companies to go through the entire lifecycle process is imperative in examination of their success, because if examined before this process is complete, the portfolio company will not have had enough time to exit the investment fund; therefore no hard performance indicators would be available. Thus;

P1: Socially innovative VC firms that have not had the opportunity to go through the entire VC lifecycle process will have a negative relationship with VC firm performance (exits).

Theoretically and methodologically, research on social investing in the capital market is in its infancy and there is much new terrain to explore and understand. For example, not much is known about the varied dimensions of social mission or if these differences matter. As previously discussed, variation among the dimensions may have been a result of the differences in age, size, and even experiences (more general firms investing across a broad range of industries and opportunities vs. specialized firms that operate in niche markets). The firms that operate in niche markets are likely to include language relating to their specific investments and are often smaller and younger; while the generalist firms are larger and more established, and do not include such specific language as they intend to appeal to a broader and more diverse audience. Additionally, generalist firms (despite including broad and general socially related language) may not actually have any social orientation. Alternatively, highly socially orientated firms that utilize very specific language may suffer from the previously mentioned lifecycle constraints, which offer a likely explanation for the variation in performance for firms with different dimensions of social mission. Therefore, these results point to the need for further research to examine within-group differences among social firms. For example, more firms
(including older, larger, established, and non-socially oriented firms) may be including language in their missions that promotes social aspects to appeal to broad stakeholder views. Whereas, those same firms may not be including language that would only be relevant to very specific socially oriented investments.

There is recent support for this notion that sustainability in the financial service (which VC is included) comes in the form of governance, accountability, and broadening the stakeholder view (Eccels & Serafeim, 2013). In their 2013 Harvard Business Review article, Eccels and Serafeim highlight that in the financial services sector, fringe corporate social responsibility programs (e.g. recycling programs, energy efficient lighting, etc.) result in neither sustainability nor societal impact. Rather, it is attributed to the disclosure, accountability, and responsibility of the products and services these institutions are providing (i.e. governance). If this is the case (i.e., more generalized VC firms are trying to adopt a governance based form of social investing), then research on social investing needs to be more precise in its intent, i.e., focus on those firms that are actually investing in socially innovative ideas and individuals or those firms that invest in all types of ventures, but also believe that governance and stakeholders are important. This clear difference in what is meant by social investing provides further support to examine the environmental, social, and governance (ESG) categories of social investing as a multi-dimensional construct, with each dimension having very different meanings, strategies, and outcomes. Thus;

P2: The strategies, structures, and outcomes of socially innovative VC firms will vary due to differences in socially innovative foci.

A final significant outcome of the results of this investigation relates to the strategies that social VC firms choose to engage, in order to achieve their goals. To reiterate, this study focused on investing in a certain stage of investment as a logical extension from the firm’s social
mission. The results seem to support an alternative strategy based on diversification and not specialization, i.e., spreading investments over several different stages, industries, markets, and/or firms rather than having a singular focus on one specific stage, industry, or market. The findings related to a non-specialized strategy are consistent with the fact that social innovation and innovators need to allow for opportunities to arise from a more emergent path (Moulaert et al., 2005). Socially innovative firms have a mission to support and develop social wellbeing, although the path to that wellbeing may come from very different opportunities. Therefore, it is necessary to be unconstrained by one single strategy, and be open to all opportunities. Even if new opportunities do not necessarily fit with past decisions, the opportunity may still fit with firm goals. Additionally, given the importance of a diversification strategy and openness to emergent opportunities that align with the mission, stage of investment may not be the most important factor for social VCs when making investment opportunities. This is in line with prior research on VC decision making (Tyebjee & Bruno, 1984; Fried & Hisrich, 1994; Gompers, 1995; Dimov, Shepherd, & Sutcliffe, 2007).

P3: Socially innovative VC firms will engage in a diversification strategy to support their socially innovative goals.

In support of the view that a focus on diversification may be necessary in achieving socially innovative goals, this investigation also found that certain strategies were more relevant and beneficial due to firm structural components. Most notably, size matters for social VC firms in determining success, particularly when deciding on investment stage. Specifically, that as the firm gets larger, performance decreases as more investments are made into early stages. Again, this is potentially related to the ability to gain access to lower risk and higher reward investments (later stage) so the larger firm’s focus and resources are directed toward those investments and away from higher risk (earlier stage) investments. In other words, larger firms may be giving up
the higher risk and unknown reward of early stage investments for the higher rewards and lower risk of later investments. Therefore, it is important for social VCs seeking to support socially innovative ideas to be mindful of the role played by size in the effectiveness and efforts placed on different investment strategies. Thus;

P4: As the size of socially innovative VC firms increases, the firm’s strategic focus will be directed toward later stage investments.

In summation, the findings from this study provides relevant information to social VCs designing their organizational strategies to ensure growth, profitability, and social impact; as well as researchers seeking to examine social innovation in the context of venture capital firms.

Contributions and Implications for Theory and Practice

Theoretical Contributions

Social innovation, while a not a new term or area of research, is just starting to emerge in management literature. Therefore, using established organizational theories to understand the fairly new phenomenon of social innovation at the firm level is an important first step.

This investigation also contributes to the venture capital stream of research. Prior literature on social VC is limited, and is primarily either conceptual (Ranjelovic et al., 2003; Pepin, 2005), qualitative (Silby, 1997; Waddell, 1995), or suffers from small sample sizes in quantitative work (Miller & Wesley, 2010). This investigation adds to current limited pool of quantitative social VC studies in a number of ways. A systematic and objective process was followed to build a robust and relevant sample. This process served to eliminate potential sample selection bias that stems from relying exclusively on external lists of social VC firms. The usage of varied techniques such as content analysis also provides new methodological approaches to consider in future research on social VC firms.
Prior VC research often focuses on the investments made by larger public firms, mutual fund companies, or the decisions of individuals (Boerner, 2011). There is very little research related to social venture capital investing. As this investigation is focused on social VCs, it contributes to the stream of research on social investing. When positive portfolio exits occur, this provides one example of how capacity building for social innovation can occur through VC funding. VC funding is essential to support both the creation and diffusion of social innovation. The capital market sector serves to fill current funding gaps, systematically measures success, and engages in the mechanisms necessary for erosion of sector boundaries through integration of private, public, and philanthropic support. Hence, capital markets are another key mechanism for the successful creation and diffusion of social innovation (Lettice & Parekh, 2010). This research goes a step further and identifies the importance of design in the context of capital markets.

Practical Contributions

Practically speaking, this research offers several contributions for venture capital firms seeking a blended value mission. The findings identified that while the decision relating to stage of investments is important and should be taken into account; there are potentially other organizational mechanisms that are more important to performance and to support social innovation. For example, structural aspects such as size and network, when combined with the specialized strategy of early stage investing are predictive of performance, especially for social firms. Evidence revealed that it would be advantageous for smaller VC firms to invest in early stage opportunities, and that performance (in terms of portfolio company exits) will start to decrease when firms approach more than $20 million in committed capital. Not only is it more advantageous for smaller firms to invest in early stage investments, but also for those more
socially oriented firms. Performance tends to increase as more socially oriented organizations increase the amount invested in early stages. This positive relationship potentially is related to the newness, the smaller size, and the niche market of more socially oriented firms. Due to these liabilities, their investment opportunities are perhaps limited to primarily early stage high risk investments. Therefore, highly socially oriented firms focus all their effort and resources ensuring these high risks turn into high rewards, as there are no other alternative except to ensure that their early stage investments succeed.

Key Implications

Based on the results of this investigation there are several key take-a-ways that both practitioners and researchers can draw on when making decisions about or examining social VCs:

a. Firms adopt distinct dimensions as the focus of their social orientations and each of these various foci have different effects on the firms overall performance, the strategic decisions the firm makes, and their structural designs. It is therefore necessary to treat each dimension separately in examination of the outcomes of social innovation in VC firms.

b. Similarly, firms will choose to be generalists or specialists when adopting different social foci. Some social foci will direct firms toward very niche markets, where opportunities may be limited and therefore diversification strategies are effective to ensure that opportunities are not missed. Alternatively, generalists are just that, these firms can diversify or they can choose a specialization strategy where investments are similar in nature. The point here is that different social foci should again be treated
separately given differences in strategies, industry and investment focus, and market orientations.

c. Including socially related language in the firm’s mission statement does not guarantee that a VC firm will actually implement a social orientation or seek to create the social value inherent in social innovation. Caution should therefore be taken when classifying VC firms as social because not all firms that have social missions necessarily follow a blended value model where both social impact and financial success are important metrics in overall firm performance. Therefore results for social performance are more likely if VC firms actually implement their stated social mission through appropriate firm structure and strategy.

d. Some investment strategies are more advantageous depending of the size of the firm and the socialness of the firm’s orientation. Specifically, investing in early stage investments is a better and even more meaningful investment for small and more socially oriented firms. Although, it should be noted that when examining investment decisions, there are other more important factors that have greater predictive power than the stage of investments and therefore should be included in future models.

e. While findings from this study were somewhat mixed in terms of overall performance (given the infancy of social VC investments in the sample), results did reveal and support that adopting a social orientation does not hurt the firm. In particular, as results did not indicate relationships between any of the social dimensions and firm failure, an initial conclusion and possibly the most significant contribution is that pursuing a social orientation is viable, and effective in delivering blended value strategies for VC firms engaging in social innovation.
These guidelines may offer socially oriented venture capital firms some insight into strategic and structural aspects that are important to their success in achieving positive exists of their portfolio companies, thus increasing both financial and social value.

Limitations

Data Collection

Despite the potential contributions of this research, there are several limitations. The first limitation relates to sampling issues. While the ThomsonOne PE database is the most common data set used in VC research it does have some biases. Specifically, Kaplan, Sensoy, and Stromberg (2002) identified some biases, including an oversampling of U.S. based VC firms and missing information financing rounds. A second limitation relates to identification of the final sample. Other than the USSIF list of social VC firms, there is no comprehensive list of social VCs available. This list is potentially problematic as it is generated solely by the methodology of the USSIF and they offer not external validation for their identification process. The alternative to using this list would be to create a new list of social VC firms from scratch. The primary issues with the creation of a new list is that there is no specific identifier in the ThomsonOne PE database for social VC, therefore, determining what makes a VC social would not be feasible using the ThomsonOne PE database alone. The creation of a new list of social VC firms may have validity issues in terms of identification codes for what actually constitutes a VC social or not. Given these limitations, an attempt was made to draw the sample from the entire population of VC firms in the ThomsonOne PE database. A social orientation, was determined by the socialness of the mission was determined by collecting external data (mission statements) and objective measurements using content analysis procedures.
Cross-Sectional Data

Cross-sectional aggregate data collection techniques raise the usual caveats concerning a lack of causal evidence. While there were significant associations between social mission and VC firm performance, the results are correlational as opposed to causal. Without an experiment or longitudinal study it is not possible to determine if the dimensions of social missions developed before or simultaneously with the successful of the firm. Nonetheless, cross-sectional research designs have been frequently used and considered acceptable for this type of research (e.g., Gompers & Lerner, 2001).

Methods

Other limitations relate to the specific methods used, specifically computerized content analysis. The natural language processing capabilities in a content analysis software program are limited and may not have the capability to properly categorize ambiguous concepts (Morris, 1994). Additionally, there is the inability to recognize the communicative intent of word usage when relying on word frequency analysis (Krippendorff, 1980). There is also an inability to create a completely exhaustive listing of key words (Pearce & David, 1987). Finally, there are issues with transforming meanings into numbers that may not have meaning, which is why it is necessary ensure that there is sufficient theoretical rationale for the classification of the textual data (Morris, 1994). Hence subject experts, prior research, and data were triangulated to arrive at a keyword list to categorize the data obtained on VC firm missions.

Research Design

A final limitation relates to the nature of the research design. Determining the degree to
which a firm, especially a VC firm, is social, is quite complex. While mission statements do signal certain goals to internal and external stakeholders, as well as driving the strategic decisions of the firm, they are not the only tools that organizations use for declaring their strategic orientation. Additionally, it is quite conceivable that a mission statement may be created out of formality and may not really reflect the true nature of the organization and its goals (Sattari, Pitt & Caruana, 2011).

Future Research

While considerable research has addressed the relationship between organizational strategy, structure, and firm performance, and found considerable support, this is one of the first studies to explore these relationships in the context of social innovation, where firms are designing their organization based on blended measures of success. Based on the results provided from this study, several ideas for future research have surfaced and additional suggestions have emerged for improving future investigations on the role of a social orientation in VC and other contexts.

This investigation examined the effects of maintaining a social orientation on firm performance in the aggregate to provide big picture perspective of social innovation in VC firms. Future studies could investigate the longitudinal effects of maintaining the different types of social orientation on firm performance. Longitudinal effects would provide a model not only of performance, but also firm growth (in terms of performance, size, and network), the different strategies they choose (e.g. investment stages), as well as the potential for identifying the type of individualized financing round and the amount of committed capital for each round.
Longitudinal research of this type provides indication of the true nature of the firm and the potential for causality between variables of interest.

Another area for future research is to compare those socially oriented firms against those that are not, using a matched sample by age, size, and possibly industry focus. It would be interesting to identify differences in the types of firms and whether being social is actually a differentiating factor in VC decision making, strategies, and performance. Alternatively, research could focus solely on social oriented firms, by excluding firms with no social orientation, providing insight on within group differences. Taking this a step further, research could then examine in-group difference by the specific dimensions of social investing.

While firms may utilize their mission statement to guide their decisions, it would be useful to identify if that is actually happening in a more direct way by looking closely at the socialness of each investment and Portfolio Company.

Finally, future research can examine this same sample after all the VC firms have had a chance to go through at least one entire VC lifecycle process. As previously discussed, it typically takes from 3 to 10 years for a portfolio company to actually exit. Therefore, by addressing the same research questions in this investigation, with the same sample, several years from now might provide a different view into the actual relationship between strategy, structure, and performance of socially oriented VC firms.

Summary

Despite the critical importance of venture capital in the success of social innovations (Lerner, 2010), there is a paucity of research in understanding the factors that affect the performance of these social VC firms. Therefore, the intentions of the study were to contribute to
the body of knowledge on social innovation and the relationship between social orientated organizations, organizational design, and performance in the context of capital markets. This social innovation (or socially responsible investing) is a relatively new phenomenon that has emerged within the last 10 years (Miller & Wesley, 2010) and there is limited theoretical or empirical work to clarify the field. The results of this investigation provide evidence that certain types of social orientations have a significant effect on VC firm performance. However, it would be useful to validate these results with empirical evidence from other firms, industries, and environmental contexts.

Successful VC firms use their knowledge and expertise to make investment decisions, and also to manage current investments with an expectation of providing positive returns on investments. With a shift toward adopting blended values and focusing on both financial and social returns, research is necessary to identify what decisions social VCs are making to manage their investment. This research provided evidence that it is necessary for all VC firms to consider both strategy and structural components when making decisions in order to achieve the financial and social returns that stakeholder are expecting.

In sum, this research plants the seeds for further research on social innovation and social investing. For example, an important extension to this investigation may be the rigorous examination of the advantages and disadvantages that different design based decisions can have for firms at with different types and levels of social orientations.

The results of the study provide insight for VCs with aspirations of becoming social, academic institutions, as well as government and financial entities that provide resources to socially oriented VC. The research provides particularly important information to practicing VCs designing their organizational strategies to ensure growth, profitability, and social impact. This
dissertation contributes towards an initial understanding of social innovation in the context of social investing and encourages future research on various organizational and industry contexts outside of capital markets.
APPENDIX

SEARCH CRITERIA USED IN ThomsonOne PE TO IDENTIFY VC FIRMS
<table>
<thead>
<tr>
<th>Search Category</th>
<th>Selected Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>View in Currency</td>
<td>USD - US Dollar</td>
</tr>
<tr>
<td>Search Currency</td>
<td>USD - US Dollar</td>
</tr>
<tr>
<td>Companies Involved In</td>
<td>Venture Capital Deals</td>
</tr>
<tr>
<td>Portfolio Status</td>
<td>Currently PE/VC Backed</td>
</tr>
<tr>
<td>Real Estate Properties</td>
<td>Exclude¹</td>
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<tr>
<td>Previous Investor</td>
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<tr>
<td>Investment Security Type</td>
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<tr>
<td>Disclosed Valuations Only?</td>
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<td>Firm Type</td>
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</tr>
<tr>
<td>Firm Status</td>
<td>Actively seeking new investments</td>
</tr>
<tr>
<td>Fund Stage</td>
<td>Seed Stage, Early Stage, Later Stage, Balanced Stage</td>
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<tr>
<td>Transaction Type</td>
<td>Venture Capital, Buyouts, Bridge Loans, Mezzanine Financing, Acquisitions, Acquisition for Expansion, PIPEs, Secondary Purchases, Recapitalization/Turnarounds, Fund of Funds (VC Partnerships), Private Equity Carve Outs,</td>
</tr>
<tr>
<td>Transaction Status</td>
<td>Completed Venture Investment, Completed Buyouts, Announced/Pending Buyouts, Announced/Pending Acquisitions, Announced Pending Acquisitions for Expansion</td>
</tr>
</tbody>
</table>

*Criteria follows the NVCA 2012 Yearbook search criteria for capturing VC firms in the ThomsonOne PE database

¹ Real estate properties do not qualify as VC related transactions per NVCA criteria.
REFERENCES


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