DOCTORAL DISSERTATION APPROVAL
ON BEHALF OF THE GRADUATE BOARD

Author: Michelle Leah Washington

Title of Dissertation: It's Whom You Know and What You Know: A Social Capital Perspective of the Effect of Small Firm Organizational Learning on Firm Performance
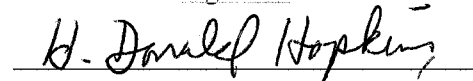
Date of Defense: 4/10/2008

By signing below, I indicate my approval of this dissertation and of the candidate's oral defense.
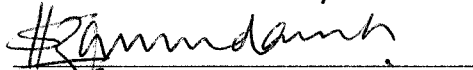
Dissertation Examining Committee Approval Signatures:

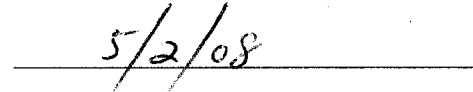| Member's Name and Affiliation	Signature
H. Donald Hopkins, GSM	*H. Donald Hopkins*
Ram Mudambi, GSM	*Ram Mudambi*
Gerald Zeitz, HRM	*Gerald Zeitz*
Erwin A. Blackstone, Economics	*Erwin C. Blackstone*
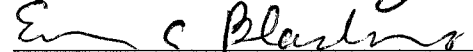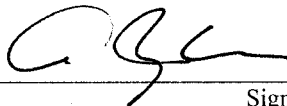
Date Dissertation Submitted to the Graduate School: 5/2/08

Accepted by the Graduate Board of Temple University in partial fulfillment of the requirements for the degree of: Doctor of Philosophy

Dean of the Graduate School: _____
Signature

IT'S WHOM YOU KNOW AND WHAT YOU KNOW: A SOCIAL CAPITAL
PERSPECTIVE OF THE EFFECT OF SMALL FIRM ORGANIZATIONAL
LEARNING ON FIRM PERFORMANCE

A Dissertation
Submitted to
the Temple University Graduate Board

in Partial Fulfillment
of the Requirements for the Degree
DOCTOR OF PHILOSOPHY

by

Michelle L. Washington
May 2008

UMI Number: 3326390

ABSTRACT

Title: It's Whom You Know and What You Know: A Social Capital Perspective of the

Effect of Small Firm Organizational Learning on Firm Performance

Candidate's name: Michelle L. Washington

Temple University, 2008

Degree: Doctor of Philosophy

Doctoral Advisory Committee Chair: H. Donald Hopkins, PhD

Extant entrepreneurship literature attributes mortality among small firms to various factors including undercapitalization, poor cash flow management, limited managerial skills and too restrictive or expansive market breadth (Chaganti, DeCarolis & Deeds, 1995). We consider Stinchcombe's (1965) suggestion that relationships with external stakeholders may help firms to survive and grow. Additionally, given the importance ascribed to knowledge and the knowledge worker in the 'New Economy' (Hamel & Prahalad, 1996), we also explore how access to knowledge and organizational learning might benefit small firms. In sum, we use social capital and knowledge management to study small firm performance.

We employed both qualitative and quantitative research methods. Our quantitative hypotheses tests analyzed survey data from a sampling frame of small, independently owned businesses via ordinary least squares (OLS) regression. Our qualitative analysis involved semi-structured interviews of three entrepreneurs.

Both our quantitative and qualitative data show that strong ties with suppliers, competitors and customers positively impact access to both business and organizing

knowledge. Though un-hypothesized, our qualitative analysis also revealed that the Internet, popular magazines and trade publications are sources of business and organizing knowledge. Contrary to our predictions, social resources were shown to negatively associate with access to both business and organizing knowledge. In support of our hypotheses, entrepreneurs with an internal locus of control were shown to possess strong ties with their external stakeholders. We also obtained support for our predictions that access to these forms of knowledge positively associates with generative organizational learning. Furthermore, the survey data corroborated our hypothesis that organizational social capital would strengthen the positive relationship between access to business knowledge and organizational learning. On the other hand, this data indicated that organizational social capital weakened the positive impact of access to organizing knowledge on organizational learning. Organizational learning was found to positively affect firm performance.

We also conducted several comparisons of our respondents with one another. As predicted, small African-American firms had weaker ties with customers and suppliers than peer firms. In contrast to our prediction, they showed stronger ties with competitors than others. Female-owned small firms reflected stronger ties with customers and suppliers and weaker ties with competitors.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Small firms contribute significantly to U.S. economic growth. According to the 1999-2000 State of Small Business Report, "small businesses...employ more than half of the American workforce and create two-thirds of the net new jobs" (U.S. Government Printing Office, 2001, p. 17). The National Federation of Independent Business' small business policy guide states that U.S. small businesses create innovative products and services and provide leadership and financial support to local communities (National Federation of Independent Business, n.d.). Nevertheless, entrepreneurship research estimates that average annual mortality rates among small firms may range from 3.9% (Watson & Everett, 1996) to 8.5% (Bates & Nucci, 1989), depending upon the researcher's definition of mortality.

Extant entrepreneurship literature attributes mortality among small firms to various factors including undercapitalization, poor cash flow management, limited managerial skills and too restrictive or expansive market breadth (Chaganti, DeCarolis & Deeds, 1995). These 'resource poverty' (Welsh & White, 1981) conditions appear to interrelate and exacerbate one another. For instance, undercapitalization at start-up often inhibits an entrepreneur's ability to effectively manage future cash flows. Additionally, a small firm may be unable to afford to hire competent staff due to poor cash flow management (Welsh & White, 1981). Furthermore, in their study of small Canadian manufacturing firms, Chaganti and Chaganti (1983) find that the least profitable firms in their sample "tended to serve regional and national markets...far from plant locations [whereas] the

1

most profitable group of firms...concentrated on local markets" (p. 50). These conditions of resource poverty seem especially evident in African-American-owned and female-owned small firms. For example, Bates (1990) finds African-American firms' debt and equity capitalization levels to be substantially lower than those of non-minority owned businesses. Similarly, prior research shows revenues of female owned firms to average one-fifth of the amount of those of male-owned firms (Brush, 1992).

Perhaps the already substantive contributions of small firms may become even greater as entrepreneurship researchers seek to uncover means of overcoming the numerous challenges faced by these firms. To this end, we consider Stinchcombe's (1965) suggestion that relationships with external stakeholders may help firms to survive and grow. Additionally, given the importance ascribed to knowledge and the knowledge worker in the 'New Economy' (Hamel & Prahalad, 1996), we also explore how access to knowledge and organizational learning might benefit small firms.

Social Capital Theory

Social capital theory examines the influence, whether positive or negative, of dyadic relationships and networks of relationships on behavior. For instance, direct relationships as well as relationship networks might influence behavior by providing critical resources such as knowledge. Social capital theorists suggest that social capital, also referred to as embeddedness, can take various forms. Hence, extant literature iterates five social capital dimensions, including cognitive, cultural, political, relational and structural. The present study focuses on relational embeddedness.

Relational embeddedness encompasses relationship type and content. Relationship types may include tie strength, multiplexity and asymmetry, of which tie strength is the most common. Relationship content addresses trust and social resources. Social resources take into account the instrumentality of direct and indirect contacts. Our proposed conceptual framework considers how tie strength among a small firm and its external stakeholders affect knowledge acquisition. We also consider whether owners of small firms establish 'entrepreneurship friendly' relationships and if these relationships impact knowledge acquisition.

Knowledge Management

Knowledge management refers to the manner in which firms acquire, assimilate, exploit and even create knowledge. The knowledge-based view of the firm purports that "knowledge is the key productive resource of the firm in terms of contribution to value added and strategic significance" (Grant & Baden-Fuller, 1995, p.18). Despite its importance, Grant (1996) comments, "*What is knowledge?* ...this question has intrigued some of the world's greatest thinkers from Plato to Popper without the emergence of a clear consensus..." (p. 110). Nevertheless, "Von Hippel [(1988)] offers the definition that 'know-how is the accumulated practical skill or expertise that allows one to do something smoothly and efficiently" (Kogut & Zander, 1992, p. 386).

Knowledge management scholars commonly describe characteristics of knowledge, such as its explicitness or tacitness. Similarly, we consider how a small firm's external social

capital affects its acquisition of business and organizing knowledge. Rather than assuming that learning automatically results from knowledge acquisition, we also examine how access to knowledge and internal social capital impact organizational learning. Furthermore, we examine the impact of organizational learning on firm performance.

This study asks several questions regarding the potential salience of social capital and knowledge management for small firm performance: Do small firms use their relationships with external stakeholders to obtain knowledge? Does access to knowledge result in organizational learning? Do internal social relations facilitate organizational learning? Do social capital and organizational learning independently impact firm performance?

In response to these questions, we explore how social capital inherent in ties with repeat customers, a key supplier and a primary competitor provides access to 'business' and 'organizing' knowledge (Yli-Renko, Autio & Sapienza, 2001). Since previous social capital analyses typically involve ties between young firms and one stakeholder group, this study seeks to extend extant research by including multiple stakeholder groups. Furthermore, this study seeks to examine how internal or organizational social capital might serve as a knowledge management tool that ultimately impacts firm performance. Prior conceptualization of organizational social capital as a form of knowledge management is unknown to the author and as such represents a unique opportunity to

integrate these burgeoning theories. This study also considers the influence of entrepreneur personality on social capital.

Another objective of this study considers whether social capital and knowledge management perspectives might further clarify evidence in extant literature regarding performance differentials among small firms. Existing studies show that African-American owned and female owned small firms are smaller in size (Bates, 1990; Christopher, 1998; Rogers, et. al, 2001; Weiler & Bernasek, 2001; Perry, 2002; Coleman, 2004), lower in debt and equity capitalization (Bates, 1990; Brush, 1992; Rogers, et. al, 2001; Weiler & Bernasek, 2001; Greve & Salaff, 2003) and more likely to fail (Bates, 1990) than other small firms. Some of these studies consider clientele characteristics (Van Fleet & Van Fleet, 1985), firm location (Cummings, 1999) or owner education (Brush, 1992; Christopher, 1998; Fairlie, 1999), but few consider social capital or knowledge management explanations of the performance differences.

The following five chapters further elaborate on the conceptual framework, its theoretical foundations and empirical analysis. A graphical depiction of the conceptual framework is displayed in Figure 1.1. Chapter two presents a review of extant social capital theory and knowledge management literatures with particular emphasis on the studies relevant to this conceptual framework. The theoretical justifications and hypotheses for the present study are discussed in Chapter three. Chapter four iterates the research methodology that was employed to empirically test each hypothesis. The results of the empirical tests are discussed in Chapter five followed by a discussion of the implications of these results for both scholarship and practice in Chapter six.

Figure 1.1 – Conceptual Framework

Firm Performance

Organizational Social Capital

Organizational Learning

Organizational Social Capital

Access to 'Business' Knowledge

Access to 'Organizing' Knowledge

Ties with External Stakeholder

Social Resources

Entrepreneur Personality

Control Variables:
- Firm Age
- Firm Size
- Firm Form of Ownership
- Firm Location
- Respondent Age
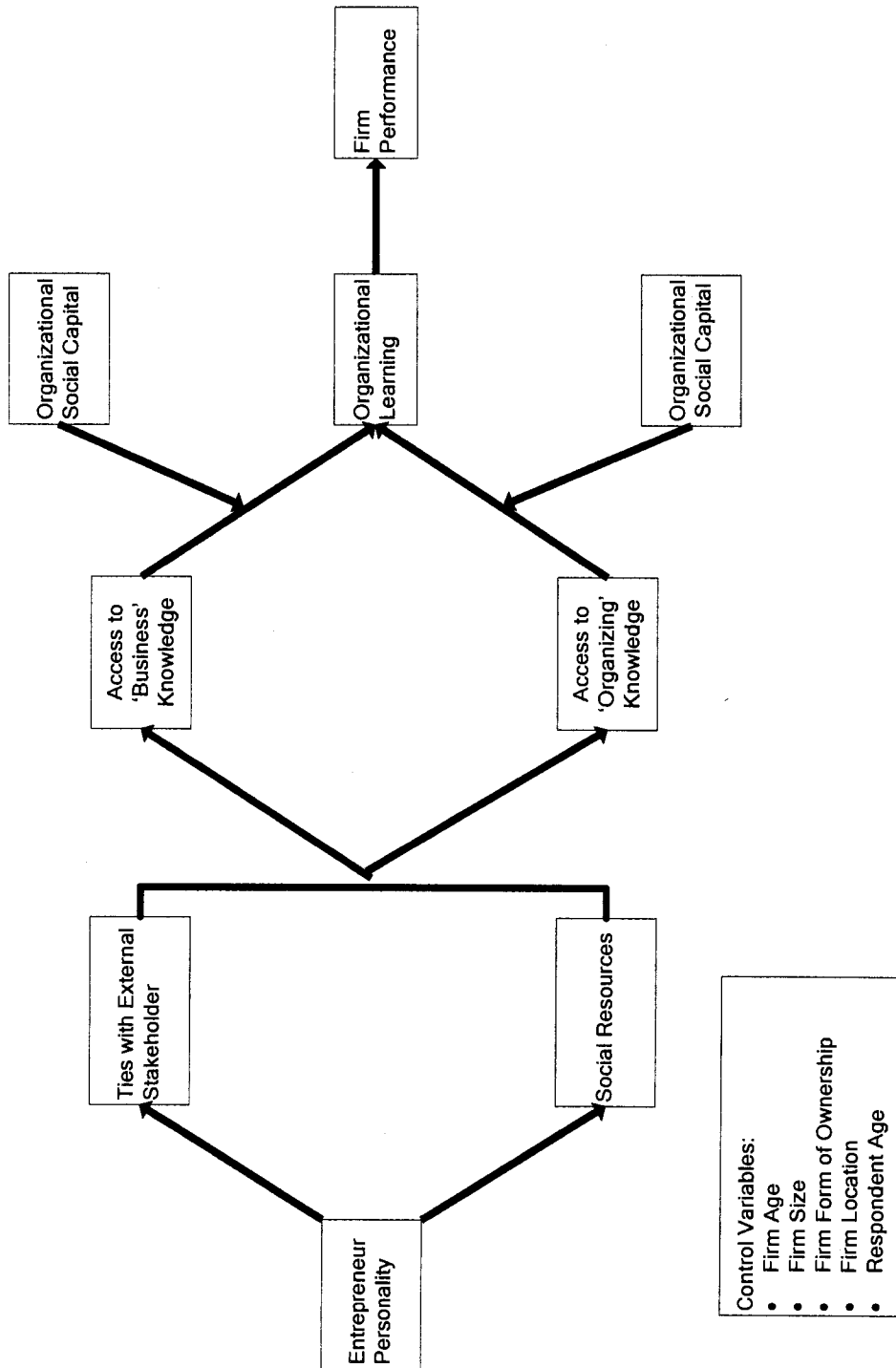
CHAPTER 2
LITERATURE REVIEW

Academic and anecdotal analyses suggest that young, small firms face numerous challenges to their viability and survivability. In his seminal 1965 work, Stinchcombe describes these challenges as the 'liability of newness'. One form of this 'liability of newness' relates to a nascent entrepreneur's inexperience with his or her role of owner and manager. Until roles and routines are formalized, young firms are presumed to experience inefficiencies that limit their profitability and growth. Additionally, since reputations for quality and service take time to establish, most start-ups possess limited amounts of legitimacy in the eyes of potential and existing stakeholders (Stinchcombe, 1965). This limited legitimacy impedes access to strategic and financial resources. Subsequently, Baum (1996) contends that size rather than youth inhibits the growth and viability of these firms, introducing a 'liability of smallness'. In this regard, smallness confers resource constraints, including financial and human capital limitations, which, in turn, limit firm growth.

How do some small firms manage to overcome these liabilities and to survive and grow? Stinchcombe prescribes relationships with internal and external stakeholders as antidotes (Stinchcombe, 1965). To this end, some entrepreneurship researchers consider the impact of social capital or the actual and potential benefits inherent in relationships and social contacts on firm viability. Other scholars investigate the role of knowledge management, or organizational learning, in minimizing the liabilities of newness and smallness (Bates, 1990; Brown & Butler, 1995; Bruderl, Preisendorfer & Zeigler, 1992;

Jack & Anderson, 2002; Pennings, Lee & van Witteloostuyen, 1998; Uzzi, 1996; Zimmer & Aldrich, 1987). Nevertheless, limited social capital and knowledge management investigations exist in extant entrepreneurship research. The aim of this study is to add to the understanding of small firm performance, in general, and that of female and African-American small firms, in particular.

The remainder of this chapter will review existing literature and research on social capital and knowledge management. This review will include definitions of social capital and knowledge management and discussions of their theoretical developments in the economic sociology, strategy, entrepreneurship and organizational communication literatures.

Social Capital: It's Whom You Know

Economic sociologists depict social capital theory as a beloved offspring possessing only the preferable traits of its economic and sociological parentage. In other words, these scholars intimate that social capital theory avoids the under-socialized view of its economic roots and the over-socialized view of its sociological roots; instead, offering one of 'balance' that acknowledges individual agency as well as the social influences and constraints on that agency. This study employs Nahapiet and Ghoshal's (1998) definition of social capital as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network" (Nahapiet & Ghoshal, 1998, p. 243). This

8

definition, more wide-ranging than pre-existing definitions, succinctly infers that social capital may encompass relational and structural facets and may facilitate access to resources. The conceptual framework presented herein examines performance-related implications of the relational dimension of social capital.

With its origins in community studies, social scientists of various academic disciplines apply social capital to a variety of phenomena across multiple levels of analysis. With respect to outcomes, social capital theorists examine how social structure augments or impedes national innovativeness (Dakhli & DeClerq, 2004), firm survival (Pennings, Lee & van Witteloostujin, 1998), career success (Larson, 1992; Lin, Ensel & Vaughn, 1981; Seibert, Kramer & Liden, 2001), conflict avoidance (Nelson, 1989), financial capitalization (Uzzi, 1999) and knowledge transfer between social units (Yli-Renko, Autio, & Sapienza, 2001). With respect to levels of analysis, scholars investigate social capital's development and impact for individuals (Lin, Ensel & Vaughn, 1981; Cross & Cummings, 2004), firms (Pennings, Lee & van Witteloostujin, 1998), dyads (Larson, 1992), ego-networks (Uzzi, 1999) and industry networks (Romo & Schwartz, 1995; Walker, Kogut & Shan, 1997). Furthermore, researchers study social capital implications for immigrant communities (Portes & Sensenbrenner, 1993), regions and even nations (Dahkli & DeClerq, 2004). Nevertheless, the overriding objective of these scholars involves the interplay of social structure and economic action (Uzzi, 1997).

These researchers differentiate social capital as either a public or a private good (Leana & Van Buren, 1999). The public good perspective suggests that social capital in a network

9

impacts all members of the network. The private good perspective, on the other hand, implies that social capital affects network actors in varying amounts depending upon network position or overall network characteristics.

Social capital possesses several properties. First, social units jointly own the social capital existing among them. Second, social capital is productive such that it facilitates economic action beyond the capability of individual economic agents (Coleman, 1988). Third, social capital is non-substitutable in that "a given form of social capital that is valuable for facilitating certain actions may be useless or even harmful for others" (Coleman, 1988, p. 98).

Scholars also recognize social capital's multi-dimensionality. Zukin and DiMaggio (1990) iterate four dimensions including political, cultural, cognitive and social. The present review further delineates their social dimension into relational and structural and therefore will discuss five social capital dimensions. According to Zukin and DiMaggio (1990), social capital's political dimension relates to governmental influences on economic behavior while its cultural dimension reflects societal limitations on economic action. The cognitive facet of social capital encompasses "those resources providing shared representations, interpretations, and systems of meaning among parties" (Nahapiet & Ghoshal, 1998, p. 244).

Relational embeddedness, or social capital's fourth dimension, has undergone much inquiry. This dimension includes the impact of differing types of relationships as well as

the content of relationships. One relationship type involves the strength of the relationship. Granovetter (1973) explicates relationship or tie strength as the intensity, frequency of interaction, intimacy and reciprocity of a relationship. He further indicates strong ties tend to form between people of similar values and interests and to require considerable commitments of time to develop. As a result, strong ties are associated with low conflict (Krackhardt & Stern, 1988; Nelson, 1989) and high levels of trust (Granovetter, 1992). On the other hand, weak ties, or those of minimal intensity and interaction, provide access to novel information since weakly connected people tend to differ from one another (Granovetter, 1973). Additional relationship types include multiplexity and asymmetry. Multiplexity refers to ties involving more than one form of relationship, such as neighbors who are also co-workers or siblings who are also business partners or classmates. Multiplex relationships may be weak or strong and may discourage unethical behavior (Brass, Butterfield & Skaggs, 1998). Asymmetric relationships represent those with unequal levels of power, status or emotional intensity. The party with greater amounts of power or status and lower emotional intensity possess greater potential for control (Carley & Krackhardt, 1990; Brass, Butterfield & Skaggs, 1998).

The relational dimension of social capital also addresses relationship content. This dimension considers content items such as trust (Fukuyama, 1995; Putnam, 1995), norms, obligations (Burt, 1992; Coleman, 1990; Granovetter, 1985), and appropriability. Appropriability occurs when a relationship formed for one purpose is accessed for additional purposes (Coleman, 1988). Herein, the social resources approach, with its

11

emphasis on the status, power, and other resources of one's contacts, predominates. According to the social resources approach, agents accomplish their economic interests by leveraging the resources of their acquaintances, close friends, or family members (Lin, Ensel & Vaughn, 1981).

Structural embeddedness, the fifth social capital dimension, entails network characteristics and their impact on economic action. Networks of relationships can include both direct and indirect ties and even the absences of ties. Structural hole theory focuses on these absent or missing ties between actors in a network (Burt, 1992). This approach suggests that individuals, who serve as bridges over structural holes, or liaisons between unconnected actors, can gain informational and control benefits. A structural bridge represents the only connection between two otherwise unconnected actors in a network. As a result, this 'bridge' can mediate or control the flow of information between the other two actors. Furthermore, if these two otherwise unconnected actors are directly and indirectly connected to separate local networks then the 'bridging' actor potentially gains timely access to new information (Burt, 1992, 1997).

Structural embeddedness can also refer to network characteristics such as centrality, density, and complementarity. Centrality relates to the relative distance of an actor to others in a network such that actors with the shortest paths from all other actors are centrally located and thus possess power, etc (Brass & Burkhardt, 1993). Dense networks consist mainly of strong ties. Cliques are dense subgroups within a network. Complementarity refers to the amount of direct and indirect ties. Since direct and

indirect ties possess different advantages, scholars suggest that an optimal network configuration includes both direct and indirect ties. This mix of direct and indirect ties should connect network actors to trusting, supportive direct ties and timely access to novel information from indirect ties (Uzzi, 1996, 1999).

As previously stated, researchers from a variety of social sciences examine social capital for its impact on numerous phenomena. These phenomena may include career outcomes, managerial innovation, business unit performance and firm performance. Empirical tests include qualitative and quantitative forms and can be divided into two categories: those investigating the development or creation of social capital and those studying the impact of existing social capital on behavior. The next section will review existing research on social capital and will include studies of individuals, firms and networks.

A number of social capital studies investigate consequences of social capital at the individual level. For instance, Lin, Vaughn and Ensel (1981) develop the concept of social resources as they challenge assumptions within the social mobility literature regarding the broad diffusion of career information. The social mobility literature suggests that labor market information is widely diffused such that applicants know about job openings and employers know where and how to find qualified applicants. On the other hand, an uneven distribution of labor market information might expose some, but not all, applicants to information about job openings. These 'privileged' applicants might use their relationships with others to learn about job openings and gain employment. In other words, some applicants might use their social resources in their employment search.

13

According to Lin, Vaughn and Ensel (1981), social resources refer to "the wealth, status and power, as well as the social ties, of...persons who are directly or indirectly linked to [an]...individual and..." (p. 1165) with whom the individual might interact for instrumental purposes, such as finding a job or winning a bid on a contract for business. Their study expands Blau and Duncan's seminal (1967) model of occupational status and mobility by including social resources. The Blau and Duncan (1967) study determines that family background and education influence career status. Specifically, Lin and coauthors consider the impact of the occupational status of a personal contact on the status of an individual's first and most recent jobs. To test their hypotheses, Lin and coauthors gather cross-sectional data on 20 to 64 year old men residing in Albany, NY in 1975. Their standardized regression analyses reveal that the occupational status of a personal contact favorably impacts the status of a first job, above and beyond the impacts of family background and education. This social resource positively affects the status of the most recent job, along with family background, education and first job status. Although their use of cross-sectional data of male respondents in one U.S. city limits generalizability, their results suggest the existence and importance of social resources.

In a related study, these scholars examine the roles of social resources and tie strength in occupational status attainment. Further expanding Blau and Duncan's (1967) model, Lin, Ensel and Vaughn (1981) hypothesize that a weak tie between a job seeker and his/her contact may prove beneficial to the job seeker. Social capital theory suggests that weak ties tend to exist between dissimilar people. Therefore, a weak tie may likely exist between people of differing social or occupational status. A contact of a higher status

14

could prove useful in obtaining information about employment opportunities. Using the same 1975 cross-sectional data of the aforementioned study, Lin, Ensel and Vaughn employ structural equations modeling and uncover interesting findings. First, "job seekers seem to reach upward [via weak ties] when using contacts to get a job" (Lin, Ensel, & Vaughn, 1981, p. 397) and the status of these contacts has a strong, direct effect on the status of first and subsequent jobs. Second, the status of a subsequent job depends upon a strong tie between one's personal contact and the potential employer. In sum, both social resources and tie strength impact occupational status.

Burt (1997) investigates whether structural equivalence influences the relationship between social capital and career outcomes for senior managers. Structural equivalence for a manager occurs when similar managerial positions exist and the manager may be compared with the persons filling these comparable roles. This existence of similar roles within the organization increases the amount of competition for a manager. It is hypothesized that structural equivalence will reduce the positive effect of social capital on career outcomes. Burt (1997) uses number of peers to measure structural equivalence and measures social capital by calculating the inverse of the level of constraint inherent in each manager's network. The career outcomes include early promotion and bonus amount. Using regression analyses of data about male senior managers in a large electronics firm, Burt (1997) finds that number of peers lowers the favorable effect of social capital on time to promotion and bonus level.

Similarly, Seibert, Kraimer and Liden (2001) develop and test a model of career outcomes using relational and structural embeddedness and social resources. Their model investigates social capital influences on salary, promotional history and career satisfaction. In other words, Seibert and coauthors hypothesize that weak ties and structural holes connect individuals to persons in other functional areas and higher status levels. These social resources, in turn, provide access to information, resources and mentoring, each of which relate to salary, promotions and career satisfaction. To test their model, Seibert et al. gather ego-network data from a random sample of a university's alumni. The results of their structural equations model indicate that both weak ties and structural holes relate to contacts in other functions. Weak ties also relate to contacts at higher levels. Contacts at higher levels relate to access to information and mentoring. Access to information relates positively to promotions and career satisfaction. In general, the results support the study's hypotheses relating social capital and career outcomes.

Another study, Moran (2005), also examines the influence of both structural and relational embeddedness. More specifically, this study investigates the effects of network closure, structural holes, closeness with contacts and trust in contacts on the task performance of 120 sales and product managers working for a large pharmaceutical firm. With respect to structural embeddedness, Moran (2005) predicted higher performance for managers whose networks reflected closed networks with many structural holes. Regarding relational embeddedness, the author predicted that managers with close and trusting relationships with their contacts will experience high performance levels. In

order to test his hypotheses, Moran collected data on the independent variables using a network questionnaire that was completed by the 120 sales and product managers. Data on managerial execution and innovation, the dependent variables, were collected via "a separate questionnaire [that] was sent to the human resource directors...who were asked to provide assessments of the task performance of each of their product and sales managers..." (Moran, 2005, p. 1138). After analyzing these data, Moran found high sales performance among managers with closed networks and those who are closely connected to their contacts. However, contrary to his predictions, neither structural holes nor trusting relationships impacted sales performance. He also found high levels of innovativeness among managers with close, trusting relationships with their contacts. No relationship was found between managerial innovativeness and structural holes or closed networks.

A very recent study uses social capital to predict an individual's intention to become an entrepreneur. Linan and Santos (2007) seek to extend extant entrepreneurial intention models by including bonding and bridging cognitive social capital. According to extant research, "individuals decide to create a firm (develop their intentions and become potential entrepreneurs) when a precipitating event lets them perceive the entrepreneurial activity as more desirable or more feasible than other alternatives" (Linan & Santos, 2007, p. 445). Linan and Santos hypothesize that bonding and bridging cognitive social capital will positively influence the perceived desirability and feasibility of starting a new business. Cognitive social capital refers to shared norms and values. These researchers define bonding cognitive social capital as "strong ties from family or other close relationships [that] may generate...different values, beliefs, or trust favoring individual

17

perceptions. Thus, values assumed through contact with family or friend entrepreneurs would generate more favorable perceptions of desirability or feasibility to create a firm" (p. 447). The authors predict a similar effect resulting from bridging cognitive social capital, or values and beliefs transmitted through weak ties. Linan and Santos collect primary data using a modified version of the Entrepreneurial Intention Questionnaire (EIQ) that was administered to 354 undergraduate Economics and Management students studying in Seville, Spain. Using partial least squares regression to test their hypotheses, Linan and Santos found that bonding cognitive social capital positively influences both perceived desirability and perceived feasibility. They also found that bridging cognitive social capital positively impacted perceived feasibility but did not influence perceived desirability. Furthermore, perceived desirability and perceived feasibility were shown to positively influence entrepreneurial intention.

Theorists also investigate organizations and social capital. Several of these firm-level studies examine antecedents of firm social capital. For example, Leana and Van Buren (1999) discuss how employment practices, such as hiring, job training and group-based compensation, might result in the development of organizational social capital. Their conceptual essay introduces organizational social capital or "a resource reflecting the character of social relations within the organization, realized through members' levels of collective goal orientation and shared trust" (Leana & Van Buren, 1999, p.540). Organizational social capital entails two dimensions: associability and trust. Cohesive organizations whose members work cooperatively for the common good of the organization exemplify associability. The second dimension of organizational social

capital is resilient trust. This form of trust relies upon group cohesion, past experience and confidence in future cooperation among group members.

Organizational social capital involves both benefits and costs. Leana and Van Buren (1999) iterate four organizational benefits. First, organizational social capital might encourage an organization's members to subjugate their personal interests in favor of organizational interests. Second, numerous high efficiency work practices entail employee involvement or management-labor cooperation and require trust and group identity. Hence, organizational social capital might facilitate the adoption of such efficient work practices. Similar to Uzzi (1997), these authors identify a third benefit such that "organizational social capital can make collective action more efficient, because it becomes a substitute for the formal contracts, incentives and monitoring mechanisms that are necessary in systems with little or no social capital among organizational members" (Leana & Van Buren, 1999, p.549). The fourth benefit parallels Nahapiet and Ghoshal's (1998) conceptualization of the cognitive dimension of social capital. Leana and Van Buren (1999) suggest that "the shared language, metaphors, and perspectives often found in organizations strong in social capital can also be effective and efficient ways of transferring knowledge" (p. 549). Leana and Van Buren (1999) also recognize organizational social capital's costs. Cohesiveness requires time, effort and resources to maintain. In addition, the collectivistic nature of organizational social capital might produce groupthink that could stifle innovation or encourage inertia over time. The present conceptual framework considers organizational social capital as a facilitator of organizational learning.

19

Other studies also consider the creation of external social capital for firms. Larson (1992) uses qualitative data to develop a three-phase process model of dyadic networks. In Phase I of her model, appropriability encourages managers of different firms to establish cooperative ties between their firms. The continuance of this cooperative interaction subsequently results in the development of trust between the two organizations and the transition into the second phase. Phase III is characterized by operational, strategic and social integration of the two firms. In sum, "it was found that the firms were engaged in relatively stable, sustained relationships characterized by multiple transactions and a high degree of cooperation and collaboration. They were governed in important ways by social controls arising from norms of trust and reciprocity" (Larson, 1992, p.98).

Arregle and co-authors propose a framework for the creation of organizational social capital for family-owned and managed firms. These scholars draw upon tenets of social capital and institutional theories in their discussion of family-firm organizational social capital. According to Arregle, Hitt, Sirmon and Very (2007), families represent a social network on which family-owned and managed firms depend for various critical resources. As a result of this dependence, "the family...wields significant influence in setting constraints on firm behavior as well as approving the pursuit of new opportunities...this logic suggests that the family influences the development of the family firm's OSC [organizational social capital] via coercive, mimetic and normative isophormic pressures" (p. 80). In addition, family values and norms are expected to

shape the organizational identity of the family firm and ultimately contribute to the firm's organizational social capital. This transfer of norms from the family's social capital to that of the family firm will also occur through the firm's human resources practices. Since family members will fill key positions within the family firm they will more than likely be heavily involved in the recruitment, selection and promotion of employees. These human resource practices, according to these scholars, will afford the family opportunities to recruit, select and promote individuals whose values are congruent with those of the family. Furthermore, this article purports that the family firm's organizational social capital will be shaped by the family's social capital since the initial social network for the family firm "is often initially based on the family members' networks" (p. 81). These authors propose that the effects of the family's social capital on the firm's organizational social capital will be moderated by the level of family involvement in the business, the number of family members and the level of dependence of the family firm on the family for key resources. These authors consider not only the potential benefits for the family firm but also the potential drawbacks associated with the connection between familial social capital and firm social capital. One obvious drawback might arise "from the transfer of dysfunctional family characteristics to the family firm's OSC" (p. 87).

Many social capital theorists evaluate consequences of firms' internal or external networks of relationships. Nelson (1989) evaluates whether relational embeddedness influences inter-unit conflict within an organization. Nelson hypothesizes that strong ties between organizational units will reduce inter-unit conflict as a result of the affect and

trust associated with strong ties. At the same time, the absence of strong intra-group ties should encourage cross-group cooperation and therefore lower conflict throughout the multi-unit organization. Using ego-network data of 20 firms and a network analysis clustering algorithm, Nelson (1989) learns that strong ties between business units decreases conflict organization-wide. The results also show that "the high-conflict organizations have within-group contact that is higher than expected, and the low-conflict organizations have between-group contact that is higher than expected" (Nelson, 1989, p. 387).

Chetty and Agndal (2007) investigate changes in internationalization modes via their qualitative study of 20 small and medium-sized enterprises (SMEs) located in New Zealand and Sweden. These researchers propose that a SME's change from a low-control internationalization mode, such as exporting, to a higher control one, such as foreign direct investment, may be attributable to social capital. Chetty and Agndal conducted semi-structured interviews as well as consulted firm and public archival documents to prepare their case studies of 20 SMEs. As a result, they found evidence that social capital's efficacy role influenced changes in internationalization mode: "This involves the firm exploiting its network (and that of its employees) to identify new business opportunities or to obtain information about new and existing markets...To enter these markets, the firm will need to change its internationalization mode" (pp. 10-11). These scholars also found support for their prediction that social capital's serendipity role will influence mode changes. In this regard, an individual or entity outside of the SME proposes that the SME change its internationalization mode. As a result, the mode

change occurs serendipitously rather than as a result of strategic planning. Evidence was also found to support these authors' predictions about the influence of social capital's liability role on internationalization mode. In other words, some changes in internationalization mode occurred because "these firms experienced...opportunistic behavior from business partners, lack of commitment, and failed relationships that needed to be ended...[and hence] provide firms with the opportunity to change internationalization mode..." (p.22).

Numerous studies investigate social capital's impact on firm performance. Pennings, Lee and van Witteloostuyen (1998) write that "results revealed that the industry-specific human capital and social capital of owners...contributed more to firm survival than those of employee[s'] ... [such that] firm-level human and social capital could be important sources of competitive advantage" (pp. 437-438).

In a study of bank-firm relationships, Uzzi (1999) finds that network complementarity lowers cost of capital and enhances access to credit. Uzzi (1999) conducts both ethnographic and statistical analyses of banker-borrower ties to address economic theory's under-socialized view of the allocation of credit. His study examines the effect of the banker-client relationship on the approval and cost of credit for mid-market clients. From his ethnographic investigation, Uzzi identifies three ways in which mid-market firms benefit from embedded ties with their banker. First, strong ties with a banker help to lower uncertainty regarding the bank client's creditworthiness. Mid-market firms generally lack the external scrutiny imposed upon large corporations that must produce

audited financial statements. Additionally, the financial resources of mid-market firms are often intertwined with those of its owners. Both of these characteristics of mid-market firms make it difficult to discern creditworthiness. Second, strong banker-client ties encourage the banker to "leverage their personal social capital at the bank on the firm's behalf" (Uzzi, 1999, p. 490). Third, mid-market firms benefit from strong ties to one bank along with weak ties to other banks. In particular, the weak ties provide access to broad market information regarding competitors' interest rates and loan structures. On the other hand, the strong tie allows the client to negotiate with its primary bank based on the market information gained from its weak ties. This finding agrees with results from his 1996 study of better dress apparel firms and their networks that indicate that firms with strong, primary ties and weak, secondary ties are most likely to survive. Uzzi (1999) refers to this mix of strong and weak ties as network complementarity. Uzzi (1999) also analyzes secondary data on a random sample of mid-market non-agricultural firms. As with the ethnographic study, the statistical results show that strong bank-client ties correlate with lower costs of capital and that network complementarity positively impacts both access to capital and cost of capital.

Rowley, Behrens and Krackhardt (2000) study the contingent effects of network structure, tie strength and environment on firm performance with the intent of clarifying contradictions from prior research. Some scholars prescribe weak ties as purveyors of competitive advantage as a result of their access to novel information while other scholars purport that strong ties promote superior performance through high levels of trust, information transfer and problem-solving. Similarly, both dense and sparse

24

networks are associated in the extant literature with improvements in firm performance. In response, Rowley and coauthors consider contingency relationships wherein the effects of network structure and tie strength on firm performance might depend upon one another and environmental demands. Using secondary data on strategic alliance networks in the steel and semi-conductor industries, these researchers uncover several interesting findings. The steel industry represents a stable environment requiring the exploitation of existing knowledge such that strong ties and dense networks should prevail. The volatility of the semi-conductor industry environment, however, demands exploration into new knowledge. This need for exploration should be associated with weak ties and sparse networks. The empirical results show that strong ties and dense networks independently and jointly relate positively to firm performance in the steel industry's stable environment. On the other hand, weak ties and sparse networks show positive associations with firm performance in the volatile environment of the semi-conductor industry. Strong ties negatively relate to firm performance in a sample comprised of both industries. These results confirm the need for contingent and contextual examinations of the performance effects of social capital.

Florin, Lubatkin and Schulze's 2003 study of initial public offerings (IPOs) discovers that social resources moderate financial capital and human capital impacts on firm performance. These scholars hypothesize that the human capital of a firm's top managers might signify the potential of the firm and thus positively impact pre-IPO financial capital accumulation and post-IPO sales and profitability. Similarly, the top managers' social resources might signal legitimacy and encourage investors to infuse capital. In

addition to these direct effects, Florin and coauthors propose that human and social capital jointly impact firm performance, both before and after IPO. In order to test their hypotheses, these researchers gather cross-sectional, secondary data on 275 IPOs for 1996. The results of their hierarchical regression analyses indicate that human and social capital relate positively to pre-IPO financial capital. These scholars use both sales growth and return on sales as measures of post-IPO performance. Consistent with their hypotheses they find a direct and positive association between social resources and return on sales. Human resources relate negatively to return on sales except when moderated by social resources.

Oh, Chung and Labianca (2004) study how group closure and inter-group ties influence group effectiveness. These authors propose that moderate levels of group closure will produce optimal levels of group effectiveness. Groups with multiplex ties with members of other groups will be most effective. Groups with access to leaders of other groups are also expected to experience high levels of effectiveness. Oh and coauthors gather data from mainly entrepreneurial firms located in Korea. As anticipated, their regression analyses of these data show maximum group effectiveness at moderate levels of group closure. In addition, the results indicate that ties with the leaders of other groups enhance group effectiveness. The evidence, however, fails to support a relationship between inter-group multiplexity and group effectiveness.

Many social capital studies examine either internal, bonding social capital or external, bridging social capital. Other social capital studies investigate structural, relational or

cognitive social capital. However, Leana and Pil (2006) examine the effects of all five of these forms of social capital on organizational performance. These researchers gather data on schools in an urban school district from multiple stakeholders of the school district. With respect to internal social capital, Leana and Pil collect data on structural, relational and cognitive social capital from teachers working in the school district. Teachers were asked to respond to six questions regarding information sharing among teachers at the school level in order to measure internal, structural social capital. This survey also asked teachers to respond to six questions measuring trust for internal, relational social capital. Six additional survey items were included on the teacher survey in order to measure internal cognitive social capital. Data on external, bridging social capital were gathered via time diaries maintained by principals within the school district. The time diaries were designed to capture the amount of time that each principal spent interacting with external stakeholders. Parents of children attending schools in the focal school district were surveyed in order to measure instructional quality, a mediating variable in their model. Organizational performance, the dependent variable, was measured using longitudinal data on student mathematics and reading achievement scores. This study's conceptual framework predicted that instructional quality would mediate the relationship between social capital and organizational performance. The results of their analyses, however, revealed greater complexity than predicted. As predicted, "instructional quality fully mediates the relationship between social capital and student achievement in math [but not in reading]" (Leana and Pil, 2006, p. 361). On the other hand, social capital was found to directly impact student achievement in reading.

Boutilier (2007) uses social capital theory and social network analysis to devise an analytical tool that multinational corporations might use to assist them as they conduct community development in developing countries. First, a multinational corporation must gather data on the network structure among the community stakeholders and compare this network structure to one of six potential structures that Boutilier developed using core-periphery principles. Second, the multinational corporation should determine the amount of social capital between itself and its stakeholders as either high or low. Third, the MNC would use the network structure and the level of social capital identified in prior steps in order to choose from among twelve possible network-social capital classifications developed by Boutilier. Each classification is designed to help the MNC to diagnose the present climate for community development such that "everyone would know what pitfalls were most likely currently, and what changes would move the network towards agreeing on goals and collaborating to achieve them" (Boutilier, 2007, p. 131).

A few studies investigate both antecedents to and consequences of firm social capital. Uzzi's (1996) analysis of better dress firms in New York City elucidates antecedents and consequences of structural embeddedness. Prior to the 1996 study, social capital literature vaguely purported that social structure might ameliorate or constrain economic behavior. Uzzi (1996) uses interviews of apparel firm senior managers along with statistical analysis of secondary data to identify antecedents to and consequences of structural embeddedness. For instance, third-party referrals and multiplexity represent two antecedents of structural embeddedness. That is, a third-party might introduce two otherwise unconnected parties, allowing the newly formed relationship to 'borrow' from

the credibility of the previously existing relationships. Similarly, two firms might form a relationship based on familiarity with one another's personnel in a different context. A firm alliance might develop between two business owners who are neighbors or former schoolmates. Initially, these relationships are weak or arms-length in nature.

Uzzi (1996) discovers that over time these relationships strengthen or become embedded and, as a consequence, display trust, fine-grained information transfer and joint problem-solving arrangements. In particular, trust serves to minimize opportunism and encourage cooperation that, in turn, facilitates access to strategic resources. Additionally, embedded firms tend to share "strategic and tacit know-how that boosts a firm's transactional efficacy and responsiveness to the environment" (Uzzi, 1996, p. 678). Furthermore, embedded firms frequently assist one another in developing solutions to operational challenges. Contrary to the emphasis on self-interest and profit maximization in traditional economic theories, the ethnographic component of Uzzi (1996) uncovers how "economic exchange becomes embedded in a multiplex relationship composed of economic investments, friendship and altruistic attachments" (p. 681).

In addition to an ethnographic investigation, Uzzi (1996) gathers secondary data on apparel firms in New York City and their networks to test hypotheses relating structural embeddedness and organizational survival. These statistical analyses reveal that firms that connect to their networks via embedded or strong ties are less likely to fail than those that connect via arms-length or weak ties. Furthermore, results show that firms with

strong, primary ties but weak secondary ties are more likely to survive than firms whose primary and secondary ties are all strong or all weak. In other words,

> Embedded ties benefit from trust, joint problem-solving and thick information exchange, which enhance coordination and resource sharing...[while] arm's-length ties have wide access to information circulating in the market...This suggests that networks consisting of a mix of arms-length and embedded ties have the greatest adaptive capacity because embedded ties facilitate coordination and resource pooling, while arms-length ties prevent the network's insulation from market imperatives (Uzzi, 1996, p. 684).

Collins and Clark (2003) investigate the creation and impact of a firm's internal and external networks on competitive advantage. These scholars examine the role of certain human resources practices in the creation of a top management team's external network with stakeholders and internal network with employees. In turn, these external and internal networks are proposed to favorably influence financial performance. According to these authors, human resources practices such as mentoring, incentive pay, and training might encourage top managers to build large, dense external and internal networks. These large, dense networks should provide access to new and different information that a top manager might use to improve firm competitiveness. Ego-network data on 73 mid-Atlantic based technology firms was collected and hierarchical regression analysis used to test hypotheses. Collins and Clark (2003) find that incentive pay, training and mentoring associate with the size, range and tie strength of internal networks

and the size and strength of external networks. The range and tie strength of external networks influence firm performance. Internal network size relates positively to firm performance as measured by sales growth while internal network range associates favorably with firm performance as measured by stock returns. Overall, the results of this study are both practically and theoretically useful.

Although most social capital studies test positive relationships between social structure and economic action, some uncover potential drawbacks. In their essay on social capital and immigrant communities, Portes and Sensenbrenner (1993) discover that strong ties within immigrant communities may serve as both blessings and curses. That is, these strong, dense ties may benefit immigrant entrepreneurs by providing access to low cost financial and human capital. On the other hand, these same ties may pressure entrepreneurs to address community needs beyond economic reasonableness and "the result is to turn promising enterprises into welfare hotels, checking their economic expansion" (p. 1339). Uzzi (1997) describes the possible negative effects of embeddedness as a 'paradox of embeddedness'. One cause of this paradox occurs when strong ties dominate a network and a central player in the network leaves the network. This loss may temporarily or even permanently impact the remaining network members until the resources provided from the departed member are replaced by a new relationship. Another drawback of embeddedness relates to informational isolation. According to social capital theory, strong ties tend to form between similar actors (Granovetter, 1973) and similar actors tend to possess similar knowledge (Burt, 1992). Thus, firms within a tightly embedded network may inadvertently restrict themselves

31

from access to new and different knowledge. Limitations to new and different knowledge may stifle creativity, learning and competitiveness. The third drawback corroborates findings of Portes and Sensenbrenner's (1993) ethnographic study of immigrant business communities. Per Uzzi (1997), "feelings of obligation and friendship may be so great...[among embedded] transactors that a firm becomes a 'relief organization' for the other firms in its network" (p. 59).

This present study will draw upon the relational dimension of social capital, focusing in particular on the potential informational benefits derived from tie strength and social resources. The ties between a focal small firm and its repeat customers, primary supplier and key competitor are analyzed for their impact on the focal firm's access to 'business' and 'organizing' knowledge. Characteristics of internal ties among a firm's owners, managers and employees are analyzed for their role in the focal firm's assimilation and management of this 'business' and 'organizing' knowledge.

Knowledge management: It's What You Know

As previously stated, social capital theorists purport that social structure impacts access to resources, including knowledge. For example, the tie strength approach attributes the diffusion of innovative and novel information to weak ties (Granovetter, 1973) while another approach credits knowledge transfer to the bridging of structural holes (Burt, 1997). Likewise, knowledge management involves the creation and transfer of knowledge. According to Ruggles (1998) " 'knowledge management'...has now come to be used to describe everything from organizational learning efforts to database

management tools…[Nevertheless] knowledge management…is an approach to adding or creating value by more actively leveraging the know-how, experience, and judgment resident within and, in many cases, outside of an organization" (p. 80).

In response to the varied ways in which scholars have defined knowledge as well as knowledge management, Jakubik (2007) seeks to bring clarification to the 'knowledge landscape' through her review of the knowledge literature. To this end, Jakubik categories scholarly work on knowledge published between 1990 and 2004 into four knowledge views. These four views include the ontological, epistemological, commodity and community views. Jakubik (2007) associates those studies that purport that knowledge exists within individuals or within relationships as a part of the ontological view. Nevertheless, she indicates that "several ontologies exist, depending on activities…, tasks, and problems…Knowledge cannot exist in a vacuum. Ontologically knowledge is always contextual…" (Jakubik, 2007, pp. 9-10). This author assigns to the epistemological view those scholarly works that examine the characteristics of knowledge. Tacit versus explicit knowledge represent two commonly examined characteristics. She defines the commodity view of knowledge as one in which "knowledge is understood as a static organizational resource…that improves performance,…has strategic and operational value, and…results in better decision making" (Jakubik, 2007, pp. 12-13). On the other hand, studies designated as part of the community view of knowledge focus on the social processes underlying the creation, transfer and exploitation of knowledge. In this view, "knowledge is shared and constructed within organizations through a continuous process of dialog and interactions,

33

and that knowledge is imbued with routines, standards, and with day-to-day practices" (Jakubik, 2007, p. 14). As a result of her review of the knowledge landscape, Jakubik "conclude[s] that: [there is an] apparent need to focus more attention on knowledge creation and on [the] community view of knowledge" (pp. 16-17). We suggest that our present study reflects a community view of knowledge.

Along the knowledge landscape, the knowledge-based view of the firm provides clear exposition of knowledge management. The knowledge-based view focuses on the creation, diffusion and exploitation of knowledge as bases for the existence of firms, their organizational structure, external coordination with other firms and competitive advantage. As reflected by its name, the knowledge-based view purports that "knowledge is the key productive resource of the firm in terms of contribution to value added and strategic significance" (Grant & Baden-Fuller, 1995, p.18). This knowledge may take the form of technological and/or organizational innovations (Kogut & Zander, 1995). The units of analysis used by knowledge-based view theorists include the individual, group, organization or alliance. The key concepts include, among others, absorptive capacity (Cohen & Levinthal, 1990), explicit versus tacit knowledge (Polanyi, 1967) and knowledge creation, transfer and diffusion.

Knowledge-based view theorists most commonly categorize knowledge as either explicit or tacit (Polanyi, 1967). Explicit or codified knowledge includes facts, data, or information that can be easily recorded and stored. Due to its ease of storage, explicit knowledge is also easily transferred from individual to individual or from firm to firm.

On the other hand, tacit knowledge involves direct experience and interaction of the learner and as a result its diffusion is more difficult and more costly than explicit knowledge (Polanyi, 1967). Other knowledge-based view theorists, Kogut and Zander, also propose terms for categorizing knowledge. Kogut and Zander (1992) utilize the terms information and know-how. According to these authors, information represents "knowledge which can be transmitted without loss of integrity ... [and] includes facts, axiomatic propositions and symbols ... [whereas] know-how must be learned and acquired" (Kogut & Zander, 1992, p. 386). Nevertheless, since knowledge-based view literature generally relies on Polanyi's categories of explicit and tacit knowledge, this present study will use his terminology.

According to the knowledge-based view, a firm's existing base of knowledge plays a major role in its knowledge creation, transfer and exploitation. Cohen and Levinthal (1990) explain that a firm's existing knowledge base will facilitate its ability to recognize, comprehend and commercialize new knowledge. These scholars define this role of prior knowledge as absorptive capacity. Because a firm is a collection of individuals, its absorptive capacity depends partly upon the absorptive capacities of its employees. An employee's absorptive capacity includes his/her educational experiences as well as industry-related training and experience. Additionally, absorptive capacity is impacted by organizational processes that encourage or impede the dissemination of new knowledge throughout the organization. These authors recommend organizational processes that include "partially overlapping knowledge [between organizational subunits] complemented by non-overlapping diverse knowledge" (p. 134). The

overlapping or common knowledge will augment communication between subunits while the non-overlapping knowledge will incite diverse perspectives and ultimately lead to creativity and innovation. Their essay also points out the path-dependence and cumulative nature of absorptive capacity. Existing knowledge constrains an individual or a firm to recognize new knowledge that is related to its existing knowledge. As a result, absorptive capacity is path-dependent. Furthermore, this path-dependence implies that prior development of absorptive capacity will permit future development. Hence, absorptive capacity is also cumulative in nature (Cohen & Levinthal, 1990).

The knowledge-based view also investigates the potential for knowledge creation by organizations. Nonaka (1994) presents a spiral model of knowledge creation. In this model organizations create knowledge as a result of the conversion of the tacit and explicit knowledge of its members. As organizational members share knowledge through social interaction within self-organizing teams, the trust that is developed among team members results in the re-conceptualization of the knowledge. This 'new' knowledge eventually crystallizes by the team into a tangible product or process. Then, the crystallized concept is evaluated or 'justified' by organizational criteria to determine its viability. If successfully justified, the new concept or product will be integrated into the organizational knowledge base. According to Nonaka (1994), three conditions serve as catalysts for this process of organizational knowledge creation. One such condition, creative chaos, results from an externally or internally generated crisis that should motivate organizational members to recombine existing knowledge or seek new knowledge in response to the crisis. Another necessary condition involves intentional

36

redundancy in the knowledge of organizational members: "In business organizations, this means the conscious overlapping of company information, business activities, and management responsibilities ... [that] facilitates interaction among organizational members and consequently makes it easier to transfer tacit knowledge among them" (Nonaka, 1994, p. 29). The third condition, or requisite variety, seeks to balance the increased information processing load resulting from redundancy with organizational structure.

Choo's 1998 book entitled *The Knowing Organization* presents a dynamic, integrative conceptual framework that includes organizational sense-making (Weick, 1995), knowledge creation (Nonaka & Takeuchi, 1995), and decision-making processes (March & Simon, 1958). This framework reflects a knowing cycle in which sense-making, knowledge creation and decision-making interrelate. According to Choo's (1998) framework, changes in the environment prompt a 'knowing organization' to try to 'make sense' of or understand the environmental change and its potential implications for the organization. This sense-making represents managers' attempts to minimize ambiguity and uncertainty and includes not only the recognition of environmental change but also its analysis and interpretation.

According to Choo (1998), managers' sense-making may lead to decision-making. When managerial sense-making indicates that existing products and/or processes might prove relevant in addressing the environmental change, then the process of decision-making may begin. In this segment of Choo's (1998) knowing cycle, he purports that managers'

bounded rationality results in organizational decision-making based upon satisficing and simplification. Bounded rationality refers to managers' cognitive limitations due to intellect and experience (Simon, 1957). Given these intellectual and experiential limitations, managers tend to make decisions by satisficing or "looking for a course of action that is satisfactory or good enough rather than seeking the optimal solution" (Choo, 1998, p. 12). In addition, bounded rationality leads managers to use routines and heuristics to simplify the process of decision-making.

In addition, sense-making may result in knowledge creation when existing organizational processes prove unrelated to the environmental change. Choo (1998) relies upon Nonaka and Takeuchi's (1995) model of knowledge creation for this aspect of his organizational learning framework. New knowledge is created as organizations assimilate explicit knowledge from the environment and integrate it with tacit knowledge possessed internally. That is, Nonaka and Takeuchi (1995) suggest that "knowledge creation is achieved through a recognition of the synergistic relationship between tacit and explicit knowledge...and through the design of social processes that create new knowledge by converting tacit knowledge into explicit knowledge" (Choo, 1998, p.8). The knowing cycle also iterates how decision-making and knowledge creation might impact one another and sense-making.

Knowledge management scholars examine the transfer and diffusion of knowledge within and between organizations. With respect to accessing and assimilating knowledge from the environment, Cohen and Levinthal (1990) recommend the use of 'gatekeepers' who

38

will interact with the environment to identify new knowledge. These 'gatekeepers', in conjunction with other employees who serve in 'boundary spanning' roles, will disseminate the new knowledge throughout the organization. Grant (1996) argues for the use of teams to facilitate knowledge transfer. International business researchers extend knowledge-based view concepts of knowledge transfer and diffusion to the study of multinational corporations. Internationalization provides firms with various opportunities to learn as a result of the knowledge spillovers from foreign firms or other multinationals (Feinberg & Majumdar, 2001). Gupta and Govindarajan (1991) analyze the interaction of knowledge flows and control mechanisms in multinational corporations. That is, headquarters-subsidiary control systems will reflect the quality and direction of knowledge flow among subsidiaries and from headquarters.

Ultimately, the knowledge-based view's examination of knowledge creation, transfer and diffusion aims to identify sources of competitive advantage. Kodama (1992) discusses technology diffusion wherein firms not only learn from existing competitors but also from firms in other industries. This cross-industry learning results from a customer-driven focus and from intra- as well as inter-industry knowledge gathering capabilities. Coff's (2003) article identifies the means by which knowledge contributes to firm performance. That is, firm knowledge generates capabilities that may permit the firm to lower its cost structure and positively impact firm performance. This favorable firm performance may be sustained when firm knowledge is tacit, firm-specific and socially complex (Coff, 2003).

Various researchers conduct empirical tests of the predictions of the knowledge-based view of the firm. The most common proxies for knowledge include research and development (R&D) spending, patent counts or citation counts. Analytical methods include primary data collected via questionnaire or interviews of industry experts and executives as well as the collection of secondary data. Cohen and Levinthal (1990) gather cross-sectional survey data in order to test their absorptive capacity framework. Using R&D intensity as a proxy of absorptive capacity, the results of their empirical study support many of their predictions. In particular, they find that similarities between the basic knowledge of a firm and its environment augment organizational learning. They also find that ease of learning conditions and market concentration positively impact knowledge spillover. Similarly, Kogut and Zander (1995) discover that codifiability and teachability positively impact knowledge transfer but not necessarily spillover or imitation. Their results suggest "that the view of capability transfer and imitation as mirror phenomena needs to be refined...The imitation of innovations does not necessarily involve the imitation of capabilities, while transfer, by definition, is the replication of ... capabilities" (Kogut & Zander, 1995, p.85). Lane and Lubatkin's (1998) study of learning alliances uses primary, secondary and bibliometric data to determine factors that facilitate inter-organizational learning. Their empirical results reveal that commonalities in basic knowledge between student and teacher firms as well as comparable compensation practices and research networks impact cross-organizational learning. Furthermore, Yli-Renko, Autio and Sapienza (2001) study the effects of social networks on organizational learning. These scholars' test results, based upon statistical

analysis of survey data, show that social interaction and customer network ties favorably impact knowledge acquisition and ultimately encourage product development.

As knowledge management research proliferates, further integration of the social processes of knowledge acquisition, transfer, creation and exploitation is occurring. This trend in knowledge management research has led to theoretical and empirical investigations of knowledge networks. According to Contractor and Monge (2002), sub-units, entire organizations and inter-organizational alliances may represent knowledge networks. These scholars also indicate that nodes within a knowledge network may include individuals as well as information systems and that social processes among knowledge network nodes may include both cognitive and communication linkages. In other words, "the challenge of KM [knowledge management] is, therefore,…a challenge of understanding the psychological, social and communicative mechanisms by which … knowledge network ties are created, maintained, dissolved or reconstituted" (Contractor & Monge, 2002, p.350). Furthermore, these scholars recommend the use of multi-theoretical, multi-level models that incorporate both human and non-human knowledge repositories in the investigation of knowledge networks.

Numerous normative studies examine knowledge networks through the integration of social capital and knowledge management. Nahapiet and Ghoshal (1998) refine the definition of social capital through their theoretical model of how firms might use their social capital to create intellectual capital. According to these authors, social capital refers to the manner in which relationships, whether directly or indirectly, serve as or

provide access to resources, such as information or knowledge. A network of relationships and the resources available therein constitute social capital. Intellectual capital encompasses explicit and tacit forms of knowledge constructed and maintained by the network of relationships (Nahapiet & Ghoshal, 1998). These authors iterate three dimensions of social capital including structural, relational and cognitive. The structural dimension of social capital entails how network members connect with one another. Commonly studied characteristics of social capital's structural dimension include centrality, density, or its antithesis, structural holes. The relational dimension refers to the quality and/or strength of relationships within a network. This dimension encompasses trust or norms. The cognitive dimension relates to forms of communication that bind network members to one another and may contribute to a common identity among members.

Nahapiet and Ghoshal (1998) argue that each dimension of social capital may be appropriated by a firm to develop intellectual capital. Their article proposes seventeen possibilities by which the various dimensions of social capital might impact a firm's opportunity, motivation, or ability to combine existing or new social knowledge in order to create intellectual capability. For example, they propose that trust, a component of relational embeddedness, may permit access to knowledge or may motivate network members to combine and exchange knowledge. These scholars also indicate that intellectual capital might encourage the development of social capital: "Organizations, thus, build and retain their advantage through the dynamic and complex interrelationships between social and intellectual capital" (Nahapiet & Ghoshal, 1989, p.260). Nahapiet and

Ghoshal recognize that social capital forms over time as a result of increasing levels of interdependence and interaction. Furthermore, the continuance of social capital within a network requires a certain degree of network closure or identifiable boundaries between network and non-network members.

Dyer and Nobeoka (2000) integrate social capital and knowledge management in their case study of Toyota's network with its suppliers. According to these authors, Toyota's dense network of strong ties with and among its suppliers effectively disseminates both explicit and tacit knowledge. Toyota's networks begin with weak ties between Toyota and its suppliers established through the creation of a supplier association. Gradually, the supplier association encourages interaction among Toyota's suppliers as well as with Toyota. Toyota requires that suppliers willingly share knowledge as they receive knowledge from Toyota and their peers. Eventually, Toyota offers the expertise of specialist employees to its suppliers as free consultants. This offer facilitates the transfer of tacit knowledge and also strengthens ties among Toyota and its suppliers. The establishment of learning teams in which suppliers assist one another in problem-solving further reinforces the strong ties among suppliers. Knowledge sharing occurs freely and widely through the Toyota-supplier network as a result of network identity, rules and processes. The supplier associations, consultants and learning teams all serve to create a network identity such that network members conceive knowledge as 'owned' by the network rather than by individual firms. Additionally, by their example of openness and sharing, Toyota sets rules of knowledge sharing within the network. Knowledge sharing is further augmented by specific processes developed by Toyota.

43

Yli-Renko, Autio and Sapienza (2001) determine that social capital indirectly impacts firm performance via knowledge acquisition and exploitation. These scholars examine how young firms, competing in high technology industries, use their social capital to gain and exploit external knowledge. These researchers focus on characteristics of the relationship between a firm and its key customer, "the one that accounts for the highest proportion of sales revenue" (Yli-Renko, Autio & Sapienza, 2001, p. 588). They use structural equations modeling of primary and secondary data to test their hypotheses. The results indicate that personal social interaction facilitates the transfer of knowledge to a firm from its key customer. Customers who connect a firm to other potential customers also influence knowledge transfer. Furthermore, "knowledge acquisition is positively related to the number of new products developed ... technological distinctiveness [and]...lower...sales costs" (Yli-Renko, Autio & Sapienza, 2001, p.604). Contrary to expectations, trust relates negatively to knowledge transfer. This study reinforces the connection between social capital and knowledge management.

Tsai (2001) considers how network position and absorptive capacity of business units within a multi-unit firm affect unit innovation and performance. According to these authors, centrally located business units should exhibit higher levels of innovation and performance since their centrality affords them access to the ideas and information of many of their peer units. Additionally, business units with higher levels of absorptive capacity are expected to be more innovative and to perform better than those with lower levels of absorptive capacity. Absorptive capacity refers to the ability of a unit to

recognize, assimilate and exploit new knowledge (Cohen & Levinthal, 1990). Tsai (2001) also suggests that centrality and absorptive capacity jointly impact a business unit's innovativeness and performance. Network data on all of the business units of two multinational corporations was gathered and the study's hypotheses were tested using hierarchical regression. The regression analyses show that network centrality and absorptive capacity directly and jointly influence a business-unit's innovativeness. With respect to performance, absorptive capacity positively affects business-unit performance. Network centrality, on the other hand, fails to directly contribute to performance but instead impacts performance contingent upon business-unit absorptive capacity.

Another study, Tsai (2002), examines the influences of social capital and inter-unit competition on inter-unit knowledge sharing. Similar to an earlier study, Tsai (2002) conceptualizes the multi-unit organization as a network. However, with this 2002 study, Tsai introduces a concept referred to as 'coopetition' or

> simultaneous cooperative and competitive behavior...To gain new knowledge and to exploit economies of scope for their business operations, organizational units have to cooperate with each other and learn from each other. At the same time, these units compete with each other...because they are compared on the basis of their ability to achieve high rates of return (Tsai, 2002, p. 180).

Hence, a possibly tenuous balance may need to occur between cooperation and competition for business units within a firm to share their knowledge with another.

Specifically, Tsai (2002) suggests that a hierarchical organization structure will deter knowledge sharing since emphasis will be placed on the relationship between units and headquarters rather than among units. On the other hand, informal social relations among business units should ameliorate inter-unit knowledge transfers. Business units might compete internally for financial resources or externally for market share. This competition among business units is expected to further exacerbate the lack of knowledge sharing in a hierarchical structure yet augment knowledge sharing in the context of informal social relations among units. Tsai (2002) collects data on the entire internal network of a large, multiunit firm at two separate points in time and employs Quadratic Assignment Procedure (QAP) regression analysis to test the study's hypotheses. The results show that a centralized structure does in fact lower knowledge sharing while informal social relations tend to encourage knowledge sharing. The QAP analysis also shows that external market competition aggravates the negative effect of centralization and minimally enhances the positive effect of social interaction on knowledge sharing. Though interesting, the generalizability of these findings is low since they are based on only one firm.

Rodan and Galunic (2004) consider both social network structure and content in their examination of the impact of structural holes and network knowledge heterogeneity on managerial innovation and performance. These researchers define knowledge heterogeneity as "the variety of knowledge, know-how, and expertise to which a manager has access through her network" (Rodan & Galunic, 2004, p.545). Extant structural hole theory suggests that managers benefit from social networks with numerous

structural holes or disconnections between network members. According to this theory, disconnections tend to exist between dissimilar people and dissimilar people tend to possess dissimilar knowledge. A manager that brokers disconnections has access to a variety of knowledge and information that might possibly be used for creativity, career advancement or other instrumental purposes. Structural hole theory fuses a network characteristic (sparseness) with network content (knowledge heterogeneity). Rodan and Galunic (2004) segregate sparseness and knowledge heterogeneity and test their independent and interdependent effects on managerial innovation and performance. Using survey data of middle managers in a Scandinavian firm and multivariate analysis, these researchers find that network sparseness and knowledge heterogeneity jointly and singly have a positive impact on managerial performance. Independently, knowledge heterogeneity has a larger favorable impact on managerial creativity than network sparseness. Heterogeneity and sparseness also jointly impact managerial creativity. Hence, his study contributes to social capital literature by disentangling structural holes and knowledge heterogeneity.

Beesley (2004) uses a network perspective to examine knowledge management at individual, group, organizational and inter-organizational levels. This researcher gathered qualitative data over a three-year period on a collaborative research project consisting of research partners from industry, government and academia. The grounded theory analysis of the longitudinal qualitative data uncovered commonalities among the various levels of analysis. These commonalities involve social, communication, cognitive, emotional and values-based processes. Of particular interest is the role of

emotions in knowledge management. Beesley (2004) discovered that initially tension and conflict arose at the inter-organizational level among knowledge network members as "individuals were presented with information that was contrary to their existing beliefs or values" (p. 77). Eventually, group and organizational level processes help to facilitate assimilation of the new information at the individual level that, in turn, ameliorated its incorporation at the inter-organizational level.

A team of researchers integrate incentive theory, social motivation theory and goal-setting theory in order to study knowledge transfer between individuals and the effects of knowledge on group performance. Quigley, Tesluk, Locke and Bartol (2007) collect primary data on individual and group-level constructs from 120 U.S. undergraduate management students who played a computer-based management simulation game. Each participant was randomly assigned a partner with whom he/she interacted exclusively via information technology. Each team member attempted to manage an individual business unit within a division of a nascent cellular phone company over an eight 'year' period. Since each division consisted of two units, "division performance was calculated based on the average performance of the two units that constituted the division..." (Quigley et. al, 2007, p.76). The simulation entailed three compensation levels including individual, hybrid and group. Individual level merit bonuses were based solely on the performance of that team member's unit. Hybrid compensation provided a merit bonus determined equally by the team member's unit performance and the division's overall performance. Division performance determined the amount of each team member's merit bonus under the group compensation scheme. The researchers employed multiple data collection

methods. Data on self-efficacy, self-set goals, norms and trust were gathered via questionnaire. Three coders analyzed the content of instant messages sent between partners in order to measure knowledge sharing. Performance was measured using the market share percentage achieved by the end of the eighth 'year' of the simulation. Once data were collected, the authors used random coefficient modeling and hierarchical regression for their analyses. The authors obtained support for all three of their hypotheses. First, the results supported their prediction that the positive relationship between group-level incentives and knowledge sharing will be strengthened by group norms that encourage knowledge sharing. Second, their results also supported their prediction that the effect of self-efficacy on goal setting will be even more positive when the knowledge recipient trusts the knowledge sender. Third, greater amounts of knowledge sharing and higher levels of self-set goals contributed to higher performance levels. Hence, these scholars "drew upon three distinct motivational theories…in complementary ways…[that] yielded…a more comprehensive explanation of the knowledge sharing and transfer process" (Quigley et. al, 2007, p. 82).

In addition to multi-theoretical and or multi-level empirical examinations of knowledge networks, one study considers multiple phases of knowledge management. Hansen, Mors and Lovas (2005) use a network perspective to discern whether common social processes occur among three phases of knowledge management. These phases include the decision to seek knowledge, the search process and the acquisition process. Hansen et. al employed a combination of logistic regression and ordinary least squares regression on survey data collected from numerous subsidiaries of a large technology firm to test their

hypotheses. Their results revealed that a subsidiary's decision to seek knowledge from other subsidiaries depends upon the focal subsidiaries network density and tie strength. Both strong and dense internal subsidiary networks lowered the propensity to seek knowledge externally. On the other hand, those subsidiaries with larger inter-subsidiary networks were more likely to seek knowledge from other subsidiaries. With respect to the search process, Hansen and coauthors found that both inter-subsidiary tie strength and perceived competition increase the cost to search for knowledge. The level of perceived competition also increased to cost to transfer knowledge between subsidiaries.

Haas (2006) examines knowledge management in the multinational corporation context. Instead of the more common expatriate-non-expatriate classification within international business research, Haas (2006) differentiates cosmopolitans from locals. According to Haas (2006), "cosmopolitans are...individuals who have lived and worked in multiple countries and who speak several languages, whereas locals are identified as individuals who have lived and worked in the project country and who speak the local language" (p. 369). Haas predicts that locals working on a transnational team will share and seek out country-specific knowledge as a result of their familiarity with the local culture and practices. Cosmopolitan team members are expected to share and collect technical knowledge or "skills, competencies, and expertise relevant to the functional requirements of the work (cf. Obstfeld, 2005)" (Haas, 2006, p. 369). The author also hypothesizes that both country and technical knowledge will positively impact project quality. In order to test his hypotheses, the author studied a single multinational organization by gathering qualitative data via semi-structured interviews and quantitative data via questionnaires.

One survey instrument was used to gather data from transnational team members for several independent variables while a separate survey instrument collected data on each team's project quality from independent, internal experts. The author used multivariate linear regression to test his hypotheses. As he expected local team members contributed country knowledge and cosmopolitan team members contributed technical knowledge. However, contrary to his expectations, both local and cosmopolitan team members lowered the positive impact of knowledge on project quality.

Coombs, Mudambi and Deeds (2006) investigate the influence of firm-specific and location-specific factors on financial capital flows between early stage U.S. biotechnology ventures and their U.S. and foreign partners. The firm-specific characteristics of the biotechnology ventures examined by these scholars include knowledge-related factors such as research and development (R&D) intensity and number of recent patents granted. The location-specific factor of technological munificence is measured using a composite of scientific activities occurring in the biotechnology venture's statistical metropolitan area (SMA). This composite includes grant value, number of grants, number of top ranked medical schools and university science departments. Their statistical analysis reveals that U.S. and foreign corporate partners invest in U.S. biotechnology start-ups for different reasons: U.S. firms focus on start-ups' firm-specific factors whereas foreign partners focus on location-specific factors. In particular, recent patents predict U.S. based capital inflows while technological munificence explains foreign generated capital. Furthermore, foreign investors favor larger, more established biotechnology ventures when pursuing

51

investment opportunities. In general, these findings suggest that firm-level knowledge, rather than environment-level knowledge, may differentially affect inter-firm relationships.

Bogner and Bansal (2007) also explore the impact of knowledge management on firm performance. Specifically, these authors investigate knowledge impact, knowledge management capability and knowledge management capture rate and their effects on firm performance. Knowledge impact refers to the means by which knowledge management ameliorates a firm's absorptive capacity. Knowledge management capability corresponds to a firm's integration of new knowledge. According to Bogner and Bansal (2007) "new knowledge that is based on the firm's own prior new knowledge creations…has superior value" (p. 170). Knowledge management capture rate addresses how well a firm can retain as much of the benefits from its own inventions and minimize the positive spillover effects to other firms. These researchers gather longitudinal, secondary data on patents, patent citations, return on equity and year-over-year sales growth for 42 firms representing various industries. Using ordinary least squares regression on these data, Bogner and Bansal (2007) found that both knowledge impact and knowledge management capability positively affect return on equity and sales growth. Their analysis rejected their third hypothesis predicting positive relationships between knowledge capture rate, sales growth and return on equity.

Many knowledge-based view and knowledge management studies investigate the organizational benefits of knowledge. One study, Haas and Hansen (2005), examines

potential benefits and risks associated with knowledge management. These researchers collect primary and archival data on a single management consulting firm in order to investigate the impact of codified and tacit knowledge on the firm's ability to win customer bids. Haas and Hansen rely upon a situated performance perspective wherein "the value of the firm's knowledge resources must be assessed by examining task outcomes, rather than by measuring the levels of stock or flows of knowledge in the organization" (Haas & Hansen, 2005, p. 3). The results of their statistical analysis reveal a negative relationship between codified knowledge and the probability of the consulting firm winning a customer's bid. This relationship between knowledge and performance was exacerbated for sales teams with more experience and for bids that were more competitive. On the other hand, personal knowledge increased the chances of winning the customer's bid in the case of competitive bids (those in which other consulting firms were competing against the subject firm for the customer's bid)

In sum, social capital theorists assert that relationships and networks of relationships may facilitate or obstruct an individual's or organization's access to resources and may consequently impact economic action. To this end, social capital theorists examine social capital's political, cultural, cognitive, relational and structural dimensions for individuals, groups, firms and even nations. However, a need exists for further investigation of small firms from a social capital perspective. This present study will focus on implications of relational embeddedness for small firm performance. It will also examine the effects of entrepreneur personality on organizational embeddedness.

According to social capital theory, knowledge represents one resource provided or restricted by relationships and social networks. Knowledge management literature purports that organizational learning plays a significant role in an organization's competitive advantage. Nonetheless, minimal examination of the knowledge management of small firms occurs in extant knowledge management literature. In response, the conceptual framework herein seeks to investigate performance implications of organizational learning for small firms. Furthermore, a relationship between organizational learning and firm performance will be considered. The details of the conceptual framework along with testable hypotheses are presented in the next chapter.

CHAPTER 3

HYPOTHESES AND THEORY DEVELOPMENT

Entrepreneurship research often highlights the importance of entrepreneurship and small business management to regional and even national economic growth (Birley, 1989). According to the 1999-2000 State of Small Business Report, "small businesses...employ more than half of the American workforce and create two-thirds of the net new jobs" (U.S. Government Printing Office, 2001, p. 17). Implicitly, the scholarly investigation of entrepreneurship has economic implications on a national scale.

Social capital analysis within the entrepreneurship literature has gained in popularity. Social capital, also known as embeddedness, refers to the tangible and intangible resources inherent within, and available through, relationships and networks of relationships (Nahapiet & Ghoshal, 1989). According to Hoang and Antoncic's (2003) review, extant investigations of entrepreneurship and embeddedness reflect two general types. One type of social capital research addresses the formation of an entrepreneur's network either during the start-up process or afterward. The other, more prolific type focuses on the consequences of embeddedness. In this latter type, researchers consider the emotional (Bruderl & Preisendorfer, 1998; Larson, 1992), informational (Nahapiet & Ghoshal, 1989; Burt, 1992; Yli-Renko, Autio & Sapienza, 2001), and financial (Uzzi, 1999) benefits of relationship quality or network structure.

Despite social capital's increasing popularity, the Hoang and Antoncic (2003) review iterates the need for further clarification of the role of embeddedness on entrepreneurship. Specifically, their review uncovers mixed results among existing studies regarding social

capital's effect on the performance of young firms. One study shows a correlation between embeddedness and performance (Stearns, 1996), another shows equivocal results (Merenda et al., 1994) and others show no relationship (Butler, et al., 1990; Aldrich & Reese, 1993). Their review also reveals conflicting evidence in extant entrepreneurship research with respect to the implications of weak and strong ties for firm performance. In some studies, weak ties prove beneficial while in other studies strong ties enhance firm performance (Aldrich, Rosen & Woodward, 1987; Bruderl & Preisendorfer, 1998). Furthermore, Hoang and Antoncic (2003) exposes the limited amount of research into the network development process for young firms and calls for future investigations into factors affecting the creation of social networks for young firms. The present study aims to address these gaps in embeddedness investigation of small firm performance.

Unlike social capital research, the study of knowledge management within extant entrepreneurship literature is limited. Knowledge management encompasses knowledge transfer between or within organizational units and knowledge exploitation by organizational units. These knowledge-related activities have been explained and predicted in various contexts including the multinational enterprise (Gupta & Govindarajan, 1991; Kogut & Zander, 1993), strategic business units (Gupta & Govindarajan, 2000) and strategic alliances (Lane & Lubatkin, 1998), but less so for new ventures or small firms.

Our conceptual framework of small firm organizational learning connects the theoretical tenets of social capital theory and knowledge management and builds upon existing

56

models such as those presented in Nahapiet and Ghoshal (1998) and Yli-Renko, Autio and Sapienza (2001). This present study argues that relational dimensions of small firms' social capital affect access to knowledge-specific resources and ultimately firm performance. Additionally, this analysis explores organizational social capital, or internal social structure and relationships, as a knowledge management tool. We also consider how an entrepreneur's personality might influence his or her social capital. In addition, we look at the social network characteristics of African-American owned and female owned small firms to explain and predict the performance of these firms in comparison to other small firms.

This study examines several questions regarding small firms. Do small firms use their relationships with external stakeholders to obtain knowledge? Do small firms use their internal relationships among employees to exploit knowledge transferred from external stakeholders? What are the performance implications of social capital and knowledge management for small firms? Does entrepreneur personality facilitate or derail social capital levels? Do the social networks of African-American firms differ from other firms? Do the social networks of women-owned firms differ from those owned by men? If so, do these differences in social capital explain and predict performance differentials?

In exploring these questions, this study seeks to make several contributions to the entrepreneurship literature. First, this study intends to investigate a small firm's relationship with more than one stakeholder. Existing social capital studies often evaluate the relationships between a focal firm and one stakeholder group, such as a primary customer (Yli-Renko, Autio, & Sapienza, 2001) or banker (Uzzi, 1999). Second, we

explore how personality might impact social capital. Third, while many knowledge management studies analyze one type of knowledge, we examine the impact of two knowledge types – business knowledge and organizing knowledge. Business knowledge refers to knowledge of customer needs, new product development and industry trends. Organizing knowledge involves knowledge of human resource, cash flow and work flow management. Fourth, the desired sample to test the study's hypotheses will include firms representing various industries in contrast to many previous studies that have used single-industry or exclusively technology-based samples. The use of an industry diverse sample may enhance the external validity of empirical results. Fifth, this study will compare network characteristics of African-American owned and female owned small firms to other firms in order to clarify existing analyses of the performance of these firms.

This chapter contains several sections. The first section presents brief reviews of social capital and knowledge management theories. The second section integrates the tenets of social capital and knowledge management and presents hypotheses regarding the influences of external relationships on knowledge acquisition and internal relationships on the knowledge acquisition-exploitation interplay. The chapter continues with hypotheses regarding the performance implications of knowledge management and social structure for the firm. Then, hypotheses addressing social capital-related differences in performances of African-American owned and women owned firms are presented. The chapter concludes with a preliminary discussion of research methodologies - the content of chapter four.

Social Capital and Knowledge Management

Social capital theory and knowledge management complement one another. Social capital theory examines the manner in which relationships and/or social structure may provide actors with resources that may facilitate economic action. One such resource is knowledge. Specifically, social capital theorists evaluate how different types of relationships or social network structures may generate different types of knowledge. For example, Granovetter (1973) contends that weak ties more efficiently and effectively transfer novel information. Knowledge management continues the analysis by considering how different types of knowledge impact economic action. Tacit knowledge transferred to a firm via its ties with stakeholders may increase the firm's competitive advantage (Kogut & Zander, 1992; Uzzi, 1996).

Social capital theorists contend that direct and indirect social relations influence behavior. In this perspective, relationships may serve as behavior-enabling resources or as conduits to such resources. For instance, the social resources approach investigates actors' use of the wealth, status and power of their direct and indirect contacts for the attainment of their goals (Lin, Ensel & Vaughn, 1981; Lin, Vaughn & Ensel, 1981). Social capital theory also considers circumstances in which social relations might constrain behavior. Portes and Sensenbrenner's (1993) examination of immigrant business enclaves uncovers potential drawbacks to embeddedness. One drawback results from bounded solidarity in which a group-wide experience of struggle and oppression may obligate entrepreneurs to group members. These obligations at times undermine economic rationality.

Social capital theorists identify several dimensions of this construct, each of which is described in detail in Chapter two. For this present study, we consider the influence of relational dimensions of social capital on the organizational learning and performance of small firms. The relational dimension of social capital refers to the effects of relationship type, quality and content on economic action. For example, Uzzi's (1997) ethnographic study of firms in the apparel industry reveals that embeddedness produces 'economies of time' since trust between embedded actors more efficiently governs transactions than monitoring.

Knowledge management explores the impact of knowledge acquisition, absorption and exploitation on performance. As a result, knowledge management may include communication systems, data storage systems and organizational routines (Ruggles, 1998). One widely recognized knowledge management perspective is the knowledge-based view of competitive advantage. Many knowledge-based view studies emphasize knowledge transfer and knowledge creation as primary sources of competitive advantage (Kogut & Zander, 1992; Nonaka, 1994; Grant & Baden-Fuller, 1995). Our study considers only knowledge transfer.

According to the knowledge-based view, knowledge transferability depends upon the type of knowledge to be transferred and the absorptive capacity of the recipient economic unit. Polanyi (1967) identifies knowledge as either explicit or tacit. Adeptly explicated by Nonaka (1994), "'explicit' or codified knowledge refers to knowledge that is transmittable in formal, systematic language. On the other hand, 'tacit' knowledge has a personal quality, which makes it hard to formalize and communicate. Tacit knowledge is

deeply rooted in action, commitment, and involvement in a specific context" (p. 16).

Hence, explicit knowledge is less costly and easier to transfer than tacit knowledge. In

the context of our study, we suggest that explicit knowledge may be transferred via weak

ties whereas tacit knowledge requires strong ties.

In addition to knowledge type, transferability depends upon absorptive capacity.

Absorptive capacity refers to a firm's ability to recognize the commercial value of new

knowledge. This ability depends upon existing knowledge within the firm that is related

to the new externally generated knowledge as well as "the structure of communication

between the external environment and the organization, and also on the character and

distribution of expertise within the organization" (Cohen & Levinthal, 1990, p.132). In

many respects our model's incorporation of ties with external stakeholders, knowledge

acquisition, internal firm social structure, knowledge exploitation and firm performance

makes it a model of the absorptive capacity of small firms.

<p style="text-align:center">Strength of Ties and Knowledge Acquisition</p>

Although business and organizing knowledge contain both tacit and explicit components,

we focus on their tacit nature. Tacit knowledge refers to the awareness of phenomena

resulting from direct experience with the phenomena or from close observation of

another's direct experience (Polanyi, 1967). For example, successful bread making by

hand requires many hours watching experienced bread bakers and repeated attempts to

mimic their behavior. Thus, the transfer of tacit knowledge requires a frequency of

interaction characteristic of strong ties (Nonaka, 1994, Kogut & Zander, 1995, 1996).

(However, the existence of strong ties may not automatically result in knowledge

<p style="text-align:center">61</p>

transfer. Other factors may impede the transfer of knowledge via strong ties. For example, a married couple represents a strong tie between a wife and her husband. Nevertheless, the transfer of tacit knowledge from the wife to the husband, or vice versa, may fail to occur due to emotion or psychological factors, such as fear or pride.) In studies of the apparel industry, Uzzi finds an association between fine-grained information transfer and strong ties in that "information exchange in embedded [or strong] ties...includes strategic and tacit know-how that boosts a firm's transactional efficacy and responsiveness to the environment" (Uzzi, 1996, p.678). As a result, we argue:

> H1: Ties with external stakeholders (competitors, customers and suppliers) are
>
> positively associated with access to business knowledge.

> H2: Ties with external stakeholders (competitors, customers and suppliers) are
>
> positively associated with access to organizing knowledge.

Social Resources and Knowledge Acquisition

The social resources approach to structural embeddedness suggests that network actors might benefit from the resources possessed by their contacts. For instance, an entrepreneur might use an indirect contact with a governmental official to gain information about bidding for government contracts. In the context of this study, we contend that small firms will acquire knowledge as a result of these social resources. Therefore,

> H3a: The social resources of an owner of a small firm are positively associated
>
> with access to business knowledge.

H3b: The social resources of an owner of a small firm are positively associated with access to organizing knowledge.

Entrepreneur Personality and Social Capital

One of the major research streams in entrepreneurship literature centers upon the personality characteristics of entrepreneurs. Some entrepreneurship researchers study these characteristics in order to understand whether or not entrepreneurs differ from managers or other non-entrepreneurs. This research suggests various differentiating characteristics, including a need for achievement (McClelland, 1967), risk propensity (Brockhaus, 1980), tolerance for ambiguity (Sexton & Bowman, 1985), risk perceptions (Sarasvathy, Simon & Lave, 1998), and counterfactual thinking (Baron, 2000).

We examine whether an entrepreneur's locus of control might impact his or her social capital. Individuals with an internal locus of control perceive themselves as active participants in the accomplishment of life goals. On the other hand, those with an external locus of control believe life events to be more coincidental (Rotter, 1966). We hypothesize that an entrepreneur with an internal locus of control will proactively establish and maintain relationships with stakeholders and will seek out opportunities for friends, associates and other contacts to use their resources for the benefit of his or her firm. We are unaware of any other study that relates locus of control and social capital. Therefore,

H4a: An entrepreneur's internal locus of control will positively associate with his or her ties with external stakeholders (competitors, customers and suppliers).

H4b: An entrepreneur's internal locus of control will positively associate with his or her social resources.

Social Capital, Knowledge Acquisition and Knowledge Exploitation

Organizational learning entails the acquisition and exploitation of knowledge. We have already suggested that relationships with external stakeholders play a role in a focal firm's acquisition of knowledge. Now, we consider the exploitation of knowledge and the role of internal relationships in that exploitation.

Knowledge Acquisition and Organizational Learning

In his book entitled *The Fifth Discipline: The Art and Practice of the Learning Organization*, Senge suggests that organizational learning encompasses five disciplines including systems thinking, personal mastery, mental models, shared vision and team learning. The systems thinking, shared vision and team learning disciplines are very similar to organizational social capital. As a result, we focus on the disciplines of personal mastery and mental models to represent generative organizational learning. According to Senge (1990), personal mastery refers to a culture and process within an organization "where challenging the status quo is expected ... [resulting in] continually clarifying what is important..." (p. 142). Similarly, the mental models discipline enables employees to re-evaluate market and operational assumptions. We expect that access to business and organizing knowledge from external stakeholders will positively influence generative learning or the disciplines of personal mastery and mental models.

H5a: Access to business knowledge is positively associated with generative learning.

64

H5b: Access to organizing knowledge is positively associated with generative learning.

Organizational Social Capital and Knowledge Exploitation

Leana and Van Buren (1999) introduce the construct of organizational social capital in their conceptual model of employment practices. They define organizational social capital "as a resource, reflecting the character of social relations within a firm...[that] is realized through members' levels of collective goal orientation and shared trust, which create value by facilitating successful collective action" (Leana & Van Buren, 1999, p. 538). According to these scholars, organizational social capital possesses two dimensions – associability and resilient trust. Associability includes interdependence among employees as well as an emphasis on achievement of organizational goals. Resilient trust results from "experience with the other parties and/or beliefs about their moral integrity" (p. 543). This combination of associability and trust should encourage cooperation among employees that will facilitate the internal diffusion of externally obtained knowledge and the creative employment of this knowledge for problem solving. Thus,

H5c: Organizational social capital will moderate the relationship between access to business knowledge and generative learning. Specifically, organizational social capital will be associated with a stronger relationship between access to business knowledge and generative learning.

H5d: Organizational social capital will moderate the relationship between access to organizing knowledge and generative learning. Specifically, organizational social capital will be associated with a stronger relationship between access to organizing knowledge and generative learning.

Knowledge Exploitation and Firm Performance

The knowledge-based view also addresses firm performance. According to this perspective firms that absorb and implement new knowledge are better able to respond to market demands, lower operating costs and enhance performance (Kogut & Zander, 1992; Uzzi, 1996). As a result, we contend that:

H6: Generative learning is positively associated with firm performance.

Two rapidly growing segments of business ownership include African-American and female owned firms. Between 1992 and 1997, female entrepreneurship rose 16 percent and "the number of African-American-owned businesses increased by 26 percent...compared with an increase of 7 percent in the number of all businesses" (U.S. Small Business Administration Office of Advocacy, 2001, p. 10). Despite these increasing entrepreneurial participation rates, the performance of small African-American and female owned firms tends to lag behind non-minority and male-owned firms, respectively. We investigate social capital-related reasons for these performance differentials.

Social Capital and Firm Performance of African-American Firms

The limited extant research on the performance of African-American firms consistently shows that these firms are smaller and are less likely to survive than non-minority owned firms (Bates, 1990). However, existing research suggests varying explanations. Some studies indicate that clientele characteristics lower firm performance. African-American businesses tend to depend upon an almost exclusively African-American clientele (Van Fleet & Van Fleet, 1985), which on average has lower disposable income than other

ethnicities (Cummings, 1999). Other studies point to owner educational levels as the explanation for the lower sales and survival rates of African-American businesses. These studies indicate that African-American entrepreneurs are generally less educated than other entrepreneurs (Christopher, 1998). One study finds African-American high school dropouts more likely to start a business than African-American college graduates (Fairlie, 1999). Another study uncovers a negative relationship between minority networks and owners' perception of firm performance. Specifically, "respondents who are members of a Black American organization report they are much less likely [than those who are not members of a Black organization] to consider their business a success (10 times less likely)" (Rhodes & Butler, 2004, p. 65). We seek to further clarify this finding by comparing the relational embeddedness of small African-American firms to their non-African-American peers.

H7a: African-American owned firms will have weaker ties with their external stakeholders (competitors, customers and suppliers) than non-African-American owned small firms.

H7b: African-American small business owners will have fewer social resources than non-African-American small business owners.

Social Capital and Firm Performance of Women-Owned Firms

Female ownership of business is on the rise yet scholarly examination of women-owned businesses is limited (Brush, 1992). Within the existing literature on female entrepreneurship, research identifies several educational and psychological differences between female and male entrepreneurs. That is, female entrepreneurs tend to have liberal arts educational backgrounds compared to business or engineering backgrounds for male

67

entrepreneurs and exhibit lower tolerances for risk (Brush, 1992). However, existing research lacks clarity regarding how women-owned businesses perform vis-à-vis firms owned by men.

Conflicting findings exist in research on the comparative performance of female-owned firms. A few studies indicate that female- and male-owned firms perform similarly while many studies reveal that female firms under-perform their male counterparts (Weiler & Bernasek, 2001; Brush, 1992). Among studies uncovering performance differences, some suggest these differences may relate to social capital.

One social capital explanation for the performance of female-owned firms involves relationships with stakeholders. Research shows that female entrepreneurs often face customer and supplier 'discrimination'. In other words, male-dominated customer networks often reject female supplied products and services in favor of those offered by men. Similarly, bankers and venture capitalists, many of which are male, may be less likely to lend to or invest in women businesses (Greve & Salaff, 2003; Weiler & Bernasek, 2001; Brush, 1992). Additionally, women business owners may inadvertently reduce their own social capital. Female entrepreneurs tend to rely on exclusively female or familial advice and support networks that may limit access to information and other resources due to the small size and the density of these networks (Brush, 1992). Therefore, we argue that:

H8a: Women owned small businesses will have weaker ties with their external stakeholders (competitors, customers and suppliers) than male owned small firms.

68

H8b: Women small business owners will have fewer social resources than male small business owners.

This chapter presents several main arguments regarding factors affecting the performance of small firms: First, relational embeddedness among small firms and their primary stakeholders provides access to business and organizing knowledge. Second, internal relational embeddedness among firm employees impacts business and organizing knowledge performance effects. Third, knowledge management affects firm performance. Fourth, entrepreneur locus of control impacts tie strength and social resources. We also present arguments in this chapter suggesting differences in relational embeddedness between African-American and non-African-American owned small firms and between female and male-owned firms.

The arguments set forth in this chapter were subjected to empirical testing, analysis and evaluation. To this end, chapter four discusses this study's research methodology and measurement of constructs in detail. Data collection entailed questionnaire surveys of small firms in various regions of the U.S. and interviews of three entrepreneurs. These data were used to test the hypotheses comprising the study's conceptual framework.

CHAPTER 4

RESEARCH METHODOLOGY AND CONSTRUCT MEASUREMENTS

This chapter describes the construct measurements and research methodologies employed to test the study's hypotheses. The chapter begins with a brief summary of popular, extant methodologies used to examine social capital, social networks and knowledge networks. Then a description of the design of the present research study is presented. The chapter concludes with an explication of the sampling, data collection and constructs measurement procedures.

Popular Social Capital, Social Network and Knowledge Network Methodologies

This research study relies upon theoretical and empirical scholarship within the social capital, social network, knowledge management and knowledge network literatures. Each of these literatures exhibits varied forms of empirical analysis. Nevertheless, a brief discussion of the commonly implemented research methodologies will be provided.

Social capital theory considers the impact of relationships and social structure on behavior. The research designs of social capital studies represent two main types – total network or ego-network studies. With total network studies, researchers use saturation sampling in order to gather data from every node or member of the network. Ego-network studies, however, collect data on the network from the perspective of only one node, the ego, in the network (Wasserman & Faust, 1994). This present study is an ego-network study.

For both total network and ego-network studies, three common means of data collection in extant research include name generation, position generation and ethnography. The name generator technique asks respondents to list names of members of their social network (Wellman, 1979). The position generator technique "use[s] a sample of structural positions...(occupations, authorities, work units, class or sector) and ask[s] respondents to indicate contacts (e.g., those known on a first-name basis), if any, in each of the positions" (Lin, 1999). Ethnographic social capital and social network studies generally entail semi-structured interviews. For example, Uzzi's (1996, 1997) studies use ethnography to examine embeddedness in the New York City area better dress industry.

According to social capital theory, "actors and their actions are viewed as interdependent rather than independent, autonomous units" (Wasserman & Faust, 1994). As a result, social network analysis requires analytical tools that accommodate interdependence among data. Such tools may include ordinary least squares regression (Uzzi, 1999), logistic regression (Uzzi, 1996), structural equations modeling (Seibert, Kraimer & Liden, 2001, Yli-Renko, Autio & Sapienza, 2001), quadratic assignment principle (Tsai, 2000) and computational modeling. Hyatt, Contractor and Jones' (1997) article discusses the merits of simulation or computational modeling for the investigation of social networks. According to these scholars, computational modeling allows researchers to more easily take into account the effects of multiple theoretical factors, especially those pertaining to non-linear inter-relationships. Researchers may also with computational modeling predict a network's evolution over time. The predictions could then be compared with actual data to reinforce or refine organizational theory.

Research Design

As shown in the previous section, research in social capital and network analysis reflects rich and varied methodological practices. This variety not only offers choices to researchers but also facilitates research methodology triangulation. According to Jick (1979), in order to maximize precision, research designs should include more than one methodology such that "the weaknesses in each single method will be compensated by the counter-balancing strength of another...Perhaps the most prevalent attempts to use triangulation have been reflected in efforts to integrate fieldwork and survey methods" (p. 604). Nevertheless, Jick (1979) admits that triangulation has its challenges, particularly if results from one method appear to conflict with those from another method.

Given the potential benefits of a triangulated research design, this present study employed multiple research methods and analytical tools. One method gathered ego-network data via survey questionnaires and used these data to test hypotheses with ordinary least squares regression via SPSS. The second method gathered ego-network data via semi-structured interviews. These data were analyzed using Atlas.ti.

Samples and Data Collection

As previously stated, this research study examines the effects of social capital and knowledge management on the performance of small firms using ego-network data gathered from survey questionnaires and from semi-structured interviews. Our sampling criteria required that each firm must: (1) have been in existence for at least one year, (2) have fewer than 500 employees and (3) be independently owned and operated. Our

definition of small size, or firms with fewer than 500 employees, corresponds with that of the U.S. Small Business Administration.

Survey Sample and Data Collection

With respect to the data gathered via survey questionnaires, the sample included small firms representing various industries and operating in geographic locations throughout the U.S. We constructed our sampling frame from multiple sources including 1) a random sample of 500 small businesses registered with Dun and Bradstreet, 2) small businesses featured in Black Enterprise magazine issues published during 2004 – 2005 and 3) member businesses of three business associations located in a large northeastern U.S. metropolitan city. We included businesses from Black Enterprise magazine in hopes of increasing the response rate of African-American small business owners for two of our hypotheses tests. We included local business association members in order to increase our study's overall response rate.

After obtaining approval from the university Institutional Review Board, we conducted multiple mailings of our survey to this sampling frame. In the first mailing, we distributed 549 surveys resulting in the receipt of 40 completed surveys. One hundred and seventy nine surveys were mailed in our second mailing, fifteen of which were completed and returned to us. Our third mailing involved the distribution of 95 surveys and we received 14 completed surveys in response. Mann-Whitney non-parametric tests comparing early and late respondents reveal statistically significant differences with respect to firm location and ethnicity. The early respondents are more racially and geographically diverse than later respondents. As a result, we included business location

(urban versus suburban) as one of our control variables in all regression analyses. Since testing for non-respondent bias was challenging, we compared characteristics of our respondents to those reported in The Annual Report on Small Business and Competition, a publication of the U.S. Small Business Administration Office of Advocacy. As shown in Table 4.10, our respondents appear representative of U.S. small businesses with respect to age, gender and education.

Overall, we collected 79 of the 823 surveys distributed across our three mailings. Virtually all of the surveys were complete. On average, one percent of the data collected for the seven independent variables was missing. Roughly one percent of the data was missing for the objective measure of firm performance while four percent of the subjective measure of firm performance was missing. The pattern of missing data appears random. For each construct, we replaced missing data with the mean for the index measuring that construct. As a result, the 79 surveys reflect a 9.59% response rate. This response rate compares with other studies of entrepreneurial firms involving mail surveys (McDougall, Covin, Robinson & Herron, 1994).

Semi-Structured Interview Sample

With respect to the data gathered via semi-structured interviews, its sample consisted of three small firms. Each firm competes in one of the three major industrial classifications of retail, service or construction/manufacturing. Contrary to the geographic diversity of the survey sample, all three of these firms operate in a large northeastern U.S. metropolitan area. One entrepreneur, Deborah, owns a "neighborhood café that serves gourmet coffees, teas, and other food items to [members of her community], including

74

[students and employees of a nearby elementary] school, [employees of] local businesses, residents [and public transit commuters]". Another interviewee named Janet owns a "natural bath and skin care [business], consisting of hand-made products [that are] made fresh weekly." Rico, the third entrepreneur-interviewee, is a partner in a full-service mechanical contracting firm. Table 4.11 summarizes basic demographic and organizational characteristics of each entrepreneur and his or her small firm. These entrepreneurs and their businesses reflect racial, gender and industry diversity.

Survey and Semi-Structured Interview Instruments

Most of the constructs of this study required the development of new measurement scales for both the survey and the semi-structured interview instruments since only a few norm-referenced scales pre-exist. The scale development process relied primarily on theoretical conceptualizations of constructs in extant literature or on the adaptation of existing scales to ensure relevance to the phenomena investigated by this study.

Survey Instrument

The survey questions ask about ties between the focal firm and its external stakeholders in addition to basic information about the focal firm and its ties internally. Given the lack of norm-referenced measures for many of our constructs and in order to promote data validity and reliability, the questionnaire development process involved numerous forms of evaluation (Peterson, 2000, Thomas, 2004). First, two language experts reviewed the wording of survey items to ensure clarity, brevity and grammatical correctness. Second, two subject matter experts evaluated the survey items to assess whether owners of small firms would possess sufficient knowledge to answer the survey questions. One subject

matter expert was the Executive Director of a university's Innovation and Entrepreneurship Institute. The second subject matter expert was an entrepreneur who has owned a small business for over twenty years. Third, survey methodology experts, one being a statistics doctoral student and the other a former market research analyst, suggested improvements to the survey. Fourth, we conducted a pilot test of the survey using eight entrepreneurs who own small businesses. The pilot test revealed the average amount of time required to complete the survey as well as any potentially confusing items. Numerous changes were made to the wording and construction of the questionnaire as a result of the expert feedback and pilot study.

The final version of the survey questionnaire includes seven sections. The first three sections include items that measure tie strength. Section one asks respondents to indicate the number of customers in total as well as repeat customers with which he or she has face-to-face and/or telephone contact in an average week. Five point scales are provided for respondents to indicate their responses. The second section includes three items that address perceptions of multiplexity between the entrepreneur and external stakeholders. Each question in this section asks if the entrepreneur considers his or her relationships with repeat customers, primary suppliers or key competitors, respectively, as more than business relationships. The response categories used include: 1= strongly disagree; 2= disagree; 3= agree; 4= strongly agree; 0= not applicable; 0= I'm not sure. Our survey's third section asks respondents to indicate the number of times in an average week that he or she has face-to-face and/or telephone contact with a repeat customer, a primary supplier and a key competitor. The same five point scale, each point indicating a range of times in a week, is used for these three items. The fourth section of our survey includes

items intended to measure access to business and organizing knowledge. The first five items in this section address access to business knowledge. Each respondent is asked to indicate whether he or an employee can easily obtain information about pricing, customer needs, new products, industry trends, and improvements in information technology. Similarly, the three items addressing access to business knowledge request how easily information can be obtained about managing employees, cash flow and work flow. Section five of our survey includes nine items, four organizational learning items and five organizational social capital items. Response categories for sections four and five are the same as those used in section two. The sixth section asks basic questions about the small business while the seventh section asks questions about the small business owner. Within section seven, there are three items that serve as measures of social resources along with three items that intend to measure locus of control. The response categories for these six items are the same as those used in sections two, four and five. The remaining items in section seven address the entrepreneur's race, gender, education and age.

Following the pilot study, the final version of the questionnaire was administered by mail to the survey sample group who were assured of data confidentiality as well as provided with a brief description of the study's objectives and a compelling request for participation. A copy of the final version of the questionnaire is presented in Appendix A.

Semi-Structured Interview Instrument

We also sought to promote the reliability and validity of the interview protocol developed for the qualitative component of our study. First, the interview protocol was pilot tested using a university faculty member who is also an entrepreneur. This pilot test resulted in

several changes to the wording of various questions. Second, each interviewee agreed to meet on three separate dates to complete the interview process. According to Seidman (1998), "the three-interview structure incorporates features that enhance the accomplishment of validity. It places participants' comments in context. It encourages interviewing participants over the course of one to three weeks to account for idiosyncratic days and to check for internal consistency of what they say" (Seidman, 1998: 17). Third, the interview data were analyzed using Atlas.ti, a qualitative analysis software application. The analysis process included identifying interesting and/or surprising statements by each interviewee and comparing their responses to theory as well as to one another. A copy of the interview protocol is displayed in Appendix B.

Construct Measurements

Once data collection was complete we tested for internal consistency reliability. This section will include descriptions of each construct and the results of our reliability tests.

Tie Strength

Our survey instrument includes eight items to measure tie strength. Two items address the number of customers in total and repeat customers interacted with in an average week. Three items, one for each external stakeholder, address multiplexity and three capture frequency of contact with suppliers, competitors and customers, respectively. These items reflect extant social capital literature. Granovetter (1973) defines tie strength as a function of contact frequency, intimacy, reciprocity and intensity. Although subsequent researchers determined that these three dimensions correlate with one another such that contact frequency alone easily and parsimoniously measures tie strength

(Nelson, 1989), we also included an item for multiplexity, often associated with strong ties (Brass, Butterfield & Skaggs, 1998).

After data collection, we determined the reliability of our measure of tie strength via Cronbach's alpha. This reliability test led to construction of two tie strength variables. One tie strength variable, with an alpha of 0.695, includes six items related to customer and supplier multiplexity and frequency of contact. The other tie strength variable includes two items: competitor multiplexity and frequency of contact. This second tie strength variable exhibits an alpha of 0.64.

Table 4.1 Tie Strength (suppliers & customers) TIEX Reliability Analysis Cronbach's Alpha = .695			
Item	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
tiecus1a	13.773	.634	.571
tiecus1b	14.094	.743	.534
tiecus2a	20.507	.278	.694
tiesup2b	22.750	.029	.740
tiecus3a	15.014	.566	.602
tiesup3b	18.540	.280	.703

Table 4.2 Tie Strength (competitors) TIECOMX Reliability Analysis Cronbach's Alpha = .640			
Item	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
tiecomp2c	.472	.485	[a]
tiecom3c	.769	.485	[a]
[a] This value is negative due to a negative average covariance among items.			

Social Resources

In the existing literature, this construct has been measured in the context of occupational status attainment (Lin, et al., 1981) and initial public offerings (Florin, Lubatkin & Schulze, 2003). As such, we relied upon extant entrepreneurship literature to develop unique scale items that relate to small firms. Social resources represent tangible and intangible benefits that accrue from knowing people with the informational, financial or political resources needed to achieve one's goals. According to extant entrepreneurship research, successful entrepreneurs tend to know other successful entrepreneurs (Bruno & Tyebjee, 1982) have the support of family and friends (Rhodes & Butler, 2004) and compete in a business friendly political-legal environment (Gnyawali & Fogel, 1994). In order to measure social resources of small firms, we designed three items, each of which reflects these pro-entrepreneurial conditions. The reliability test that we conducted on these three items using our survey data indicated low reliability that prompted us to combine these items with those intended to measure locus of control. As a result, we discuss this combined social resource-locus of control variable within our description of the locus of control construct.

Locus of Control

Rotter (1966) introduces locus of control. Since then numerous scholars from a variety of disciplines study locus of control. Entrepreneurship researchers show particular interest in this personality trait. We adapted three items from Rotter's (1966) scale. As with the social resources measurement items, the three items used in our survey to measure locus of control reflected low internal consistency. Consequently, we tested the reliability of the social resources and locus of control items combined. This variable, SOCRESX, includes two social resources items and two locus of control items. The Cronbach's alpha for this variable is 0.498.

Table 4.3 Social Resources SOCRESX Reliability Analysis Cronbach's Alpha = .498			
Item	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
socres7a	1.789	.372	.352
socres7b	1.774	.262	.461
locus7d	1.939	.283	.433
locus7e*	2.046	.258	.455
* This item is reverse coded.			

Access to Business Knowledge

We adapted the four-item scale that Yli-Renko, Autio and Sapienza (2001) used to measure the knowledge acquisition of technology-based firms and included a fifth item. After conducting a reliability test on our data, we eliminated two items, resulting in an Access to Business Knowledge variable, BUKNX, with a Cronbach's alpha of 0.808.

The three retained items address the ease with which the business owner and/or employees can obtain information about customer needs, new products/services to offer and industry trends.

Table 4.4 Access to Business Knowledge BUKNX Reliability Analysis Cronbach's Alpha = .808			
Item	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
buskn4b	1.328	.524	.862
buskn4c	1.007	.812	.565
buskn4d	1.112	.651	.743

Access to Organizing Knowledge
We created a three-item scale to measure access to organizing knowledge. These three items structurally parallel the aforementioned access to business knowledge scale but include words reflecting organizing knowledge concepts such as human resource, cash flow and operations management. The Cronbach's alpha for this three-item scale is 0.839.

Table 4.5 Access to Organizational Knowledge ORGKNX Reliability Analysis Cronbach's Alpha = .839			
Item	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
orgkn4f	1.411	.664	.818
orgkn4g	1.442	.684	.795
orgkn4h	1.435	.767	.719

Table 4.6 Organizational Learning ORGLRNX Reliability Analysis Cronbach's Alpha = .811			
Item	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
orglrn5a	3.537	.578	.789
orglrn5b	2.856	.628	.768
orglrn5c	3.266	.648	.757
orglrn5d	2.744	.693	.732

Generative Learning/Problem-Solving

We created four items to measure generative learning. These items ask the extent to which respondents and their employees pursue opportunities to discover trends in their industry and to re-evaluate their existing business practices. This variable, ORGLRNX, has a Cronbach's alpha of 0.811.

Organizational Social Capital

Leana and VanBuren (1999) introduce organizational social capital as a bi-dimensional construct including associability and trust. Associability refers to the willingness and ability of organizational members to relegate personal goals to organizational goals. When such associability is coupled with trust among organization members, then the organization possesses organizational social capital. We used Leana and Van Buren's (1999) explication of organizational social capital to create five survey items that reflect these two dimensions. Two of the items address the small business owner's associability and trust while the other three items address employee associability and trust. Using data gathered from our survey, the Cronbach's alpha for this five item variable is 0.811.

Table 4.7 Organizational Social Capital SOCCAPX Reliability Analysis Cronbach's Alpha = .811			
Item	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
orgsc5e	4.446	.180	.764
orgsc5f	3.782	.417	.662
orgsc5g	4.077	.544	.619
orgsc5h	3.639	.641	.569
orgsc5i	3.517	.573	.589

Firm Performance

One challenge of entrepreneurship research involves the measurement of firm performance. Since small firms are often unprofitable, traditional performance measures such as return on sales or return on assets might prove inappropriate. As a result, some researchers use subjective measures of performance (Zahra, Neubaum & El-Hagrassey, 2002). We intend to use two measures of performance. Two items request self-reported 2004 and 2005 gross sales, respectively. The other measure of performance includes two items that request the entrepreneur's satisfaction with his or her firm's growth and profitability. We adapted these two subjective measurement items from Zahra, Neubaum and El-Hagrassey (2002) and Rhodes and Butler (2004). Both performance measures proved reliable. Our objective two-item performance measure, FINPERFX, reflected a Cronbach's alpha of 0.98 while our subjective measure, PERPERFX, reflected a Cronbach's alpha of 0.79.

Table 4.8 Financial Performance (objective) FINPERFX Reliability Analysis Cronbach's Alpha = .980			
Item	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
perf2005	2.113	.961	a
perf2004	2.180	.961	a
[a] This value is negative due to a negative average covariance among items.			

Table 4.9 Financial Performance (subjective) PERPERFX Reliability Analysis Cronbach's Alpha = .790			
Item	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
perfpr	.534	.654	a
perfgr	.569	.654	a
[a] This value is negative due to a negative average covariance among items.			

Control Variables

Entrepreneurship research has uncovered both firm- and environment-related factors that impact performance. As a result, our survey includes questions regarding the age of the business, the number of employees, the primary industry in which the business operates, the form of business ownership, the location of the business (urban, rural, suburban or other), as well as the business owner's ethnicity, gender, education and age. For predictive validity and rigor, we follow the example of Rodan and Galunic (2004) and include several control variables in each of our models:

The main concern regarding non-respondents is that they may differ from the observed population along dimensions which may be linked to the dependent variable and for which the study does not control. We therefore took care to measure and include a long list of control variables... to give at least some reassurance that our models provided estimates of effects that are *net* of the important ways in which non-respondents might differ from respondents (Rodan & Galunic, 2004, p. 552).

Therefore, in order to enhance predictive validity, each of our regression equations includes four control variables. One control variable is the age of the organization. We calculated the natural logarithm for organization age. Another control variable is the age of the small business owner. We created dummy variables to control for the firm's form of ownership and location.

Table 4.10 Characteristics of Survey Respondents Compared To The Annual Report on Small Business & Competition

Demographic Characteristic	Survey Respondents	Demographic Characteristics	Annual Report on Small Business
Female	41.8%	Female	39.2%
Male	58.2%	Male	60.8%
African-American	26.6%	African-American	7.0%
Asian	3.8%	Asian	4.7%
Caucasian	63.3%	Caucasian	88.2%
Hispanic	2.5%		
Other	3.8%		
18 – 27 years old	1.3%	Under 25 years old	5%
28 – 41 years old	24.1%	25 – 34 years old	17.2%
42 – 51 years old	34.2%	35 – 44 years old	29.7%
52 – 60 years old	27.8%	45 – 54 years old	25.9%
61+ years old	12.7%	55 – 64 years old	15.4%
		65+ years old	6.7%
Some High School	1.3%		
High School Graduate	12.7%	High School or less	39.9%
Some College	12.7%	Some College	27.4%
College Graduate	49.4%	College Graduate	19.8%
Graduate/Professional Degree	24.1%	Graduate/Professional Degree	13%

Table 4.11 Characteristics of Interviewees: Entrepreneurs in a Large Northeastern U.S. Metropolitan Area, 2006

Entrepreneur	Race/Gender	Age Range	Highest Educational Level	Year Started Business	Business Form of Ownership	Primary Industrial Sector	Equivalent Full-Time Employees
Deborah	Caucasian/Female	42 - 51	Some college	2000	S corporation	Service	3
Janet	Black/Female	42 - 51	College graduate	2003	Sole proprietorship	Retail	2
Rico	Black/Male	42 - 51	College graduate	1997	Partnership	Construction	7

		Table 4.12 – Survey Measures		
Variable	Code	Item #	•	Source
Tie Strength (suppliers & customers)	TIEX	1a, 1b, 2a, 2b, 3a, 3b	0.695	Brass, Butterfield & Skaggs (1998)
Tie Strength (competitors)	TIECOMX	2c, 3c	0.640	Granovetter (1973)
Social Resources	SOCRESX	7a, 7b, 7d, 7e (R)	0.498	Lin, et al. (1981)
Locus of Control	included in SOCRESX			Rotter (1966)
Access to Business Knowledge	BUKNX	4b, 4c, 4d	0.808	Yli-Renko, Autio & Sapienza (2001)
Access to Organizing Knowledge	ORGKNX	4f, 4g ,4h	0.839	Yli-Renko, Autio & Sapienza (2001)
Generative Organizational Learning	ORGLRNX	5a, 5b, 5c, 5d	0.811	Senge (1990)
Organizational Social Capital	SOCCAPX	5e, 5f, 5g, 5h, 5i	0.695	Leana & VanBuren (1999)
Ethnicity	RACE	7g	-	-
Gender	GENDER	7h	-	-
Firm Performance (Objective)	FINPERFX	6g, 6h	0.980	-
Firm Performance (Subjective)	PERPERFX	6i, 6j	0.790	Zahra, Neubaum & El-Hagrassey (2002); Rhodes and Butler (2004)

Note: "(R)" means item is reverse scored. All indexes are scored so that a high numerical score indicates a large amount of the construct: e.g. a high score on TIEX means strong ties.

CHAPTER 5
HYPOTHESES TESTING AND EMPIRICAL RESULTS

We tested our hypotheses using both quantitative and qualitative methods. We will present the results of our quantitative tests first and then discuss those of our qualitative tests.

Quantitative Results

The quantitative tests use a sampling frame of small, independently owned businesses located throughout the United States. We used SPSS to test our hypotheses via ordinary least squares (OLS) regression. Table 5.1 displays descriptive statistics for each of our study's independent, dependent and control variables.

The typical respondent (67%) employs 0-3 employees. Thirty-eight percent of respondents own and manage a small retail trade business, 30% operate in a service industry, while 19% of respondents indicate 'Other' as the industry in which their business competes. The sole proprietorship and S corporation forms of ownership each comprise 32 percent of our sample followed by limited liability corporations (14%), conventional corporations (11%) and partnerships (9%). The median age range of our respondents is 42-51 years old. A majority, or 73%, of respondents possess a college or graduate degree.

Table 5.1 - Descriptive Statistics						
Variable	Code	N	Min.	Max.	Mean	Std. Dev.
Firm Age	FIRMAGE	77	1	46	12.04	10.724
Firm Size	FIRMSIZE	79	1	4	1.48	0.830
Respondent Age	RESAGE	79	1	5	3.27	1.009
Form of Ownership (Sole Prop=1)	SOLE	79	0	1	0.32	0.468
Firm Location (Urban=1)	URBAN	79	0	1	0.63	0.485
Gender (Female=1)	FEMALE	79	0	1	0.42	0.496
Ethnicity (African-Amer=1)	AFRIC	79	0	1	0.27	0.445
Tie Strength (suppliers & customers)	TIEX	79	1.00	4.67	3.12	0.861
Tie strength (competitors)	TIECOMX	79	1.00	4.00	1.63	0.728
Access to Business Knowledge	BUKNX	78	2.33	4.00	3.32	0.522
Access to Organizing Knowledge	ORGKNX	77	2.00	4.00	3.15	0.572
Generative Organizational Learning	ORGLRNX	79	1.75	4.00	3.03	0.579
Social Resources	SOCRESX	79	2.25	4.00	3.27	0.427
Social Capital	SOCCAPX	78	1.00	4.00	3.03	0.627
Firm Performance (Objective)	FINPERFX	79	1.00	5.00	2.69	1.441
Firm Performance (Subjective)	PERPERFX	76	1.00	4.00	2.84	0.675

Table 5.2 – Correlation Matrix

Variables	frmageln	frmsize	resage	sole	urban	female	afric	tiex	tie-comx	buknx	orgknx	orglrnx	soc-capx	socresx	perper-fx	finper-fx
frmageln	1	.114	.339**	.212	.155	-.348**	-.227*	.201	.063	-.088	.020	.034	.050	-.226*	.175	.300**
frmsize	.114	1	-.063	-.298**	-.097	-.027	-.212	.031	-.133	-.052	-.071	-.033	.041	-.033	.172	.640**
resage	.339**	-.063	1	.145	-.034	-.148	-.160	.074	-.007	-.028	-.088	-.050	-.223*	-.115	.037	-.066
sole	.212	-.298**	.145	1	.179	-.080	-.040	.097	.125	.024	-.077	-.152	-.159	-.020	-.193	-.270*
urban	.155	-.097	-.034	.179	1	.113	.220	.317**	.059	.120	.161	-.015	.036	.195	-.006	.075
female	-.348**	-.027	-.148	-.080	.113	1	.246*	.043	-.031	.161	-.003	-.073	.049	.060	-.139	-.299**
afric	-.227*	-.212	-.160	-.040	.220	.246*	1	-.243*	.111	.107	.122	.106	.104	.301**	-.310**	-.349**
tiex	.201	.031	.074	.097	.317**	.043	-.243*	1	.163	.171	.091	.064	.094	.163	.206	.224*
tiecomx	.063	-.133	-.007	.125	.059	-.031	.111	.163	1	.095	.194	.112	-.053	.109	.088	-.182
buknx	-.088	-.052	-.028	.024	.120	.161	.107	.171	.095	1	.561**	.369**	.155	.028	.126	-.160
orgknx	.020	-.071	-.088	-.077	.161	-.003	.122	.091	.194	.561**	1	.424**	.194	.028	.301**	-.029
orglrnx	.034	-.033	-.050	-.152	-.015	-.073	.106	.064	.112	.369**	.424**	1	.424**	.212	.286*	.034
soccapx	.050	.041	-.223*	-.159	.036	.049	.104	.094	-.053	.155	.194	.424**	1	.119	.259*	.145
socresx	-.226*	-.033	-.115	-.020	.195	.060	.301**	.163	.109	.028	.028	.212	.119	1	-.001	-.111
perperfx	.175	.172	.037	-.193	-.006	-.139	-.310**	.206	.088	.126	.301**	.286*	.259*	-.001	1	.263*
finperfx	.300**	.640**	-.066	-.270*	.075	-.299**	-.349**	.224*	-.182	-.160	-.029	.034	.145	-.111	.263*	1

Statistical significance (two-tailed): * = .05 ** = .01

The correlation matrix of all variables is presented in Table 5.2. The negative and statistically significant correlation between the form of ownership dummy variable and objective financial performance suggests that sole proprietorships earn lower gross sales than small businesses of other forms of ownership. Several correlations support extant research. For instance, both the female and African-American dummy variables show negative correlations with the age of the firm. Negative correlations are also exhibited between firm performance as measured by gross sales and female and African-American small business owners, respectively. These correlations, consistent with prior studies, suggest that female-owned and African-American-owned firms are younger than other firms and experience lower firm performance.

None of the correlations among the independent variables exceed 0.90, indicating a lack of multicollinearity. The positive correlation between access to business knowledge and generative learning provides preliminary support for hypothesis 5a. Similarly, the 0.424 correlation between access to organizing knowledge and generative learning suggests support for hypothesis 5b. Our subjective measure of firm performance correlates positively with generative learning providing preliminary support for hypothesis 6. Furthermore, the negative correlation between the Ethnicity (African-American=1) dummy variable and TIEX, representing ties with customers and suppliers, indicates preliminary support for hypothesis 7a.

A potential threat to data validity involves a measurement challenge referred to as the 'halo' effect. This measurement bias occurs when a respondent's response to one question prejudices his or her responses to subsequent questions, resulting in the

"suppression of variation in ... [responses]" (Wilkie, McCann & Reibstein, 1974). With respect to our study, a 'halo' effect might occur if a respondent's perception of his small business' profitability influenced his responses to all other survey items. The possibility of 'halo' effects on our results is mitigated since the survey items addressing firm performance occur near the end of the survey instrument.

Endemic of entrepreneurship research, our sample consists of small businesses that were in operation at the time of our survey. According to Cassar (2004), "surviving firms may have different characteristics [from those firms] that have since 'died'... The longer the temporal period between surveying respondents and the actual start-up, the greater influence of this bias on results" (p. 265). The average length of time since start-up for our sample was 12 years. As a result, our analytical results are subject to survivorship bias.

Our first hypothesis proposes that ties between a small business owner and his or her external stakeholders will associate positively with access to business knowledge. As a result of our reliability tests, we use two tie variables; one representing ties with customers and suppliers (TIEX) and the other representing ties with competitors (TIECOMX). Model 2 in Table 5.3 reveals the positive though statistically insignificant coefficients for the TIEX (β=0.205, p>0.10) and TIECOMX (β=0.062, p>0.10) variables. The positive coefficients for these two tie variables reflect the direction predicted by Hypothesis 1.

94

Similarly, our second hypothesis predicts that ties between a small business owner and his or her external stakeholders will associate positively with access to organizing knowledge. The results, shown in Model 4 of Table 5.4, reflect positive coefficients for both the TIEX and TIECOMX variables, as predicted by Hypothesis 2, though neither coefficient achieves statistical significance.

In order to maximize internal consistency, we combined two survey items originally intended to measure social resources with two of the locus of control items into one variable, SOCRESX. We used this SOCRESX variable in tests of our third and fourth pairs of hypotheses. Our third pair of hypotheses suggests that a small business owner's social resources will positively relate to his or her access to business knowledge (H3a) and organizing knowledge (H3b). Our tests reject both of H3a and H3b as shown by the negative coefficients for SOCRESX in Model 2 of Table 5.3 and Model 4 of Table 5.4.

Hypothesis 4a predicts that an entrepreneur's locus of control will relate to his or her ties with external stakeholders. As previously stated, we used SOCRESX, a variable that includes both social resources and locus of control measurement items, in both of our tests of H4a. We conduct two tests of H4a, one for each tie variable. Our first test includes TIEX as the dependent variable and reflects a positive and statistically significant coefficient for SOCRESX. TIECOMX is the dependent variable in our second of test of H4a. This second test indicates a positive but statistically insignificant coefficient for SOCRESX. The results of these tests are displayed in models 6 (Table 5.5) and 9 (Table 5.6). We were unable to test Hypothesis 4b that predicted a positive

relationship between locus of control and social resources since we combined the social resources and locus of control measures into one variable, SOCRESX.

Our fifth set of hypotheses relates access to knowledge, generative learning and organizational social capital. Hypothesis 5a states that access to business knowledge will positively relate to generative learning. Our test supports this hypothesis as shown by the positive and weakly statistically significant coefficient ($\beta=0.222$, $p<0.10$) for the BUKNX variable in Model 12 (Table 5.7). Likewise, the test of hypothesis 5b indicates a positive and statistically significant relationship between access to organizing knowledge and organizational learning. Herein, the standardized coefficient for the access to organizing knowledge variable is $\beta=0.230$ ($p<0.10$). We obtain mixed results in our tests of the predictions of Hypotheses 5c and 5d that organizational social capital will moderate the positive relationship between access to knowledge and generative learning. In our test of Hypothesis 5c, we attain positive but statistically insignificant coefficients for the interaction term between access to business knowledge and organizational social capital. On the other hand, our test results reject H5d as indicated by the negative coefficient for the interaction term, CAPXOK. These test results are displayed in Table 5.8 via Model 14.

The sixth hypothesis suggests a positive relationship between generative learning and firm performance. We use both an objective and a subjective measure of firm performance. The objective measure, FINPERFX, represents the 2004 and 2005 gross receipts earned by the small business. The subjective measure, PERPERFX, is a

composite of the respondent's perception of the degree to which his or her business is on track to meet its profitability and growth objectives. In both tests, displayed in Models 16 (Table 5.9) and 18 (Table 5.10), the coefficients for ORGLNX are in the hypothesized direction though statistically insignificant.

We also conducted tests that compared the social capital of African-American to non-African American entrepreneurs. Hypothesis 7a suggests that African-American entrepreneurs will possess weaker ties with their external stakeholders in comparison to non-African American small business owners. We conducted two tests of H7a, one for each tie variable. The negative and highly significant coefficient (β=-0.327, $p<0.01$) for the Ethnicity variable (African-American =1) in Model 7 (Table 5.5) indicates support for this hypothesis. On the other hand, the regression test using the competitor tie strength variable rejects H7a as shown by the positive yet insignificant coefficient (β=0.115, $p>0.10$) for the Ethnicity variable in Model 10 (Table 5.6). Hypothesis 7b proposes that African-American small business owners will possess lower levels of social resources than other business owners. However, contrary to H7b, our statistical test (Model 20, Table 5.11) indicates a positive and significant relationship between African-Americans and social resources (β=0.243, $p<0.05$).

Hypotheses 8a and 8b suggest that female-owned businesses will exhibit weaker ties with external stakeholders and fewer social resources than male-owned businesses, respectively. Model 7 of Table 5.5 reveals that the coefficient for the Gender variable (Female=1) is positive (β=0.123) rejecting H8a and indicating that women small

business owners have stronger ties with customers and suppliers than their male counterparts. However, the test of H8a (Model 9, Table 5.6) using the competitor tie variable, TIECOMX, reflects partial support for this hypothesis as shown by the negative and statistically insignificant coefficient (β=-0.031, p>0.10). Our test of H8b provides suggestive evidence in support for our prediction that women business owners will possess fewer social resources than men business owners. As shown by Model 20 in Table 5.11, the Gender variable (Female=1) coefficient is negative yet insignificant (β=-0.105, p>0.10).

In total, we conducted twenty tests for our fourteen testable hypotheses using ordinary least squares regression. A summary of each hypothesis and the level of support are presented in Table 5.12. Since most of the paths are in the direction predicted by our model, we also performed structural equations modeling using AMOS 5.0 in order to test our path model in its entirety.

We developed a parsimonious structural equations model that closely resembled our hypothesized model and reflected a good fit with the data. This structural equations model is displayed in Figure 5.1 and the model's statistics are presented in Table 5.13. Ties with customers and suppliers (TIEX) in our structural equations model positively affect access to business knowledge in support of hypothesis 1 while ties with competitors (TIECOMX) positively impact access to organizing knowledge (H2). In support of hypothesis 4a, social resources (SOCRESX) positively influence ties with external stakeholders as shown by the positive parameter estimates for the paths

between SOCRESX, TIEX and TIECOMX. We also obtain support for hypotheses 5a and 5b with our structural equations model as access to both forms of knowledge are shown to positively affect generative learning. The positive parameter estimate for the path between generative learning and subjective firm performance supports hypothesis 6. In addition, the negative parameter estimate in our structural equations model for the path from our Ethnicity (African-American = 1) variable and TIEX provides support for hypothesis 7a. On the other hand, the positive parameter estimate for the path from our Ethnicity (African-American=1) variable and SOCRESX rejects hypothesis 7b.

Table 5.3 – Regression Models				
	Dependent variable: BUKNX			
Model #:	1		2	
Independent variables:	Beta	Sig.	Beta	Sig.
Constant	0.037	0.930	-0.041	0.932
firm age (natural log)	-0.114	0.381	-0.110	0.451
firm size	-0.020	0.870	-0.001	0.995
respondent age	0.011	0.928	0.016	0.899
form of ownership (sole proprietorship=1)	0.017	0.896	0.019	0.881
firm location (urban=1)	0.133	0.268	0.045	0.741
tiex (customers & suppliers			0.205	0.144
tiecomx (competitors)			0.062	0.609
socresx			-0.085	0.518
gender (female=1)			0.090	0.493
ethnicity (African-amer=1)			0.122	0.396
R^2	0.054		0.081	
Adjusted R^2	-0.011		-0.054	
Note: "Beta" indicates standardized coefficient.				

Table 5.4 – Regression Models				
	Dependent variable: ORGKNX			
Model #:	3		4	
Independent variables:	Beta	Sig.	Beta	Sig.
Constant	0.193	0.652	0.194	0.483
firm age (natural log)	0.069	0.591	0.030	0.834
firm size	-0.111	0.367	-0.073	0.568
respondent age	-0.092	0.456	-0.080	0.525
form of ownership (sole proprietorship=1)	-0.141	0.263	-0.149	0.245
firm location (urban=1)	0.161	0.175	0.137	0.308
tiex (customers & suppliers)			0.070	0.611
tiecomx (competitors)			0.176	0.148
socresx			-0.062	0.636
gender (female=1)			-0.050	0.698
ethnicity (African-amer=1)			0.093	0.516
R^2	0.054		0.097	
Adjusted R^2	-0.011		-0.036	
Note: "Beta" indicates standardized coefficient.				

Table 5.5 – Regression Models						
Dependent variable: TIEX						
Model#	5		6		7	
Independent variables	Beta	Sig.	Beta (H4a)	Sig.	Beta (H7a, 8a)	Sig.
Constant	-0.598	0.049	-0.435	0.163	-0.420	0.190
firm age (natural log)	0.128	0.297	0.172	0.173	0.110	0.384
firm size	0.056	0.634	-0.029	0.800	-0.012	0.921
respondent age	0.040	0.734	0.014	0.902	0.014	0.903
form of ownership (sole proprietorship=1)	0.027	0.823	-0.004	0.972	0.001	0.995
firm location (urban=1)	0.299	0.010	0.309	0.007	0.358	0.002
socresx			0.250	0.028		
gender (female=1)			0.149	0.189	0.123	0.289
ethnicity (Afr-amer=1)			-0.388	0.001	-0.327	0.006
R^2	0.128		0.274		0.221	
Adjusted R^2	0.068		0.191		0.144	
Note: "Beta" indicates standardized coefficient.						

Table 5.6 – Regression Models					
Dependent variable: TIECOMX					
Model #:	8		9		10	
Independent variables	Beta	Sig.	Beta (H4a)	Sig.	Beta (H7a, 8a)	Sig.
Constant	0.132	0.292	0.017	0.973	0.026	0.959
firm age (natural log)	0.075	0.579	0.112	0.435	0.085	0.541
firm size	-0.120	-0.970	-0.104	0.420	-0.097	0.451
respondent age	-0.050	-0.406	-0.041	0.745	-0.041	0.745
form of ownership (sole = 1)	0.077	0.610	0.084	0.512	0.086	0.501
firm location (urban=1)	0.021	0.173	-0.023	0.859	-0.002	0.987
socresx			0.107	0.402		
gender (female=1)			-0.020	0.877	-0.031	0.808
ethnicity (African-amer=1)			0.089	0.502	0.115	0.372
R^2	0.032		0.053		0.043	
Adjusted R^2	-0.034		-0.056		-0.051	
Note: "Beta" indicates standardized coefficient.					

Table 5.7 – Regression Models				
	Dependent variable: ORGLNX			
Model #	11		12	
Independent variables:	Beta	Sig.	Beta	Sig.
Constant	0.206	0.499	0.062	0.875
firm age (natural log)	0.112	0.870	0.082	0.512
firm size	-0.109	-0.884	-0.057	0.597
respondent age	-0.066	-0.535	0.043	0.690
form of ownership (sole proprietorship=1)	-0.196	-1.534	-0.115	0.297
firm location (urban=1)	-0.010	-0.085	-0.108	0.346
buknx			0.222	0.075
orgknx			0.230	0.068
soccapx			0.325	0.003
tiex (customers & supplier			-0.035	0.765
tiecomx (competitors)			0.052	0.617
socresx			0.206	0.066
gender (female=1)			-0.097	0.377
ethnicity (African-amer=1			0.001	0.994
R^2	0.040		0.393	
Adjusted R^2	-0.025		0.272	
Note: "Beta" indicates standardized coefficient.				

Table 5.8 – Regression Models				
	Dependent variable: ORGLNX			
Model #:	13		14	
Independent variables:	Beta	Sig.	Beta	Sig.
Constant	0.206	0.499	0.073	0.856
firm age (natural log)	0.112	0.870	0.072	0.579
firm size	-0.109	-0.884	-0.057	0.604
respondent age	-0.066	-0.535	0.048	0.672
form of ownership (sole proprietorship=1)	-0.196	-1.564	-0.117	0.296
firm location (urban=1)	-0.010	-0.085	-0.112	0.344
buknx			0.219	0.085
orgknx			0.221	0.097
soccapx			0.322	0.004
capxbk			0.041	0.781
capxok			-0.054	0.713
tiex (cust./suppliers)			-0.030	0.805
tiecomx (competitors)			0.054	0.607
socresx			0.208	0.070
gender (female=1)			-0.098	0.390
ethnicity (Afri-amer=1)			0.006	0.959
R^2	0.040		0.395	
Adjusted R^2	-0.025		0.250	
Note: "Beta" indicates standardized coefficient.				

Table 5.9 – Regression Models				
	Dependent variable: FINPERFX			
Model #	15		16	
Independent variables:	Beta	Sig.	Beta	Sig.
Constant	0.735	0.156	1.714	0.002
firm age (natural log)	0.289	0.002	0.091	0.355
firm size	0.561	0.000	0.533	0.000
respondent age	-0.100	0.264	-0.093	0.283
form of ownership (sole proprietorship=1)	-0.169	0.064	-0.150	0.084
firm location (urban=1)	0.112	0.191	0.182	0.047
orglrnx			0.053	0.579
buknx			-0.154	0.119
orgknx			0.026	0.796
soccapx			0.082	0.353
capxbk			-0.055	0.620
capxok			0.015	0.893
tiex (cust. & suppliers)			0.190	0.043
tiecomx (competitors)			-0.119	0.143
socresx			-0.107	0.226
gender (female=1)			-0.256	0.004
ethnicity (Afri-Amer.=1)			-0.131	0.164
R^2	0.506		0.658	
Adjusted R^2	0.472		0.569	
Note: "Beta" indicates standardized coefficient.				

Table 5.10 – Regression Models				
	Dependent variable: PERPERFX			
Model #	17		18	
Independent variables:	Beta	Sig.	Beta	Sig.
Constant	-0.467	0.285	-0.120	0.794
firm age (natural log)	0.209	0.098	0.030	0.823
firm size	0.085	0.480	0.077	0.502
respondent age	0.003	0.980	0.082	0.492
form of ownership (sole proprietorship=1)	-0.214	0.084	-0.167	0.160
firm location (urban=1)	0.009	0.940	0.033	0.794
orglrnx			0.102	0.444
buknx			-0.053	0.693
orgknx			0.222	0.118
soccapx			0.184	0.134
capxbk			0.046	0.764
capxok			-0.150	0.332
tiex (cust. & suppliers)			0.073	0.566
tiecomx (competitors)			0.092	0.408
socresx			0.050	0.678
gender (female=1)			-0.048	0.687
ethnicity (Afri-Amer.=1)			-0.336	0.011
R^2	0.093		0.348	
Adjusted R^2	0.030		0.180	
Note: "Beta" indicates standardized coefficient.				

Table 5.11 – Regression Models				
	Dependent variable: SOCRESX			
Model #	19		20	
Independent variables:	Beta	Sig.	Beta	Sig.
Constant	0.179	0.552	0.061	0.853
firm age (natural log)	-0.258	0.041	-0.249	0.060
firm size	0.018	0.883	0.068	0.570
respondent age	-0.018	0.878	0.001	0.993
form of ownership (sole proprietorship=1)	0.000	1.000	0.019	0.874
firm location (urban=1)	0.236	0.043	0.195	0.102
gender (female=1)			-0.105	0.384
ethnicity (Afri-amer=1)			0.243	0.047
R^2	0.106		0.158	
Adjusted R^2	0.044		0.075	
Note: "Beta" indicates standardized coefficient.				

H#	Hypothesis	Support?	Model/Table#
	Table 5.12 – Hypotheses and Supporting Evidence		
H1	Ties with external stakeholders are positively associated with access to business knowledge	partial (both TIEX and TIECOMX)	Model 2 (Table 5.3)
H2	Ties with external stakeholders are positively associated with access to organizing knowledge	partial (both TIEX and TIECOMX)	Model 4 (Table 5.4)
H3a	The amount of social resources of an owner of a small firm is positively associated with access to business knowledge	no	Model 2 (Table 5.3)
H3b	The amount of social resources of an owner of a small firm is positively associated with access to organizing knowledge	no	Model 4 (Table 5.4)
H4a	An entrepreneur's internal locus of control is positively associated with his or her multiplex ties with external stakeholders.	yes (TIEX) partial (TIECOMX)	Model 6 (Table 5.5)
H4b	An entrepreneur's internal locus of control is positively associated with his or her multiplex ties with external stakeholder.	not tested	not applicable
H5a	Access to business knowledge is positively associated with generative learning	yes	Model 12 (Table 5.7)
H5b	Access to organizing knowledge is positively associated with generative learning	yes	Model 12 (Table 5.7)
H5c	Organizational social capital will moderate the relationship between access to business knowledge and generative learning.	no	Model 14 (Table 5.8)
H5d	Organizational social capital will moderate the relationship between access to organizing knowledge and generative learning.	no	Model 14 (Table 5.8)

Table 5.12 – Hypotheses and Supporting Evidence			
H6	Generative learning is positively associated with firm performance	partial	Model 16 (Table 5.9); Model 18 (Table 5.10)
H7a	African-American owned small businesses will have weaker ties with their external stakeholders than non-African-American owned small businesses	yes (TIEX) no (TIECOMX)	Model 7 (Table 5.5); Model 10 (Table 5.6)
H7b	African-American small business owners will have fewer social resources than non-African-American small business owners	no	Model 20 (Table 5.11)
H8a	Women owned small businesses will have weaker ties with their external stakeholders (suppliers, competitors and customers) than male owned small businesses	no (TIEX) yes (TIECOMX)	Model 7 (Table 5.5); Model 10 (Table 5.6)
H8b	Women small business owners will have fewer social resources than male small business owners	partial	Model 20 (Table 5.11)

Table 5. 13 – Structural Equations Model Statistics							
	Chi^2	P	d.f.	GFI	AGFI	IFI	NFI
Default model	16.936	0.715	21	0.954	0.902	1.039	0.866

109

Figure 5.1 – Structural Equations Model
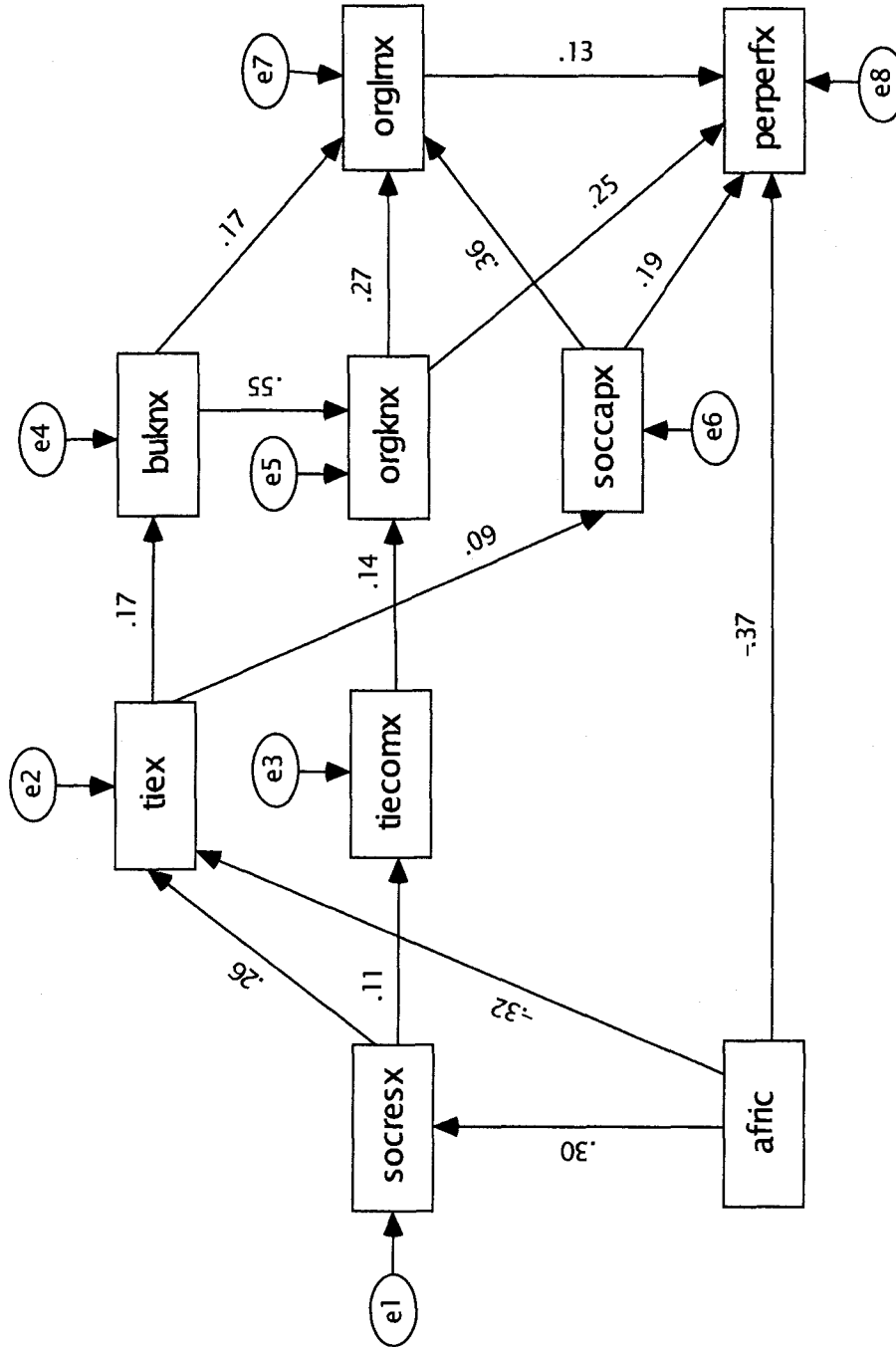
Qualitative Results

The qualitative test involved a sample of three entrepreneurs. We interviewed three entrepreneurs who own small businesses in a large northeastern U.S. metropolitan area.

Hypothesis 1 predicts that ties with external stakeholders will positively associate with access to business knowledge. Neither Rico, a partner in a mechanical contracting firm, nor Janet, the sole proprietor of an all-natural bath and body products retail establishment, acquire business knowledge as a result of their relationships with their suppliers. Janet acknowledges that most of her ties with suppliers are weak ties as much of her interaction with them consists of purchasing products via the suppliers' websites. Deborah, the co-owner of a gourmet coffee shop, indicates that suppliers are a source of knowledge about industry trends. However, she also reveals "with respect to suppliers, our relationships are always friendly and courteous but you keep things at a business level. They might go the extra mile if you need them to. They all know me. When I call in my orders they say 'Oh Hey Deborah'. Sometimes we talk about the weather or something but then we get right to the order." With respect to ties with competitors, partial support was uncovered for hypothesis 1. Deborah shares that benchmarking competitors offers potential sources of knowledge about pricing. However, she admits that she presently underutilizes this potential source. Similarly, Rico comments that "information on industry trends is available but we don't have it organized." Janet's ties with her competitors are weak at best. For both Rico and Deborah customers are sources of knowledge about pricing and customer needs in partial support of hypothesis 1. Instead of stakeholder ties, Rico cites trade journals as

a resource for learning about industry trends. Janet relies on periodicals and popular media for information on industry trends and enhancements in information technology and telecommunications. She also consults her competitors' websites to compare her prices with those of her competitors.

Our second hypothesis relates ties with external stakeholders and access to organizing knowledge. None of our interviewees acquire organizing knowledge as a result of ties with suppliers or with customers. Rico, however, provides partial support for this hypothesis through his comments regarding competitors as potential sources of organizing knowledge about managing employees, cash flow, work flow and work processes. According to Rico, "similar size companies compete so much with one another that they get to know one another well."

Our third set of hypotheses relates social resources and access to business (H3a) and organizing (H3b) forms of knowledge. All three interviewee-entrepreneurs reveal varying amounts of social resources. Family support is common among all three interviewees. However, none of them associate social resources with access to either business or organizing knowledge. On the contrary, Deborah states, "Yes, I personally know other experienced entrepreneurs to whom I can go for encouragement or advice. I know them but I don't go to them for advice and I definitely wouldn't go to them for encouragement."

Hypotheses 4a and 4b propose that an entrepreneur's locus of control will relate to his ties with external stakeholders and his level of social resources. Each interviewee

responded to two statements taken from a norm-referenced measure of locus of control. All three interviewees disagreed with the first statement "success is a matter of hard work; luck has little or nothing to do with it". On the other hand, each agreed with the statement "When I make plans, I am almost certain that I can make them work." Although Deborah added, "I've learned that a plan is important but you can't expect that everything will turn out as planned. There's always something new or that I didn't consider. A plan is critical but you have to be willing to accept that it might not go that way." The mixed responses to the two statements produced inconclusive results regarding each interviewee's locus of control. Furthermore, none of the interviewees indicated a connection between locus of control, ties with external stakeholders or social resources.

Our fifth set of hypotheses relates access to knowledge and generative learning. Two questions were posed to each interviewee-entrepreneur regarding generative learning. The first question asks whether the interviewees and/or their employees seek opportunities to learn more about their industry. In general the response to this first question was affirmative. With regards to her employees, Deborah commented that "Not as many [of my employees seek to learn about the coffee industry] as I'd like. I have employees that are willing to learn but they rarely take the initiative. I think they see the coffee business as temporary for them." Rico's response was mixed in that "Our mechanics are unionized and their union has certain continuing education requirements. The other employees aren't really pursuing that yet. Right now we are just learning on-the-job because there's so much going on." The second generative learning question asked whether the small business owner and/or his employees

113

continually evaluated company assumptions about effective business practices. All three indicated that employees regularly provide feedback about operational issues. The feedback, however, may go unheeded. According to Deborah, "They [employees] are constantly telling me what to do. I say 'thank you' because you don't want to shut someone down. If it's a suggestion requiring an investment and we aren't in a position to do it then we just live with the present condition. You have to weigh the benefits. If it's just going to save someone five minutes then it might not be worth it." These responses indicate that all interviewees consider their small businesses to be learning organizations. Employees and competitors were mentioned either directly or indirectly by one or more interviewee as potential catalysts in their organizations' learning process. As a result, we obtained support for our fifth set of hypotheses.

Our sixth hypothesis predicts that generative learning positively associates with firm performance. We measured firm performance by asking our interviewees to share their perceptions of their firms' ability to meet their profitability and growth objectives. The responses were mixed. Deborah responded affirmatively whereas Janet responded negatively. Rico indicated that his partnership is on track to meet its profitability objectives but not its growth objectives. As previously stated, each interviewee described his/her small business as a learning organization. However, the only direct connection between generative learning and firm performance was made by Deborah when she mentioned that "At this time, I would say 'yeah, it is' [on track to meet profitability and growth objectives] due to support from a lot of resources." Hence, we obtained weak support for our sixth hypothesis.

Our final chapter, chapter six, will iterate the major findings of this study as well as their managerial and theoretical implications. The sixth chapter will also address this study's limitations and suggest opportunities for future research.

CHAPTER 6
DISCUSSION AND CONCLUSION

With this study we aspired to gain further insight into the performance of small firms by examining both the social capital and knowledge management of these firms. To this end, we investigated whether the ties between a small firm and its suppliers, competitors and customers and the social resources of the owner of the small firm positively associate with the firm's access to business and organizing knowledge. In addition, we explored the relationship between access to knowledge and generative organizational learning. Ultimately, we proposed that generative learning relates to firm performance. In order to test our predictions, we employed both qualitative and quantitative research methodologies in this study. We discovered many items of interest.

An ongoing debate occurs within social capital and social network literatures regarding the salience of strong versus weak ties. Granovetter (1973) purports that weak ties more efficiently transmit new, novel information. Nelson (1989) asserts that strong ties promote solidarity and lower conflict. Uzzi (1997) contends that an organization might benefit most from a social network consisting of both strong and weak ties. Our study's results support the strong tie side of the debate. We found that small business owners obtain information about customer needs, new products/services to offer, industry trends, human resource management, finance and operations management from strong ties with their customers, suppliers and competitors.

We also found that small businesses use the business and organizing knowledge that they obtain from strong ties with their external stakeholders in order to re-evaluate their

116

business practices and to seek additional knowledge about the industry in which they compete. In other words, our results indicate that small businesses are learning organizations.

Our quantitative results uncovered that internal ties among employees of small businesses may facilitate the exploitation of business knowledge but may hamper the assimilation of organizing knowledge. Business knowledge entails knowledge of customer needs, new product development and industry trends while organizing knowledge encompasses human resource, cash flow and work flow management. These results suggest an internal stickiness (Szulanski, 1996) related to organizing knowledge. Perhaps employees resist implementation of organizing knowledge since its tenets directly address how they might be treated.

Furthermore, small firm performance was shown to benefit from organizational learning. That is, small business owners that re-evaluated their business practices as a result of acquiring business and organizing knowledge reported higher gross sales and greater confidence in their firm's ability to achieve its growth and profitability objectives.

Consistent with our predictions, our African-American survey respondents reported weaker ties with customers and suppliers in comparison with other respondents. African-American small business owners might intentionally keep ties with their customers weak in order to minimize requests for favors from 'friendly' customers. On the other hand, attempts to survive 'resource poverty' conditions might so overwhelm African-American small business owners that they inadvertently neglect customer relationships.

117

Furthermore, African-American small business owners may experience discrimination on the part of suppliers which results in weak ties.

On the other hand, African-American small business owners report stronger ties with competitors than do other small business owners. If their competitors are also African-Americans this result might reflect a "united we stand, divided we fall" mentality. In other words, cooperation among 'competitors' might facilitate the survival of multiple African-American businesses in an industry. If competitors are non-African-Americans then strong ties with competitors might provide the only means of generative learning since ties with customers and suppliers are weak.

Our quantitative tests indicate that African-American respondents possess more social resources than other respondents. Perhaps the limitation in access to traditional sources of financial capital often experienced by African-American small business owners encourages them to rely more upon family, friends and other experienced entrepreneurs for financial and emotional support. The higher reported levels of social resources by African-American entrepreneurs might also emanate from racial solidarity generated in response to racial discrimination in U.S. society at large. Furthermore, this result might reflect a sampling bias in that well-connected African-American small business owners may have chosen to complete and return our survey.

Prior studies suggested that male customers and suppliers may discriminate against women business owners in favor of male owned businesses (Greve & Salaff, 2003; Weiler & Bernasek, 2001; Brush, 1992). However, our results indicate that female small business owners possess stronger ties with customers and suppliers than their male

counterparts. Conceivably, major changes in societal attitudes in favor of female entrepreneurship may have occurred since the publication of these prior studies.

On the other hand, in support of our hypotheses, our female respondents report weaker ties with competitors and fewer social resources compared to our male respondents. Perhaps women entrepreneurs are entering nascent or fragmented industries with few competitors. Women may intentionally focus on strengthening ties with customers and suppliers but not competitors. Past research has indicated that the social networks of female entrepreneurs tend to be more homogeneous than those of male entrepreneurs. The homogeneity of the female small business owner's social network might limit her social resources.

Several commonalities surfaced among the three interviewees regarding their social capital and social resources. All three interviewees describe their ties with their employees as strong. Each of them possesses social resources in the form of encouragement and support from friends and family members and each knows other experienced entrepreneurs. Although all three possess social resources, surprisingly none of them use their social resources in order to obtain business or organizing knowledge.

We also uncovered interesting results from our quantitative and qualitative analyses that were not hypothesized. For instance, with respect to our structural equations model, there is a positive path from TIEX (ties with customers and suppliers) to organizational social capital (SOCCAPX) which represents ties among employees. Also, organizational social capital (SOCCAPX) is shown to positively and directly impact both generative learning

119

(ORGLRNX) and subjective firm performance (PERPERFX). Furthermore, in our structural equations model access to organizing knowledge (ORGKNX) positively and directly affects subjective firm performance (PERPERFX).

Though not hypothesized, Deborah reveals that she relies upon popular magazines and periodicals for knowledge about managing employees, a facet of organizing knowledge. With respect to knowledge acquisition and management, all three interviewees rely upon the Internet as a source of knowledge. Deborah, however, obtains information from the Internet indirectly from friends as in her words, "I don't own a computer but I have friends who do. If I did [own a computer and have Internet access] I would probably download a lot of information all the time". In addition, Rico draws upon trade journals as a source of knowledge and Deborah consults popular magazines, such as Entrepreneur, for business and organizing knowledge.

<center>Managerial Implications</center>

This study's results may inform and benefit several groups of people. These groups include existing and aspiring small business owners/entrepreneurs, managers of business incubators, managers of local business associations and teachers of entrepreneurship courses. According to our study's results, small business performance may benefit from the development and continuance of a "learning mindset" on the part of small business owners. This "learning mindset" entails viewing each encounter with a supplier, competitor and customer as an opportunity to learn. Small business owners may easily and inexpensively incorporate certain business practices, such as requesting customer

<center>120</center>

feedback, that will reflect and foster a learning mindset. This study also provides further evidence of the salience of networking. Generally, business incubators and local business associations play key roles in encouraging networking among their member-businesses.

Theoretical Implications

Our study makes several contributions to scholarly understanding of small business performance, social capital theory and knowledge management. One such contribution involves the integration of social capital and knowledge management in the analysis of the performance of small businesses. A second contribution pertains to our research design. To our knowledge, this study includes the first use of operationalizations of access to business knowledge, access to organizing knowledge and organizational social capital in an empirical study. The development of these measures should promote future investigations of social capital and knowledge management. Similarly, our third contribution involves our measures of tie strength via multiplexity and frequency of contact. Prior researchers suggest that multiplex ties may be strong and that ties may strengthen as a result of frequent contact. Our qualitative research revealed that frequent contact might not necessarily represent strong ties.

Research Limitations

As with any empirical study, there are limitations to the research design that affect the interpretation of results. First, we collected cross-sectional data that reduce internal validity by making causal direction of relationships among variables ambiguous. Nevertheless, the statistically significant interaction effects that we attained in our OLS

regression equations make causality in directions opposite of our predictions less likely (Krishnan, Martin & Noorderhaven, 2006). Second, our survey includes single item measures for some of our variables. It is recommended that researcher use at least three items to measure each variable in order to maximize reliability. Third, our convenience sample limits the external validity of our study's results. Fourth, our low response rate limits the generalizability of our results. Fifteen of our twenty empirical tests failed to achieve statistical significance. The low response rate might have contributed to the lack of statistical significance for these tests. Fifth, our survey asked each respondent to describe segments of his/her business' social network. Therefore, we obtained the perspective of only one member of each network. Employing a total network design, as opposed to an ego-network design, might have proven valuable.

Suggestions for Future Research

Several opportunities for future research may be suggested as a result of our study. First, future research should seek to enhance internal and external validity. The use of a representative random sample in the future will clarify the causal nature of relationships between small business firm performance, ties with external stakeholders, social resources, access to business and organizing forms of knowledge, generative learning and organizational social capital. In addition, a longitudinal research design will further address causality. Future longitudinal research might also allow researchers to compare longitudinal data on the effects of a business' social network to computational modeling of the evolution of a business' social network over time. Second, a total network design could provide additional insights. For example, Mudambi and Treichel's (2005) study of Internet-based new ventures found that the quality and character of the new venture's

finance network positively related to firm performance. Moreover, a total network design could allow for the incorporation of social network structural variables such as structural holes, network complementarity as well as the impact of the degree of knowledge heterogeneity within each business's social network. The present study focused on small and primarily low-technology businesses. A third possibility for future research is to include medium- and large-sized businesses to determine whether firm size impacts social capital and knowledge management. Fourth, a small firm's social capital and knowledge management might change as it progresses through the entrepreneurial finance cycle (Carlsson & Mudambi, 2003). As such, consideration of a firm's position in the entrepreneurial finance cycle might enhance future investigations into small firm performance.

Although numerous enhancements were made to our survey questionnaire before administering it to our survey sample, data analysis uncovered the need for further improvements. First, several survey items inadvertently caused missing data because they could be answered only by respondents with employees. These survey items should be reworded so that all respondents may respond. Second, measures of two constructs reflected low internal consistency reliabilities and therefore require enhancement. One such measure involved locus of control. Our survey used three items from the thirteen item norm-referenced locus of control measure. We used only three items in order to minimize respondent fatigue. However, our low reliability indicates that we should retain more items from the norm-referenced measure. The measure of social resources also needs adaptation. In existing social capital literature, the job search process was the primary context for the social resources construct. Our measure needs further

enhancement in order to more accurately represent this construct for entrepreneurs and small business owners. Perhaps we could add items that request information about memberships in professional associations or local business associations. Third, the scale category labels for many of our survey items included "strongly disagree", "disagree", "agree", "strongly agree", "not applicable" and "I don't know". The latter two labels should be replaced since they result in missing data. Furthermore, for many of our survey items the agreement labels should be replaced with labels that capture how frequently the respondent participates in the activity/behavior addressed in the survey item.

Future research might also examine possible relationships among social capital, knowledge management, 'necessity' entrepreneurs and 'opportunity' entrepreneurs. Some individuals become entrepreneurs out of necessity because of limited choices in the labor market or due to language barriers. These 'necessity' entrepreneurs might relate to their stakeholders differently from 'opportunity' entrepreneurs.

Our qualitative research revealed that the Internet, popular magazines and trade publications are sources of business and organizing knowledge used by small business owners. Future research might investigate whether these media provide greater or lesser amounts of knowledge than customers, suppliers and competitors. It might also be of interest to compare the quality of the business and organizing knowledge gained by these sources with that obtained from external stakeholders.

Our findings indicate more social resources for African-American businesses in comparison with other businesses. Future research should explore these differences in more detail. Perhaps subsequent research might draw upon studies of immigrant entrepreneurship for explanations. For example, strong ties within immigrant communities have been shown to supply ample social resources for immigrant entrepreneurs (Portes & Sensenbrenner, 1993). A similar phenomenon may exist within the African-American community that may explain the higher levels of social resources reported by respondents to our study. Furthermore, our study's results showed female entrepreneurs reported stronger ties with customers and suppliers than male entrepreneurs. Future research should seek to resolve this conflict between our study's results and extant research.

REFERENCES

Aldrich, H. & Reese, P.R. (1993). Does networking pay off? A panel study of

　　entrepreneurs in the research triangle. In Churchill, N.S., et al. (Eds.), *Frontiers in*

　　Entrepreneurship Research, 325-339.

Aldrich, H., Rosen, B., & Woodward, W. (1987). The impact of social networks on

　　business foundings and profit: a longitudinal study. In Churchill, N.S., et al.

　　(Eds.), *Frontiers in Entrepreneurship Research*, 154-168.

Arbuckle, J.L. (2003). Amos 5.0 [Computer Software] Chicago, IL: SPSS.

Arregle, J.L., Hitt, M., Sirmon, D.G. & Very, P. (2007). The development of

　　organizational social capital: Attributes of family firms. *Journal of Management*

　　Studies, 44 (1), 73- 95.

Baron, R.A. (2000). Counterfactual thinking and venture formation: The potential effects

　　of thinking about 'what might have been'. *Journal of Business Venturing, 15 (1)*,

　　79-91.

Bates, T. (1990). Entrepreneur human capital inputs and small business longevity.

　　Review of Economics and Statistics, 72 (4), 551-559.

Bates, T. & Nucci, A. (1989). An analysis of small business size and rate of

　　discontinuance. *Journal of Small Business Management, 27 (4)*, 1-7.

Baum, J.A.C. (1996). Organizational ecology. In C. Hardy (Ed.), *Handbook of*

　　Organization Studies. (pp. 77-114). Thousand Oaks, CA: Sage Publications.

Beesley, L. (2004). Multi-level complexity in the management of knowledge networks.

　　Journal of Knowledge Management, 8 (3), 71-88.

Birley, S. (1989). Female entrepreneurs: are they really any different? *Journal of Small Business Management, 27 (1)* , 32-37.

Bogner, W.C. & Bansal, P. (2007). Knowledge management as the basis of sustained high performance. *Journal of Management Studies 44 (1)*, 165-188.

Boutilier, R.G. (2007). Social capital in firm-stakeholder networks: A corporate role in community development. *Journal of Corporate Citizenship, 26*, 121-134.

Brass, D. J. & Burkhardt, M.E. (1993). Potential power and power use: An investigation of structure and behavior. *Academy of Management Journal, 36 (3)*, 441-470.

Brass, D.J., Butterfield, K.D., & Skaggs, B.C. (1998). Relationships and unethical behavior: A social network perspective. *Academy of Management Review, 23 (1)*, 14-31.

Brockhaus, R.H. (1980). Risk taking propensity of entrepreneurs. *Academy of Management Journal, 23(3)*, 509-520.

Brown, B. & Butler, J.E. (1995). Competitors as allies: A study of entrepreneurial networks in the U.S. wine industry. *Journal of Small Business Management, 33 (3)*, 57-66.

Bruderl, J. & Preisendorfer, P. (1998). Network support and the success of newly founded businesses. *Small Business Economics,10 (3)*, 213-225.

Bruderl, J., Preisendorfer, P. & Zeigler, R. (1992). Survival chances of newly founded business organizations. *American Sociological Review, 57 (2)*, 227-242.

Bruno, A.V. & Tybejee, T.T. (1982). The environment for entrepreneurship. In C.A. Kent, D.L. Sexton & K.H. Vespers (Eds.), *Encyclopedia of Entrepreneurship* (pp. 288-307). Englewood Cliffs, CA: Prentice Hall.

127

Brush, C. (1992). Research on women business owners: Past trends, a new perspective

and future directions. *Entrepreneurship Theory & Practice, 16 (4)*, 5-30.

Burt, R. (1992). *Structural holes: The social structure of competition*. Cambridge:

Harvard University Press.

Burt, R. (1997). The contingent value of social capital. *Administrative Science Quarterly,*

42 (2), 339-365.

Carlsson, B. & Mudambi, R. (2003). Globalization, entrepreneurship, and public policy:

A systems view. *Industry and Innovation, 10 (1)*, 103-116.

Cassar, G. (2004). The financing of business start-ups. *Journal of Business Venturing, 19*

(2), 261-283.

Carley, K. & Krackhardt, D. (1991). Emergent asymmetric behavior: A socio-cognitive

examination of asymmetric relationships. Working Paper. Carnegie-Mellon

University. Pittsburgh.

Chaganti, R. & Chaganti, R. (1983). A profile of profitable and not-so-profitable small

businesses. *Journal of Small Business Management, 21 (3)*, 43-51.

Chaganti, R., DeCarolis, D. & Deeds, D. (1995). Predictors of capital structure in small

ventures. *Entrepreneurship Theory and Practice 20 (2)*, 7-18.

Chetty, S. & Agndal, H. (2007). Social capital and its influence on changes in

internationalization mode among small and medium-sized enterprises. *Journal of*

International Marketing, 15 (1), 1-29.

Christopher, J. (1998). Minority business formation and survival: Evidence on business

performance and viability. *Review of Black Political Economy, 26(1)*, 37-74.

Choo, C.W. (1998). *The knowing organization: How organizations use information to construct meaning, create knowledge and make decisions*. New York: Oxford University Press.

Coff, R. (2003). The emergent knowledge-based theory of competitive advantage: An evolutionary approach to integrating economics and management. *Managerial and Decision Economics, 24 (4)*, 245-251.

Cohen, W. & Levinthal, D. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly, 35 (1)*, 128-152.

Coleman, J.S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, 95-120.

Coleman, J.S. (1990). *Foundations of Social Theory*. Cambridge: Harvard University Press.

Coleman, S. (2004). Access to debt capital for women- and minority-owned small firms: Does educational attainment have an impact? *Journal of Developmental Entrepreneurship, 9 (2)*, 127-143.

Collins, C.J. & Clark, K.D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of Management Journal, 46 (6)*, 740-751.

Contractor, N. & Monge, P. (2002). Managing knowledge networks. *Management Communication Quarterly, 16 (2)*, 249-258.

Coombs, J. E., Mudambi, R. & Deeds, D.L. (2006). An examination of the investments in U.S. biotechnology firms by foreign and domestic corporate partners. *Journal of Business Venturing, 21(4)*, 405-428.

Cross, R. & Cummings, J.N. (2004). Tie and network correlates of individual

performance in knowledge-intensive work. *Academy of Management Journal, 47*

(6), 928-937.

Cummings, S. (1999). African american entrepreneurship in the suburbs: Protected

markets and enclave business development. *Journal of the American Planning*

Association, 65 (1), 50-61.

Dahkli, M. & DeClerq, D. (2004). Human capital, social capital, and innovation: A multi-

country study. *Entrepreneurship & Regional Development, 16 (2)*, 107-128.

Dyer, J.H. & Nobeoka,K. (2000). Creating and managing a high-performance

knowledge-sharing network: The Toyota case. *Strategic Management Journal,*

21(3), 345-367.

Fairlie, R. (1999). The absence of African-American owned business: An analysis of the

dynamics of self-employment. *Journal of Labor Economics, 17(1)*, 80-105.

Feinberg, S.E. & Majumdar, S.K. (2001). Technology spillovers from foreign direct

investment in the Indian pharmaceutical industry. *Journal of International*

Business Studies, 32 (3), 421-437.

Florin, J., Lubatkin, M., & Schulze, W. (2003). A social capital model of high-growth

ventures. *Academy of Management Journal, 46 (3)*, 374-384.

Fukuyama, F. (1995). *Trust: The social virtues and the creation of prosperity*. New York:

Free Press.

Gnyawali, D. & Fogel, D. (1994). Environments for entrepreneurship development: Key

dimensions and research implications. *Entrepreneurship Theory & Practice, 18*

(4), 43-62.

Granovetter, M. (1973). The strength of weak ties. *The American Journal of Sociology 78 (6)*, 1360-1380.

Granovetter, M. (1985). Economic action and social structure: A theory of embeddedness. *American Journal of Sociology, 91 (3)*, 481-510.

Granovetter, M. (1992). Problems of explanation in economic sociology. In N. Nohria & R. Eccles (Eds.), *Networks and Organizations: Structure, Form and Action* (pp. 25-56). Boston, MA: Harvard Business School Press.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal, 17*, 109-122.

Grant, R. & Baden-Fuller, J.S. (1995). A knowledge-based theory of inter-firm collaboration. *Academy of Management Journal*, 17-21.

Greve, A. & Salaff, J. (2003). Social networks & entrepreneurship. *Entrepreneurship Theory & Practice, 28 (1)*, 1-22.

Gupta, A. & Govindarajan, V. (1991). Knowledge flows and the structure of control within multinational corporations. *Academy of Management Review, 16 (4)*,768-792.

Gupta, A. & Govindarajan, V. (2000). Knowledge flows within multinational corporations. *Strategic Management Journal, 21 (4)*, 473-496.

Haas, M.R. (2006). Acquiring and applying knowledge in transnational teams: The roles of cosmopolitans and locals. *Organization Science, 17 (3)*, 367-384.

Haas, M.R. & Hansen, M.T. (2005). When using knowledge can hurt performance: The value of organizational capabilities in a management consulting company. *Strategic Management Journal, 26 (1)*, 1-24.

Hamel, G. & Prahalad, C.K. (1996). Competing in the new economy: Managing out of bounds. *Strategic Management Journal, 17 (3)*, 237-242.

Hansen, Mors & Lovas. (2005). Knowledge sharing in organizations: Multiple networks, multiple phases. *Academy of Management Journal, 48(5)*, 776-793.

Hoang, H. & Antoncic, B. (2003). Network-based research in entrepreneurship: A critical review. *Journal of Business Venturing, 18 (2)*, 165-187.

Hyatt, Contractor & Jones. (1997). Computational organizational network modeling: strategies and an example. *Computational and Mathematical Organization Theory, 2 (4)*, 285-300.

Jack, S.L. & Anderson, A.R. (2002). The effects of embeddedness on the entrepreneurial process. *Journal of Business Venturing, 17 (5)*, 467-487.

Jakubik, M. (2007). Exploring the knowledge landscape: Four emerging views of knowledge. *Journal of Knowledge Management, 11 (4)*, 6-19.

Jick, (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly , 24(4)*, 602-611.

Kodama, F. (1992). Technology fusion and the new R&D. *Harvard Business Review, 70 (4)*, 70-78.

Kogut, B. & Zander, U. (1992). Knowledge of the firm, combinative capabilities and the replication of technology. *Organization Science, 3 (3)*, 383-397.

Kogut, B. & Zander, U. (1993). Knowledge of the firm and the evolutionary theory of the multinational corporation. *Journal of International Business Studies, 24 (4)*, 625-645.

Kogut, B. & Zander, U. (1995). Knowledge and the speed of the transfer and imitation of organizational capabilities: An empirical test. *Organization Science, 6 (1)*, 76-92.

Kogut, B. & Zander, U. (1996). What do firms do? Coordination, identity and learning. *Organization Science, 7 (5),* 502-518.

Krackhardt, D. & Stern, R.N. (1988). Informal networks and organizational crises: An experimental simulation. *Social Psychology Quarterly, 51 (2),* 123-140.

Krishnan, R., Martin, X. & Nooderhaven, N.G. (2006). When does trust matter to alliance performance? *Academy of Management Journal, 49 (5),* 894-917.

Lane, P. & Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal, 19 (5),* 461-477.

Larson, A. (1992). Network dyads in entrepreneurial settings: A study of the governance of exchange relationships. *Administrative Science Quarterly, 37 (1),* 76-104.

Leana, C. & Van Buren, H. (1999). Organizational social capital and employment practices. *Academy of Management Review, 24 (3),* 538-555.

Leana, C. & Pil, F.K. (2006). Social capital and organizational performance: Evidence from urban public schools. *Organization Science, 17 (3),* 353-366.

Lin, N. (1999). Social networks and status attainment. *Annual Review of Sociology, 25,* 467-487.

Lin, N., Ensel, W.M. & Vaughn, J.C. (1981). Social resources and strength of ties: Structural factors in occupational status attainment. *American Sociological Review, 46 (4),* 393-405.

Lin, N., Vaughn, J.C. & Ensel, W.M. (1981). Social resources and occupational status attainment. *Social Forces, 59 (4),* 1163-1181.

Linan, F. & Santos, F. J. (2007). Does social capital affect entrepreneurial intentions? *International Advances in Economic Research, 13 (4),* 443-453.

March, J.G. & Simon, H.A. (1958). *Organizations.* New York: John Wiley.

McClelland, D.C. (1967). *The achieving society*. New York: Free Press.

McDougall, P.P., Covin, J.G., Robinson, R.B. & Herron, L. (1994). The effects of industry growth and strategic breadth on new venture performance and strategy content. *Strategic Management Journal, 15 (7)*, 537-544.

Moran, P. (2005). Structural vs. relational embeddedness: Social capital and managerial performance. *Strategic Management Journal, 26 (12)*, 1129-1151.

Mudambi, R. &Treichel, M. (2005). Cash crisis in newly public internet-based firms: An empirical analysis. *Journal of Business Venturing, 20 (4)*, 543-571.

Nahapiet, J. & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review, 23 (2)*, 242-266.

National Federation of Independent Business. (n.d.). NFIB Small business policy guide. Retrieved November 5, 2005 from the National Federation of Independent Business Web site: http://www.nfib.com/page/home

Nelson, R.E. (1989). The strength of strong ties: Social networks and intergroup conflict in organizations. *Academy of Management Journal, 32 (2)*, 377-401.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science, 5 (1)*, 14-37.

Nonaka, I. & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.

Oh, H., Chung, M. & Labianca, G. (2004). Group social capital and group effectiveness: The role of informal socializing ties. *Academy of Management Journal, 47 (6)*, 860- 875.

Pennings, J.M., Lee, K. & van Witteloostuyen, A. (1998). Human capital, social capital and firm dissolution. *Academy of Management Journal, 41 (4)*, 425-440.

Perry, S.C. (2002). A comparison of failed and non-failed small businesses in the United States: Do men and women use different planning and decision making strategies? *Journal of Developmental Entrepreneurship, 7 (4)*, 415-428.

Peterson, R. A. (2000). *Constructing effective questionnaires*. Thousand Oaks: Sage Publications.

Polanyi, M. (1967). *The Tacit Dimension*. Garden City: Doubleday & Company.

Portes, A. & Sensenbrenner, J. (1993). Embeddedness and immigration: Notes on the social determinants of economic action. *American Journal of Sociology, 98 (6)*, 1320-1350.

Putnam, R. (1995). Bowling alone: America's declining social capital. *Journal of Democracy, 6 (1)*, 65-78.

Quigley, N., Tesluk, P.E., Locke, E.A. & Bartol, K.M. (2007). A multilevel investigation of the motivational mechanisms underlying knowledge sharing and performance. *Organization Science, 18 (1)*, 71-88.

Rhodes, C. & Butler, J. (2004). Understanding self-perceptions of black performance: An examination of black American entrepreneurs. *Journal of Developmental Entrepreneurship, 9 (1)*, 55-71.

Rodan, S. & Galunic, C. (2004). More than network structure: How knowledge heterogeneity influences managerial performance and innovativeness. *Strategic Management Journal, 25*, 541-562.

Rogers, C.D., Gent, M.J., Palumbo, G.G. & Wall, R.A. (2001). Understanding the growth and viability of inner city businesses. *Journal of Developmental Entrepreneurship, 6 (3)*, 237-256.

Romo, F.P. & Schwartz, M. (1995). The structural embeddedness of business decisions: The migration of manufacturing plants in New York state, 1960 to 1985. *American Sociological Review, 60 (6)*, 874-907.

Rotter, J. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80*, 609.

Rowley, T., Behrens, D., & Krackhardt, D. (2000). Redundant governance structures: An analysis of structural and relational embeddedness in the Steel and Semiconductor industries. *Strategic Management Journal, 21 (3)*, 369-386.

Ruggles, R. (1998). The state of the notion: Knowledge management in practice. *California Management Review , 40 (3)*, 80-89.

Sarasvathy, D.K., Simon, H.A., & Lave, L. (1998). Perceiving and managing business risks: Differences between entrepreneurs and bankers. *Journal of Economic Behavior and Organization, 33 (2)*, 207-228.

Seibert, S., Kraimer, M. & Liden. (2001). A social capital theory of career success. *Academy of Management Review, 44 (2)*, 219-237.

Seidman, I.E. (1998). *Interviewing as qualitative research: A guide for researchers in education and the social sciences.* New York: Teacher's College Press.

Senge, P. (1990). *The Fifth Discipline: The Art and Practice of the Learning Organization.* New York: Doubleday Currency.

Sexton, D.L. & Bowman, N. (1985). The entrepreneur: A capable executive and more. *Journal of Business Venturing, 1 (1)*, 129-140.

Simon, H.A. (1957). *Models of man: social and rational.* New York: John Wiley.

Stearns, T.M. (1996). Strategic alliances and performance of high technology new firms. In Reynolds, P., et al. (Eds.), *Frontiers of Entrepreneurship Research* (pp. 268-281).

Stinchombe, A.L. (1965). Social structure and organizations. In J.G. March (Ed.), *Handbook of Organizations.* (pp. 153-193). Chicago, IL: Rand McNally.

Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practices within the firm. *Strategic Management Journal, 17,* 27-44.

Thomas, S.J. (2004). Using web and paper questionnaires for data-based decision making: From design to interpretation of the results. Thousand Oaks: Corwin Press.

Tsai, W. (2000). Social capital, strategic relatedness and the formation of intraorganizational linkages. *Strategic Management Journal, 21 (9)*, 925-939.

Tsai, W. (2001). Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance. *Academy of Management Journal, 44 (5)*, 996-1004.

Tsai, W. (2002). Social structure of 'coopetition' within a multiunit organization: Coordination, competition and intraorganizational knowledge sharing. *Organization Science , 13 (2)*, 179-190.

United States Government Printing Office. (2001). *The state of small business: A report of the President 1999-2000.* Retrieved April 8, 2005, from http://www.sba.gov/advo/index.html

United States Small Business Administration Office of Advocacy. (2001). *The annual report on small business and competition*. Retrieved April 8, 2005, from http://www.sba.gov/advo/index.html

Uzzi, B. (1996). The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review, 61 (4)*, 674-698.

Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly, 42 (1)*, 35-67.

Uzzi, B. (1999). Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing. *American Sociological Review, 64 (4)*, 481-505.

Van Fleet, E. & Van Fleet, D. (1985). Entrepreneurship and black capitalism. *American Journal of Small Business, 10 (2)*, 31-40.

Walker, G., Kogut, B. & Shan, W. (1997). Social capital, structural holes, and the formation of an industry network. *Organization Science, 8 (2)*, 109-125.

Wasserman, S. & Faust, K. (1994). *Social network analysis: Methods and applications*. Cambridge: Cambridge University Press.

Watson, J. & Everett, J. (1996). Do small businesses have high failure rates?: Evidence from Australian retailers. *Journal of Small Business Management, 34 (4)*, 45-62.

Weick, K.E. (1995). *Sensemaking in organizations*. Thousand Oaks: Sage Publications.

Weiler, S. & Bernasek, A. (2001). Dodging the glass ceiling? Networks and the new wave of women entrepreneurs. *The Social Science Journal, 38 (1)*, 85-103.

Wellman, B. (1979). The community question: The intimate networks of East Yonkers. *American Journal of Sociology, 84 (5)*, 1201 - 1231.

138

Welsh, J. &White, J. (1981). A small business is not a little big business. *Harvard Business Review, 59 (4)*, 18-32.

Wilkie, W.L., McCann, J.M. & Reibstein, D.J. (1974). Halo effects in brand belief measurement: Implications for attitude model development. *Advances in Consumer Research, 1 (1)*, 281-290.

Yli-Renko, H., Autio, E. & Sapienza, H.J. (2001). Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms. *Strategic Management Journal, 22 (6)*, 587-613.

Zahra, S., Neubam, D.O. & El-Hagrassey, G.M. (2002). Competitive analysis and new venture performance: Understanding the impact of strategic uncertainty and venture origin. *Entrepreneurship Theory & Practice, 27 (1)*, 1-28.

Zimmer, C. & Aldrich, H. (1987). Resource mobilization through Ethnic Networks: Kinship and friendship ties of shopkeepers in England. *Sociological Perspectives, 30 (4)*, 422-445.

Zukin, S. & DiMaggio, P. (1990). *Structures of capital: The social organization of the economy*. New York: Cambridge University Press.

APPENDIX A

SURVEY INSTRUMENT

Please read each question carefully and check the box for the answer that most closely represents your thoughts and experiences.

1. Please indicate the number of customers with which you have (face-to-face and/or telephone) contact in an average week.

	0-5	6-10	11-15	16-20	21+
Customers in total	☐0	☐1	☐2	☐3	☐4
	0-1	2-3	4-5	6-7	8+
Repeat customers	☐0	☐1	☐2	☐3	☐4

2. For each of the following statements about the quality of relationships among you, your customers, suppliers and competitors, please check the box below the appropriate response:

	Strongly Disagree	Disagree	Agree	Strongly Agree	Not Applicable	I'm not sure
My relationships with my **repeat customers** are more than business relationships. My repeat **customers** are also friends, family members, or neighbors.	☐1	☐2	☐3	☐4	☐0	☐0
My relationships with my primary **suppliers** are more than business relationships. My primary **suppliers** are also friends, family members, or neighbors.	☐1	☐2	☐3	☐4	☐0	☐0
My relationships with my key **competitors** are more than business relationships. My key **competitors** are also friends, family members or neighbors.	☐1	☐2	☐3	☐4	☐0	☐0

140

3. Please indicate the number of times in an average week that you have face-to-face and/or telephone contact with:

	0-1	2-3	4-5	6-7	8+
a repeat customer	☐0	☐1	☐2	☐3	☐4
a primary supplier	☐0	☐1	☐2	☐3	☐4
a key competitor	☐0	☐1	☐2	☐3	☐4

4. Please check the box below the response that most closely represents your thoughts and experiences.

I and/or at least one of my employees can easily obtain information about:

	Strongly Disagree	Disagree	Agree	Strongly Agree	Not Applicable	I'm not sure
how our prices compare with customer expectations.	☐1	☐2	☐3	☐4	☐0	☐0
customer needs.	☐1	☐2	☐3	☐4	☐0	☐0
new products/services to offer.	☐1	☐2	☐3	☐4	☐0	☐0
industry trends.	☐1	☐2	☐3	☐4	☐0	☐0
upcoming improvements in computers or telecommunications.	☐1	☐2	☐3	☐4	☐0	☐0
managing employees.	☐1	☐2	☐3	☐4	☐0	☐0
managing cash flow.	☐1	☐2	☐3	☐4	☐0	☐0
managing workflow and work processes.	☐1	☐2	☐3	☐4	☐0	☐0

5. Please check the box below the response that most closely represents your thoughts and experiences:

	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable	I'm not sure
I continually seek out opportunities to learn more about my industry.	☐1	☐2	☐3	☐4	☐0	☐0

My employees continually seek out opportunities to learn more about our industry.	☐1	☐2	☐3	☐4	☐0	☐0
I continually evaluate my company's assumptions about effective business practices.	☐1	☐2	☐3	☐4	☐0	☐0
My employees continually evaluate my company's assumptions about effective business practices.	☐1	☐2	☐3	☐4	☐0	☐0
I place company goals before individual goals.	☐1	☐2	☐3	☐4	☐0	☐0
My employees place company goals before individual goals.	☐1	☐2	☐3	☐4	☐0	☐0
My employees get along well with one another.	☐1	☐2	☐3	☐4	☐0	☐0
I trust my employees to perform their jobs well and with integrity.	☐1	☐2	☐3	☐4	☐0	☐0
My employees trust one another to perform their jobs well and with integrity.	☐1	☐2	☐3	☐4	☐0	☐0

6. This section asks basic questions about your business:

In which year did you start your business? _____

How many equivalent full-time employees work for you? (Please check only one)

❑ 0 -3 employees	❑ 21 – 100 employees
❑ 4-10 employees	❑ 101 – 500 employees
❑ 11 – 20 employees	❑ 501+ employees

In which primary industry does your business compete? (Please check only one)

❑ Construction	❑ Retail Trade
❑ Manufacturing	❑ Service
❑ Wholesale Trade	❑ Other: _____

What is your company's form of ownership? (Please check only one)

❑ Sole Proprietorship	❑ S Corporation
❑ Partnership	❑ LLC
❑ C Corporation	❑ Other

Where is your headquarters or main office located? (Please check only one)

❑ Urban	❑ Suburban
❑ Rural	❑ Other

In which city and state is your headquarters located?

_____

What were your gross receipts or gross sales for fiscal year 2005?

❑ $0 - $100,000	❑ $501,000 - $999,999
❑ $101,000 - $250,000	❑ $1 million & over
❑ $251,000 - $500,000	

What were your gross receipts or gross sales for fiscal year 2004?

❑ $0 - $100,000	❑ $501,000 - $999,999
❑ $101,000 - $250,000	❑ $1 million & over
❑ $251,000 - $500,000	

Please check the correct response below:

	Strongly Disagree	Disagree	Agree	Strongly Agree	I'm not sure
My company is on track to meet its profitability objectives.	$❑_1$	$❑_2$	$❑_3$	$❑_4$	$❑_0$
My company is on track to meet its growth objectives.	$❑_1$	$❑_2$	$❑_3$	$❑_4$	$❑_0$

7. This section asks about you – the entrepreneur and small business owner.

	Strongly Disagree	Disagree	Agree	Strongly Agree	I'm not sure
I personally know other experienced entrepreneurs to whom I can go for encouragement or advice.	☐1	☐2	☐3	☐4	☐0
I have family members or friends (who are neither company employees nor company officers) that have provided emotional and/or financial support since I opened my business.	☐1	☐2	☐3	☐4	☐0
I personally know local, state, or federal government officials that can help my business.	☐1	☐2	☐3	☐4	☐0
I believe success depends on ability not luck.	☐1	☐2	☐3	☐4	☐0
I have little influence over things that happen to me.	☐4	☐3	☐2	☐1	☐0
I make plans that I am generally certain will work.	☐1	☐2	☐3	☐4	☐0

	African/Black	Asian	Caucasian	Hispanic	Other
Please indicate which one of the following best describes you.	☐1	☐2	☐3	☐4	☐5

	Male	Female
Please indicate your gender.	☐0	☐1

	Some High school	High school	Some College	College Graduate	Graduate School
Please indicate the highest level of education that you have completed.	☐1	☐2	☐3	☐4	☐5

	18 - 27	28 - 41	42 - 51	52 - 60	61+
Please indicate your age.	☐1	☐2	☐3	☐4	☐5

THANK YOU FOR COMPLETING THIS SURVEY.

APPENDIX B
INTERVIEW PROTOCOL

First Meeting: Basic Company Information/Background/Focused Life History

Entrepreneur _____

Business name _____

Interview date _____ Start time_____ End time _____

Control Variables

1. Please describe your company. What are its product and/or services?

2. In which year did you start your business? _____

3. How many equivalent full-time employees work for your company?_____

4. Within which of the following industries does your company primarily compete?
(retail, service, manufacturing, government contractor, other_____)

5. Which of the following ethnic groups most closely describes you? (African/Black,
Asian, Caucasian, Hispanic, Other_____)

6. What is your gender (Female, Male)?

7. Within which of the following age ranges are you (18 – 27; 28 – 41; 42 – 51; 52 – 60;
61+)?

8. What is the highest level of education that you have completed (Some high school;
High school; Some college; College graduate; Graduate school)?

9. What is your company's form of ownership (sole proprietorship, partnership,
corporation, other _____)?

Environmental Munificence
10. In which city, state is your company's main office or headquarters located?

11. Which best describes the area in which your company's main location or headquarters
is located (urban, rural, suburban, other _____)?

Background

1. How did you come to be an entrepreneur? What circumstances or experiences led to your decision to start a _____ business?

2. What is a day in your life like as the owner of _____?

3. What do you like about owning your own business?

What do you dislike about owning your business?

4. What are some of the challenges of owning your own business?

What are some of the rewards?

Social Resources

1. Do you personally know other experienced entrepreneurs to whom you can go for encouragement or advice?   YES   NO

2. Do you have family members or friends (who are neither company employees nor officers) that have provided emotional and/or financial support since you opened your business?   YES   NO

3. Do you personally know local, state or national government officials that can help your business?   YES   NO

Locus of Control

Do you agree with the following statements?:
1. "Success is a matter of hard work; luck has little or nothing to do with it?"
                                                                YES   NO

2. "When I make plans, I am almost certain that I can make them work."
                                                                YES   NO

3. "In the long run, people get the respect they deserve in the world."
                                                                YES   NO

Second Meeting: Details of experience

Entrepreneur _____

Business name _____

Interview date _____ Start time_____ End time _____

Let's get a bit more specific about the day-to-day operations of your business, in particular how your customers, suppliers, competitors and employees impact your business.

Let's begin with customers:

1. Without using full names, please identify up to eight repeat customers.

_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO

2. How many times do you have face-to-face, telephone or e-mail contact with _____ in an average week? (write answer above next to each customer's name)

3. Is repeat customer _____ also a friend or family member or neighbor? (write answer above next to each customer's name)

4. Are some or all of these repeat customers friends with one another, or family members of one another or neighbors of one another?

Now, let's talk about suppliers:

1. Please identify up to eight suppliers.

_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO
_____	_____	YES	NO

2. How many times do you have face-to-face and/or telephone contact with supplier _____ in an average week? (write answer above next to each supplier)

3. Is supplier _____ also a friend, family member or neighbor? (write answer above next to each supplier)

4. Is repeat customer _____ also a friend, family member or neighbor of supplier _____?

Customer _____   Supplier _____

Customer _____   Supplier _____

Customer _____   Supplier _____

Customer _____   Supplier _____

Customer _____   Supplier _____

Customer _____   Supplier _____

Customer _____   Supplier _____

Customer _____   Supplier _____

Can we also talk about your competitors?

1. Who do you consider to be your competitors (identify up to eight competitors)?

_____   _____   YES   NO

_____   _____   YES   NO

_____   _____   YES   NO

_____   _____   YES   NO

_____   _____   YES   NO

_____   _____   YES   NO

_____   _____   YES   NO

_____   _____   YES   NO

2. How many times do you have face-to-face and/or telephone contact with competitor _____ in an average week? (write answer above next to each competitor)

3. Do you consider competitor _____ to be a personal friend? Is competitor _____ a relative or family member? a neighbor? (write answer above next to each competitor).

4. Is repeat customer _____ friends with your key competitor?

Customer _____   Competitor _____

Customer _____   Competitor _____

Customer _____   Competitor _____

Customer _____   Competitor _____

Customer _____   Competitor _____

Customer _____   Competitor _____

Customer _____   Competitor _____

Customer _____   Competitor _____

5. Is supplier _____ also a friend, family member or neighbor of competitor _____?

Competitor _____   Supplier _____

Competitor _____   Supplier_____

Competitor_____   Supplier_____

Competitor_____   Supplier_____

Competitor_____   Supplier_____

Competitor_____   Supplier_____

Competitor_____   Supplier_____

Competitor_____   Supplier_____

Knowledge Heterogeneity

1. Is the type of knowledge (expertise/skills) needed to operate your business different from that of your customers?   YES   NO

2. Is the type of knowledge (expertise/skills) needed to operate your business different from that of your suppliers?   YES   NO

Access to 'Business' Knowledge

1a. Does your company have access to information about how your prices compare to customer expectations?   YES   NO

1b. what are the sources of this information?

2. Does your company have access to information about customer needs?
                                                        YES   NO

2b. what are the sources of this information?

3. Does your company have access to information about industry trends?
                                                        YES   NO

3b. what are the sources of this information?

4. Does your company have access to information about advances in computers or telecommunications?   YES   NO

4b. what are the sources of this information?

Access to 'Organizing' Knowledge

1. Does your company have access to information about managing employees?

                         YES   NO

1b. what are the sources of this information?

2. Does your company have access to information about managing cash flow?

                         YES   NO

2b. what are the sources of this information?

3. Does your company have access to information about managing workflow and work processes?   YES   NO

3b. what are the sources of this information?

Generative Organizational Learning

1. Do you and/or your employees continually seek out opportunities to learn more about your industry?

                         YES   NO

2. Do you and/or your employees continually evaluate your company's assumptions about effective business practices?   YES   NO

Organizational Social Capital

1. In general, do you and/or your employees place company goals before individual goals?   YES   NO

2. In general, do your employees get along well with one another?

                         YES   NO

3. In general, do your employees trust one another to perform their jobs well and with integrity?   YES   NO

Third Meeting: Reflections on the meaning of Entrepreneurship

Entrepreneur _____

Business name _____

Interview date _____ Start time_____ End time _____

1. What does owning your own business mean to you?

Firm Performance

1. Is your company on track to meet its profitability objectives?   YES   NO

2. Is your company on track to meet its growth objectives? YES   NO