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Barbara J. Frazier

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Patricia Huddleston
Major professor

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THE INFLUENCE OF NETWORK CHARACTERISTICS ON INFORMATION ACCESS, MARKETING COMPETENCE AND PERCEPTIONS OF PERFORMANCE IN SMALL RURAL BUSINESSES

By

Barbara J. Frazier

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ABSTRACT

THE INFLUENCE OF NETWORK CHARACTERISTICS ON
INFORMATION ACCESS, MARKETING COMPETENCE
AND PERCEPTIONS OF PERFORMANCE IN SMALL RURAL BUSINESSES

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This study focused on the influence of network relationships on the ability of retail entrepreneurs in small communities to access and use business information. I drew upon social network theory to propose a model linking an entrepreneur's network characteristics to the level of social capital available in the network. I suggested that social capital positively influences the quality of information that entrepreneurs can access through their strong-tie and weak-tie networks. Information quality is then transformed into marketing competence, which positively impacts firm performance.

Data were collected from 112 independent gift retailers in small towns in Midwestern states, using a mailed survey instrument. Exploratory and confirmatory factor analysis were used to test validity and reliability of model constructs. A network was conceptualized as a latent variable, which explained the density, centrality, friendship and perceptual homophily features of the entrepreneur's network ties. Social capital was a latent variable, which explained the level of trust, commitment and reciprocal intentions among identified network members. Information quality measured the relevancy, timeliness and specificity of business information received from network members.

Marketing competence was characterized as the ability to assess customer needs, provide quality customer service, and introduce innovation. Performance was measured by perceptions of success relative to industry and competitors.

Structural equation techniques were used to test causal relationships in the model. Results showed that network ties influenced the level of social capital in both strong-tie and weak-tie information networks. Social capital influenced the richness of information received from these networks. Social capital did not have a direct influence on perceptions of firm performance.

Information received from weak-tie networks influenced marketing competence in introducing innovation. No link between information from strong-tie networks and marketing competence was found. There was a significant relationship between both local and innovative marketing competence and performance.

Results support social network theory contentions that both strong and weak ties facilitate the flow of information. Implications for retail entrepreneurs suggest that networking is an important activity for gathering business information, and that strength of network relationships can influence the quality of information. This research also highlights the need for retail entrepreneurs to better use the information they receive to build marketing skills.

DEDICATION

To my husband, Lon and children, Megan, Josh and Alex.

Your love and support carried me through.

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CHAPTER 1

INTRODUCTION

Independent retailers face enormous challenges in the modern retail environment. Smaller retail firms have been dramatically affected by changing economic forces in the structure of retailing in the United States. Over the last several decades, shifts in population, changes in demographics and attitudes and lifestyles of U.S. consumers have led to retail activity becoming increasingly concentrated in large-scale retail formats (Dalal, Al-Khatib, Da Costa & Decker, 1994; Stone, 1995). New retail formats, such as direct selling through catalogues, television shopping and the Internet are giving consumers more options in how, when and where they conduct retail transactions (Barlow, 1994; Goodman, 1995).

These changes have been devastating to many small, independent retailers, many of whom are not able to compete with the economies of scale of large-scale retailers. The broad assortments and low-prices offered by discount chains and category killers have resulted in the closing of many small stores (McCune, 1994). Many retail sectors are consolidating as bigger stores gain market share and drive independents out of business. The density of retail establishments in the U.S. was 60 per 10,000 people in 1992 versus 62 in 1987, with smaller stores accounting for the decline (Du & Apfel, 1995).

Significance of Study

In spite of the failure rates, owning a small store remains an attractive idea for many individuals. Retail entrepreneurship offers autonomy, flexibility and satisfaction (Buss, 1996; Cooper and Artz, 1995). Thousands of new retail businesses are started each year in the U.S., offering an avenue for independent employment. Retail entrepreneurship remains a key source of innovation and job creation in the U.S. economy. Small retailers dominate ownership in hardware stores, sporting goods stores, jewelry stores and gift stores (McCune, 1994).

Small stores can satisfy consumer demand by filling gaps in the market that are not profitable for larger retailers (Buss, 1996; Julien, 1993). As one forecaster put it, large firms are like boulders dropped in a hole, and entrepreneurial opportunities are the spaces created between the boulders (Williams, 1999). Retail entrepreneurs can fill these spaces by providing unique products and distinctive personal service. Several authors have noted that people miss the personal attention of "mom and pop" stores (Barlow, 1994; Casison, 1998). Smaller stores are able to compete successfully by tailoring their assortments to complement, rather than compete with, larger discount chains and category killers. Personal service is another way in which independent retailers can differentiate (Stone, 1995).

Nonmetropolitan Retailing

The threat posed by large scale retailing has had a particularly devastating toll on independent retailers in smaller U.S. communities. Urban migration due to changes in the agricultural sector have resulted in a steady erosion of the population base and declining consumer demand (Fuguitt, Brown & Beale, 1989). Competition from discount stores, along with easier access to nearby larger communities with regional shopping centers, have further cut into the market share of independent home town stores (Dalal, et al, 1994). Downtown shopping districts in nonmetropolitan areas, which have historically been populated with independent merchants, have undergone profound changes due to economic and social forces (Lawhead, 1995). In many communities, storefronts stand empty, or are occupied by non-retail business establishments (Henderson & Wallace, 1992).

Strengthening the nonmetropolitan retail sector is an important part of rural development programs (Flora & Flora, 1990; Lawhead, 1995; Markley & McNamara, 1997). Smaller, more rural communities must create a positive social and economic environment to attract and retain residents. A healthy retail sector in a rural community can provide off-farm employment for local residents and keep local dollars circulating in the community (Henderson & Hines, 1990) Making a town more appealing to potential residents may attract more good jobs (Lawhead, 1995). Recent studies of small towns suggest that small retail establishments can serve as the glue that keeps residents in a community by providing a place for informal public life (Irwin, Tolbert & Lyson, 1997). Residents are more positive about their communities when they perceive convenient

access to needed goods and services (Brown, 1993). These factors point to the need for more problem-solving to support independent retail entrepreneurship for rural communities.

Problem Definition

Research focused on causes of rural retail decline has centered primarily on rural consumer behavior (Miller & Kean, 1997a and 1997b; Riecken & Yavas, 1988; Samli, Riecken & Yavas, 1983). Rural residents often cite dissatisfaction with local retailers as reasons for their outshopping behavior (Dalal et al, 1994; Miller & Kean, 1997a). Studies show that rural residents want local retailers to provide adequate assortments of well-priced, quality merchandise, personal service and an enjoyable, convenient atmosphere. A recent study by Miller and Kean (1997a) found that local shoppers who had positive attitudes about retailers in their communities were generally satisfied with retailer offerings in their communities. Subramanian (1993) found that as retailers adapted their product and service offerings to suit customers, the exchange utility perceived by consumers increased and outshopping decreased.

What comes through clearly in these studies is that relying exclusively on hometown loyalty is no longer sufficient for the survival of independent retailers in rural communities. Local retailers in nonmetropolitan communities must possess superior marketing competencies in order to compete with large scale retailers and specialty retailers from other communities. The literature on rural consumer behavior suggests that

in order to retain local customers in the community and draw customers from nearby communities, a rural retailer must develop and sustain marketing competence that results in the delivery of products and services that are valued by rural consumers.

Small town merchants must react to constant and rapid change in order to maintain and build market share. Those small retail firms that have survived in the shadow of the retail giants have focused on differentiation or niche strategies that complement, rather than compete with chain stores (Barlow, 1994; Kean, Gaskill, Leistritz, Jasper, Bastow-Shoop, Jolly & Sternquist, 1998; Nation's Business, 1993; Stone, 1995). Execution of effective strategies requires development of *distinctive marketing competencies* that enable retailers to respond to environmental changes more effectively than competitors (Conant, Smart & Solano-Mendez, 1993).

Distinctive competence refers to marketing activities that an organization performs especially well in comparison to competitors (Day & Wensley, 1988). Competence relates to the ability of a firm to deliver products and/or services in an efficient manner relative to its competitors. These competencies can become sustainable competitive advantages if consumers perceive them as valuable, and competitors cannot easily duplicate them (Bharadwaj, Varadarajan & Fahy, 1993). Distinctive marketing competence has been shown to lead to better organizational performance in small retailers (Conant, Smart & Solano-Mendez, 1993). A firm creates competence by articulating its objectives and executing the processes that are necessary to meet the goals it has set (Sinkula, 1994). This process requires identifying and interpreting information in the environment that is

relevant to the development of competence (McGrath & MacMillan, 1992; Sinkula, 1994). Exploiting information asymmetries that allow an entrepreneur to identify and fill unmet customer needs can lead to sustainable competitive advantage (Lado, Boyd & Wright, 1992). Thus, ability to access strategic information can ultimately determine the success of a firm.

The role of any retailer in marketing exchange is to create value for consumers by delivering combinations of assortment, price, promotion, display, customer service and location that meets the needs of the target market (Carn, Rabianski & Vernor 1995). The firm's strategy is the set of decisions it makes about how it will adjust to environmental change (Miles, Snow, Meyer & Coleman, 1977). Information is critical to the entrepreneurial, operational and administrative solutions that are necessary to compete in the market. Furthermore, retailers must have the flexibility to respond more quickly than competitors to changes in the business environment (Kean et al, 1998). An effective retail strategy requires knowledge of current and prospective customers and industry trends, along with access to innovative customer service, promotion and merchandising techniques (Conant, Mokwa & Varadarajan, 1990; McCune, 1994; Pearson, 1994). Effective strategy building requires extensive information input from many sources.

Extensive work has focused on the information seeking behavior of entrepreneurs in small businesses. The literature on information search indicates that small business managers seek information about running their businesses from multiple sources, including suppliers, other retailers, local business owners, professional advisors, employees and

customers (Beal, 2000; Birley, 1985; Dollinger, 1985; Gales & Blackburn, 1990; Shafer, 1990; Specht, 1988). Many studies conclude that small business owners and managers prefer personal sources of information as input for strategic decision making. Most of this work focuses on the *presence* of relationships, but neglects the relational qualities between the information seeker and the source.

Recent work regarding networks suggests that ties with network members can influence performance by providing entrepreneurs with richer, more timely information than can be attained by arms length relationships (Burt, 1992; Uzzi, 1996). The nature of the relationship among network members appears to influence the ability to access information in a network. Granovetter (1985) suggests that some information is more easily accessed through what he describes as "weak ties", where network members with whom one has less frequent contact and fewer incidences of network interaction are richer sources of valuable information than close friends. Weimann (1983), on the other hand, showed in a study of information flow that "strong" ties promoted the flow of information within groups, while weak ties facilitated inter-group information flow.

Some authors have conceptualized the ability to access resources from an individual's set of personal networks as "social capital". Access to social capital means that people have connections to individuals with greater amounts of economic and cultural capital, and who can help with advice, further connections and access to other resources (Burt, 1997; Nahapiet & Ghoshal, 1998. Social capital is produced through embedded

ties characterized by frequent contact with individuals with whom one has a close, personal relationship. Embedded relationships yield levels of trust, obligation and reciprocity that can provide a competitive advantage to entrepreneurs (Burt, 1997).

Objective of Study

I conducted a study focused on exemplary small retailers in rural areas in Michigan in 1997 (Frazier, 1999). These "superpreneurs" were identified by peer nomination as successful retailers who possessed extraordinary vision, passion and leadership. This study revealed that superpreneurs were skilled networkers, using multiple personal contacts to access and filter business information. They maintained close ties with their family members and friends, with customers and with business colleagues in and out of the community. They also developed long-term relationships with people that acted as bridges to other networks. These ties are a source of inspiration which leads to innovation in small firms.

Information benefits may build intellectual capital that can be used to develop and sustain marketing competence, leading to better financial performance (Nahapiet & Ghoshal, 1998). No empirical work has tested these assumptions in the context of retail entrepreneurship. The objective of this study is to explore empirically the impact of independent retailers' network ties on the creation of social capital, the acquisition of information, and the development of marketing competence. The central proposition of

this paper is that the nature of ties in an entrepreneur's network of suppliers, trade associates, family, friends, and community residents influences access to the information necessary to build competitive advantage. Higher quality information about the market and the environment enable the development of superior marketing competence, leading to better firm performance.

CHAPTER 2

LITERATURE REVIEW

Theoretical Framework

Social Exchange Theory

Social exchange theory looks at resource exchange in the context of interdependent, long-term relationships embedded in the dense fabric of social relationships. Unlike the impersonal, one-time exchange depicted in traditional marketing theory, social exchange rests on the premise of on-going relationship with other actors who have reasonably predictable traits that can enhance or diminish the value of the exchange (Emerson, 1973).

Marketing exchange is a special case of social exchange, which argues that people enter into exchange relationships for goal-oriented reasons that are not entirely based on cost(Bagozzi, 1975). People engage in both social and economic exchange to satisfy needs by influencing or complying with the norms and traditions of the exchange network. On-going relationships are characterized by rules and norms that facilitate the exchange. The expectation of future exchanges reduces the likelihood of malfeasance and opportunism (Easton & Araujo, 1994). Exchange relationships can be characterized as communal (caring) to instrumental (tit-for-tat) relationships (Winstead, Derlega, Montgomery & Pilkington, 1995).

Network Theory

Traditional economic theory argues that market exchanges are independent events conducted by self-interested actors with perfect information. Price is the mechanism that controls the market. Social structures are not taken into account, or are accounted for only peripherally (Coleman, 1988; Granovetter, 1973; Portes & Sensenbrenner, 1993). Network theory, on the other hand, integrates the concept of relationships into the exchange equation. Networks include the set of relevant exchange relationships between actors; network analysis is concerned with the influence of structure and interaction of those relationships on performance and outcomes (Cook & Whitemeyer, 1992; Gilly, Graham, Wolfinbarger & Yale, 1998). This approach allows analysis of marketing exchange behavior taking the effects of personal relationships into account (Uzzi, 1996). Other research has shown that social relationships can build social capital of the exchange partners. Network characteristics have been used to explain career mobility (Burt, 1992; Granovetter, 1985), word-of-mouth communication (Frenzen & Nakamoto, 1993), consumer buying behavior (Frenzen & Davis, 1990; Miller & Kean, 1997), returns to education (Coleman, 1988; Friedman & Krackhardt, 1997; Morgan & Sorensen, 1999), immigration (Portes and Sensenbrenner, 1993) and successful adoption of new innovations (Swan & Newell, 1995).

The exchange framework is particularly attractive for evaluating the performance of rural retail entrepreneurs. First, small firm behavior is often embodied in the behavior of the owner/manager. Decision making in small firms is often highly personalized, reflecting the personality and attitudes of the owner/manager (Jennings & Beaver, 1997),

making the role of social structure in firm behavior a relevant topic. Further, although rural entrepreneurs appear to share the same psychological traits as their urban counterparts (Babb & Babb, 1992) residents in rural communities tend to have different social structures than individuals from urban areas. Ties are more likely based on kinship and neighborhood solidarities rather than on friendships. Networks of rural residents tend to be denser, smaller and more homogeneous (Beggs, Haines & Hurlbert, 1996; Wall, Ferrazzi, & Schryer,1998).

Entrepreneurial Exchange

An abundance of entrepreneurial research has focused on the question of what constitutes an entrepreneur. In the context of the marketplace, most concur that entreprneurs are individuals that perform the function of identifying opportunities and converting them into economic value (Baumol 1996; Carland, Hoy and Carland 1988; Gartner 1988; Schumpeter 1942). Burt (1992) characterizes an entrepreneur as one who has the opportunity, ability and motivation to take advantage of "structural holes", or gaps in information in networks. Gaps are created when certain members of a network are not connected, providing opportunities for the entrepreneur to capitalize on opportunities. For example, if A (the entrepreneur) knows B and C, but B and C do not know each other, the structural hole between B and C creates opportunities for A. In terms of market information, the structural hole between B and C provides A with more non-redundant information that can be used to increase the rate of return. Thus, networks that are rich in structural holes have more potential opportunities, and bridging the gaps requires social activity. Effective social relations with network members have the potential to offer

higher rates of returns to well-connected players by providing access to the information gaps in the market.

In the context of retail activity, retailers act as links in the marketing channel, spanning the information gaps between producers and consumers. The best performing retailers effectively bridge gaps in assortment, quantity, place and time (Lewison, 1994). Offering the right product in the right place at the right time requires that a retailer have better access to the "structural holes" in the marketplace than its competitors.

Embeddedness

Embeddedness refers to a logic of exchange where social ties influence entrepreneurial behavior. Uzzi (1996) argues that:

> "Organizations operate in an embedded logic of exchange that promotes economic performance through inter-firm resource pooling, cooperation, and coordinated adaptation. (p. 675)".

Embeddedness suggests that entrepreneurs are motivated beyond purely economic goals to pursue the enrichment of relationships through trust and reciprocity (Powell, 1990; Smitka, 1991). Embedded relationships influence the value of a transaction and enrich the social capital of members in the network (Portes and Sensenbrenner, 1993). Embeddedness within a group refers to the fact that exchanges within a group have an ongoing social structure that influences action. Rather than the arms length relationships characterized by isolated transactions where cost is everything, embedded ties involve special, close relationships with trusted others. *Social capital* is the governance mechanism that promotes voluntary transfer of information (Uzzi, 1996). The level of

embeddedness has been shown to be a factor in channel decisions for small firms. Uzzi (1993; 1996) found that embedded relationships among small firms in the apparel manufacturing industry influenced chances of survival.

Studying the outcomes of entrepreneurial network activities can provide new insights into patterns of success and failure among retail firms in rural markets. In the following section I propose a model that relates the level of embeddedness in retailer networks to the development of social capital, information access, marketing competence and financial performance.

Model Development

Networks

One's personal network is the totality of all persons connected by a certain type of relationship. From an ego-centered perspective, a network consists of the relevant members of one's social landscape at a particular point in time. Social networks may include family, friends and acquaintances with whom the entrepreneur relates at a social level. Suppliers, customers, trade associations, local business and government organizations, and friendship and kin groups may also be part of the social networks of small retailers (Aldrich & Zimmer, 1986; Nelson, 1989). Many network studies which are focused on small firms define networks in the context of inter-organizational networking such as supplier-buyer networks (Barringer, 1997; Golden & Dollinger, 1993; Johannisson & Monsted, 1992; Larson, 1991; Provan, 1993), competitor networks (Brown & Butler, 1995; Human & Provan, 1997), professional advisors (Curran, Jarvis, Blackburn &

Black, 1993), stakeholders (Rowley, 1997), and trade associations and wholesaler-sponsored groups (Reijnders & Verhallen, 1996). Some studies have included more informal networks comprised of family, friends and community residents (Bates, 1994; Birley, 1985; Carroll & Teo, 1996; Dodd, 1997; Donckels & Lambrecht, 1997; Ostgaard & Birley, 1996; Ramachandran & Ramnarayan, 1993).

Networks are rich in the resources that entrepreneurs need to grow and sustain their businesses. Information acquired through network activity creates new knowledge that can be used for decision making. Interpersonal communication in networks is important to the diffusion of new ideas. Networks promote social learning and adaptive responses to an uncertain environment (Aldrich & Zimmer, 1986).

Entrepreneurs in small firms prefer personal rather than non-personal sources of information (Birley, 1985; Cooper, Woo & Dunkleberg, 1989; Peters & Brush, 1996; Shafer, 1991; Smeltzer, Fann & Nikoliasen, 1988; Young & Welsh, 1983). Brush (1992) found that small firm managers conducted person-to-person and telephone networking more than any other type of environmental scanning. Dollinger (1985) and Peters and Brush (1992) found that the amount of time spent seeking information was related positively to performance. Ostgaard and Birley (1996) associated higher and more diverse levels of communication and networking activity with better performance. Van deVen, Hudson and Schroeder (1984) related network activity to firm growth. In my superpreneur study, best-in-class retailers preferred personal sources of information. Participants in the identified mentioned personal sources more frequently than nonpersonal

sources when asked to name the most valuable sources of business-related information (Frazier, 1999).

For all of the interest in network activity in small firms, some studies suggest that the frequency and importance of more formal networks are overstated. Bates (1994) found that Asian immigrants who relied heavily on social networks were less profitable and more failure prone. Birley (1985) found that although small manufacturers used networks to access resources, networking was not related to firm growth. Smaller firms whose owner is also the manager and primary decision maker, may simply be too busy with day-to-day operating concerns to be able to devote very much time to formal network activities. For these entrepreneurs, networking may be conducted in a more informal manner. Trading information with other retailers at trade shows, building business friendships with supplier representatives, and interacting with customers in social situations may be more effective in developing social capital than participation in more formal network activities.

There is evidence that the social structure of one's networks and position in the structure can be a source of competitive advantage for entrepreneurs (Burt, 1992; Granovetter, 1985 Uzzi, 1996). Burt suggests that successful entrepreneurs are those individuals who are strategically positioned and connected in networks so that they are able to take advantage of opportunities before others are aware of them. Networks are places where individuals trade resources, and successful entrepreneurs are those that are positioned to activate ties in order to gain access to business information and to attract

customers (Aldrich & Zimmer, 1986).

Much of the analysis of network effects has been approached from a structural perspective. This approach focuses upon analyzing network effects by mapping the social structure of a network from data about actual relationships in a network from all of its members. Kilduff and Krackhardt (1994) suggest that the structural method can be enhanced by focusing on "cognitive maps" of perceived relationships in a network. Individual perceptions of network structure have been found to be effective in predicting attitudes and opinions of focal network members (Marsden, 1990). Individuals use these maps to operate in their social environment. These cognitive maps reflect the perceptions of structure in the minds of network members. Perceived ties are useful in measuring social influence, attitudes and opinions (Marsden, 1990). Perceived relationships were shown to be more predictive of reputation than actual structure within an organization (Kilduff & Krackhardt, 1994). I focus on the individual entrepreneur's perceptions of the structural and relational properties of their communication networks in this study. This approach allows comparison of the individual networks of entrepreneurs to gain insight into optimal structures for obtaining information that yields higher returns to information.

Network Structure

Recent work by network analysts suggests that certain types of networks provide optimal access to information (Burt, 1992; Granovetter, 1985; Greve, 1995). A person's network can be characterized by both its structure and by the nature of the interpersonal

interaction in the network. Structure refers to the configuration of an actor's ties, or social bonds with others (Davern, 1997; Hall & Wellman, 1985). Important dimensions of structure with respect to information flow include the *density* of the network, and the *centrality* of a particular individual in the network (Burt, 1992; Rowley, 1997). Different positions in the social structure means that individuals have access to differing levels of power, prestige and wealth, leading to different opportunities, constraints and outcomes (Adams & Blieszner, 1994).

Density. Density is a characteristic of the whole network, and refers to the number of ties that link network members compared to the total possible ties in the network. Density increases as the number of ties within a network grows, and is often associated with spatial proximity or kinship (Marsden, 1993). A network with high density would be one where everyone in the network knows everyone else. Highly interconnected networks facilitate flow of norms and values among players, creating implicit behaviors and expectations among members (Oliver, 1991). This means that people in close networks are more willing to share information with each other (Greve, 1995). Close-knit groups tend to have little variation in norms, which leads to less ambiguity about expectations in the group (Bienenstock, Bonacich & Oliver, 1990; Rowley, 1997). To a point, as density increases, communication becomes more efficient (Rowley, 1997; Uzzi, 1996). Density is an indicator of actor-to-actor influence and is positively correlated with diffusion of innovation (Rogers, 1983). New tacit knowledge flows more easily through interpersonal contacts (Lundvall, 1988).

Density can build social capital by facilitating the diffusion of norms through the establishment of behavioral expectations (Rowley, 1997). Density allows social attitudes to travel across the network more quickly (Bienenstock, Bonacich & Oliver, 1990). Density is an indicator of cohesiveness of a group, and cohesiveness establishes trust (Axelrod, 1984; Greve, 1995). Norms of trust means actors consider the probability of long term and continued exchange in transactions with network members. Cooperation and commitment develop as a natural basis of social relations (Axelrod, 1984).

Density has a positive effect on the speed and accuracy of certain types of information. In diffusion of innovation studies, new ideas are transmitted among interconnected individuals more rapidly at certain stages of the diffusion process (Rogers, 1983). Yamaguchi (1994) demonstrated that low density contributed to the inefficiency of information flow through social networks. Ryan and Gross (1943) found that neighbors were an important source of information for farmers adopting hybrid seed corn. New drugs were more likely to be adopted by doctors who worked together than by those who did not (Coleman, 1966). Weimann (1983) discovered that news and gossip traveled faster and more accurately in interconnected groups in an Israeli kibbutz. Liedka (1991) found that network density within a niche serves as a resource for organizational survival. Private colleges belonging to the same consortia were more likely to adopt new programs than those who were less densely connected (Baptista, 1999). Higher density of organizations in a specific technological niche positively influenced the diffusion and adoption of new technologies in manufacturing firms (Podolny, Stuart & Hannan, 1996).

Dense networks can be a constraint when redundant ties provide the entrepreneur with similar information. Some evidence exists to support the value of sparse network structures. Less dense networks can yield access to new information not available in one's primary network. Granovetter's (1973) classic study on information access for persons seeking employment provides support for the contention that ties outside one's primary network offer access to valuable information. Spatially weaker links may provide more important resources for a firm (Ostgaard & Birley, 1996). Falemo (1989) found that contact with persons living outside the community were more important in channeling marketing resources to entrepreneurs.

Centrality. Centrality refers to where one is located in the flow of information relative to others in a network. Centrality is a predictor of influence or rank. An individual centrally located in a network has status in the hierarchy, implying better access and control of resources in a network. This position may be derived formally, through an elected or appointed office, or informally, built upon reputation and expertise (Ibarra, 1993). Entrepreneurs may find themselves in a central position in the network hierarchy by virtue of their socio-economic status or personality characteristics. As is well documented in the diffusion of innovation literature, "opinion leaders" are central in the flow of information in their networks (Rogers, 1983). Through their position in a group, they have the capacity to control or interrupt the flow of communication.

The degree of centrality measures an actor's ability to access independently all other players in a network, the most central actors having the shortest aggregate distances

to all other actors (Rowley, 1997). Centrality in organizational networks is associated with perceptions of power, adoption of innovations and access to critical information (Burkhardt & Brass 1990; Ibarra and Andrews 1993; Krackhardt, 1990; Rogers & Kincaid, 1981). Centrality in a network insures that information is easily accessed at low cost. Inequality in centrality negatively impacts the flow of information (Yamaguchi, 1994). Ibarra and Andrews (1993) found that advice network centrality in an advertising agency influenced access to information, resources and legitimacy. Podolny, Stuart and Hannan (1996) found that organizational centrality was related to organizational growth in technology based industries. Donckels and Lambrecht (1997) found that small enterprises that were more central in business networks experienced higher growth. Leavitt (1951) found that centrality in communication networks was correlated with influence on outcomes. Centrality was shown to be an important factor in the level of administrative innovation in an organization (Ibarra, 1992). Centrality suggests many alternative source of information (Rowley, 1997). Within organizations, higher centrality leads to more boundary spanning behavior, because those in higher positions perceived more uncertainty (Seror, 1989).

Together, high levels of density and centrality form a "tight" network structure, where an actor has easy access to all of the information in a network. This can be an advantage when the information sought is of a highly tacit nature, or when information changes too rapidly to be codified (Hansen, 1999). A tight network can be a disadvantage when one is seeking to innovate. Looser structures where network members are weakly connected to other networks provide access to the ideas not available in one's immediate

circle of friends and acquaintances.

Network Interaction

Interaction refers to dimensions of solidarity and homogeneity of networks (Adams & Blieszner, 1994). The type of interaction in a network structure can have an affect on access to information. The emotional intensity, intimacy, and perceived commonalities shared between network members can affect the flow of resources (Granovetter, 1985; Marsden, 1990). Berg and Clarke (1986) note that close relationships facilitate the exchange of a greater variety and higher quality of resources than those in casual relationships.

Frequency. Frequency measures the number of times a resource flows between two network members. The more one has contact with another, the more opportunity there is to build a close relationship, which may facilitate the exchange of information among network members (Foa, Converse, Tornblom & Foa, 1993). Frequency of contact is especially important for information that is complex and changing (Alange, Jacobsson & Jarnehammer, 1998). In small business marketing, data from the immediate environment is generally considered to be most critical, and is consequently collected on a more frequent basis (Brush, 1992). Van de Ven, Hudson and Schroeder (1984) found that higher performing managers had more frequent contact with employees, customers and financiers. Aldrich, Rosen and Woodward (1987) found that the frequency of contact with network members positively influenced performance in entrepreneurial new ventures.

Emotional Intensity. Emotional intensity measures the closeness of a relationship. It can be equated with friendship (Marsden & Campbell, 1984). Indicators of emotional intensity are the mutual assessment of the level of friendship in a relationship, and the degree to which the focal individuals spend time together socially (Granovetter, 1973; Marsden & Campbell, 1984; Schaefer & Olson, 1981). Friendship quality is based in part on the willingness to spend free time together (Winstead, Derleger, Montgomery & Pilkington, 1995). Closeness infers self-disclosure, help and support, shared interest, expression, trust and acceptance (Parks & Floyd, 1996). Emotional intensity was found to be the best indicator of unobserved tie strength (Marsden & Campbell, 1988).

Studies indicate that people often mix work and friendship (Haythornwaite & Wellman, 1998). Real estate agents studied by Halpern (1996) relied on friendly relationships in understanding and using information that they obtained in a business context. Further, the lack of friendship among participants in the study interfered with business transactions. Friendly relations between students in an M.B.A. program had positive effects on perceptions of team effectiveness and performance. Halpern (1996), Specht (1987), Dollinger (1985) and others have found that friends are an often-used source of business information among small business owners.

Intimacy. An intimate relationship is one where an individual shares experiences in several areas, along with an expectation that the experiences and the relationship will persist over time (Olson, 1975) Intimacy measures the perceived level of mutual confiding present in a relationship. It measures the depth of the exchange, both verbally and

nonverbally, between two persons. Intimacy implies commitment and acceptance, and positively influences the level of self-disclosure (Gilbert, 1976). More intimate relationships would be ones where such personal matters as family concerns or political subjects are likely to be discussed (Marsden & Campbell, 1984). More intimate relationships are likely to share common friends, similar ideas and interests (Olson, 1975).

Perceptual Homophily. People tend to associate with others who are like themselves (Blau, 1961). Gilly et al. (1998) refer to perceptual homophily, or the degree to which network members share values and experiences. Shared values and norms can facilitate the flow of information in a network and provide better access to information. Tsai and Ghoshal (1998) demonstrated that social ties and shared vision contribute to the creation of trust, which in turn increased the flow of resources between business units in a firm. The level of trust and goal congruence between individuals in a network can determine the "thickness" of information and influence when information is received (Borch & Arthur, 1995; Uzzi, 1996). Shared values, norms, interpersonal affiliation and respect help a firm cope with complexity and reduce uncertainty (Borch & Arthur, 1995). Referral information is more likely to be transferred between strong, homophilous ties (Brown & Reingen, 1987). Institutionally homogeneous networks of private colleges were more likely to share information about curriculum than less similar groups (Kraatz, 1998). Consumer behavior studies support the notion that people seek information from those that are perceived to be similar to themselves. Feldman and Spencer (1965) found that respondents used perceived similarity of sources rather than perceived expertise when seeking physician referrals. Gilly et al (1998) found that perceptual homophily was a

stronger predictor than demographic homophily in a consumer behavior context.

The Strength of Ties

Frequency, emotional intensity, intimacy and perceptual homophily as a measure of the level of interaction can be expressed as the strength or weakness of ties among members (Granovetter, 1973). Strong ties exist where network members have frequent contact with close friends. Weak ties are relationships characterized by less frequent contact and less intimate, more instrumental communication (Ashman, Brown & Zwick, 1998).

Both strong and weak ties are vital in the flow of information. Weak ties act as bridges, permitting information to travel from one network to another (Brown & Reingen, 1987; Weimann, 1983). Weak ties are indicators of non-redundant information (Hansen, 1999). Granovetter's (1973) seminal work on the strength of weak ties showed that individuals searching for a job received the most valuable information from infrequent, distant ties, rather than from strong ties. He explained this outcome by reasoning that close ties are more likely to have the same information as the job searcher, and that valuable information about new opportunities resides in weaker ties. Burt (1992) found that top managers' promotions within high technology organizations were enhanced by weak, rather than strong ties. In a study of nonprofit organizations, those with primarily weak ties did better in acquiring donations from external sources (Ashman, Brown & Zwick, 1998). Weak ties with national and international networks were associated with firm growth for entrepreneurs in medium sized manufacturing firms (Donckels &

Lambrecht, 1995). Swan and Newell (1995) found a correlations between use of professional associations (weak ties) and new technology diffusion. Hansen (1999) found that weak ties between units of a firm are sources of new knowledge, but impede the transfer of complex knowledge. Nelson (1991) found that churches which had more inter-group weak ties performed better than churches without bridges to other networks.

The entrepreneurial network research tends to view dense, cliquish network structures, where everyone in the network knows everyone else, as a disadvantage (Burt, 1992; Granovetter, 1985). However, some studies show that close relationships can facilitate the flow of sensitive, complex and rapidly changing information (Weimann, 1983; Hansen, 1999). While strong ties may constrain access to new information, these relationships facilitate transfer of some types of knowledge. In a study of new product development projects in a large firm, strong ties produced better task-related outcomes when the transfer of complex information was involved (Hansen, 1999). Baptista (1999) found that strong ties among liberal arts colleges increased adoption of professional programs. Weimann (1983) found that within subgroups within an Israeli kibbutz, gossip, news and consumer information was communicated faster and more accurately through strong ties than through weak ties.

Several studies indicate that multiple network structures may be optimal. Nelson (1991) found that churches which had more weak inter-group ties, combined with strong within group ties were higher performers. Greve (1995) found that entrepreneurs in later phases of entrepreneurship had more weak ties than start-up businesses, suggesting that

strong ties are beneficial in accessing resources for start up, while weaker ties are instrumental in acquiring resources needed for growth.

Social Capital

Social capital is an intangible asset that resides in the relationships present in networks. Relationships promote social well-being and provide such rewards as emotional support and encouragement (Coleman, 1988; Winstead et al., 1995). Close relationships create trust and obligations and define expectations and norms among trading partners (Gulati, 1995). Those individuals who are able to build trust, reciprocity and commitment through their network relationships have a comparative advantage which leads to richer and finer grained exchange of information (Burt, 1997; Tsai & Ghoshal, 1998). An actor in a network has social capital if that person can draw other resources from the network because of her/his social relationships with network members (Hofferth & Iceland, 1998).

Social capital provides the insurance necessary to facilitate transactions in the marketplace through the presence of trust, reciprocity and commitment. Portes and Sensenbrenner (1993, p. 1323) conceptualize social capital as "those expectations for action within a collectivity that affect economic goals and goal-seeking behavior of its members, even those in the economic sphere." Expectations include the belief that others will act in a manner that will facilitate action within the social structure. These expectations are built upon a common set of values and norms drawn from an underlying moral order. Reciprocity and trust enable non-contractual transactions and block malfeasance and opportunistic behavior. Commitment in a network is derived from

common awareness, collective sentiment and collective self-interest (Coleman, 19880).

In the model I developed for this study, the presence of social capital (SC) is defined by the level of trustworthiness, reciprocity and commitment perceived in the network. The more trustworthy the focal actor, and the greater the reciprocity and commitment perceived to be present among network members, the higher the level of SC.

Trust Being perceived as trustworthy, dependable and sincere by network members encourages exchange among network members (Doney, Cannon & Mullen, 1998; Hawes Rao & Baker, 1995; Lane & Bachmann, 1996; McAllister, 1995; Tsai & Ghoshal, 1997). Knowledge and information are more likely to be exchanged when parties are sure about the moral and ethical basis of another's actions and motivations (Jones & George, 1998). Tsai and Ghoshal (1998) found that trust between business units in a large firm positively influenced information sharing between units. Trust between supervisors and employees explained a significant amount of variation in information sharing between the two groups (Ramaswami, Srinivasan & Gorton, 1997).

Network interaction influences the development of trust through the characteristics of the network member, through experience, and through affect (Jones & George, 1998). Currall and Judge (1995) found that the longevity of prior work relationships was associated with increased trust between managers in an organization. Persons who were perceived to be more trustworthy were more likely to be given information by network members.

Commitment. Confidence that a partner will cooperate and pursue mutually compatible interests is derived from collective experiences and common awareness created through group interaction (Tsai & Ghoshal, 1997). Common awareness is created when a group is affected by common events or situations. This collective experience can lead to internal solidarity and collective sentiment that fosters altruistic conduct and mutual support. Characterized as shared vision by Tsai & Ghoshal (1998), this quality promotes proper ways of acting in a social system. Coleman (1988) suggests that the expectations created through social interaction affect goal-seeking behavior of group members, including economic ones. Commitment reflects the willingness of network members to help one another by providing support, encouragement and information.

Reciprocity. Reciprocity contributes to SC through self-interested transactions where network members accumulate favors and other valuable items that can be called upon as resources when needed (Portes & Sensenbrenner, 1993). Exchanges across strong ties are influenced by previous encounters, which may have created outstanding debts owed to an individual. That individual can "call in'" the favors owed in subsequent exchanges, which may provide better access to tacit knowledge of exchange partners (Portes & Sensenbrenner, 1993). The desire for social acceptance may motivate actors to provide valuable resources in return for admiration (Miller & Kean, 1997a).

Marketing transactions are influenced by feelings of reciprocity. Frenzen and Davis (1990) found that intention to buy was influenced by reciprocal sentiments of home party consumers. Miller and Kean (1997a) found that rural consumers were more

favorable toward local retailers when they were satisfied with the levels of reciprocity in their community. In a study of manufacturer-dealer networks, the level of information shared by manufacturers was positively correlated with the volume of other resources flowing between network members (Usdiken, 1990). Reciprocal norms in a network may influence the willingness of network members to share valuable information with others in the network. Relationships generate trust, reciprocal intentions, and commitment, which are the foundation of SC. Different network structures and interaction levels produce varying levels of social capital. Burt (1997) suggests that SC capital can be brokered into higher returns by facilitating access to information. Higher levels of trust, reciprocity and commitment in a network enable a person to access information when it is needed. Key indicators of social capital include the willingness of one's network contacts to share information and provide help. Other indicators include memberships in organizations and voluntary groups (Bourdieu, 1986), the number of friendship ties, and the quality of relationships (Wall et al., 1998).

Social capital has been operationalized in various ways, but generally refers to the amount of help available in a person's network of contacts. See Table 1 for a summary of the use of social capital in previous literature. High levels of social capital have been related to a variety of outcomes. College attendance by rural residents was positively associated with high levels of family and community-based social capital, measured in terms of available family resources, (Smith, Beaulieu & Seraphine, 1995), Charitable giving was more prevalent in communities with higher levels of social capital, measured as

residents' involvement with the community (Weissman, 1998). Coleman (1988) found that school performance was positively influenced by family social capital derived from network relationships among family and friends. Friedman and Krackhardt (1997) related lower returns to college education to lower levels of social capital among Asian immigrants. Ashman, Brown and Zwick (1998) defined social capital as relationships that provide resources, information and social legitimacy, and showed that higher levels of social capital led to long-term effectiveness among nonprofit organizations.

Social capital may create competitive advantage for a firm through the exchange of information among network members (Nahapiet & Ghoshal, 1997). Access to social capital means that people have connections to individuals who can help with advice, provide further connections and access to other resources. Interaction with various environments promotes learning, and increases the likelihood that the entrepreneur will be confronted with new ideas (McKee, Conant, Varadarajan & Mokwa, 1992). Entrepreneurs with high levels of social capital are also able to benefit from increased referral advantages by building a reputation with others in the network (Burt, 1992; Granovetter, 1985).

Social capital is useful for enhancing learning, economic growth, power and status for individuals (Bourdieu, 1986; Nahapiet & Ghoshal, 1998). Chung and Gibbons (1997) suggest that a socio-economic structure that facilitates the emergence of SC is key to the effective creation and control of entrepreneurial behavior. Participation in networks provides members with credentials in the form of obligations or institutionally guaranteed

rights. Network membership also provides access to resources via contacts and connections. Both strong and weak ties can build source of social capital. The type of network tie that best facilitates access to information depends upon the type of information that is being accessed.

Information

Resource theory posits that people interact and associate with others because they depend on them for resources. Information is an important resource exchanged between a firm and its environment. Information is derived from data that flows into and out of an organization in the form of advice, opinions, instructions or enlightenment. A proportion of information gathering activity involves contact and exchange with networks of individuals who are linked by some common purpose or interests. Information flows between points in the structure at different rates and volumes, depending on the nature of the relationships in the network (Borch & Arthur, 1995; Foa, Converse, Tornblom & Foa, 1993; Leifer & Delbecq, 1977). Knowledge obtained through social interaction with network members can lead to new combinations that drive strategic and tactical decisions for firms (Nahapiet & Ghoshal, 1998).

Effective interaction between entrepreneurs and the environment is essential to developing informed decisions. There is a critical need for small business owners to obtain accurate and timely information about customer preferences and motivations and competitor activity. Small retailers spend considerable time monitoring the environment

for information that will guide their strategic, managerial and technical decision making (Dollinger 1984; Schafer 1990; Smeltzer & Fann, 1989). The intensity of information search and number of sources have been shown to have a positive affect on growth in small firms (Dollinger, 1984; Jarillo, 1989; Young and Welsh, 1983). Information asymmetries that result from differences in the ability of the scanner to access information contribute to adaptive behaviors and variation in performance outcomes (Weedman, 1992).

The value of information depends upon its accuracy, relevancy, reliability, specificity and timeliness (O'Reilly, 1982). Information sources vary in their perceived ability to provide higher quality information. In situations where the environment is uncertain and ambiguous, face-to-face information is often considered to be richer because of its ability to provide immediate feedback and multiple cues to interpret complex subjective messages (Daft & Wiginton, 1979).

Information that is more complex is often accessed through personal ties. Complexity refers to the level of codification and the dependent nature of the information. Information characterized by low codification (not expressed in writing) is similar to tacit knowledge, and is transferred more easily through strong ties (Hansen, 1999; Weimann, 1983). Dependency refers to the degree to which information is interdependent with another set of information (Winter, 1987; Zander & Kogut, 1995) . Stronger ties help to interpret dependent information within its relevant context.

Information that inspires innovation is often located outside the immediate environment of the searcher (Alange, Jacobsson & Jarnehammer, 1998; Freeman, 1991; Rogers, 1983). Innovative Indian entrepreneurs networked extensively with external sources (Ramachandran & Ramnarayan, 1993). Swan and Newell (1995) reported a link between boundary spanning activity and technological innovation in professional associations. Weak ties are more valuable in accessing information that contains new ideas.

Marketing Information

Marketing information is considered by small business managers to be the most important type of information used in business planning (Smeltzer, Fann & Nickolaisen, 1988). For retailers, key marketing information is located both in the local environment (data about customers, competitors and local economic and regulatory conditions, for example). Information about new products, processes and technical innovations is found in the remote environment (Brush, 1992).

Successful implementation of a retail strategy requires access to both local and remote market information sources. The structural hole argument postulates that because of optimal network ties, the successful retailer is in a position to bridge the information gaps between local and remote markets and thereby create competitive advantage. In other words, social capital yields higher quality information.

Local Marketplace Information. Local marketplace information includes information about consumer demand, competitor moves and local economic and regulatory conditions (Brush, 1992). Because this information tends to be complex and ever-changing, strong ties which contain common cultural norms and values are important in information transfer. When information is localized, those who are closest to the source can obtain information more cheaply than others (Hansen, 1999). Strong ties, characterized by frequent contact and close relationships, foster intra-group flow of information. Weimann (1993) suggests that strong ties facilitate the flow of information within a close-knit group, such as among family, friends and neighbors. High frequency of interaction, along with the intimacy and emotional intensity found in close relationships, makes information flow quickly between network members. Cultivating tacit knowledge requires an environment of trust, respect and commitment (Durrance, 1998).

The superpreneur study (Frazier, 1999; Frazier & Niehm, 1999) revealed that high-performing retail "superpreneurs" are adept at extracting information about the local market from their local network of friends, family, business associates, government officials and other community residents. Their local networks were built on friendship, kinship and geographic proximity, and provided quick access to thicker, richer and less costly information about the local marketplace than could be obtained through armslength methods. These "Market Intelligence" networks were useful for tapping into information that was ever-changing and uncodified. Superpreneurs were able to assess consumer demand, evaluate competitive threats, and tailor advertising, customer service and merchandising strategies based on the information they received from their networks.

Remote Marketplace Information. Remote marketplace information includes data about broader socio-cultural, political and economic trends, as well as technological trends (Brush, 1992). Hartman, Tower and Sebora (1994) found that innovative introductions were a product of interacting with the external environment. Pioneering entrepreneurs who emphasized new products, markets and technology were found to be active scanners of remote information sources (Ramachandran & Ramnarayan, 1993). Sources external to manufacturing firms accounted for up to two-thirds of inputs to innovative development (Conway, 1995). Innovative Norwegian firms sought information primarily from trusted, similar firms (Johannisson & Dolva, 1995). Ties that reach outside a dense core group into distant and less frequent contacts, or "Innovative" networks are more important for radical change (Alange et al, 1998). Granovetter (1973; 1985) suggests that weak ties (acquaintances) are crucial in accessing information that is not readily available in the near environment. The argument here is that close friends and kin would likely have the same information as the information seeker, so new information is most likely to reside outside the network of close ties (Burt, 1992; Granovetter, 1973; Uzzi, 1996).

The superpreneur study identified unique networks of individuals who provided information which inspired innovative marketing ideas, and identified new sources of merchandise and merchandising techniques. These innovative networks consisted of retailers, supplier representatives, and other business professionals who acted as bridges to networks with new information. Retailers in this study emphasized that long-term relationships resembling "weak ties" gave them to access ideas and information in the

remote market (Frazier, 1999).

Competitive Advantage through Information Access

Schumpeter (1942) suggests that the essence of entrepreneurship is the ability of certain individuals to recognize gaps in products, services and distribution before others, and to respond by creating new combinations which meet the needs in the marketplace. This activity requires access to information in a time frame that results in competitive advantage. Kaish and Gilad (1991) found that entrepreneurs exposed themselves to more information, looked in less obvious places, and used different types of information cues than traditional managers. Christensen, Madsen and Peterson (1986) postulate that opportunity identification is contingent on profound market knowledge. Environmental scanning research links boundary-spanning information search to market-based learning and the development of marketing competence (Beal, 2000; Brush, 1992; McKee, Conant, Varadarajan & Mokwa, 1992; Mohan-Neill, 1995; Peters & Brush, 1996).

Compared to large-scale retail firms, a small retailer may be at a disadvantage when it comes to having access to key information sources about new trends, new products, or new merchandising processes. This disparity may be overcome by creating network relationships that provide access to key information. Likewise, insuring that information is received in a timely manner is important in meeting customer demand. Entrepreneurs also use control of information as a source of advantage. Because there is always more information available than can be attended to, being able to tap into

information that is relevant to a specific situation may be a benefit of network ties. For example, retailers in some rural communities may not have immediate use for information about a fashion trend that is popular in urban areas. Close ties with suppliers who have a sense of what the retailer's customer prefers can help to limit information to the most relevant, saving time and other costs.

Strong Ties or Weak Ties ? For independent retailers operating in rural markets, it seems that both strong and weak ties would be valuable in accessing high quality information from networks. Strong ties within the community would facilitate the flow of information about market preferences, competitor moves, and local economic and regulatory conditions. Weak ties, on the other hand, would provide access to information that could be used to spark innovation in merchandising and marketing practices. Previous network studies suggest that Market Intelligence (MI) networks will contain tighter, stronger ties than Innovation (INV) networks.

Based on the preceding literature, the first set of hypotheses are:

H_1: Market Intelligence Network (MI) structures will be more highly connected (higher density/higher centrality) than Innovation Network (INV) structures.

H_2: MI Networks will contain stronger ties (higher levels of Emotional Intensity, Intimacy, Perceptual Homophily, and Frequency of Interaction) than INV Networks.

H_3: For MI Networks, denser, more central and stronger ties will lead to higher levels of Social Capital (SC).

H_4: For MI Networks, higher levels of Social Capital (SC) will lead to higher Information Quality (IQUAL).

H_5: For INV Networks, denser, more central and stronger ties will lead to higher levels of Social Capital (SC).

H_6: For INV Networks, higher levels of Social Capital will lead to higher levels of Information Quality (IQUAL).

Distinctive Marketing Competencies

Independent retailers must develop marketing abilities that are highly visible and valued by consumers to remain competitive in the rural marketplace. These competencies can be used to build a sustainable competitive advantage by offering superior product assortments, better service, and/ or shopping experiences (Conant, Smart & Solo-Mendez, 1993). Regardless of size, superior retailers possess something special and hard to imitate, which enables them to outperform their competitors by delivering value to their customers. Every value activity uses and creates information, making information quality a critical part of marketing competence (Porter & Millar, 1985).

Bharadwaj, Varadarajan & Fahy (1993) note that competitive advantage is developed and sustained through the mobilization of unique resources and distinctive skills. Superior skills are those capabilities that set a firm apart from its competitors. Conant et al. (1993) operationalized distinctive marketing competencies for smaller retailers. Knowledge of customers, competitors and industry trends, skill in segmenting markets and the ability to select, price and advertise product lines were identified as source-of-skill advantages. Other functional activities considered to be relevant were awareness of store strengths and weaknesses, developing store image, effectiveness in conducting public relations, civic involvement, employee development and control and

evaluation of retail programs. Their study found that the most successful small retailers were those with clearly defined strategies and the greatest number of distinctive marketing competencies.

Because it is unlikely that smaller firms can compete with large-scale chains using a cost leadership strategy, most successful small retailers use a differentiation or niche strategy. These approaches require a firm to be unique in some aspect that is important to consumers (Conant et al., 1993; Porter, 1985). Analysis of the environment is critical in the development of a differentiation strategy (Neil, 1986). Retailers must be connected to channels that provide information about product, promotion, service delivery, consumer demand and competitor activity. They must determine consumer demand and match it to information they have about available products and trends. Small retailers may gain competitive advantage by being able to access information and synthesize it in a more responsive manner than their competitors.

The ability to maintain competitive advantage through distinctive marketing competencies requires continual adaptation to changing consumer demand. A successful retail strategy emerges from the process of studying the environment to discover new opportunities for responding to consumer needs and wants. Retailers interpret consumer demand by possessing a thorough understanding of the economic, social, demographic, technological and political trends that impact consumer demand. In order to respond to changes, the retailer must constantly scan the environment for innovative products and

services that fit the expectations of the market. Resources and skills are prone to deteriorate over time and must be upgraded (Bharadwaj et al, 1993). Firms can adapt more quickly than competitors by being better informed about the environment than competitors.

The nature of linkages to network members affects the learning of marketing skills. Interaction with various environments promotes learning by increasing the likelihood that the organization will be confronted with new ideas (McKee, Conant, Varadarajan & Mokwa, 1992). Using the argument provided by network theory, embedded network ties can influence the quality of information. The social capital created by embedded ties can lead to distinctive marketing competence by providing the information necessary to develop and maintain these skills. Networking activity has been shown to influence marketing competence by providing market access, cost savings, shorter lead times, technology and process innovation, market feedback and financial resources (Larson, 1991).

An entrepreneur's ability to create and use social capital may lead to easier access to the information required to develop and maintain marketing competencies. Richer information about the nature of consumer demand may be accessed by those individuals who have strong social ties to potential customers and others in the immediate marketing environment. Advantages relating to innovation may be enjoyed by retailers who have developed close friendships with suppliers. Retailers may also be able to learn about

industry and economic trends through social ties with individuals and firms that have access to information.

Levitas, Hitt and Dacin (1997) suggest that knowledge gained from collaboration with other firms can lead to innovation. Normann (1985) postulates that environmental scanning promotes learning by increasing the likelihood that a firm will be confronted with new ideas. Research has linked the ability to innovate with increased environmental scanning (Conway, 1995; Hartman, Tower and Sebora; 1994; McKee, Conant, Varadarajan & Mokwa, 1992; Ramachandran & Ramnarayan, 1993). Larson (1991) found that free and rapid movement of information between exchange partners increased a firm's tacit knowledge, expanded innovative capacity, improved product quality, reduced costs, and enhanced market competitiveness. This suggests that better information quality can lead to higher levels of marketing competence.

H_7: For Market Intelligence (MI) Networks, higher Information Quality will lead to higher Marketing Competence related to Local Markets (MC/MI).

H_8: For Innovative Networks, higher Information Quality will lead to higher Marketing Competence related to Remote Markets (MC/INV).

Performance Outcomes

Strategy research is based on the notion that strategy influences performance (Lubatkin & Shrieves, 1986). The relationship between information seeking and performance has been revealed in the literature. Dollinger (1984) showed that intensity of search was related positively to performance for small retailers. Peters and Brush (1996)

found that scanning the environment for information related to competitors and market share was related to financial growth in small firms. Scanning intensity was also related to employee growth in new manufacturing firms (Box, White & Barr, 1993). The use of professional advisors was related to financial success by Lussier (1996).

Marketing competence is associated with better performance (Bharadway, Varadarajan & Fahy, 1993; Conant, Smart & Mowka, 1993; Snow & Hrebiniak, 1980). This model suggests that retailers who obtain higher quality information develop better marketing competence, and thus perform better than less informed retailers. Therefore, I suggest that higher levels of marketing competence (both Local Market Competence and Remote Market Competence) will lead to higher growth and profitability.

H_9: For MI networks, higher Local Market Marketing Competence (MC/MI) will lead to higher perceptions of performance (PERF).

H_{10}: For INV Networks, higher Innovative Marketing Competence (MC/INV) will lead to higher perceptions of performance PERF.

Network social capital has also been linked to access to other types of resources which lead to better financial performance in small firms. Network support has been linked to survival, firm growth, and overall success of firms (Duchesneau & Gartner, 1988; Ginn & Sexton, 1989; Ostgaard & Birley, 1996). Besides providing valuable information, networks also provide access to resources such as financial capital, emotional support and change capability. This leads to the final two hypotheses:

H_{11}: For MI Networks, higher SC will lead to higher perceptions of performance (PERF).

H_{12}: For INV Networks, higher SC leads to higher PERF.

Chapter 3

METHOD

Sample

The population considered in this study consisted of owners and/or primary managers of small retail stores in smaller communities in the Midwestern U.S. Only businesses located in smaller communities with populations less than 25,000 were part of the sample. I controlled for community size because of research that indicates that people in smaller towns tend to have different networks than their urban counterparts (Babb & Babb, 1992). As the commercial database did not have a way to identify communities as rural, population size was used as a measure. The sample was drawn randomly from a commercial database of owners and managers of independently owned retail gift shops (SIC code 5947) in Midwestern states. A single merchandise category (gift shops) was sampled in order to control for variations in information search patterns and financial performance by merchandise category. Because the focus of this study was small firms, the sample for this study was drawn from the set of retail firms where the owner was the primary decision maker. Only firms with less than twenty employees were included in the sample. Chain stores and franchise operations were excluded from the study.

Instrument

A mailed, self-administered, questionnaire was used to measure the constructs in the model. I developed the preliminary instrument both from existing scales and scales developed from a review of the network literature in several domains: social exchange, network analysis, and business strategy.

Instrument Development

The Network Structure, Network Interaction, and Social Capital scales were previously undeveloped. I first generated items for each construct from a review of the relevant literature (See Table 2 for details on instrument development.) Preliminary scales were developed, then presented to three experts familiar with the social network research. They were given a definition of each construct, along with a random list of scale items, and asked to place the items with the construct that best fit each item. If two of three experts agreed on an item's placement with a construct, the item was retained as originally developed. Where less than two experts agreed on an item's placement with a construct, items were either revised, replaced or eliminated. This resulted in a 3-item scale for Density, a 6-item scale for Centrality, 4-item scale for Emotional Intensity, a 3-item Intimacy scale, a 4-item Perceptual Homophily Scale, a 3-item Frequency scale, a 4-item Trust scale, 3-item Commitment scale, and a 3-item Reciprocity scale. (See Table 3 for item content.)

The Marketing Competence and Information Quality scales were previously developed, but were adapted for use in the study context. Marketing Competence relates to the superior skills and capabilities that set a firm apart from its competitors. Conant, Smart and Solo-Mendez (1993) operationalized distinctive marketing competencies for smaller retailers. Knowledge of customers, competitors and industry trends, skill in segmenting markets and the ability to select, price and advertise product lines were identified as source-of-skill advantages. Other functional activities considered to be relevant were awareness of store strengths and weaknesses, developing store image,

effectiveness in conducting public relations, and civic involvement. Content validity of the scale was addressed by the researchers, however factor analysis and reliability was not reported in their study.

The scale developed by Conant et al. (1993) was adapted for use in this study. The original scale consisted of 25 items. I was interested in measuring marketing competence related to knowledge of customer needs and preferences, competitors, local market conditions, and adopting new merchandise, marketing ideas and business techniques. Based on the superpreneur study, I first eliminated items that did not appear to relate directly to competence gained from local or remote market networking. These items related to employee training, store location, allocation of financial resources, sales forecasting, and control and evaluation of programs.

Content validity for Marketing Competence was assessed first through an expert panel consisting of three researchers familiar with small business and retailing. Experts were given a definition of local market and remote market competence, and were asked to sort competencies from the original scale into one or both of those categories, or indicate that the item did not belong to either category. As a result of this stage, seven items were retained which measured local Marketing Competence. Four items remained after revision for measuring innovative Marketing Competence. (See Table 3.)

The Information Quality scale was used with modification to the study context. Experts were given the study definition of information quality, and asked to rate each

question on the following scale: (1) clearly representative of information quality, (2) somewhat representative of information quality, and (3) not representative of information quality. All items were rated either (1) or (2) by the expert panel. Wording for those items rated (2) was revised based on expert comments. This stage led to a 5-item scale for information quality, measuring the accuracy, relevance, specificity, reliability and timeliness of information received from the network.

Using the scales that resulted from the expert panel stage, I pre-tested the instrument to assess content and construct validity and internal reliability. I identified potential participants for the pretest from telephone directory listings of gift stores, and contacted them by phone to solicit their participation. Those agreeing to participate were sent a questionnaire. Twelve questionnaires were returned complete after one week. I interviewed participants after administering the questionnaire to identify problems with comprehension and determine time needed to complete the questionnaire. I also assessed reliabilities for each scale, which ranged from .69 to .90, except for the scale measuring frequency of contact. The alpha for this scale was .47. Because of concerns about questionnaire length, and lack of evidence in the literature that frequency should be measured as a latent variable, I decided to measure frequency using a single item in the final questionnaire.

Measures

This study focused on networks that provided business-related information to the respondent. Respondents were asked to identify two information networks. First, they

were asked to identify individuals to whom they talk about local market information regarding customers, competitors and local market conditions. Respondents were asked to list the first names or initials of all the people to whom they talk about these topics on the instrument. Ten spaces were provided, with instructions to make additional spaces if necessary. These people comprised the local, or market intelligence (MI) network. The same procedure was used to identify networks for remote marketplace information (information about new merchandise, new marketing ideas and new business techniques). This group is identified in the study as the INV network.

Previous network research used the recall method to identify network members (Burt, 1987; 1997; Ibarra,1993; Marsden, 1990; Tsai & Ghoshal, 1997). Individual perceptions of network structure are found to be effective in predicting attitudes and opinions. Individuals use these maps to operate in their social environment. These cognitive maps reflect the perceptions of structure in the minds of network members. Perceived relationships were shown to be more predictive of reputation than actual structure within an organization (Kilduff & Krackhardt, 1994; Weick & Bougon, 1986). I focus on the individual entrepreneur's perceptions in the assessment of network structure and interaction in this study.

Network Structure (NETSTRUCT). Structure is a latent variable which is represented by the configuration of ties among the individuals identified as network members. Structure was assessed through measurement of *density* and *centrality*. Density (DENS) refers to the number of ties that link network members compared to the

total possible ties in the network (Marsden, 1993). Based on work by Burt (1987), Granovetter (1973), Greve (1995), and Marsden (1990). I measured density by asking respondents three questions that identify the degree to which the people named as network members interact with each other. Questions were scaled 1 to 5 (not true at all to very true).

Centrality (CENT) refers to the degree to which one is central or peripheral in the flow of information relative to others in a network. Based on work by Baldwin, Bedell and Johnson (1998) and Rowley (1997), I assessed centrality by asking six questions to determine the degree to which respondents were in a position to call or talk to the network members they named directly. Responses ranged from 1 (strongly disagree) to 5 (strongly agree).

Network Interaction (NETINTER). Interaction is a latent variable which is represented by the closeness of a set of network relationships. The frequency of interaction as well as the emotional intensity, intimacy, and perceived commonalities shared between network members are the observed variables that define levels of interaction in the network. Frequency was measured as a single item.

Emotional intensity (EMOT) measures the closeness of a relationship. It can be equated with friendship (Marsden & Campbell, 1984). Statements regarding the closeness of the relationship were assessed using a five point scale (1=not true at all to 5=very true).

Intimacy (INT) measures the perceived level of mutual confiding present in a relationship. Three questions were developed based on discussions by Marsden and Campbell (1984), Schaefer and Olson (1981) and Parks and Floyd (1996), and Frenzen and Nakamoto (1993), that measured the degree to which respondents felt they would discuss private topics such as family matters and politics. These questions assessed the likelihood that the respondent would confide in named network members. A five point scale (1=very unlikely to 5=very likely) was used, with higher scores indicating more intimate relations with named network members.

Perceptual homophily (PERHOM) measures the degree to which respondents believe that network members are similar to themselves in shared outlook on life. Four statements were rated on a five point scale (1=strongly disagree to 5= strongly agree).

Social Capital (SC). This latent variable consists of three dimensions: the respondent's self-perceptions of their own trustworthiness among network members, respondent's assessment of the level of reciprocal intentions among identified network members, and respondent's assessment of the level of commitment among identified network members.

Trust (TRST) is the expectation by one person that another will act in an ethically justifiable manner (Smeltzer, 1996). This construct was measured by respondent perceptions of their reputation with respect to dependability, sincerity and trustworthiness among named network members. Four questions measured agreement with statements

about the perceived trust placed in the respondent by the named network members.

Reciprocity (RECIP) deals with the respondent's assessment of the level of support, accumulation of favors owed and the fairness perceived to be present in relationships (Frenzen & Davis, 1990; Miller & Kean, 1997). Three questions measuring this variable were used to assess the perceived level of reciprocity between named network members.

Commitment (COM) is the third variable comprising social capital, and measures the level of confidence that a partner will cooperate and pursue mutually compatible interests. It includes the degree to which respondents believe that network members share the same goals and visions, and their assessment of the vigor with which the network supports the respondent, and the amount of mutual help that is given in the network. The level of commitment present in the network was assessed via three questions which rated the respondents perception of network commitment. TRST, COM and RECIP were measured on a 1 (strongly disagree) to 5 (strongly agree) scale.

Information (IQUAL)

I used a scale developed by O' Reilly (1982) to measure the quality of information received from both immediate and remote marketplace sources. Information quality measures the accuracy, relevancy, reliability, specificity and timeliness of information. The scale was originally developed to assess quality and accessibility of information from a variety of formal and informal sources, including personal sources. The final scale

included five questions on quality, measured using a seven point scale (1=not relevant at all, to 7 = very relevant; 1=not reliable at all, to 7=very reliable, etc). Cronbach alpha was .89 in the original study. The wording was adapted for use in the current study.

Marketing Competence (MC).

Marketing Competence was measured in the context of the local market (MC/MI), which addressed skills in responding to and communicating with customers. Innovative marketing competence (MC/INV) dealt with assessing the ability to be first to identify new trends and try new business techniques. The scales measured responses using a 7 point scale indicating how competent the respondent felt they were compared to the top three competitors (1= not as strong, 7=much stronger).

Financial Performance (PERF).

I used subjective measures of growth, profitability and overall performance compared to industry and competitors to measure performance. Subjective assessments of performance are generally consistent with secondary performance measures (Venkatraman & Ramanujam, 1986). Respondents were asked to indicate a), their assessment of the firm's overall performance, b), their assessment of the firm's performance compared to industry, and c), compared to competitor performance, on a 5 point scale of 1 equaling "poor" to 5 equaling "excellent".

Procedure

I obtained a list of names and addresses of one thousand small retail gift store owners from a commercial database. After eliminating duplicate listings and pretest participants, questionnaires were mailed to 987 participants, along with a letter explaining the study. An addressed, stamped reply envelope was included with the questionnaire and letter. Follow-up reminder/thank you postcards were mailed two weeks after the first mailing. As a result of the reminder postcard, nineteen participants requested that another questionnaire be sent. Thirty-eight questionnaires were returned as undeliverable. Please see the Appendix for the final questionnaire, cover letter, and follow-up postcard

One hundred twelve completed questionnaires were returned, for a response rate of 12.1%. Several reasons may exist for the low response rate. Response rates are typically problematic when sampling small businesses (Conant & White, 1999). Authors have cited difficulties in contacting the appropriate respondent, lack of time, survey "burnout", and concerns about confidentiality (Winter, Fitzgerald, Heck, Haynes and Danes, 1998). The response rate achieved in this study is in the same range as those achieved by other studies where small retailers are the participants (e.g. Conant & White, 1999 - 13.1%; Ganesan & Weitz, 1996 - 13.8%; Robinson, Logan & Salem, 1986, 10.1%).

Questionnaire length and the nature of the questions may have contributed to the low response rate. In the pretest, respondents noted that the questionnaire took about 30 minutes to complete, but that they were often interrupted and completed the questionnaire

over the span of several hours or even days. Several also stated that the questions required a considerable amount of thought to answer. I received several replies from retailers who indicated that they were going out of business, or that their businesses were too small to be relevant to the study.

Sample Description

The sample consisted of 104 owners and 7 managers (one respondent did not indicate status) of small gift stores in small towns in Michigan, Ohio, Indiana, Illinois, and Wisconsin. Seventy-one percent were female, and twenty-six percent were male. Respondents tended to be older, with over eighty percent over 40 years old. Three-fourths were college educated (see Table 4.)

Nearly half (45.1%) of the respondents had owned their current business for over ten years, and over two-thirds had more than ten years experience in retailing. Firms were quite small, with forty-two percent reporting that they had no full-time employees. (See Table 4 for sample descriptives.)

Chapter 4

RESULTS

This chapter summarizes the process used to test hypotheses and the results of those tests. The study generated responses to questions about the respondent's relationships with two groups of people. First, respondents were asked to identify people from whom they received information about local market conditions, then evaluate aspects of their relationships with the people they identified. These data pertain to the MI (Market Intelligence) group. The second set of data related to people who were identified as sources of information about new trends, ideas and merchandise. These data pertain to the INV (Innovative) group. The goal in the final analysis was to identify a model that fit both sets of data. I will first explain the exploratory and confirmatory factor analyses used to develop final model, then discuss testing of the hypotheses.

I used SPSS 7.0 to conduct exploratory factor analyses and assess reliability. I used EQS 5.1 to test hypotheses related to the measurement and structural models. Maximum likelihood procedure was used to estimate model parameters, as MLE estimates have shown to be quite robust to violation of normality (McCallum, 1995, p.38). I assessed model fit using several methods. First, I looked for a small, nonsignificant χ^2 statistic, which measures the absolute magnitude of the discrepancy between the sample and the fitted covariance matrices. For each model analyzed, I also reviewed the standardized residual matrix, looking for large residuals as evidence of poor model fit. Lagrange Multiplier (LM) tests and Wald tests, provided by the EQS program, were used

to identify misspecifications in the model. The LM tests model restrictions to identify parameters that would contribute to a significant drop in χ^2 if they were to be freely estimated. Wald tests identify parameters that could be set to zero, without loss of model fit (Byrne, 1994). Model modifications were not made, however, unless a substantive argument could be given to do so.

Because χ^2 may not perform well under conditions of small sample size and nonnormal distribution, both of which characterize these data, I also assessed fit with incremental (NNFI) and comparative (CFI) indexes provided by EQS, which measure the degree of congruence between the model and the data. These indexes adjust for nonnormality of the data. A value of .90 or greater was considered acceptable fit of the data to the model.

Factor Development

Exploratory Factor Analysis

Prior to testing the hypotheses, I conducted exploratory factor analyses on items for the hypothesized constructs. Because of the small sample size (112), the goal in this stage of the analysis was to identify scale items that would lead to the most parsimonious measurement model possible. I was looking for scale items that loaded satisfactorily and uniquely onto à priori defined factors in both the MI and INV scales. For each set of responses, I retained items in the analyses that (a), did not crossload onto other factors, and (b), loaded greater than .50 on the hypothesized factor, for both sets of data.

Performance, Marketing Competence and Information Quality. Scale items measuring firm performance, local and innovative marketing competence and information quality were factor analyzed using varimax rotation. Items which loaded greater than .50 on the hypothesized factors were retained for further analysis (see Table 5).

Network Structure and Network Interaction. I retained items measuring Density, Centrality and Perceptual Homophily that met the criteria specified above. This resulted in a three-item Density scale, an four-item Centrality scale, and a three-item Perceptual Homophily Scale. Factor analysis revealed that items measuring EMOT and INT loaded on one factor, rather than two, in both groups (See Table 5). I re-conceptualized the construct as Friendship (FRND), consisting of items v40, v41, v42, and v43. This is consistent with the conceptualization of friendship offered by Olson (1975), and Parks and Floyd (1996), who define friendship in terms of willingness to self-disclose. I dropped the variable which measured frequency of interaction as a single indicator, as it loaded on several other factors in both sets of data. The social network literature suggests that frequency of contact is a measure of network interaction, but these results suggest that it is not a unique concept.

Social Capital. RECIP and COM loaded on a single factor in the MI network responses, while TRST and RECIP loaded together in the INV responses (see Table 5). Since there was not a common pattern between the network responses, and these factors appeared to be distinct from one another in the literature, I retained these three scales as separate factors.

Results from this step suggest, however, that in this sample, trust, reciprocity and commitment are not unique constructs. It may be that social capital in strong-tie networks is not the same as social capital in weak tie networks. Trust and reciprocity appear to be a single factor in weak-tie networks, while commitment and reciprocity behave as a single factor in strong-tie networks.

Results of factor analyses, and Cronbach alphas for each scale are displayed in Table 5. Cronbach alphas ranged from .71 to .95, exceeding the .70 threshold recommended by Nunnally (1978). The measurement model is shown in Figure 2. Item content is given in Table 3.

Confirmatory Factor Analysis

Using the items identified in exploratory factor analysis, I tested validity of the NETSTRUCT, NETINTER and SC constructs for both MI and INV data using confirmatory factor analysis. This was completed in two steps. In the first step, I tested the hypothesized relationships of first order factors, then tested their loadings on to the hypothesized second-order factors (NETSTRUCT, NETINTER and SC; see Figure 2). In the second step, I created composite scores that transformed the first order factors into observed variables by averaging the scores for each scale. As a result, DENS, CENT became observed variables for the latent variable NETSTRUCT. FRND and PERHOM became observed variables for the latent variable NETCHAR. TRST, COM and RECIP were averaged to create observed variables for SC. This step was taken because the small sample size in this study required that I simplify the model to decrease the parameter-to-

subject ratio.

Network Structure and Network Interaction

First Order Confirmatory Factor Analysis. A first-order confirmatory factor analysis for DENS, CENT, FRND, and PERHOM revealed two variables which crossloaded onto more than one factor in both the MI and INV models (v40 loaded on both CENT and FRND; v46 loaded on PERHOM and FRND). Since the goal of this step was to create composite scores for the first-order factors, these variables were dropped from the model to create a model where all variables loaded cleanly onto a single factor.

Results of the first order CFA for MI network data after eliminating these variables were (χ^2=78.527, df 50, n=106, p=.006; NNFI=.924, CFI=.942). For INV data the results were (χ^2=80.928, df 50, n=101, p = .002; NNFI=.935, CFI=.953). A review of the measurement equations found that all free parameters were significant at the .05 level for both MI and INV models (see Tables 6 and 7). LM tests indicated that v30, which asked whether the people in the network knew each other by name and was hypothesized to load on DENS, also loaded significantly on FRND for both groups. Although substantively, the argument could be made to add this parameter, subsequent tests indicated that adding it would not improve model fit substantially, and would confound the final model; therefore, no modification was made.

Second Order Factor Analysis. Three-item DENS (v30, v31, v32) and four-item CENT scales (v33, v36, v37, v38) were hypothesized to load on second-order factor

NETSTRUCT, and three-item FRND (v41, v42, v43) and two-item PERHOM scales (v47, v49) were hypothesized to load on NETINTER. To simplify the model, I re-conceptualized NETSTRUCT and NETINTER as one second-order factor, Network Characteristics (NETCHAR). This adjustment is consistent with some scholars' conceptualization of network dimensions. Granovetter (1985) and Marsden and Campbell (1984) presented network characteristics without delineating between structural and interaction components. The single latent factor finding suggests that the structure features of a network (density and centrality) are not distinct from the kinds of relationships between network members. Network studies often focus on either structure or interaction. These results suggest that structural and relational characteristics cannot be viewed separately when defining network characteristics.

The revised model (Figure 3) produced acceptable fit for both MI (χ^2=61.548, df 50, n=106; $p < .126$; NNFI=.969, CFI=.977). For the INV data, results were: χ^2=55.591, df 50, n=101; $p < .240$; NNFI=.987, CFI=.991). Parameter estimates are shown in Tables 8 and 9. These results suggest that network density, centrality, friendship and shared values are explained by a common, second order factor, NETCHAR.

Estimates of the reliability and variance extracted measures for each construct were computed to assess whether the specified indicators were sufficient in their representation of the constructs (Hair, Anderson, Tatham and Black, 1995). Formulas used to calculate these estimates may be found in the Appendix. An examination of these factors reveal that reliability is above the recommended .70 level for DENS, CENT, and

FRND in both data sets, and near the acceptable level for PERHOM. The variance extracted was near or above the recommended level of .50 (Hair et al, 1995) for all variables in both groups except for PERHOM in the MI model. The low variance extracted for PERHOM indicates that shared values, beliefs and outlook on life do not explain a substantial portion of the variance in NETCHAR (See Table 11.) The low composite reliability for PERHOM is an indication that more indicators may be needed for this factor. These results suggest that further development of the scale measuring this construct is warranted.

Social Capital

First Order Factor Analysis. I then proceeded to test the relationships of TRST, COM and RECIP, and their loadings on a second-order factor conceptualized as social capital (SC). Exploratory factor analysis had indicated that RECIP and TRST loaded on a single factor for INV networks, and COM and RECIP loaded on a single factor for MI networks (See Table 5). Because these three constructs appear to be distinct in the literature, and for practical reasons, three indicators of SC were required in later analyses, I retained three constructs as originally proposed. I then proceeded to the first-order CFA, using a four-item TRST scale (v20, v21, v22, v23), a three item COM scale (v24, v25, v26), and a three-item RECIP scale (v27, v28, v29). Multivariate LM tests in EQS indicated that v22, measuring TRST and v27 measuring RECIP loaded on multiple factors in both data sets, and were subsequently dropped from the model.

Confirmatory factor analyses fitting MI and INV data to the trimmed model produced acceptable fit for MI (χ^2= 32.710, df17, n=106; p=.01227; NNFI=.921, CFI=.952). When fit to the model, INV data provided a less than optimal fit (χ^2=43.059, df17, n=103, p <.001; NNFI=.873, CFI=.923). Parameter estimates were all significant at the .05 level, and factors were significantly correlated, as expected.[1] See Tables 10 and 11 for parameter estimates.

Second Order Factor Analysis. I conducted a second-order confirmatory factor analysis which hypothesized TRST, COM and RECIP as first order factors explained by the second order factor Social Capital (SC). See Figure 4. This analysis revealed results for the MI network data as (χ^2=44.806, df 18, n=106; p < .012; NNFI=.873, CFI=.918), and for INV data (χ^2=43.526, df 18, n=103; p < .001; NNFI=.923, CFI=.953). Parameter estimates for the second-order analysis are shown in Tables 12 and 13.[2] The patterns of loadings for each group were significant and positive. TRST loaded less strongly in the MI data (.591) than in the INV data (.816), while COM loaded more strongly for MI networks (.988) than for INV networks (.738).

Composite reliabilities found in Tables 12 and 13 for the constructs are near or

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1

In the MI model, COM and RECIP had a correlation greater than 1.0. Bollen (1995) suggests that when correlations are out of, but near admissible range, it may be due to the factors actually being highly correlated in the population, which is expected in this case. Other sources of this result may be small sample size, presence of outliers or model misspecification.

2

To account for the high correlation between F6 and F7, D6 and D7 were constrained to be equal.

above the .70 threshold, indicating that the factors are reliable estimators. Variance extracted is strong for RECIP, and moderate for TRST and COM.

Hypothesis Testing

Equality of Characteristics between Marketing Intelligence and Innovative Networks

To test H_1 and H_2, which stated that network structure and interaction would be different between local networks and remote networks, I used a multi-group, structured means approach to determine whether the means of the latent variables DENS , CENT, FRND and PERHOM, were significantly different for the MI and INV groups. I was interested in knowing whether these constructs were similar in MI and INV networks, thus shedding light on the differences between characteristics in each type of network. In other words, what makes a network that is used to gather local information different from one which is used for information about new ideas, trends and business techniques? Since NETSTRUCT and NETINTER became the single second-order factor NETCHAR in the factor development process, H_1 and H_2 are tested in a single analysis.

Multi-Group Analysis. In EQS, answering this question involves creating a constant variable, which has a variance fixed to zero. This restructures the dependent factors so that their residuals manifest the variance and covariance information for that variable. The two groups are then compared, with the factor intercepts in one group fixed to zero; this group then operates as a reference group against which latent means for the other group are compared. Loadings are constrained to be equal across groups; the LM

test then tests statistically for the validity of the constraints (Byrne, 1994). To determine whether the latent construct means are significantly different across groups, the factor intercepts representing latent mean values in the non-reference group are examined for statistical significance. Significance in this study would indicate that latent mean structures for MI and INV network characteristics are different across groups.

I used the baseline model representing the final first-order construct model for DENS, CENT, FRND and PERHOM to test the hypothesis that the means of these latent variables would be significantly different for MI and INV networks. INV was designated as the reference group; therefore the factor intercepts were fixed to zero in this group. The intercepts of measured variables were set to be equal across groups. LM tests in the initial analysis indicated that releasing the constraint holding v36 equal for both groups ("If I needed advice about running my business, I could call them on the telephone."), would substantially improve model fit. This suggests that the respondent may not feel that he/she could call people in remote information networks as easily as those in local information networks. Because it seemed reasonable that this measure might not be the same for both groups, I released the constraint. After releasing this constraint, good model fit was achieved (χ^2=148.3, df 107, n=101; p = .005; NNFI=.957, CFI=.965). All estimates relating to the factor loadings and variable intercepts were significant for both groups.

Turning to the hypotheses that the means of the latent constructs DENS, CENT, FRND, and PERHOM would differ across MI and INV networks, I examined the factor

intercepts that represent the latent mean values. Results indicate that significant differences in the latent means for CENT (mean difference= .231; z=2.747, $p < .05$), and FRND (mean difference = .394; z=2.475, $p < .05$) were significantly higher in MI than in INV networks. No significant difference was found between groups for DENS (z=1.487, p=.14) or PERHOM (z=1.685, p=< ..09). See Table 14 for results.

These results suggest that differences exist between MI and INV networks with respect to the degree to which an individual is centrally located in the network, and in the strength of the friendships between the individual and identified network members, partially supporting H_1 and H_2. Respondents in the study were more centrally located, and had stronger friendships with their local networks than with remote networks. No differences were found in the density of the two networks, or in the degree to which respondents perceived themselves to share values and beliefs with network members. This suggests that both strong-tie and weak-tie information networks are configurations of personal relationships where everybody knows everybody, and whom the information seeker perceives as similar to himself. This does not support Granovetter's (1973) evidence that stronger ties are found among people who are similar to one another.

Structural Model Testing

Creation of Composite Scores for Latent Constructs.

To test the causal hypotheses 3 through 12, I created composite scores for the factors relating to NETCHAR and SC. Scores from the variables retained in the second order CFA's for DENS, CENT, FRND, PERHOM, TRST, COM and RECIP were used

to create average scores by averaging respondents' responses for the items in the final measurement models. These scores then became the values of observed variables loading on NETCHAR and SC, as previously hypothesized. (See Figure 5.)

Confirmatory Factor Analysis: Structural Model Variables.

Using composite scores for DENS, CENT, FRND, PERHOM, TRST, COM and RECIP, I then conducted CFA's for both sets of data for all variables in the structural model. Results for MI data were (χ^2=179.324, df 96, n=104; $p < .001$; NNFI=.880, CFI=.904). Wald tests indicated that covariances between several of the factors could be dropped without loss of model fit in the MI model. INV data produced a better fitting model (χ^2=131.481, df 96, n=100; $p = .009$; NNFI=.945, CFI=.956). Tables 15 and 16 give parameter estimates for the confirmatory factor analysis. LM tests for the MI data identified additional significant paths between PERHOM and SC and between COM and IQUAL.

Structural Model Fit

Model Fit: Marketing Intelligence Networks. For this stage of the analysis, scales measuring DENS, CENT, FRND, PERHOM, TRST, COM and RECIP in each data set were averaged to obtain a single score for each construct. The data for Marketing Intelligence (MI) and Innovative (INV) networks were then fit to the final structural model (see Figure 5). When I fit the MI network data to the structural model, I found less than acceptable fit (χ^2=208.425, df 99, n=104; $p < .001$; NNFI=.847, CFI=.874). As indicated by the confirmatory factor analysis, LM tests for the model indicated that the

lack of fit could be attributed to nonsignificant paths between performance (PERF) and social capital (SC), and between Marketing Competence in local networks (MC/MI) and Information Quality (IQUAL). Results fail to support the contention of some literature that social capital accrued in information networks has a direct influence on firm performance.

Multivariate LM tests indicated that, in addition to the hypothesized loadings, a relationship existed between commitment (COM) and IQUAL, and that perceptual homophily (PERHOM) loaded on SC. Supported by literature that suggests that commitment may be closely related to information sharing in dense networks, (Ashman, Brown & Zwick, 1998; Coleman, 1988), I modified the structural model by adding a path from COM to IQUAL. This provided a small improvement in χ^2 (190.292), and modest improvement in fit indexes (NNFI=.870; CFI=.894). Although shared values have been proposed to contribute to the generation of trust, commitment and feelings of reciprocity (Coleman, 1988), a test of the PERHOM -> SC relationship did not contribute significantly to model fit.

Model Fit: Innovative Networks. For the Innovative network (INV) data, statistics were χ^2=132.196, df 99, n=100; $p < .001$; NNFI=.950, CFI=.959. An examination of parameter estimates showed that all variances were significant, except for one error variance (v13) relating to Marketing Competence (MC/INV). Hypothesized variable loadings were all significant. Multivariate LM tests suggested additions of a path from Commitment to Information Quality (COM ->IQUAL), but a test of this

modification did not contribute substantially to model fit, and was not incorporated into the model.

Hypothesized Relationships Between Latent Factors

Local Information Network Relationships. For Marketing Intelligence (MI) networks, results of the structural equation analysis revealed a positive and significant path between Network Characteristics (NETCHAR) and Social Capital (SC), supporting H_3, and between SC and Information Quality (IQUAL), supporting H_4. The path between IQUAL and Marketing Competence (MC/MI) and between SC and Performance (PERF) were not significant, therefore H_7 and H_{10} were not supported. A positive and significant relationship between MC/MI and PERF did exist in this model, providing support for H_9. See Table 17 for parameter estimates. These results suggest that, for local information (MI) networks, network characteristics positively influence the level of social capital present in a network. Social capital in local information networks contributes to the quality of information received from the network but does not influence the development of MC, failing to support the argument that intellectual capital is a direct result of information acquisition. Marketing competence does, however, exert a positive influence on the performance of the firm.

Remote Information Network Relationships. For the INV data, hypothesized regression paths from NETCHAR to SC (H_5), SC to IQUAL (H_6), IQUAL to MC/INV (H_8), and MC/INV to PERF (H_{11}) were all positive and significant, supporting these hypotheses. (See Table 18). The hypothesized relationship between SC and PERF was

not significant, therefore H_{12} was not supported. In innovative information networks, this model suggests that network characteristics positively influence the level of social capital, which leads to higher quality information. Information quality has a positive impact on the perceived ability to innovate, which leads to better financial performance for the firm.

Variance Explained by Independent Variables. An examination of the standardized residual variances provides further insight into the relationships hypothesized in this model. By obtaining the coefficient of determination from the standardized residual variance provided by EQS output, an estimate of the amount of variance in the dependent variable that can be explained by the independent variable can be calculated (Bentler, 1993). In both networks, a substantial portion of the variance in the latent variable representing Social Capital (SC) was explained by the latent variable representing network characteristics (NETCHAR). The estimate of SC accounted for a relatively small portion of the variance in the latent variable measuring Information Quality (IQUAL) for both networks, suggesting that other variables not specified in this model are explaining a larger share of the variation in information quality. Although causally significant, the estimate of IQUAL explained less than ten percent of the variance in Marketing Competence in Innovative networks (MC/INV). The estimate of MC/INV explained about 25% of the variation in INV performance (PERF), and just under 20% of performance in MI networks. (See Table 19.)

Summary of Results

Overall, results of the analysis suggest that the hypothesized structural model represents a good fit when applied to Innovative information (INV) networks. It supports the relationship between an individual's social ties, and the level of social capital present in those relationships. In innovative information networks, social capital provides access to richer information from network members, which is used to build innovative marketing competency. Overall firm performance was related to perceptions of competence. Performance, however, was not influenced by the social capital available from the network.

For local information networks, the model also explained the influence of networks on social capital, and social capital on information quality. There was no significant relationship between the quality of information available in local networks and perceptions of competency relating to meeting customer needs, although marketing competence in this area did influence overall firm performance significantly. As with the innovative network, the model did not support a relationship between social capital and overall firm performance in local networks. A summary of the results of hypothesis testing are given in Table 20.

CHAPTER 5

DISCUSSION AND CONCLUSION

The purpose of this study was to elaborate on the influence of personal relationships on the ability of retail entrepreneurs in small communities to acquire and use business information. Specifically, I focused on the influence of the relational qualities between the entrepreneurial information seeker and the people who make up their business information networks. I drew upon the perspective suggested by social network theory to argue that characteristics of an entrepreneur's network relationships can produce social capital that yields access to information available from its members. Following the argument suggested by Granovetter (1973) and Burt (1997), I theorized that the relational characteristics of networks which provide local business information to the retailer would be different than those of networks where the retailer accessed new information. I then proposed that information accessed through these networks can build specific types of marketing competencies related to assessing consumer demand, delivering high quality customer service, and the ability to innovate. Finally, I suggested that marketing competence in these areas would influence the overall financial performance of the firm.

I conceptualized business information networks as being made up of people from whom the entrepreneur obtains information pertinent to operating their business. I focused on two types of information networks: networks which provide information about the local environment, and networks which access new information that can be used

to create innovation. These networks have both structural and relational characteristics that reflect the interconnectedness, centrality, friendship ties, and perceptions of shared values and beliefs of its members. Following the arguments set forth by Coleman (1988), Bourdieu (1986), and Putnam (1993), the strength of these network ties predicts the amount of social capital that is available to an information seeker. Social capital, which is defined by the amount of trust, commitment and reciprocal intentions present in network relationships, enables the seeker to access reliable, specific and relevant information about business conditions and events. The quality of information is seen as a predictor of the information seeker's perceptions of competence in assessing consumer demand, providing quality service, and creating innovative marketing programs. Perceptions of marketing competence in these and other areas has been shown to be a predictor of the overall success of retail firms (Conant et al, 1993).

I proposed a latent factor model linking network characteristics, social capital, information quality, marketing competence and firm performance. I used exploratory and confirmatory factors analysis and structural equation modeling techniques to test the validity of the constructs and the relationships between factors.

The sample in this study was drawn from the population of individuals operating small gift stores in small towns in Midwestern states. Data were collected using a self-administered, written survey. The sample consisted of 112 owners and managers of small firms. Most were college-educated, and had been in business over ten years. Nearly three fourths of respondents were female. Firms were quite small, with forty-two percent

employing no full-time employees.

Network Structure and Interaction

This study took a unique approach to the measurement of networks by adapting network mapping techniques to survey research. This approach allowed me to measure the network characteristics of multiple actors engaged in similar pursuits, and assess the influence of different network characteristics on various outcomes. This study was also unique in applying social network concepts to information search in that it developed multiple indicators to describe the constructs in question so that theory relating the constructs could be tested simultaneously.

Confirmatory factor analysis indicated that density, centrality, friendship and perceptual homophily represented a common latent factor representing an actor's business information network characteristics in both remote and local information networks. This supports the basic contention of social network theory which conceptualizes personal networks as having both structural and relational characteristics (Burt, 1992; Granovetter, 1985; Greve, 1995). I was not able to distinguish structural network characteristics from relational characteristics, as originally proposed.

A substantial portion of the social network argument rests on the idea that people belong to multiple networks, some of which contain strong ties, where network relationships are "tight", whereas others contain weak ties, characterized by "looser" network structures, and less intimate relationships (Granovetter, 1973). Brown and

Reingen (1987), Burt (1992), Granovetter (1973), Hansen (1999), Nelson (1991), Weimann (1983) and others suggest that different networks are used to access different types of information. I was able to provide partial support for this idea. I showed that local networks, which I defined as a set of relationships between the information seeker (respondent) and those who provided information about local market conditions, differed from remote networks, which included people who provided information about new business ideas. These differences pertained to the centrality of the information seeker in the network, and the strength of friendships between network members. Local information was obtained from network configurations in which the information seeker was more centrally located, and where friendship ties were stronger, when compared to networks where new business ideas were found. This suggests that strong ties are used to obtain information about customer demand, competitor activity and local economic conditions, while weaker ties were employed to access information about new merchandise, trends, marketing ideas and business techniques. This supports Weimann (1983), who found that consumer information, local news and gossip flowed more efficiently through strong ties. These findings also support Swan and Newell (1995), who found a correlation between the use of weak ties and new technology diffusion, and Hansen (1999) who found that weak ties between units of a firm are sources of new knowledge. Local and remote networks in this study did not differ significantly based on their density, or in the degree to which the focal member perceived the network members to share common beliefs and values.

These results also support the qualitative study findings that preceded this research (Frazier, 1999; Frazier and Niehm, 1999). In the study of highly successful "superpreneurs", we found that small retailers occupied central positions in strong tie networks which provided proprietary data and tacit knowledge about local market conditions. Strong tie networks included friends and relatives, customers, other local retailers, employees and community residents. Retailers were less centrally located in weak-tie networks which served as a sources of knowledge which generated new ideas and innovation. People in these networks included people outside of the immediate community, who shared business interests with the superpreneur and acted as bridges to other networks.

Social Capital

Drawing from various perspectives in the literature (Bourdieu, 1986; Burt, 1997; Coleman, 1990; Loury, 1961; Portes and Sensenbrenner, 1993), social capital was conceptualized as a latent construct, represented by the observed variables of trust, commitment and reciprocal intentions among network members. Results of confirmatory factor analyses suggest that social capital in the context of business information networks may be less complex than I have portrayed it in this study. Exploratory factor analysis and high correlations in confirmatory factor analyses between these constructs indicate a need for further investigation of the underlying structure of social capital. In a review of the origins and development of the concept, Wall, Ferrazzi and Schryer (1998) describe social capital as an "elastic" concept, which varies depending on the perspective and scale of analysis used to operationalize the term. After completing proposed tests, I tested various

conceptualizations of the SC construct, and did not find that better fit could be obtained by conceptualizing SC as a two factor or single factor model.

Network Relationships as a Source of Social Capital

I was able to provide support for the idea that networks produce social capital. The significant paths between the latent variables which represent network characteristics and social capital in both networks suggest that strong networks contain more social capital than weak networks. This finding provides empirical support for the basic argument set forth by Coleman (1985) and others, which says that social capital formation is facilitated by close social networks. These results support Gulati's (1995) finding that close relationships between firms built trust, defined expectations, and created obligations in alliance networks. It also mirrors Tsai and Ghoshal's (1998) findings that social interaction had a positive effect on trustworthiness in the resource networks that existed between business units in a large firm. My conclusions should be tempered by the fact that the latent construct SC needs to be refined.

Social Capital Influence on Information Quality

I found moderate support for the contention that social capital plays a role in accessing information resources in both market intelligence and innovative business information networks. As indicated by the regression paths between SC and IQUAL for MI networks (.61), and the same path in INV networks (.46), the level of social capital present in business information networks influences the richness of information obtained from those networks. These results add support to the notion that information is shared

more freely in relationships that are characterized by high levels of social capital (Burt, 1997; Frenzen & Davis, 1990; Portes & Sensenbrenner, 1993). Specifically, information flows between network members at different rates and volumes, depending on levels of trust, commitment and reciprocity. This supports Tsai and Ghoshal's (1998) results, which showed that trustworthiness was positively associated with resource exchange among business units.

I was not able to show a direct link between social capital and performance. There appear to be no additional benefits to performance created by the relationships in these networks, as measured by this model. Although social capital has been connected to performance through its ability to build reputation and access financial capital, the networks identified in this study did not supply additional benefits.

Past literature on entrepreneurial information search identifies a preference for personal sources of information among small business owners (Arbuthnot, Slama and Sisler, 1993; Brush, 1992; Smeltzer, Fann and Nikolaisen, 1988; Specht, 1987). These authors have found that the information gained from personal sources is more accessible, relevant and reliable than information from non-personal sources. The results in this study elaborate and extend the findings of previous studies in that they focus on the role of embedded social relationships on the ability to access worthwhile business information. My results suggest that entrepreneurs are able to tap into valuable business information by creating social capital in their business relationships. Small retailers who are adept at cultivating social relationships may have an advantage when it comes to getting the

information they need to make business decisions.

Information Quality and Marketing Competence

I proposed that the richer the information found in each of the information networks, the more competent the entrepreneur. The argument is that a key way to achieve competitive advantage in the retail environment is through the development of distinctive marketing competencies. I suggested that access to certain information was essential to building strong competencies in such activities as gauging customer demand, providing quality customer service and offering new and distinctive merchandise. I drew from research on environmental scanning, which links scanning behavior to learning and development of marketing strategies. Scanning the task and general environment allows a firm to increase intellectual capital regarding environmental opportunities and threats that impact its survival (Beal, 2000). Nahapiet and Ghoshal (1998) hypothesize that new intellectual capital is created through access to parties which enable the combination and exchange of existing information. As an externally oriented competency, market-based learning results in the fundamental bases of competitive advantage (Sinkula, 1994).

Results indicated limited support for this argument in the innovative information networks, as indicated by the regression path between IQUAL and MC (.305), and no significant relationship between these constructs in the local networks. This suggests that other variables are explaining the variation in marketing competence in this sample. Although the presence of social capital influenced the quality of information received from one's network, it does not necessarily mean that the information is used to build skills in

marketing. Competence may be due more to experience, education or cognitive ability (Alder, 1992; Jo, Hyungrae Lee, 1996; Sinkula, 1994; Stuart & Abetti, 1990). A univariate test of data from this sample showed that significant differences in perceived marketing competence existed between education levels. No differences were indicated when respondents were grouped by years of experience, however. Cognitive ability was not a variable captured in this study.

Sinkula (1994) also notes that in order for market information processing to translate into organizational learning, the proper supply of unequivocal, timely information must be present. In other words, the information that is obtained from the network may not be sufficient to develop competence, or it may not be used in a timely manner. Sufficiency and timeliness were not measured in the final model.

The lack of relationship between IQUAL and MC in MI networks may also suggest that there are few "structural holes" in local networks. Even though the information received from the local networks is rich, it may be redundant, and therefore not useful in creating marketing skills. This supports Burt's (1992) contention that higher returns are available to well-connected players only when they provide access to the information gaps in the marketplace.

The weak link between IQUAL and MC may indicate a need to develop skills in environmental scanning. Providing small retailers with guidance on how to use the information available to them via networks within a framework such as SWOT analysis,

may focus their information gathering activities in a more productive manner.

Marketing Competence and Firm Performance

The link between both local marketing competence and innovative marketing competence and perceptions of firm performance was significant. The path between MC/MI -> PERF (.40) indicated a moderate influence of local marketing competence on the respondent's perception of the performance of the firm. The relationship was slightly stronger for the MC/INV->PERF path (.49). These findings support Conant et al (1993), who found that retailers with higher source-of-advantage skills in a variety of marketing competencies performed better. The relatively weak relationships indicate that, as would be expected, other variables not included in this model explain a larger proportion of the variation in perceptions of performance. Variation in respondents' perceptions of their marketing skills relating to customer demand assessment and customer service explained just under twenty percent of the variance in performance; innovation skills explained about twenty five percent. Day and Wensley (1988) contend that superior skills and resources are not automatically converted into performance payoffs. This conversion is mediated by strategic choices, firm objectives, entry timing and the quality of tactics and implementation. Results of this study, however, suggest that distinctive skills in staying in touch with customers and a focus on continuous innovation contribute to firm success in small retail firms (Mintzberg, 1978). How information accessed through networks is transformed into marketing competence that leads to better performance remains unexplained.

Limitations

Results should be examined in light of the limitations imposed by study characteristics.

The small sample size that characterized this study limits the ability of MLE procedures to detect differences among the data. As a result of the small number of cases, I was limited in the degree of complexity that I could introduce into the model in this study.

This study focused only on business information networks for specific types of information, thus, it would not be appropriate to extend these findings beyond those network definitions. As I focused on a single sector of the retail industry with respect to product lines (gift retailers) and geographic location (small towns), these results cannot be generalized to other types of small retailers, or to retailers operating in larger communities. Small business owners in smaller communities may have very different network structures than their counterparts in urban areas. Implications may also be limited only to retail firms, as patterns of information search may be unique to the retail environment.

Measurement model results show that further refinement of measures that I developed for this study for network characteristics and social capital are needed. I also adapted measures for information quality, marketing competence and performance to this research setting, and these should be replicated and refined. The method I used to define networks in a survey research setting was also previously untested and needs further investigation.

Recommendations

Further Research

Using techniques that allow comparison of social relationship patterns among entrepreneurs can generate interesting questions, but more research is needed to refine measures that will allow investigators to use this approach. In addition to refining the measures and methods in this study relating to information networks, identifying other types of resource networks and their benefits would be a valuable line of inquiry. For example, networks that offer personal support may also be instrumental in firm success by providing the emotional support necessary to sustain entrepreneurial activity, especially in the start-up stages.

Although comparison of MI and INV models was only hypothesized for network characteristics, the results of CFA's measuring social capital raise interesting questions about whether dimensions of this construct are universal to different types of networks. The model suggested in the second order CFA explaining social capital did not fit the local network data well, suggesting that an alternative model would better explain the patterns of social resources present in strong-tie networks.

The link between access to information and being able to use it to become more competent in important marketing skills also needs further investigation. Experience, education, cognitive ability and motivation may contribute to the transformation of market information into skill. The influence of other types of marketing skills on performance, such as competence in tactical areas such as pricing and advertising would be interesting

avenues of research.

Practical Implications

The very existence of small retailers is threatened by profound changes in the retail sector. The insights from this study suggest that entrepreneurs can benefit from using their information networks. Small retailers can capitalize on their unique network positions in local networks to gather input for strategic and tactical decisions. Interacting with these networks can provide information on the wants and needs of customers, and provide timely data on economic and competitor activity.

Local business development training programs can focus on the benefits of community involvement. In the superpreneur study, (Frazier, 1999; Frazier & Niehm, 1999) we found that exceptional retailers were very involved in community activities. One retailer emphasized the importance of being involved in her community. She was active in a church group and the school parent organization, as well as in business-related groups. Although she explained that her primary motivation in belonging to these groups was not business-related, she admitted that she gained a great deal of insight about the local economy through these interactions.

Maintaining connections with people who can provide new ideas is also important to the survival of small retailers. Even in rural areas, consumers have easy access to new products via travel, catalogues and the Internet. Independent retailers must be competitive with the trends offered by their large-scale competition. Superpreneurs used

their "weak tie" connections with knowledgeable people outside of their close networks as catalysts for innovation. National retail trade organizations can foster these relationships by providing venues for small retailers to interact with other professionals and share ideas. When asked what type of business support he desired, one superpreneur said that he would like nothing better than to go somewhere and "just talk with other retailers" in his industry "for about three days".

Most entrepreneurial training programs focus on financial, legal and marketing aspects of business ownership. Little attention is paid to developing networking skills. Business training in retail entrepreneurship should also emphasize the importance of building relationships, and suggest ways of using the information received from these connections to improve marketing skills.

Conclusion

In response to calls for alternative explanations of entrepreneurial success (Aldrich and Zimmer, 1986; Tsjvold & Weicker, 1993), I used social network theory as a framework for asking questions about the influence of social relationships on small firm performance. The very existence of small retailers are threatened by the profound changes in the retail sector. The "strong tie/weak tie" argument parallels the axiom "It's not what you know, it's who you know". My model has suggested that "who you know determines what you know", and provides a platform for further inquiry into the influence of networking on entrepreneurial success.

APPENDICES

APPENDIX A

Survey Instrument

October 14, 1999

Dear Independent Retailer,

Would you like to know what makes some retailers more successful than others? We are working on a research project at Michigan State University to try to answer this question. You are one of a small number of business owners and managers that are being asked to provide information and opinions about the way they operate their businesses.

We know that small retailers like you use unique strategies to be successful. This study is concerned with the influence of personal relationships on business practices. Your opinions and attitudes are instrumental in increasing understanding of this important topic. So that we can obtain accurate and consistent information, the enclosed questionnaire should be completed by the primary decision maker for this business.

You may be assured of complete confidentiality. All of your answers will be reported together so that you cannot be identified in any way. The responses you provide are completely anonymous and can never be linked to you. The questionnaire has an identification number for mailing purposes only. This is so we can check your name off the list when the questionnaire is returned. Your name will never be placed on the questionnaire. You may provide all or part of the information.

The questionnaire will take about 30 minutes to complete. When you have completed the questionnaire, please follow instructions on the back page for returning by mail. So that we may be sure to include your responses in the study, **please return the questionnaire no later than November 1, 1999.**

Thank you in advance for agreeing to participate in this study. The results will be made available to researchers and business professionals interested in the success of independent retailers. If you would like a copy of the results, please check the box at the end of the questionnaire. You may contact the researchers listed on the questionnaire if you have any questions about this study.

Sincerely,

Barbara Frazier
Doctoral Student

Patricia Huddleston
Associate Professor

Small Business Survey
Michigan State University

*This questionnaire should be completed by the **primary decision maker** (the owner or manager who makes the major decisions for the store).*

The questions below are asking about your business and business practices. When responding to this set of questions below, compare your firm's performance to the top three stores that you consider to be your strongest competition. Please indicate your response to each question by circling the number that you feel best describes your feelings and opinions about each question.

Is YOUR firm much stronger than, about the same, or not as strong as your top 3 competitors when it comes to:	**Not as strong as competition**			**About the same as competition**			**Much stronger than the competition**
1. Assessment of current customers' needs and wants.	1	2	3	4	5	6	7
2. Assessment of prospective customers' needs and wants.	1	2	3	4	5	6	7
4. Quality of customer service.	1	2	3	4	5	6	7
5. Ability to offer competitive prices.	1	2	3	4	5	6	7
6. Creating a pleasant shopping atmosphere	1	2	3	4	5	6	7
7. Effectiveness of store advertising.	1	2	3	4	5	6	7
8. Effectiveness of store layout and merchandise presentation.	1	2	3	4	5	6	7
9. Ability to differentiate merchandise and service offerings from that of competitors.	1	2	3	4	5	6	7
10. Being first to introduce new merchandise and merchandise lines.	1	2	3	4	5	6	7
11. Introducing new ideas in my business.	1	2	3	4	5	6	7
12. Trying new marketing techniques.	1	2	3	4	5	6	7

In this section, we are going to ask you about people who give you information that helps you make business decisions. The first part of this survey concerns **who** you get information from about the following areas:

Your customers' needs and preferences
Local competition
Local market conditions

Please think for a moment about the people you talk to when you need information or advice about the above areas. These might include (but are not limited to) business or professional people, family, friends, neighbors, community residents, government officials -anyone who gives you useful information and advice about the above areas.

In the space provided below, please write the FIRST NAMES OR INITIALS of all the individuals that you can think of who you turn to for advice and information about the above areas. We are going to ask you some questions about this group of people in the next section. Make additional lines if necessary. The list is for recall purposes only. The names you list will not be used in any way in this study.

1._____	4._____	7._____	10._____
2._____	5._____	8._____	11._____
3._____	6._____	9._____	12._____

Feel free to add additional spaces.

Thinking about your relationships with the people you just listed in the box above, circle the number that indicates whether you think the statements are very true/not true at all.		Very True		Neutral		Not true at all
1.	These people know each other by name.	5	4	3	2	1
2.	These people talk to each other about business.	5	4	3	2	1
3.	These people see each other regularly in business situations.	5	4	3	2	1
4.	My relationships with these people are very close.	5	4	3	2	1
5.	I do things socially with these people.	5	4	3	2	1
6.	If I had the chance, I would spend a free afternoon with any of these people.	5	4	3	2	1
7.	I consider most of these people my friends.	5	4	3	2	1
8.	I often share business information with these people.	5	4	3	2	1

Thinking about the people that you listed in the box on page 2, please indicate how likely or unlikely it is that:		Very Likely	Somewhat Likely	Neutral	Somewhat Unlikely	Very Unlikely
9.	You would share personal matters with them.	5	4	3	2	1
10.	You might discuss family matters with them.	5	4	3	2	1
11.	You might ask them for advice about a private matter.	5	4	3	2	1
In general, comparing yourself to the people you listed in the box, how similar would you say you are to these people with respect to:		Very Similar	Somewhat Similar	Neutral	Somewhat Dissimilar	Very Dissimilar
12.	Your outlook on life.	5	4	3	2	1
13.	Your likes and dislikes.	5	4	3	2	1
14.	Your business philosophy.	5	4	3	2	1
15.	Your values and beliefs.	5	4	3	2	1
Thinking in general about the group of people you identified on page 2, indicate your agreement or disagreement with the following statements:		Strongly Agree	Agree Somewhat	Neutral	Disagree Somewhat	Strongly Disagree
17.	I am considered to be dependable by these people.	5	4	3	2	1
18.	These people would say that I am sincere.	5	4	3	2	1
19.	These people would trust me with personal information about themselves.	5	4	3	2	1
20.	I am satisfied with the level of business support I get from them.	5	4	3	2	1
21.	They would say that I am a trustworthy person.	5	4	3	2	1
22.	We do each other favors from time to time.	5	4	3	2	1
23.	In general, they are fair in their business dealings with me.	5	4	3	2	1
24.	These people share the same ambitions and visions about business that I do.	5	4	3	2	1
25.	They are enthusiastic about helping me in my business.	5	4	3	2	1
26.	I talk directly with these people about business issues.	5	4	3	2	1
27.	If any of them had information that would help me in my business, they could tell me directly.	5	4	3	2	1
28.	Among these people, I often pass along business information from one person to another.	5	4	3	2	1

		Strongly Agree	Agree Somewhat	Neutral	Disagree Somewhat	Strongly Disagree
29.	If I needed advice about running my business, I could call any of these people on the telephone.	5	4	3	2	1
30.	They support me in my business.	5	4	3	2	1
31.	If these people had business information that would be helpful, they would tell me right away.	5	4	3	2	1
32.	I am one of the first to hear about new things from this group of people.	5	4	3	2	1
33.	I frequently talk to these people about business topics.	5	4	3	2	1
34.	I would do a favor for any of these people if they asked.	5	4	3	2	1
35.	These people would be willing to do me a favor if I asked.	5	4	3	2	1

The next set of questions are asking about the information you receive from the people you identified on the first page. Please circle the number that best represents your opinions and feelings about the following:

1. When using information from the people you named above, how accurate would you say it usually is?

NOT ACCURATE AT ALL	1	2	3	4	5	6	7	VERY ACCURATE

2. Sometimes the information we get may get right to the heart of the problem we are facing. Other times the information may not be very specific to our needs. In general, how relevant is the information from the people you named above?

NOT RELEVANT AT ALL	1	2	3	4	5	6	7	VERY RELEVANT

3. At times we must gather a lot of information which isn't very relevant in order to get enough to make a good decision. Other times we need only a small amount of information because the information is very specific and allows us to make a decision. How specific is the information you get from the people you named above?

NOT SPECIFIC AT ALL	1	2	3	4	5	6	7	VERY SPECIFIC

4. Some information may be exactly what we require. How often is this the case for information obtained from the people you named above?

NOT OFTEN	1	2	3	4	5	6	7	VERY OFTEN

5. To be useful, information must often be available when we need it, not at some later time. How timely would you estimate information to be from the people you named above?

NOT VERY TIMELY	1	2	3	4	5	6	7	VERY TIMELY

The second section of this survey is asking about who gives you information and advice about the following areas:

New merchandise
The latest trends
New marketing ideas
New business techniques

Now think about the people you talk to when you need information or advice about the areas listed above. These also might include (but are not limited to) family, friends, neighbors, community residents, other business or professional people, government officials and others- anyone who gives you useful information and advice about the above areas.

In the space provided below, **please write the FIRST NAMES OR INITIALS of all the individuals that you can think of who you turn to for advice and information about the above areas.** We will be asking the same questions about this group as we did for the last group. Again, the list is for recall purposes only, and we will not use them in any way in this study.

1._____	4._____	7._____	10._____
2._____	5._____	8._____	11._____
3._____	6._____	9._____	12._____

Feel free to add additional spaces.

Thinking now ONLY about the group of people who you identified in the SECOND box above, please give your attitudes and opinions about the following:		Very True		Neutral		Not true at all
1.	These people know each other by name.	5	4	3	2	1
2.	These people talk to each other about business.	5	4	3	2	1
3.	These people see each other regularly in business situations.	5	4	3	2	1
4.	My relationships with these people are very close.	5	4	3	2	1
5.	I do things socially with these people.	5	4	3	2	1
6.	If I had the chance, I would spend a free afternoon with any of these people.	5	4	3	2	1
7.	I consider these people my friends.	5	4	3	2	1
8.	I often share business information with these people.	5	4	3	2	1

Thinking about the people that you named in the SECOND section, please indicate how likely or unlikely it is that:		Very Likely	Somewhat Likely	Neutral	Somewhat Unlikely	Very Unlikely
9.	You would share personal matters with them.	5	4	3	2	1
10.	You might discuss family matters with them.	5	4	3	2	1
11.	You might ask them for advice about a private matter.	5	4	3	2	1
12.	You will receive business information from them in the next week.	5	4	3	2	1
In general, comparing yourself to the people you named in the SECOND box, how similar would you say you are to these people with respect to:		Very Similar	Somewhat Similar	Neutral	Somewhat Dissimilar	Very Dissimilar
13.	Your outlook on life.	5	4	3	2	1
14.	Your likes and dislikes.	5	4	3	2	1
15.	Your business philosophy.	5	4	3	2	1
16.	Your values and beliefs.	5	4	3	2	1
Thinking in general about the group of people you identified in the SECOND box, indicate your agreement or disagreement with the following statements.		Strongly Agree	Agree Somewhat	Neutral	Disagree Somewhat	Strongly Disagree
17.	I am considered to be dependable by these people.	5	4	3	2	1
18.	These people would say that I am sincere.	5	4	3	2	1
19.	These people would trust me with personal information about themselves.	5	4	3	2	1
20.	I am satisfied with the level of business support I get from them.	5	4	3	2	1
21.	They would say that I am a trustworthy person.	5	4	3	2	1
22.	We do each other favors from time to time.	5	4	3	2	1
23.	In general, they are fair in their business dealings with me.	5	4	3	2	1
24.	These people share the same ambitions and visions about business that I do.	5	4	3	2	1
25.	They are enthusiastic about helping me in my business.	5	4	3	2	1
26.	I talk directly with these people about business issues.	5	4	3	2	1
27.	If any of them had information that would help me in my business, they could tell me directly.	5	4	3	2	1
28.	Among these people, I often pass along business information from one person to another.	5	4	3	2	1

		Strongly Agree	Agree Somewhat	Neutral	Disagree Somewhat	Strongly Disagree
29.	If I needed advice about running my business, I could call any of these people on the telephone.	5	4	3	2	1
30.	I frequently talk to these people about business topics.	5	4	3	2	1
31.	If these people had business information that would be helpful, they would tell me right away.	5	4	3	2	1
32.	I am one of the first to hear about new things from this group of people.	5	4	3	2	1
33.	I frequently talk to these people about business topics.	5	4	3	2	1
34.	I would do a favor for any of these people if they asked.	5	4	3	2	1
35.	These people would be willing to do me a favor if I asked.	5	4	3	2	1

The next set of questions are asking about the information you receive from the people you identified in SECTION 2. Please circle the number that best represents your opinions and feelings about the following:

1. When using information from the people you named above, how accurate would you say it usually is?

NOT ACCURATE AT ALL	1	2	3	4	5	6	7	VERY ACCURATE

2. At times we must gather a lot of information which isn't very relevant in order to get enough to make a good decision. Other times we need only a small amount of information because the information is very specific and allows us to make a decision. How specific is the information you get from the people you named above?

NOT SPECIFIC AT ALL	1	2	3	4	5	6	7	VERY SPECIFIC

3. **Sometimes the information we receive may get right to the heart of the problem we are facing. Other times the information may not be very specific to our needs. In general, how relevant is the information from the people you named above?**

NOT RELEVANT AT ALL	1	2	3	4	5	6	7	VERY RELEVANT

4. Some information may be exactly what we require. How often is this the case for information obtained from the people you named above?

NOT OFTEN	1	2	3	4	5	6	7	VERY OFTEN

5. To be useful, information must often be available when we need it, not at some later time. How timely would you estimate information to be from the people you named above?

NOT VERY TIMELY	1	2	3	4	5	6	7	VERY TIMELY

How would you describe the overall performance of your store(s) last year?

Poor		Average		Excellent
1	2	3	4	5

How would you describe your performance relative to your major competitors?

Poor		Average		Excellent
1	2	3	4	5

How would you describe your performance relative to other stores like yours in the industry?

Poor		Average		Excellent
1	2	3	4	5

In 1998, did your store.....? (Circle one)

Make a profit Break even Lose money

What is your title? ___Owner ___Manager ___Other (Please specify)_____

How many people do you employ full time (besides yourself)? _____

How many people do you employ part time ?_____

What is your age? _____

What is your gender? (circle one) Male Female

How many years have you owned or managed this business? _____ years ____months

How many years of experience in retailing do you have? _____ years ____months

How long have you owned a business in this community? _____ years ____months

Please indicate the highest level of education completed.

___Some high school ____Some College
___High school ____College
____Post-graduate

Thank you very much for your time. Please place the questionnaire in the enclosed, postage-paid return envelope and mail no later than **November 1, 1999.** Questions may be directed to Barbara Frazier at (616) 387-3719, or Dr. Patricia Huddleston at (517) 353-9907.

If you would like a copy of the results, please send a postcard to:
Print "COPY OF RESULTS REQUESTED" on the card.

Barbara Frazier
Michigan State University
204 Human Ecology Building
East Lansing, MI 48824

Follow-up Postcard

Two weeks ago, a questionnaire seeking your opinions about business relationships was mailed to you. Your name was drawn in a random sample of retail store owners in the Midwest.

If you have already completed and returned it to us please accept our sincere thanks. If not, please do so today. Because it has been sent to only a limited number of small retailers, we need your input. It is extremely important to us that your opinions be included in the study if the results are to accurately represent the opinions of independent retailers.

If by some chance you did not receive the questionnaire, or it got misplaced, please call me at (616) 387-3719 and I will get another one in the mail to you today.

Sincerely,

Barbara Frazier
Project Director
Michigan State University

APPENDIX B

Tables

Table 1: Summary of Social Capital in Literature

Author(s)	Definition	Context
Jacobs, (1965)	Networks of cross-cutting personal relationships developed over time provide the basis for trust, cooperation and collective action.	Neighborhood network structures
Loury, (1977)	The set of resources inherent in family relations and in community social organizations	Child development
Bourdieu (1986)	SC is one of a number of separate though related, forms of capital. The creation and efficacy of SC depends on membership in a social group whose members establish group boundaries through the exchange of symbols or things.	Italian manufacturing firms
Putnam (1993)	SC is the networks, relations and obligations existing in social situations. It is a product of interaction. SC includes trust, norms and networks which enhance cooperative action. Sc includes the assurance that altruistic actions will be rewarded in the future (generalized reciprocity). SC is a resource of a network; it plays a role in outcomes of other qualities. Indicators of SC are: memberships in organizations/voluntary groups, number of friendship ties, offers of help, quality of relationships.	Immigration
Coleman, (1988)	SC is a resource that can be used to achieve goals. SC exists in structures with reciprocity, expectations, norms, values and trust. Individuals with high levels of SC have more obligations outstanding. Norms foster collectivity where members forego self-interest and act in the interest of the group. SC is useful in providing information that facilitates action.	Theoretical development; used SC to explain differences in individuals' chances to improve their human capital by staying in school

Table 1, continued

Bates, (1994)	SC is present in the form of a captive market, and derives from culturally based tastes that can only be served by co-ethnic businesses	Asian immigrant entrepreneurs
Smith, Beaulieu & Seraphine (1995)	Within the context of the community, social capital exists in the norms, social networks and interaction between members. It is represented by genuine concern or interest that adult members have about another person's child. Signs of its presence include: enforcement of norms, monitoring activities of other people's children, offering programs for youth. SC presence is determined by the structure and process of social relations in the family and in the community.	Families in the context of college attendance of youth in a rural community.
Burt (1997)	SC is a quality created between people. SC predicts that returns to intelligence, education and seniority depend in some part on a person's location in the social structures of a market or hierarchy. The network that filters information also directs, concentrates and legitimates information	Managers in an electronics firm
Chung & Gibbons, (1997)	The concept of social capital refers to the value that certain aspects of social structure have for actors as resources that can be used to achieve their ends.	Intra-organizational entrepreneurship
Ashman, Brown & Zwick (1998)	SC is found in the form of social relationships within and between diverse social groups. It is a resource developed by maintaining relationships with people and organizations. Sc provides social legitimacy and social cooperation among and between organizations.	Nonprofit organizations and fund-raising efforts

Table 1, continued

Flora (1998)	SC enhances the benefits of investments in physical and human capital. SC thrives when individuals interact in a social system in multiple roles over a period of time.	Rural community economic development
Hofferth & Iceland (1998)	Contact, exchange among network members indicate the existence of SC. Provision of help or assistance can reflect either reciprocation or investment in new social ties.	Urban and rural populations
Nahapiet & Ghoshal (1998)	SC is a multidimensional construct. Networks of relationships constitute a valuable resource for the conduct of social affairs, providing members with collectively owned capital, which entitles them to credit. It is embedded in network relationships.	Theoretical development of social capital and organizational development
Summers & Brown (1998)	A global construct that is intended to include several dimensions	Rural economic development
Wall, Ferrazzi & Schryer (1998)	Sc is subject to a variety of interpretations reflecting different trends and perspectives. Concept is found in sociology, economics and education. Coleman's framework is predominant in education. Sociologists use Bourdieu. Access to SC means that people have connections to individuals who possess greater amounts of economic and cultural capital, might help with advice, further connections, loans and so forth.	Review of social capital literature in education, economics and sociology.

Table 2: Instrument Development	
Reference	Sample/Context/Measure
	Network Identification
Ibarra, H (1993)	Employees of a single advertising agency. R's asked to name people who belonged to five different networks in the organization. Written instrument provided 10 spaces, with instructions to add additional blanks. (R's were given a telephone directory of firm to aid recall).
Burt (1987)	Network data from General Social Survey (adults) Networks defined by asking R's "Looking over the last six months, who are the people with whom you discusses matters important to you?" Network data was obtained on first five people named.
Tsai & Ghoshal, (1997)	Organizational units within same firm R's were three members of management team from each unit in a single organization; they were asked to identify units with which them shared resources (information, product, personnel and support)
Burt (1997)	Senior managers of an electronics company Network contacts identified through name generator questions; 7-22 names generated.

Table 2. continued.

Marsden (1990)	Reviewed network specification methods. Specific exchange questions (identifying specific resources exchanged) yield larger number of alters than relation name generators (asking for names of people "with whom you discuss important matters." Average number of names was 8 with specific exchange method; 2.6 with relation format.
	Network Structure
	Density
Burt (1987)	Respondents were asked to indicate which discussion partners were especially close to one another, and which were total strangers to one another
Granovetter (1973)	Strong tie networks are those where members interact most regularly and intensely; weak ties are those where interaction is less frequent and intense, and where ties are "bridges" to other networks (p. 1370).
Marsden (1990)	Density is the number of ties within a network divided my the number of possible ties. Higher ratios equal higher density

Table 2. continued.

Greve (1995)	Dense networks are ones where everybody knows everybody; low density means that the contacts (alters of the focal person (ego) in the network do not know each other. This study of Norwegian entrepreneurs measure density of five named "primary persons". Density was calculated by whether the respondent knew the person (19) very well, (2) somewhat acquainted, or (3) does not know the other person
	Centrality
Baldwin, Bedell & Johnson (1998)	M.B.A. students Use centrality index, which denotes the degree to which an individual is close to all other actors in a network, either as friend, or friend -of-friend; an individual who is maximally close is directly related to all other network members.
Rowley (1997)	Centrality includes "closeness" and "betweenness". Closeness measures independent access to all network members. Betweenness measures the opportunity to control information flowing between network members.

Table 2, continued.

	Network Interaction
	Frequency
Marsden & Campbell (1984)	Single Network analysis; American and West German adults; frequency of contact was part of a closeness index measured by response to "how much time spent out of work" (5 or 6 point scale; rarely to more than once a week)
Weimann (1983)	Tie strength measured by frequency of contact, importance attached to tie, and duration of tie
Granovetter (1973)	" the strength of an interpersonal tie is (probably linear) combination of the amount of time, the emotional intensity, the intimacy, and the reciprocal services which characterized the tie" (p. 1361). Asked job seekers how often they saw employment contacts to measure tie strength (often = at lease twice a week; occasionally =more than once a year, but less than twice a week; rarely = once a year or less)
Shah (1998)	Employees of brokerage firm; measured frequency as number of times in a typical week that R's met socially with co-worker ("In a typical week, how often do you go to lunch, meet outside work, or joke around with each person?")

Table 2. continued.

Tsai & Ghoshal (1997)	Managers of units in one organization Measuring closeness: "how much time do you spend together in social occasions/
	Emotional Intensity
Parks & Floyd (1996)	Qualitative study of university students identified sharing interests and activities as characterizing closeness
Tsai & Ghoshal (1998)	Managers of units one organization Measuring closeness: "Which units maintain close social relations with your unit?"
Frenzen & Nakamoto (1993)	University students in word-of-mouth communication experiment Measuring closeness: "How likely would you be to spend a free afternoon with (named person)?"
	Intimacy
Marsden & Campbell (1984)	American and West German adults. Intimacy as component of closeness; measured by summing reports of whether each of six topics (family, friends, politics, local events, work and leisure) was discussed in a relationship. Mutual confiding was measured by R's reporting who confided in them, and who they confided in.

Table 2. continued.

Parks & Floyd (1996)	Israeli kibbutz residents Qualitative study defined meaning of closeness in 270 university students; predominant meaning of closeness was self-disclosure, followed by provision of help and support.
Shaefer & Olson (1981)	Review of literature on intimacy Defined intimacy as "closeness of another human being on a variety of levels". An intimate relationship is one in which an individual shares intimate experiences in several areas, along with an expectation that the experiences and relationships will persist over time (Olsen, 1975).
Frenzen & Nakamoto (1993)	University students in word-of-mouth communication experiment. measuring ties strength: "There are some people in our daily lives with whom we are willing to share personal confidences. How likely are you to share personal information with (Named person)?"

Table 2. continued.

	Homophily
Granovetter (1973)	Cites empirical evidence that the stronger the tie, the more similar the individuals
Gilly, Graham, Wolfinbarger & Yale (1998)	The theory of homophily, conceptually labeled by Lazarsfeld and Merton (1954), purports that most human communication will occur between a Source and a Seeker who are alike, that is, homophilous. This study suggest that there are two different ways of conceptualizing homophily, demographic and perceptual, and these constructs are empirically and conceptually distinct. Both types of homophily can affect WOM influence processes, but in different ways. Perceptual homophily possesses the strongest and most consistent relationship with influence compared to demographic homophily. Authors used a single item scale to assess Perceptual homophily.

Table 2, continued.

	Trustworthiness
Tsai & Ghoshal (1997)	Managers of units in one organization Measuring trust: (1) "which units can you rely on without fear theat they will take advantage of your unit, even if the opportunity arises?" (2) "In general, people from which units will keep promises they make to you?"
Doney, Canon & Mullen (1998)	Trustors establish trust in a trustee based on their perceptions of the calculative, predictive, intentionality and capability of that person behave in a trusting way.
Butler (1991)	Trust is conditional on discreetness, availability, competence, consistency, fairness, integrity, loyalty, openness, promise fulfillment and receptivity
Hawes, Rao & Baker (1994)	Assessment of salesperson by adults. Trustworthiness dimensions included sincerity, dependability, reliability and overall trustworthiness.

Table 2, continued.

	Reciprocity
Frenzen & Davis (1990)	Home party invites and hostesses Measure of reciprocity: "Indicate whether the hostess owes you a favor" (-2 = definitely owes me to +2 = I definitely owe her a favor)
Miller & Kean (1997)	Measured satisfaction with reciprocity of rural consumers "How satisfied are you with the support you get from the community?" "How satisfied are you with the fairness of dealings with members of your community?" "How satisfied are you with the amount of sacrifice in your community?"
Tsai & Ghoshal (1998)	Managers of units in one organization Measured shared vision: "Our unit shares same ambitions with other units at work" "People in our unit are enthusiastic about pursuing collective goals and missions of the whole organization." (1-7; strongly disagree to strongly agree) zero-order correlation .71

Table 2, continued.

	Information Quality
O'Reilly, C.A. (1982)	Employees in a government agency; measured quality and accuracy of multiple sources of information. α =.89 No other instances of use of this scale was found in the literature.
	Performance
Conant, Mokwa & Varadarajan (1990) Conant, Smart & Solano-Mendez (1993)	Scale developed using CEO's of HMO's to measure marketing competence of HMO's. Adapted by Conant, Smart & Solano-Mendez for use with small apparel retailers. No factor analysis or reliability was reported in either study. Competency differentiated between strategic types (defender, prospector, analyzer and reactor) in both studies.
Venkatraman & Ramanujam, 1986	Subjective assessments of performance are generally consistent with secondary performance measures .

Table 3. Item Content

F1: Performance (PERF) 1=Poor; 5=Excellent	
V1	How would you describe the overall performance of your store(s) last year?
V2	How would you describe your performance relative to your major competitors?
V3	How would you describe your performance relative to other stores like yours in the industry?
F2: Local Marketing Competence (MC/MI) 1=Not as strong as competition; 7= Much stronger than competition	
V4	Assessment of current customers' needs and wants.
V5	Assessment of prospective customers' needs and wants.
V6	Quality of customer service.
V7	Ability to offer competitive prices.
V8	Creating a pleasant shopping atmosphere
V9	Effectiveness of store advertising.
V10	Effectiveness of store layout and merchandise presentation.
F3: Innovative Marketing Competence (MC/INV) 1=Not as strong as competition; 7= Much stronger than competition.	
V11	Ability to differentiate merchandise and service offerings from that of competitors.
V12	Being first to introduce new merchandise and merchandise lines.
V13	Introducing new ideas in my business.
V14	Trying new marketing techniques.

Table 3, continued. Item Content

F4: Information Quality (IQUAL)	
V15	When using information from the people you named above, how accurate would you say it usually is? 1= Not accurate at all; 7 = Very accurate
V16	Sometimes the information we get may get right to the heart of the problem we are facing. Other times the information may not be very specific to our needs. In general, how relevant is the information from the people you named above? 1=Not relevant at all; 7=Very relevant
V17	At times we must gather a lot of information which isn't very relevant in order to get enough to make a good decision. Other times we need only a small amount of information because the information is very specific and allows us to make a decision. How specific is the information you get from the people you named above? 1=Not specific at all; 7=Very specific
V18	Some information may be exactly what we require. How often is this the case for information obtained from the people you named above? 1=Not often; 7=Very often
V19	To be useful, information must often be available when we need it, not at some later time. How timely would you estimate information to be from the people you named above? 1=Not very timely; 7=Very timely
F5: Trust (TRST) 1= Strongly disagree; 5= Strongly agree	
V20	I am considered to be dependable by these people.
V21	These people would say that I am sincere.
V22	These people would trust me with personal information about themselves.
V23	They would say that I am a trustworthy person.
F6: Commitment (COM)1= Strongly disagree; 5= Strongly agree	
V24	I am satisfied with the level of business support I get from them.
V25	These people share the same ambitions and visions about business that I do.
V26	They are enthusiastic about helping me in my business.

Table 3, continued. Item Content

F7: Reciprocity (RECIP) 1= Strongly disagree; 5= Strongly agree	
V27	I would do a favor for any of these people if they asked.
V28	These people would be willing to do me a favor if I asked.
V29	We do each other favors from time to time.
F9: Density (DENS) 1= Strongly disagree; 5= Strongly agree	
V30	These people know each other by name.
V31	These people talk to each other about business.
V32	These people see each other regularly in business situations.
F10: Centrality (CENT) 1= Not true at all; 5= Very true	
V33	I talk directly with these people about business issues.
V34	If any of them had information that would help me in my business, they could tell me directly.
V35	Among these people, I often pass along business information from one person to another.
V36	If I needed advice about running my business, I could call any of these people on the telephone.
V37	If these people had business information that would be helpful, they would tell me right away.
V38	I am one of the first to hear about new things from this group of people.
F12: Emotional Intensity (EMOT) 1= Not true at all; 5= Very true	
V39	My relationships with these people are very close.
V40	I do things socially with these people.
V41	If I had the chance, I would spend a free afternoon with any of these people.
V42	I consider most of these people my friends.

Table 3, continued. Item Content

F 13: Intimacy (INT) 1=Very unlikely; 5= Very likely	
V43	You would share personal matters with them.
V44	You might discuss family matters with them.
V45	You might ask them for advice about a private matter.
F14: Perceptual Homophily (PERHOM) 1= Very dissimilar; 5=Very similar	
V46	Your outlook on life.
V47	Your likes and dislikes.
V48	Your business philosophy.
V49	Your values and beliefs.

Table 4. Characteristics of Sample

Sample Characteristic	Frequency	Percentage*
Owner	104	92.9
Manager	7	6.3
Gender		
Female	80	71.4
Male	29	25.9
Age		
Less than 40 years	18	16.4
41-50 years	36	32.7
Over 50 years	56	49.1
Education		
High school	25	22.7
College	76	69.1
Post-graduate	9	8.2
Years Owned Retail Business		
5 or less	30	27.0
6-10	30	27.0
Over 10	50	45.1
Years experience in Retailing		
5 or less	14	12.6
6-10	18	16.2
Over 10	79	70.3
Number of Full-time Employees		
None	47	42.0
1	30	27.0
2 or more	44	31.2
Number of Part-time Employees		
None	16	14.3
1 to 5	60	54.1
6 or more	35	30.7

*Less than 100% due to missing data

Table 5. Factor Loadings and Cronbach Alpha for Scale Items

Variable	Performance		Marketing Competence		Information Quality	
	MI	INV	MI	INV	MI	INV
v1	.824	.856				
v2	.825	.850				
v3	.767	.826				
alpha	**.839**	**.839**				
v4			.793			
v5			.819			
v6			.804			
alpha			**.81**			
v11				.655		
v12				.812		
v13				.883		
v14						
alpha				**.89**		
v15						
v16					.877	.938
v17					.915	.919
v18					.865	.844
v19						
alpha					**.86**	**.89**

Table 5, continued. Factor Loadings and Cronbach Alpha for Scale Items

Variable	Trust		Commitment	
	MI	INV	MI	INV
v20	.662	.687		
v21	.829	.781		
v22	.566	.720		
v23	.828	.686		
alpha	**.71**	**.75**		
v24			.798	.582
v25			.751	.824
v26			.854	.844
alpha			**.79**	**.75**
		Reci-procity	Reci-procity	
v27		.757[b]	.540[a]	
v28		.655[b]	.727[a]	
v29		.731[b]	.555[a]	
alpha		**.87**	**.76**	

[a] v27, v28, v29 loaded with COM in MI networks
[b] v27, v28, v29 loaded with TRST in INV networks

Table 5, continued Factor Loadings and Cronbach Alpha for Scale Items

Variable	Density		Centrality		Emotional Intensity & Intimacy		Perceptual Homophily	
	MI	INV	MI	INV	MI	INV	MI	INV
v30	.749	.674						
v31	.878	.895						
v32	.827	.867						
alpha	**.84**	**.89**						
v33			.699	.807				
v34								
v35								
v36			.626	.757				
v37			.763	.635				
v38			.673	.630				
alpha			**.90**	**.87**				
v39								
v40					.651	.632		
v41					.643	.769		
v42					.687	.729		
v43					.857	.868		
v44								
v45								
alpha					**.94**	**.87**		
v46								
v47							.722	.841
v48							.613	.732
v49							.762	.713
alpha							**.76**	**.87**

Table 6. Parameter Estimates for First Order CFA for NETCHAR (MI networks)

Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
v30, DENS	1.00		.755	.656
v31, DENS	1.17	7.905*	.850	.526
v32, DENS	1.125	7.638*	.792	.611
v33, DENS	1.00		.645	.765
v36, CENT	1.360	6.185*	.755	.656
v37, CENT	1.074	6.447*	.805	.589
v38, CENT	1.065	5.669*	.671	.742
v41, FRND	1.00		.782	.623
v42, FRND	1.001	8.727*	.924	.383
V43, FRND	.480	5.848*	.572	.820
v47, PERHOM	1.00		.658	.753
v49, PERHOM	1.270	4.393*	.704	.710
DENS, CENT	.313	3.496*	.519	
DENS, FRND	.425	3.225*	.422	
DENS, PERHOM	.270	2.929*	.461	
CENT, FRND	.362	4.045*	.666	
CENT, PERHOM	.178	3.196*	.561	
FRND, PERHOM	.335	3.629*	.634	
*p<.05				
χ^2 (50, n=106) = 78.257, p=.006; NNFI= .924, CFA=.942				

Table 7. Parameter Estimates for First Order CFA for NETCHAR (INV networks)

Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
v30, DENS	1.00		.807	.591
v31, DENS	1.076	9.961*	.902	.431
v32, DENS	.993	9.495*	.850	.526
v33, CENT	1.00		.628	.778
v36, CENT	1.660	6.112*	.770	.638
v37, CENT	1.476	6.365*	.821	.571
v38, CENT	1.601	6.115*	.771	.637
v41, FRND	1.00		.869	.494
v42, FRND	.975	12.539*	.938	.345
V43, FRND	.923	9.316*	.765	.645
v47, PERHOM	1.00		.742	.670
v49, PERHOM	1.140	5.996*	.837	.547
DENS, CENT	.287	3.574*	.529	
DENS, FRND	.688	3.926*	.510	
DENS, PERHOM	.354	3.351*	.480	
CENT, FRND	.371	4.269*	.708	
CENT, PERHOM	.177	3.588*	.618	
FRND, PERHOM	.450	4.086*	.632	
*$p < .05$				
χ^2 (50, n=101) = 80.928, p=.002; NNFI= .935, CFI=.953				

Table 8. Parameter Estimates for Second Order CFA for NETCHAR (MI Networks)

Construct	Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
DENS	v30, F9	1.00		.763	.646
	v31, F9	1.159	7.953*	.847	.531
	v32,F9	1.106	7.663*	.787	.617
CENT	v33, F10	1.00		.636	.772
	v36, F10	1.372	6.089*	.751	.660
	v37, F10	1.099	6.389*	.816	.578
	v38, F10	1.081	5.612*	.671	.741
FRND	v41,F15	1.00		.782	.623
	v42, F15	1.002	8.684*	.924	.383
	v43, F15	.481	5.856*	.573	.819
PERHOM	v47,F13	1.00		.647	.763
	v49,F16	1.316	4.317*	.717	.697
Construct Equations					
DENS, NETCHAR		.625	4.799*	.585	.811
CENT, NETCHAR		.462	5.543*	.821	.572
FRND, NETCHAR		.767	6.334*	.805	.593
PERHOM, NETCHAR		.405	4.569*	.743	.669
*p< . 05					
χ^2 (50, n=106) = 61.548, p=.126; NNFI= .969, CFI=.977					

Variable	Composite Reliability	Variance Extracted
DENS	.762	.516
CENT	.750	.431
FRND	.740	.495
PERHOM	.560	.390

Table 9. Parameter Estimates for Second Order CFA for NETCHAR (INV Networks)

Construct	Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
DENS	v30, F9	1.00		.602	.533
	v31, F9	1.492	7.677*	.938	.347
	v32,F9	1.310	7.646*	.842	.540
CENT	v33, F10	1.00		.628	.778
	v36, F10	1.663	6.121*	.772	.635
	v37, F10	1.473	6.356*	.820	.573
	v38, F10	1.600	6.114*	.771	.637
FRND	v41,F15	1.00		.870	.492
	v42, F15	.966	12.646*	.931	.366
	v43, F15	.938	9.567*	.777	.629
PERHOM	v47,F13	1.00		.743	.670
	v49,F16	1.138	6.015*	.736	.548
Construct Equations					
DENS, NETCHAR		.479	4.307*	.540	.841
CENT, NETCHAR		.388	5.661*	.845	.535
FRND, NETCHAR		.947	7.611*	.829	.559
PERHOM, NETCHAR		.472	5.484*	.757	.653
* $p < .05$					
$\chi^2(50, n=101) = 55.91$, $p=.24$; NNFI= .987, CFI=.991					

Variable	Composite Reliability	Variance Extracted
DENS	.799	.579
CENT	.773	.462
FRND	.817	.60
PERHOM	.671	.506

Table 10. Parameter Estimates for First Order CFA for SC (MI networks)

Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
v 20, TRST	1.00		.653	.757
v21, TRST	.895	5.838*	.787	.617
v23, TRST	.613	5.584*	.706	.708
v24, COM	1.00		.815	.579
v25, COM	.988	6.771*	.655	.756
v27, COM	1.073	8.421*	.794	.608
v28, RECIP	1.00		.736	.677
v29, RECIP	.851	6.449*	.615	.788
TRST, COM	.113	3.316*	.490	
TRST, RECIP	.162	4.158*	.790	
COM, RECIP	.335	5.483*	1.023	
*$p < .05$				
$\chi^2(17, n=106) = 32.71$, $p=.01227$; NNFI= .921, CFI=.952				

Table 11. Parameter Estimates for First Order CFA for SC (INV networks)

Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
v 20, TRST	1.00		.735	.678
v21, TRST	.944	6.204*	.677	.736
v23, TRST	1.163	7.149*	.808	.590
v24, COM	1.00		.715	.699
v25, COM	1.321	5.916*	.682	.731
v27, COM	1.221	6.185*	.722	.692
v28, RECIP	1.00		.844	.536
v29, RECIP	1.040	7.332*	.752	.659
TRST, COM	.123	4.278*	.764	
TRST, RECIP	.225	4.717*	.792	
COM, RECIP	.266	4.649*	.803	
*p < .05				
χ^2 (17, n=103) = 43.059, p < .001; NNFI= .873, CFI=.923				

Table 12. Parameter Estimates for Second Order CFA for Social Capital (MI Networks)

Construct	Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
TRST	v20, F5	1.00		.659	.752
	v21, F5	.895	5.702*	.794	.608
	v23, F5	.597	5.481*	.694	.720
COM	v24, F6	1.00		.806	.591
	v25, F6	.994	6.674*	.650	.760
	v27, F6	1.075	8.253*	.785	.620
RECIP	v28, F7	1.00		.792	.610
	v29, F7	.811	6.269*	.632	.775
Construct Equations					
TRST, SC		.227	4.461*	.591	.807
COM, SC		.591	9.062*	.988	.158
RECIP, SC		.574	8.937*	.987	.162
*p < .05					
χ^2 (17, n=106) = 44.806, p=.012; NNFI= .873, CFI=.918					

Variable	Composite Reliability	Variance Extracted
TRST	.690	.429
COM	.719	.461
RECIP	.665	.557

Table 13. Parameter Estimates for Second Order CFA for Social Capital (INV Networks)

Construct	Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
TRST	v20, F5	1.00		.739	.674
	v21, F5	.931	6.230*	.672	.741
	v23, F5	1.156	7.290*	.897	.590
COM	v24, F6	1.00		.467	.711
	v25, F6	3.299	2.471*	.749	.633
	v27, F6	3.021	2.459*	.785	.620
RECIP	v28, F7	1.00		.839	.544
	v29, F7	1.045	7.426*	.750	.661
Construct Equations					
TRST, SC		.304	6.452*	.816	.578
COM, SC		.141	2.364*	.738	.675
RECIP, SC		.750	9.213*	.986	.169
* $p < .05$					
$\chi^2(18, n=103) = 43.526$, $p < .001$; NNFI= .923, CFI=.953					

Variable	Composite Reliability	Variance Extracted
TRST	.726	.473
COM	.671	.415
RECIP	.676	.512

Table 14. Differences in Latent Means for DENS, CENT, FRND, PERHOM

Latent Factor	Mean Difference between MI and INV Networks	Standard Error	z- value
DENS	.257	.173	1.487
CENT	.231*	.084	2.747
FRND	.394*	.159	2.475
PERHOM	.183	.109	1.685
*p < .05			
χ^2 (107, n=101) = 148.3, p=.005; NNFI= .957, CFI=.965			

Table 15. Parameter Estimates for First Order CFA Structural Model (MI networks)

Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
DENS, NETCHAR	1.000		.447	.894
CENT, NETCHAR	1.598	4.645*	.942	.335
FRND, NETCHAR	1.587	4.413*	.742	.671
PERHOM, NETCHAR	.662	3.879*	.555	.832
TRST, SC	1.000		.568	.823
COM, SC	2.794	5.969*	.843	.537
RECIP, SC	2.589	6.017*	.858	.514
v16, IQUAL	1.000		.803	.595
v17, IQUAL	1.179	9.583*	.880	.475
v18, IQUAL	1.222	8.845*	.812	.584
v4, MC/MI	1.000		.949	.316
v5, MC/MI	.981	14.500*	.893	.449
v6, MC/MI	.396	4.641*	.437	.899
v1, PERF	1.000		.711	.703
v2, PERF	1.408	6.965*	.856	.517
v3,PERF	1.189	6.788*	.772	.636
SC, NETCHAR	.094	3.257*	.787	
NETCHAR, IQUAL	.192	2.709*	.395	
NETCHAR, MC			.308	
NETCHAR, PERF	.050	1.440	.173	
SC, IQUAL	.130	4.050*	.728	
SC, MC	.017	1.088	.144	
SC, PERF	.013	.996	.139	
IQUAL, MC			.113	

Table 15, continued. Parameter Estimates for First Order CFA Structural Model (MI networks).

IQUAL, PERF	.067	1.322	.185	
MC, PERF	.235	3.233*	.414	
*p < .05				
χ^2 (96, n=104) = 179.324, p < .001; NNFI= .880, CFI=.904				

Table 16. Parameter Estimates for First Order CFA Structural Model (INV networks)

Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
DENS, NETCHAR	1.00		.606	.795
CENT, NETCHAR	1.357	6.843*	.940	.341
FRND, NETCHAR	1.404	6.425*	.825	.565
PERHOM, NETCHAR	.628	5.137*	.605	.796
TRST, SC	1.000		.736	.677
COM, SC	1.314	6.825*	.717	.697
RECIP, SC	2.389	8.079*	.859	.512
v16, IQUAL	1.000		.933	.361
v17, IQUAL	1.032	13.167*	.909	.416
v18, IQUAL	.894	9.726*	.759	.651
v12, MC/INV	1.000		.608	.794
v13, MC/INV	1.279	5.479*	.944	.331
v14, MC/INV	1.056	5.290*	.638	.770
v1, PERF	1.000		.71	.703
v2, PERF	1.471	7.214*	.894	.448
v3,PERF	1.174	6.857*	.760	.650
SC, NETCHAR	.217	4.272*	.850	
NETCHAR, IQUAL	.285	2.879*	.361	
NETCHAR, MC/INV	-.094	-1.194	-.138	
NETCHAR, PERF	-.022	-.457	-.052	
SC, IQUAL	.157	3.637*	.481	
SC, MC/INV	-.010	-2.98*	-.034	
SC, PERF	.022	1.067	.128	
MC/INV, IQUAL	.178	1.741	.203	

Table 16, continued. Parameter Estimates for First Order CFA Structural Model (INV networks)

PERF/IQUAL	.113	1.796	.209	
PERF, MC	.224	3.068*	.476	
*p < .05				
χ^2 (96, n=100) = 131.48, p=.009; NNFI= .945, CFI=.956				

Table 17. Parameter Estimates for Structural Model (MI Networks)

Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
DENS, NETCHAR	1.00		.432	.902
CENT, NETCHAR	1.718	4.470*	.978	.207
FRND, NETCHAR	1.623	4.353*	.733	.680
PERHOM, NETCHAR	1.835	3.620*	.618	.758
TRST, SC	1.00		.621	.784
COM, SC	1.818	5.164*	.599	.505
RECIP, SC	2.370	6.578*	.858	.514
v16, IQUAL	1.00		.803	.596
v17, IQUAL	1.157	9.410*	.863	.505
v18, IQUAL	1.249	9.005*	.826	.564
v4, MC/MI	1.00		.943	.334
v5, MC/MI	.998	9.051*	.897	.443
v6, MC/MI	.400	4.481*	.437	.900
v1, PERF	1.00		.705	.709
v2, PERF	1.413	6.924*	.852	.524
v3, PERF	1.215	6.805*	.781	.624
Construct Equations				
NETCHAR, SC	.317	3.749*	.756	.654
SC, IQUAL	2.288	4.603*	.613	.790
SC, PERF	.272	1.072	.116	.904
IQUAL, MC/MI	.183	1.347	.146	.989
MC/MI, PERF	.201	3.482*	.402	.903
* $p < .05$				
$\chi^2(99, n=104) = 208.425$, $p < .001$; NNFI= .847, CFI=.874				

Table 18. Parameter Estimates for Structural Model (INV Networks)

Path Label	Parameter Estimate	z-value	Standardized Estimate	Standardized Residual Variance
DENS, NETCHAR	1.00		.606	.795
CENT, NETCHAR	1.357	6.831*	.941	.339
FRND, NETCHAR	1.401	6.413*	.823	.568
PERHOM, NETCHAR	.631	5.154*	.608	.794
TRST, SC	1.00		.740	.672
COM, SC	1.300	6.804*	.714	.701
RECIP, SC	2.381	8.093*	.861	.508
v16, IQUAL	1.00		.933	.359
v17, IQUAL	1.030	13.159*	.909	.417
v18, IQUAL	.893	9.718*	.759	.651
v12, MC/INV	1.00		.607	.795
v13, MC/INV	1.28	5.520*	.944	.330
v14, MC/INV	1.056	5.284*	.638	.770
v1, PERF	1.00		.706	.708
v2, PERF	1.498	7.126*	.904	.427
v3, PERF	1.169	6.787*	.752	.659
Construct Equations				
NETCHAR, SC	.351	5.403*	.846	.532
SC, IQUAL	1.434	4.184*	.466	.885
SC, PERF	.180	1.043	.110	.960
IQUAL, MC/INV	.265	2.282*	.305	
MC/INV, PERF	.299	3.655*	.487	.871
*p < .001				
χ^2 (99, n=100) = 132.196, p <.001; NNFI= .950, CFI=.959				

Table 19. Coefficients of Determination for Dependent Variables in the Causal Model

Path	Standardized Residual Variance		Variance Explained in Dependent Variable*	
	MI Network Model	INV Network Model	MI Network Model	INV Network Model
NETCHAR, SC	.654	.532	.527	.717
SC, IQUAL	.790	.885	.376	.217
SC, PERF	.904	.871	not sig	not sig
IQUAL, MC	.989	.960	not sig	.078
MC, PERF	.903	.871	.184	.241
*1 - (standardized residual variance^2)				

Table 20. Results of Hypothesis Testing

	Hypothesis	Results
1	Market Intelligence Network (MI) structures will be more highly connected (higher density/higher centrality) than Innovation Network (INV) structures.	Partially supported
2	MI Networks will contain stronger ties (higher levels of Emotional Intensity, Intimacy, Perceptual Homophily, and Frequency of Interaction) than INV Networks.	Partially supported
3	For MI Networks, denser, more central and stronger ties will lead to higher levels of Social Capital (SC).	Supported
4	For MI Networks, higher levels of Social Capital (SC) will lead to higher Information Quality (IQUAL).	Supported
5	For INV Networks, denser, more central and stronger ties will lead to higher levels of Social Capital (SC).	Supported
6	For INV Networks, higher levels of Social Capital will lead to higher levels of Information Quality (IQUAL).	Supported
7	For Market Intelligence (MI) Networks, higher Information Quality will lead to higher Marketing Competence related to Local Markets (MC/MI).	Not supported
8	For Innovative Networks, higher Information Quality will lead to higher Marketing Competence related to Remote Markets (MC/INV).	Supported
9	For MI networks, higher Local Marketing Competence (MC/MI) will lead to higher perceptions of performance(PERF).	Supported

Table 20, continued. Results of Hypothesis Testing

10	For INV Networks, higher Innovative Marketing Competence (MC/INV) will lead to higher perceptions of performance PERF.	Supported
11	For MI Networks, higher SC will lead to higher perceptions of performance (PERF).	Not supported
12	For INV Networks, higher SC will lead to higher perceptions of PERF.	Not Supported

APPENDIX C

Formulas

Formulas for Composite Reliability and Variance Extracted

Composite Reliability

$$\frac{(\text{Sum of Standardized Loadings})^2}{(\text{Sum of Standardized Loadings})^2 + \text{Sum of Indicator Measurement Error}}$$

Variance Extracted

$$\frac{\text{Sum of Squared Standardized Loadings}}{\text{Sum of Squared Standardized Loadings} + \text{Sum of Indicator Measurement Error}}$$

APPENDIX D

Figures

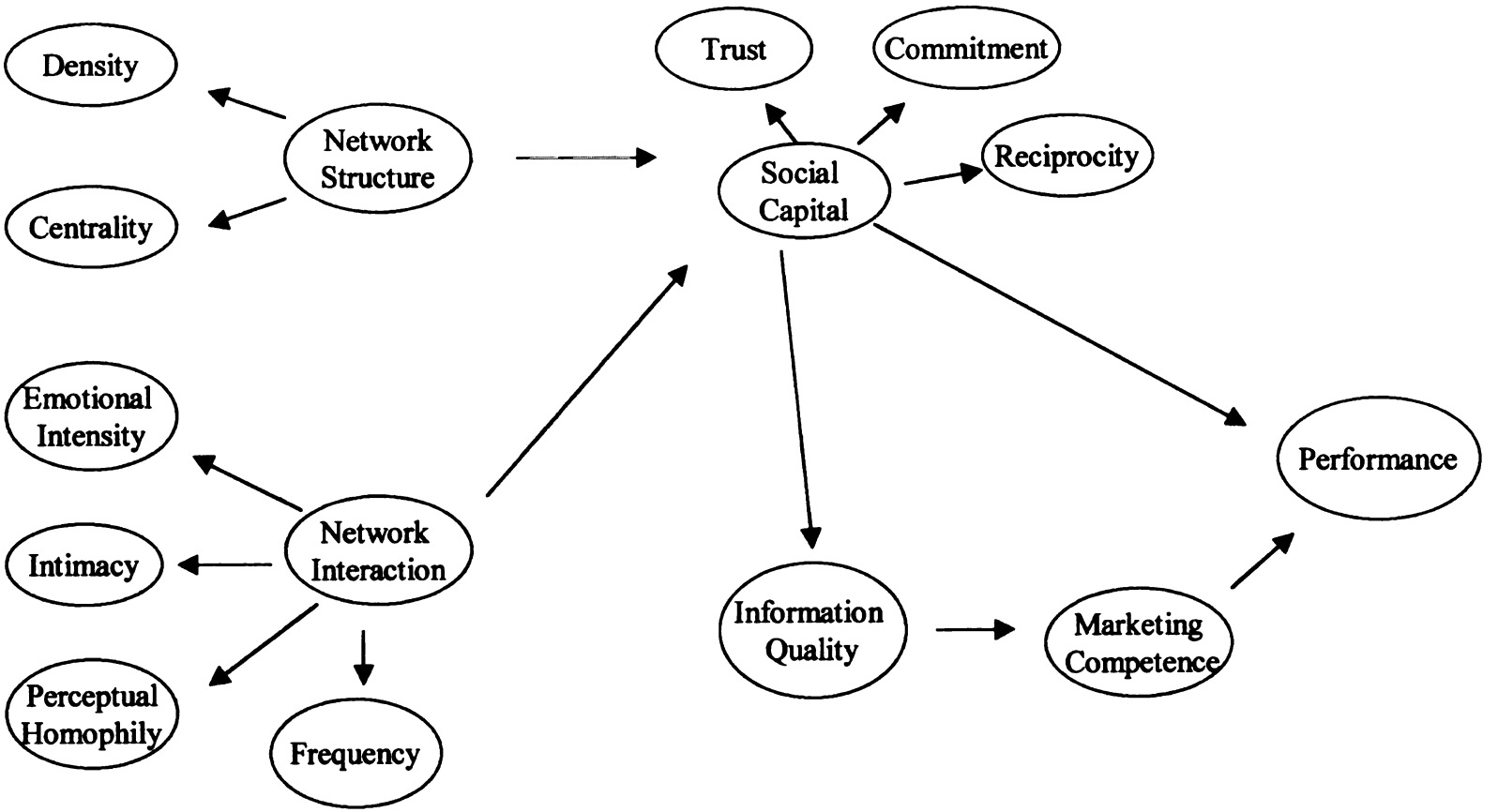

Figure 1. Theoretical Model

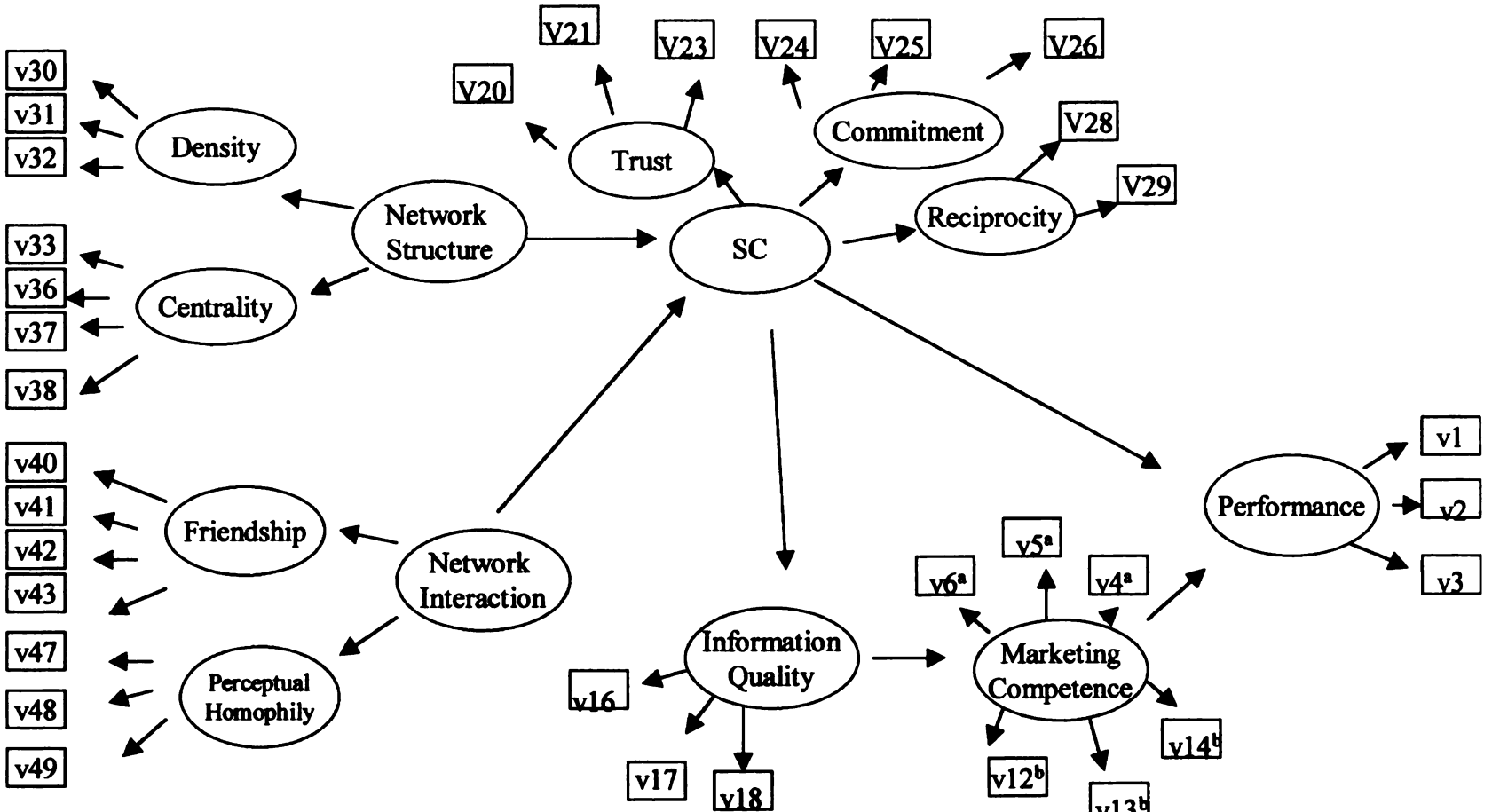

Figure 2. Initial Measurement Model
[A]MI Marketing Competence; [b]INV Marketing Competence
Error variances eliminated for simplicity

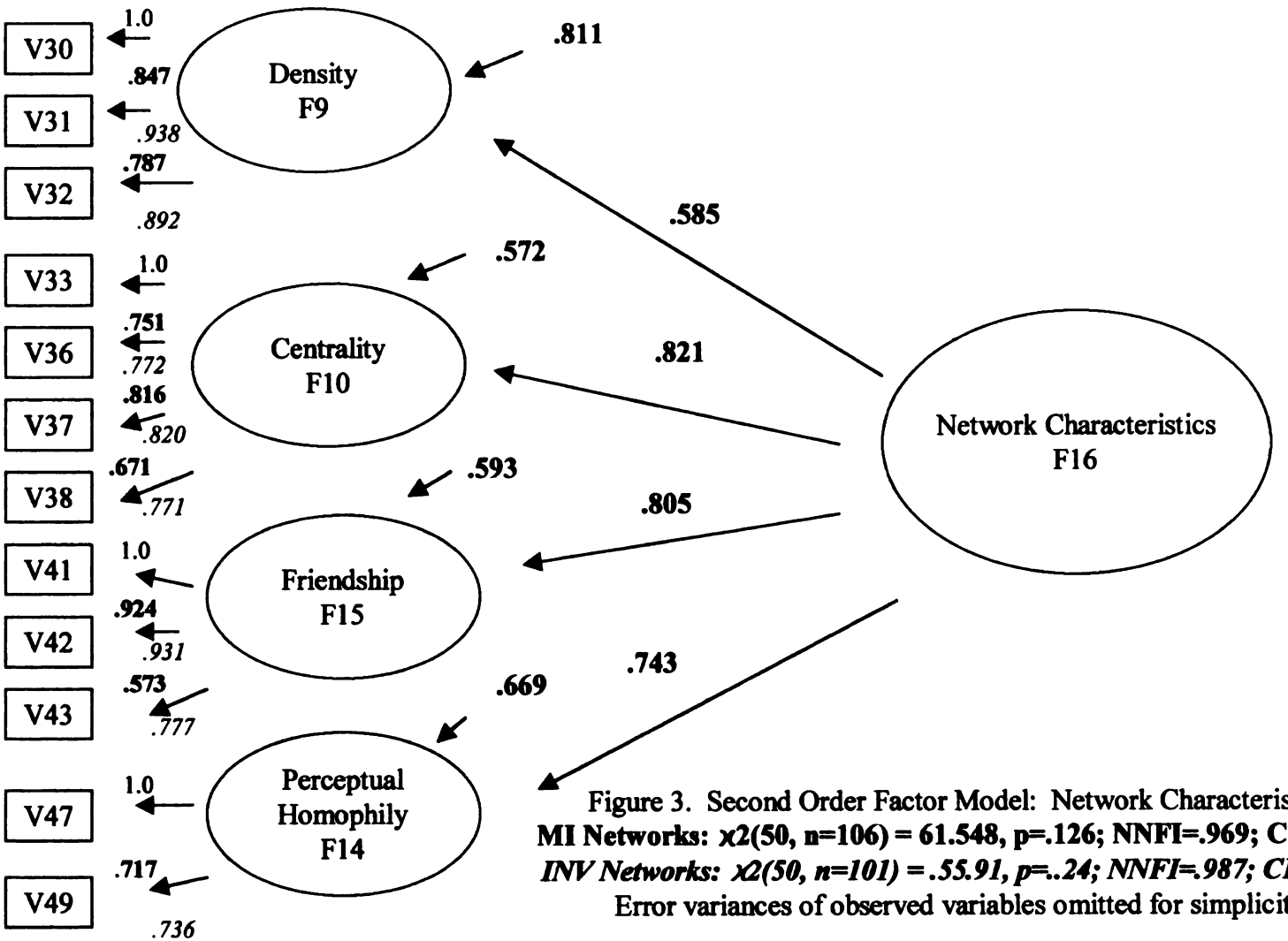

Figure 3. Second Order Factor Model: Network Characteristics
MI Networks: $\chi 2(50, n=106) = 61.548$, p=.126; NNFI=.969; CFI=.977
INV Networks: $\chi 2(50, n=101) = .55.91$, p=..24; NNFI=.987; CFI=.991
Error variances of observed variables omitted for simplicity

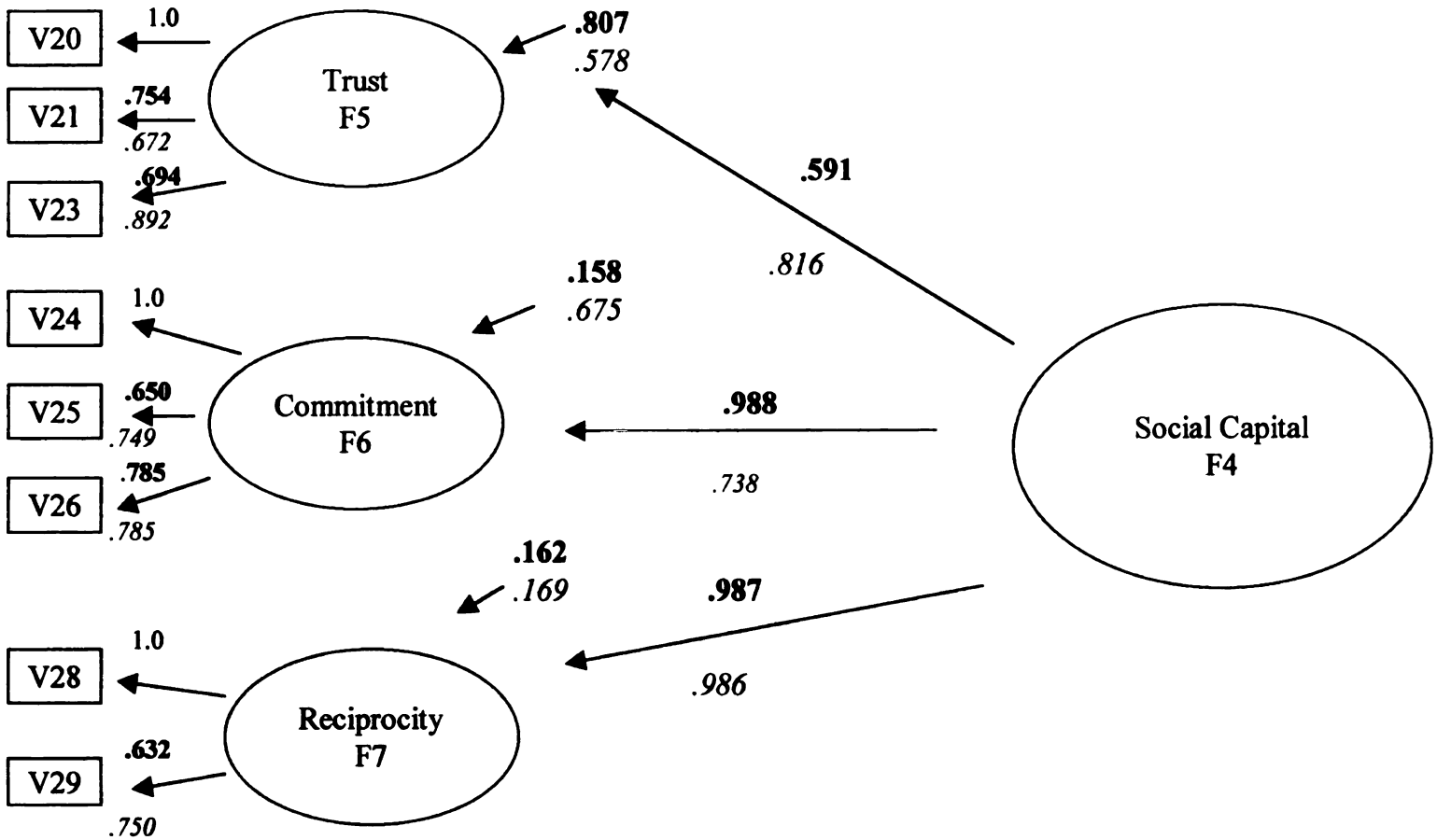

Figure 4. Second Order Factor Model: Social Capital

MI Networks: χ2 (17, n=106)=44.806, p=.012; NNFI=.873; CFI=.918

INV Networks χ2 (17, n=103)=43.526, p=.012; NNFI=.923; CFI=.953

Error variances of observed variables omitted for simplicity

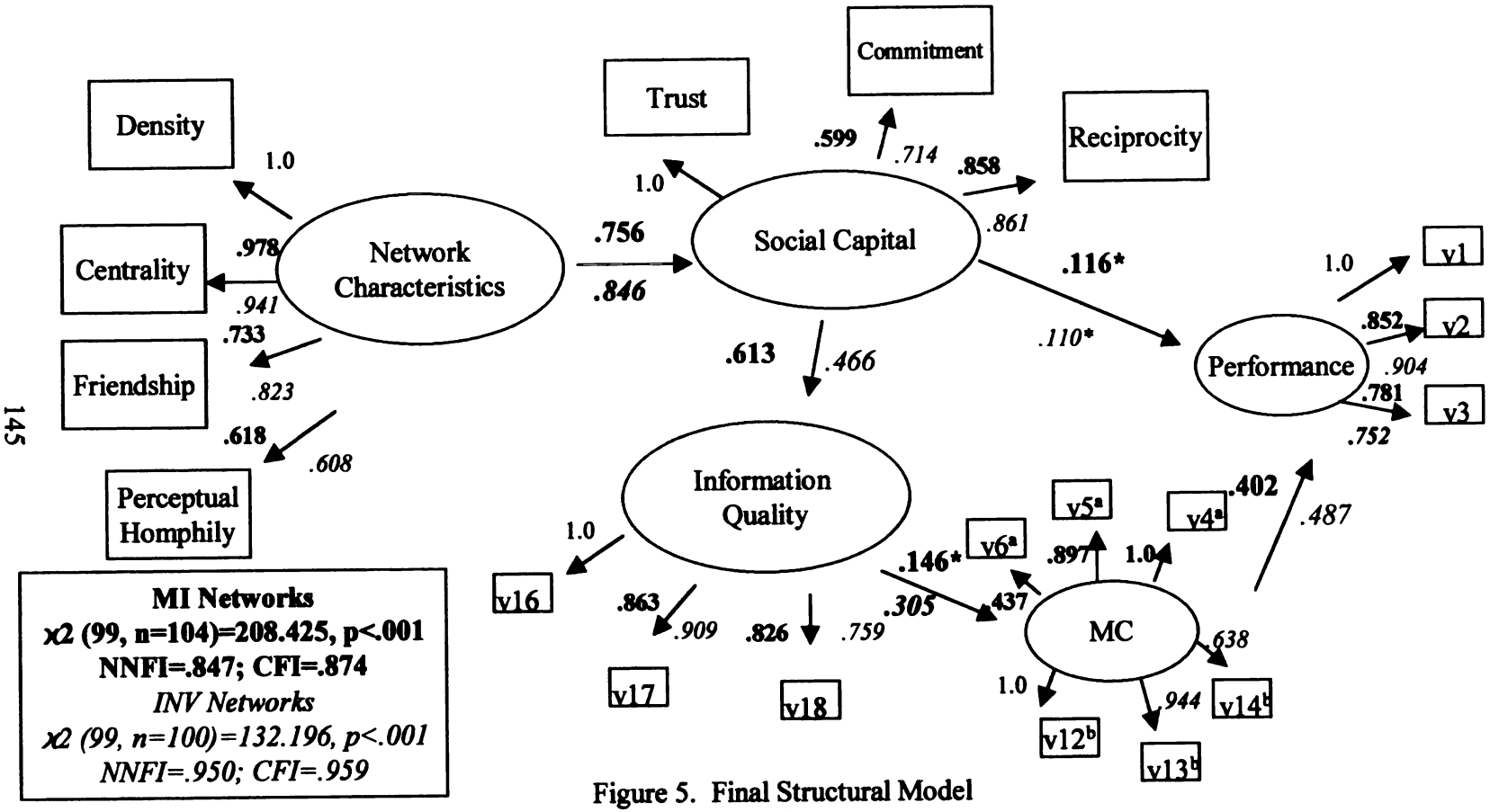

Figure 5. Final Structural Model
[A]MI Marketing Competence; [b]INV Marketing Competence
Error variances eliminated for simplicity
*Not significant

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