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RECIPROCITY AND SOCIAL EXCHANGE RELATIONSHIPS IN ORGANIZATIONS: EXAMINING WHY AND HOW INDIVIDUALS CONTRIBUTE TO ORGANIZATIONAL SOCIAL CAPITAL

by

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Melvin L. Smith, Jr., Ph.D.

University of Pittsburgh, 2002

ABSTRACT

While considerable theoretical and empirical work has focused on outcomes associated with possessing higher levels of social capital, less attention has been given to the examination of factors likely to influence individual behaviors leading to its creation. More specifically, little previous research has considered the potential antecedents and/or correlates of individual contributions to communal social capital in organizations.

This study examined the extent to which relational factors, characterized by perceived social exchange relationship quality within an organization, influence individual contributions to organizational social capital above and beyond dispositional and instrumental motivations for making such contributions. Drawing on social exchange theory and the norm of reciprocity, it was hypothesized that perceived organizational support, team-member exchange, and leader-member exchange would significantly predict the communal social capital investment behavior of individuals in an organizational setting. It was also hypothesized that an individual's level of education, as well as their centrality in the communication network of the organization would positively moderate these hypothesized relationships. Further, it was predicted that engaging in such behavior would favorably affect individual job satisfaction and affective commitment, as well as leader- and peer-rated performance, and that it would be associated with lower levels of job related stress.

Survey data were collected from teachers and the principal at three high schools in a mid-sized, urban public school district (N = 150). Data were analyzed using hierarchical regression and structural equation modeling.

Results showed that leader-member exchange and team-member exchange significantly predicted communal social capital investment behavior. Perceived organizational support, however, did not. Further, neither education level nor communication network centrality moderated the observed relationships. Finally, communal social capital investment behavior significantly predicted affective commitment and attributed performance as anticipated, but was only marginally related to job satisfaction and unrelated to job stress.

Taken as a whole, the findings from this study suggest that employees who have a perceived high quality relationship with their immediate supervisor and/or their work group peers are more likely to engage in behaviors that lead to the creation and maintenance of organizational social capital. In turn, these individuals appear to experience more favorable work related outcomes.

FOREWORD

First and foremost, I would like to thank God for giving me the will and the courage to undertake this journey, the ability to successfully accomplish all that was required of me along the way, and the strength to endure until the end. Great is His mercy!

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Chapter I

INTRODUCTION

> *Work—and how it is carried out in organizations—is fundamentally about relationships: relationships between a firm and its employees, relationships of employees with one another, relationships between a firm and its investors, suppliers, partners, regulators, and customers.*
>
> —Carrie Leana and Denise Rousseau (2000)

As suggested by the above passage, much of the activity that occurs in organizations is centered on relationships of one form or another. Moreover, these relationships can represent significant value to an organization. However, as argued by Uhl-Bien, Graen, & Scandura (2000), relationships have not received as much attention as they perhaps should have in the organizational literature. Leana & Rousseau (2000) similarly suggest that relationships represent an underrecognized, underutilized, and undervalued form of wealth in organizations. In an effort to draw greater attention to the value of relationships in organizations, Leana & Rousseau introduced a construct that they termed *relational wealth*, which they suggested refers to "...resources created for a firm through its internal relations among and with employees, as well as its external alliances and reputation" (p. 6). It is the internal aspect of relational wealth described here that serves as the focus of this study. More specifically, this dissertation is concerned with why and how individuals contribute to the creation and maintenance of the internal bonds among organizational members that facilitate collective action. These internal bonds have been described in the organizational literature as organizational social capital (Leana & Van Buren, 1999) or communal social capital (Oh, Kilduff, & Brass, 1999; Pearce & Randel, 2000; Pil, Smith, & Leana, 2000).

Communal social capital can be characterized as a dense network of multiplex ties based on norms and values of shared trust, reciprocity, and bounded solidarity (cf. Coleman, 1988; Leana & Van Buren, 1999; Oh, Kilduff, & Brass, 1999; Portes & Sensenbrenner, 1993; Putnam, 1993, 1995). This communal form of the social capital construct represents a potentially valuable resource to organizations in that it has been argued to foster the development of intellectual capital (Nahapiet & Ghoshal, 1998) and to facilitate successful collective action (Leana & Van Buren, 1999). Thus, there is an inherent value in better understanding the factors that lead to its creation and maintenance.

Problem Statement

While considerable theoretical and empirical work has focused on outcomes associated with possessing higher levels of social capital (e.g., Belliveau, O'Reilly, & Wade, 1996; Burt, 1992, 1997; Friedman & Krackhardt, 1997; Fukuyama, 1995; Putnam, 1993), less attention has been given to the examination of factors likely to influence individual behaviors that lead to its creation. More specifically, little previous research has considered the potential antecedents and/or correlates of individual contributions to communal social capital in organizations. Although this issue may not have been specifically addressed in prior organizational research, theoretical and empirical work across various disciplines such as psychology, sociology, social psychology, economics, and even biology, provide insight on the issue of why individuals contribute to communal social capital.

Communal Social Capital Contributions

Biological View

In his introduction of the discipline of sociobiology, Wilson (1975) offered that sociobiology is the "... systematic study of the biological basis of all behavior" (p. 343). Wilson (1978) added that, "evidence is strong that a substantial fraction of human behavior is based on genetic differences among individuals" (p. 43). Accordingly, sociobiologists and evolutionary psychologists contend that many patterns of human behavior have a basis in evolution (Konner, 1999). More specifically, it has been suggested that there is a biological basis of the cooperative behavior that occurs among individuals in the absence of immediate incentives to cooperate. Cosmides & Tooby (1992) offer that humans may be evolutionarily predisposed to engage in social exchange using mental algorithms developed from millions of years of engaging in social interaction as a species. According to Cosmides and Tooby, although we are not born with the actual behavioral responses that promote cooperative outcomes, we are born with the capacity to learn such responses from social exposure. Along similar lines, Baumeister & Leary (1995) discuss the *need to belong* as a fundamental human motivation with an evolutionary basis, suggesting that the desire to form and maintain social bonds has implications for both individual and group survival. They contend that, over a period of time, groups select individual characteristics (e.g., social identity and group loyalty) that facilitate social group survival. Caporael (1997) adds that, "in this view, individualistic self-interest is tempered by the requirements of group living" (p. 277).

In sum, the sociobiological and evolutionary psychological approaches suggest that there is a potential genetic explanation for communal social capital contributions on the part

of individuals. However, while contemporary sociobiology has experienced growing visibility in a variety of fields, including psychology, anthropology, and economics, many sociologists are still skeptical of the discipline and as a result, few have attempted to incorporate its propositions into their work (Freese & Powell, 1999). Pierce & White (1999) further suggest that management researchers have not considered evolution as anything more than a metaphor with little theoretical work and even less empirical investigation appearing in the organizational literature. In addition, although evolution and the resulting genetic makeup of individuals may represent a plausible explanation for why humans as a species might engage in cooperative behavior in the absence of immediate individual reward, there remain other likely explanations for individual differences in such behavior. Thus, the further consideration of additional approaches seems warranted.

Dispositional View

Another potential explanation for why an individual might be motivated to contribute to the communal social capital of an organization is based on an individual differences or dispositional approach, based on the belief that personal characteristics can aid in explaining individual attitudes and behavior (Staw & Ross, 1985). In studying social dilemma situations where individuals are faced with a decision to act upon self-interest or in the interest of a collective, social psychologists have identified one such individual difference variable that has been referred to as social motives or social values (Messick & McClintock, 1968). Social values have been defined and measured in terms of the weights that individuals assign to their own and others' outcomes (McClintock & Allison, 1989). Messick & McClintock note that three particularly common social value orientations are *cooperative* (concerned with maximizing joint gain), *individualistic* (concerned with

maximizing one's own welfare), and *competitive* (concerned with maximizing the difference between one's own outcomes and the outcomes of others in the same social environment). Previous research has confirmed that, as predicted, cooperative behavior is significantly more likely to be displayed by cooperators than by competitors or individualists (see Messick & Brewer, 1983 for a review). Thus, social value orientation is one individual difference variable that may potentially influence individual contributions to communal social capital.

A construct similar to the social values construct is *equity sensitivity*, which emerged from the literature on equity theory and justice perceptions (Adams, 1963, 1965; Huseman, Hattfield, & Miles, 1987). According to Huseman et al., individuals react in consistent but individually different ways to perceptions of both equity and inequity due to the fact that they have different equity preferences. Empirical evidence supports the existence of three distinct categories of equity sensitivity, which range from *entitlednesss* (net "taking") to *equity sensitivity* (balanced giving and taking), to *benevolence* (net "giving"; see Bing & Burroughs, 2001). Similar to social value orientations, these equity sensitivity profiles are likely to serve as significant predictors of communal social capital contributions, with individuals high in benevolence or equity sensitivity being more likely to contribute to the communal social capital of an organization than individuals high in entitledness.

Finally, proponents of the dispositional or individual differences approach to understanding individual behavior also include personality theorists whose research is typically concerned with how individuals think, feel, and act (Ehrenreich, 1997; Funder, 1994), as well as cultural value theorists who contend that interpersonal behavior is influenced by values that are presumed to be formed in early childhood and are relatively

stable over time (cf. Adler, 1997; Hofstede, 1980, Kluckhohn & Strodtbeck, 1961). One such individual difference variable likely to influence investments in communal social capital is collectivism, or a general orientation toward group goals and a proclivity to cooperate in group endeavors (Hofstede, 1984; Wagner, 1995). Eby & Dobbins (1997) suggest that collectivism differs from traditional group attraction constructs such as cohesiveness in that the former is context free. This supports the present conceptualization of collectivism as an individual difference variable rather than as a variable based on situational influence.

Nested within the collectivism construct is a specific value referred to as dispositional group loyalty, which is focused on predispositions related to motivation to achieve group goals and to defend group prestige (James & Cropanzano, 1994). James & Cropanzano more specifically define group loyalty as, "...adherence to a social unit to which one belongs, as well as its goals, symbols, and beliefs" (p. 179). They argue that to the extent that groups tend to be important to an individual's self perception, dispositional group loyalty will exist. Further, their research showed that dispositional group loyalty significantly predicted individual involvement in group-based organizational activities, favorable attitudes toward the organization, and the inclination to engage in behaviors for the benefit of the organization. These findings are consistent with the work of Triandis (1995) who suggested that individuals with a collectivistic orientation are more likely to define themselves in terms of group memberships and are also more likely to subordinate personal goals to the goals of the collective than are those with an individualistic orientation. In sum, it can be inferred that the greater an individual's collectivistic orientation, the more likely that individual would be to 1) engage in behavior that is directed toward benefiting the

collective as a whole, and 2) subordinate self-interests, if necessary, to the interests of the collective, both of which are behaviors in line with individual investments in the communal social capital of an organization.

While these individual difference arguments may be compelling in explaining collective oriented behavior, many researchers also look beyond the various individual difference variables and consider as well the basic process of adaptation through which people interact with their social environment (Ehrenreich, 1997). Coleman (1987) suggested the need to move beyond an individual difference explanation for why some individuals might engage in behavior such as contributing to a collective good while others might not. He suggested that it is necessary to consider an explanation that accounts for the rational actions of individuals. Neoclassical economists, as well as expectancy theorists, have successfully utilized such an approach based on rational choice to explain a variety of work-related attitudes and behaviors. Thus, consideration of an instrumental explanation for communal social capital investment behavior also seems warranted.

Instrumental View

A fundamental assumption of human rationality in neoclassical economics is that individuals behave in a self-interested manner and seek to maximize their expected individual returns (Becker, 1962; Gupta, Hofstetter, & Buss, 1997). Thus, the theory of rational choice might suggest that individuals would invest in the communal social capital of an organization to the extent that such an investment would result in greater personal outcomes. There are certain situations, however, where the actual behavior of decision-makers appears to violate the basic assumptions of "rational choice" (cf. Becker, 1962; McCormick, 1997; Tversky & Kahneman, 1986). A specific example of this is when

individuals make contributions to a public good from which they could conceivably benefit without making a contribution (Coleman, 1987). Communal social capital is one such public good. Considerable research in the area of social dilemmas has been conducted in an attempt to better understand why individuals might contribute to a public good when it appears that doing so goes against self-interests (see for instance, Axelrod, 1984; Axelrod & Hamilton, 1981; Brewer & Schneider, 1990; Kramer & Brewer, 1984). The fundamental problem in a social dilemma situation is that while an individual can benefit from mutual cooperation (in this case communal social capital contributions), each individual can conceivably do even better by "free-riding," thereby exploiting the cooperative efforts of others (Axelrod & Hamilton, 1981). Research in the area of social dilemmas has successfully drawn on relational arguments based on reciprocity (Axelrod, 1984; Axelrod & Hamilton, 1981), as well as collective identity (Brewer & Schneider, 1990; Kramer & Brewer, 1984) to explain individual behavior that appears to favor collective interests over individual rationality. The consideration of social context thus appears to be useful in explaining what, on the surface, appears to be irrational behavior. It follows that developing an understanding of why individuals contribute to the communal social capital of an organization is likely to benefit from the consideration of additional explanations that go beyond those provided by the purely instrumental approach.

Considering the social aspects of exchange in addition to the purely economic aspects may therefore enhance our understanding of why individuals might invest in the communal social capital of an organization. Emerson (1987) draws a useful distinction between social and economic exchange that supports this view that social exchange theory may usefully inform the issue of social capital investment behavior. Emerson states that,

> "...social exchange theory is developing in a way that is radically different from the traditional study of economics. The major difference is this: At its core, neoclassical economic theory views the actor (a person or a firm) as dealing not with other actors but with a *market*. ...Thus, 'rationality' in economic theory might be understood as a property of action taken in markets, rather than a characteristic of actors. ...By contrast, in various forms of social exchange theory, the longitudinal *exchange relation* between two specific actors is the central concept around which theory is organized." (pp. 11-12; italics added)

Based upon this distinction, and given the degree to which social capital is based on relationships between and among individuals (Coleman, 1988), it would appear to be vital to also consider a relational explanation for communal social capital investment behavior on the part of individuals.

Relational View

According to social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960), supplying rewarding services to another, obligates that individual to furnish benefits in turn, thus discharging the obligation. In addition, these theories suggest that over time the gradual expansion of mutual service is accompanied by the parallel growth of mutual trust. Thus, drawing on social exchange theory and the norm of reciprocity, it would appear that a fairly compelling explanation for individual contributions to the communal social capital of an organization might be that individuals feel more inclined or even obligated to do so based upon their perceptions of the quality of their social exchange relationships both with and within the organization.

Previous research on social exchange in organizations has examined the effects of employees' social exchange relationship quality with their immediate supervisor (Dansereau, Graen & Haga, 1975), with co-workers (Seers, 1989), and with the overall organization (Eisenberger, Huntington, Hutchinson, & Sowa, 1986) on a number of job-

related attitudes and behaviors. However, while studies have examined the effects of social exchange relationship quality on specific attitudinal and behavioral variables such as overall satisfaction (Graen, Novak, & Sommerkamp, 1982), organizational commitment (Eisenberger, Fasolo, & Davis-LaMastro, 1990), turnover (Graen, Liden, & Hoel, 1982), and organizational citizenship (Settoon, Bennett, & Liden, 1996), researchers have yet to examine the direct and/or indirect effects of these relationships on a composite measure of behaviors suggested to represent an individual's contributions to the communal social capital of an organization. Additionally, while most of the previous research in this area has concentrated on one particular social exchange relationship or another, more recent studies have begun to examine the simultaneous effects of an employee's relationship with their supervisor *and* the broader organization (Wayne, Shore, & Liden, 1997), or with their supervisor *and* other members of their work group (Liden, Wayne, & Sparrowe, 2000). The potential benefit of simultaneously considering multiple organizational relationships has been discussed in the literature on organizational commitment. Reichers (1985) for instance, suggests that, "...organizational commitment can be accurately understood as a collection of multiple commitments to various groups that comprise the organization" (p. 469). Thus, the development of commitment profiles for individuals has been suggested as a means of better predicting various outcomes (see Moreland & Levine, 2001 for additional discussion). Several empirical studies have supported the utility of this commitment profiles approach, with findings indicating that individuals can be differentially committed to top management, supervisors, and co-workers, as well as customers and occupations (cf., Becker, 1992; Becker, Billings, Eveleth, & Gilbert, 1996; Meyer, Allen, & Smith, 1993; Reichers, 1986).

These findings regarding commitment profiles suggest that examining individuals' perceived social exchange relationship quality with various organizational constituents (i.e., social exchange relationship profiles) may also be useful in predicting individual contributions to organizational social capital. Further, given that these organizational social exchange relationships may likely be related to one another, there would appear to be inherent benefits in conducting studies that examine their effects simultaneously. Little attention, however, has been given to the simultaneous examination of social exchange relationship quality at all three of the levels most commonly examined empirically (leader, work group, and organization). Additionally, there have been few attempts to examine individual level outcomes associated with behaviors that contribute to the communal social capital of an organization (see Pearce & Randel, 2000 and Pil et al., 2000 for exceptions).

Research Questions

The primary question to be addressed in this study is *what factors explain individual contributions to the creation and maintenance of communal social capital in organizations?* The dispositional, instrumental, and relational views discussed here each offer potential explanations for why an individual might be motivated to make such an investment. However, while it appears that examining individual motivations is crucial to better understanding the social capital investment behavior of individuals, it is also important to consider other factors besides motivation that might influence this behavior. Previous theoretical work concerning the creation of intellectual capital (Moran & Ghoshal, 1996; Nahapiet & Ghoshal, 1998) and social capital (Adler & Kwon, 2002), suggests that contributions to the social capital of a collective are likely to depend not only on individual motivation, but also on individual ability and opportunity to make such an investment.

Thus, in addition to attempting to understand *why* individuals might be willing to contribute to communal social capital, the issue of *how* individuals make such contributions will also be considered.

As previously suggested, prior research has examined various individual outcomes associated with the amount of one's individual social capital (e.g., Burt, 1992, 1997; Friedman & Krackhardt, 1997). Research has also examined various collective outcomes associated with the level of social capital (of the communal form) found within a collective (e.g., Fukuyama, 1995; Putnam, 1993). We still know very little, however, about specific individual returns associated with investments in the communal social capital of an organization. Thus, a secondary research question to be addressed in this study is *in what ways do individual contributions to the communal social capital of an organization affect individual, work-related outcomes?*

Research Contributions

By examining the effects of perceived social exchange relationship quality within an organization on the social capital investment behavior of individuals, the current study has the potential to make a number of significant theoretical and practical contributions. First, the results of this study should inform the social capital literature by adding to our understanding of why individuals might contribute to the communal social capital of an organization even though they themselves may benefit only indirectly. Second, the results of this study should also inform the literature on organizational social exchange relationships in at least two ways. For one, the study aims to provide a link between the literature on organizational social exchange relationships and that on social capital in organizations. This will be accomplished by drawing on social exchange theory and the

norm of reciprocity to theoretically suggest and then empirically examine the relationship between social capital investment behavior (a composite measure of behaviors that represent an individual's contributions to the communal social capital of an organization) and perceived social exchange relationship quality. Additionally, the current study should inform the social exchange literature through its simultaneous consideration of three of the most common forms of social exchange relationships within an organization (leader-member, team-member, and organization-member). Previous research has generally investigated the effects of only one of these exchange relationships or another on various work-related attitudes, behaviors, and performance outcomes. And, while more recent research has begun to examine the simultaneous effects of two forms of social exchange relationships within a single study, the consideration of the potential effects of including a third form of social exchange has generally been limited to brief discussion commentary and calls for future research (see the recent work of Cole, Schaninger, & Harris, 2002 for an exception).

Finally, the current study has the potential to make a practical contribution by providing direction to organizations regarding which social exchange relationships are likely to have the greatest impact in terms of promoting contributions by employees to the communal social capital of the organization. Developing this understanding could enable organizations to more effectively allocate attention and resources to the development of those exchange relationships most likely to result in individual behavior that adds to the organization's store of social capital.

Structure of the Dissertation

This dissertation is organized into six chapters: Introduction, Literature Review, Theoretical Model and Hypotheses, Methods, Results, and Discussion and Implications. In this introductory chapter, I have briefly discussed the motivation for this study including the statement of the problem and the specific research questions to be addressed. I have also articulated the anticipated contributions of the study to both research and practice. In the second chapter, I review the relevant literature on social capital, focusing largely on the communal or public goods form of the construct. In addition, I briefly review the literature on social exchange theory and the norm of reciprocity, including a review of the most commonly researched forms of social exchange relationships in organizations (leader-member exchange, team-member exchange, and perceived organizational support). In the third chapter I discuss how the social capital and social exchange relationship literatures may inform one another as I present a theoretical model depicting suggested relationships between key constructs, and offer specific hypotheses to be tested. In Chapter IV, I describe the research site, discuss the measures used to operationalize the constructs examined in the study, and discuss the methods utilized for analyzing the collected data and testing the stated hypotheses. Results of the tests of the hypotheses are presented in Chapter V along with the results of additional analyses performed on the collected data. Finally, a discussion of the results, as well as implications and conclusions, are presented in Chapter VI.

Chapter II

LITERATURE REVIEW

As suggested in the previous chapter, dispositional and/or instrumental explanations, while potentially informative, may be insufficient to adequately predict the communal social capital contributions of individuals. Given that social capital resides in the relationships between individuals rather than with individuals themselves (Coleman, 1988), it is essential to also consider a relational explanation for why individuals might be motivated to make such contributions. Therefore, the current study examines the effects of perceived social exchange relationship quality in organizations on individual behavior that supports the creation and maintenance of communal social capital. This chapter reviews the literature on social capital and social exchange relationships in an effort to establish a foundation for the development of a theoretical model and specific hypotheses, which will be presented in Chapter III.

The chapter begins with a review of the social capital literature, focusing largely on the organizational or communal form of social capital. This is followed by a review of the social exchange literature, which addresses the fundamental arguments of social exchange theory and the related norm of reciprocity, as well as the individual literatures on each of the most commonly researched forms of social exchange relationships within organizations (i.e., leader-member exchange, team-member exchange, and perceived organizational support). This review is intended to establish the need for additional research that examines the predictive value of social exchange theory and the norm of reciprocity, as they relate to organizationally based social exchange relationships, on individual behaviors that lead to the creation and maintenance of communal social capital within an organization.

Social Capital in Organizations

The term "social capital" was first used by Hanifan (1920), who presented it as a property of communities based on goodwill, fellowship, sympathy, and social intercourse. Hanifan described social capital as a resource that could be utilized to improve community well being. Social capital theory was further developed and popularized by Bourdieu (1985) and later Coleman (1988)[1]. Focusing on both the structure of network ties and the quality of those ties, Bourdieu (1985) defined social capital as "the aggregate of the actual and potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (p. 248; see Paxton, 1999 and Portes, 1998 for additional discussion). In his initial introduction of the social capital construct to the sociology literature in America, Coleman (1988) suggested that social capital could be defined by its function. He asserted that it consists of social structures, facilitates actions of actors within the structure and, unlike other forms of capital, resides in the relations among actors and not in the actors themselves. Drawing on the work of Granovetter (1985), Coleman argued that social capital theory integrates the "undersocialized" economic view and the "oversocialized" sociological view of human action, contending that rational or purposive action takes place within particular social contexts.

While Coleman's initial work generated considerable interest in the concept, his actual definition of social capital has been criticized due to its vagueness, which has resulted in differing and in some ways contradictory conceptualizations of the construct (Portes, 1998; Portes & Sensenbrenner, 1993). One such conceptualization, which is most

commonly associated with the work of Burt (1992, 1997) focuses on the "private goods" aspect of social capital (see Leana & Van Buren, 1999). Burt (1992) offers that social capital is a property of individuals as he defines it in terms of the information and control benefits that accrue to individuals that are able to fill what he calls *structural holes* or gaps between nonredundant contacts in a network. Researchers who have adopted this structural view of social capital based on network position have found that social capital is significantly associated with a variety of individual outcomes such as promotions and bonuses (Burt, 1992, 1997), CEO compensation (Belliveau, O'Reilly, & Wade, 1996), and managers' assessment of career potential (Friedman & Krackhardt, 1997).

Adopting a very different conceptualization and definition of social capital from that described above, Putnam (1995) referred to social capital as "features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit" (p. 67). While this definition is still consistent with Coleman's presentation of the concept, it differs from Burt's (1992) definition in that it singularly focuses on what has been referred to as the "public goods" aspect of social capital (Coleman, 1990; Leana & Van Buren, 1999). Social capital as described by Putnam is based on dense networks of social interaction that reduce incentives for opportunism and broaden the individual participants' sense of self from "I" to "we," thus enhancing the appeal of collective benefits. Whereas Burt's analysis and discussion are motivated by the individual benefits of social capital, Putnam's work is centered on the benefits to a collective. Researchers who have adopted this public goods view have found that social capital at the collective level may

[1] Coleman's work was largely influenced by the work of Bourdieu as well as that of economist Glen Loury (1977). See Portes (1998) for a detailed discussion.

significantly impact collective outcomes such as the economic performance of communities (Putnam, 1993) and nations (Fukuyama, 1995).

Adler & Kwon (2002) note that most research on social capital has tended to adopt one of these perspectives or the other. Researchers who have adopted an external (private goods) perspective have typically focused on the structure of relations an individual maintains with others (e.g., Burt, 1992, 1997; Friedman & Krackhardt, 1997). Researchers who have adopted an internal view of social capital (public good perspective) have generally been more concerned with the nature and quality of relations that exist between members of a collective (e.g., Fukuyama, 1995; Leana & Van Buren, 1999; Portes & Sensenbrenner, 1993). Adler & Kwon describe the distinction between the external and internal perspectives as "bridging" and "bonding" forms of social capital respectively. Oh, Kilduff, and Brass (1999) refer to the external perspective as "linking social capital," based on the fact that it represents connections between otherwise disconnected actors. They use the term "communal social capital" to refer to the internal form of the construct, suggesting that it is based on embedded, community-like networks of social relations.

Adler & Kwon (2002) note that, while most researchers have focused on one of these forms of social capital or the other, some researchers have taken a more neutral approach, thus allowing for either interpretation. In particular, much of the recent work in the area of social capital has incorporated elements of both perspectives or has at least considered both simultaneously (e.g., Baker & Obstfeld, 1999; Lin, 1999; Oh, Kilduff, & Brass, 1999; Pil, Smith, & Leana, 2000). Consistent with this approach, in their theoretical development of the relationship between social capital and organizational competitive advantage, Nahapiet & Ghoshal (1998) draw on Granovettor's (1992) discussion of both structural and relational

embeddedness. *Structural embeddedness* refers to the impersonal linkages between individuals within a social system (see also Burt, 1992). *Relational embeddedness*, on the other hand, considers the nature of personal relationships that individuals have developed with one another through a history of interactions. Both of these forms of embeddedness are concerned with network ties. However, while structural embeddedness considers the overall configuration of one's network ties, relational embeddedness is more concerned with the quality of those ties.

Nahapiet & Ghoshal further contend that social capital also has a cognitive component, representing systems of shared interpretations and meaning between individuals. They, therefore, describe social capital as a three-dimensional construct consisting of a cognitive, structural, and relational dimension. This three-dimensional treatment of social capital proposed by Nahapiet & Ghoshal serves as a useful framework for categorizing and integrating previous theoretical work in the social capital literature. The usefulness of this framework stems from the fact that the dimensions or components of social capital as presented in much of the significant work on the construct can generally be placed in one or more of the categories suggested by Nahapiet & Ghoshal (i.e., the cognitive, structural, and relational dimensions). A summary of this categorization/integration of previous work is presented in Table 1 and will be discussed in the sections that follow[2].

[2] Adler & Kwon (2002) present a similar categorization using ability, opportunity, and motivation as the organizing categories rather than the cognitive, structural, and relational categories presented here.

Table 1
Categorization of Previous Conceptualizations of Social Capital

Hanifan (1920)			• Goodwill • Fellowship • Sympathy • Social Intercourse
Loury (1977)		• Dense Networks	• Social Relationships
Bourdieu (1985)		• Networks	• Mutual Acquaintance and Recognition • Social Obligation
Coleman (1988)		• Structure of Relations (Dense Networks)	• Obligations and Expectations • Social Norms
Burt (1992)		• Network Structure (Structural Holes)	
Portes & Sensenbrenner (1993)			• Collective expectations – Value Introjections – Reciprocity Transactions – Bounded Solidarity – Enforceable Trust
Putnam (1993)		• Networks	• Norms • Social Trust
Fukuyama (1995)			• Shared Values • Norms • Trust
Nahpiet & Ghoshal (1998)	• Shared Codes and Language • Shared Narratives	• Network Ties • Network Configuration • Appropriable Organization	• Trust • Norms • Obligations • Identifcation
Leana & Van Buren (1999)			• Shared Trust • Associability
Lin (1999)		• Network Ties	• Tie Strength

Dimensions of Social Capital

Cognitive Dimension. The cognitive dimension of social capital as articulated by Nahapiet & Ghoshal (1998) is represented by shared language and codes as well as shared narratives (i.e., myths, stories, and metaphors). They suggest that shared language, codes, and narratives facilitate the creation of collective knowledge or "shared cognition" by enhancing the communication and interaction processes between members of a collective. Levine & Moreland (1991) add that this shared cognition is a key component of work group culture. Further, they suggest that these shared thoughts of a group have often been viewed in terms of knowledge about the group itself, knowledge about group members, and knowledge about the work that they perform.

Shared knowledge as described here can be a valuable organizational resource leading to enhanced performance due to the fact that members are more likely to interpret cues in a similar manner, make compatible decisions, and take appropriate actions (Cannon-Bowers & Salas, 2001; Klimoski & Mohammed, 1994). Supporting this view, Moreland (1999) summarizes the work of Henry (1993, 1995a, 1995b) suggesting that 1) members of a group can form *shared beliefs* about their relative expertise, and 2) when these shared beliefs are accurate, groups make better decisions. Additionally, Moreland and his colleagues (see Liang, Moreland, & Argote, 1995; Moreland, Argote, & Krishnan, 1996, 1998) contend that the improved performance demonstrated by groups with shared beliefs as suggested above can be partially attributed to the development of *transactive memory systems*, representing a shared awareness within the group of who knows what and who is good at what (Wegner, 1987, 1995). Thus, one could conceivably expect that organizations with high levels of communal social capital (particularly of the cognitive form) would have

more highly developed transactive memory systems, which might also be expected to facilitate improved performance.

The cognitive dimension of social capital may also represent shared vision, or an embodiment of the collective goals and aspirations of organization members (Tsai & Ghoshal, 1998). Drawing on the work of Krackhardt (1990), Tsai & Ghoshal hypothesized that shared vision is influenced by the structure of organization members' social interactions and that shared vision, in turn, facilitates the development of trusting relationships. An empirical examination of their hypotheses revealed that, while the social interaction was not significantly related to shared vision as anticipated, social interaction and shared vision were both positively related to shared trust within the organization. Their findings provide evidence to support the claims of Nahapiet & Ghoshal (1998) that the three proposed dimensions of social capital are likely to be interrelated in their influence on the creation of organizational resources.

Structural Dimension. A second dimension of social capital proposed by Nahapiet & Ghoshal (1998) is the structural dimension, which refers to specific network ties as well as the overall network configuration of a collective. The structural dimension also incorporates a feature of social capital that has been referred to as "appropriable social organization" (see Coleman, 1988). This aspect of network structure implies that ties of one type may be transferred to another use (e.g., receiving work advice from a friendship tie). The structural dimension of social capital plays a central role in both the public and private goods conceptualizations of the construct, although in different ways. With the private goods approach (i.e., social capital as a property of individuals), social capital is said to be greater in sparse networks where one's direct contacts are not otherwise connected to one another.

Burt (1992, 1997) refers to the "structural holes" that one spans when connecting otherwise non-connected individuals in a network. Grounding his work in social network theory, Burt (1992) suggests that spanning structural holes provides an individual with a unique opportunity to broker information and other resources for personal gain. According to Burt, social capital increases with the number of structural holes spanned. Burt's work is similar to that of Granovetter's (1974) "strength of weak ties" argument, which suggests that there are information benefits that accrue to those with a number of distant or indirect contacts (i.e., weak ties). Burt (1992) contends, however, that whereas the weak ties argument is concerned with the strength of the relationships that span the gap between otherwise unconnected others, the structural holes argument is more concerned with the gap (structural hole) itself. Burt further contends that it is the presence of these structural holes that creates information benefits.

Researchers adopting a public goods approach to social capital (i.e., social capital as a property of a collective) take an opposing stance relative to the effects of network structure on social capital. Rather than suggesting the benefits of sparse networks rich in structural holes, these researchers discuss the benefits of dense networks of redundant contacts, as well as the benefits of network closure (see for example Coleman, 1988; Putnam, 1993). Coleman (1988) contends that greater density of obligations and expectations among members of a collective equates to higher levels of social capital. He further suggests that, in addition to density, network closure leads to higher levels of social capital since it allows for collective sanctioning, promotes trustworthiness, and facilitates the proliferation of obligations and expectations. Putnam (1995) also argues the benefits of dense networks. According to Putnam, dense networks of social interaction reduce incentives for

opportunism and broaden the members' sense of self from "I" to a more inclusive "we," thus increasing the desire for collective benefits. Putnam's argument linking members' sense of identity and identification with the collective to the social structure of that collective provides further indication that the various dimensions of social capital are not necessarily independent of one another, but rather they may actually be mutually reinforcing. For instance, prior research has suggested that we tend to interact with those individuals whom we like, and also that we tend to develop positive affect for those individuals with whom we interact most often (see for example Homans, 1950; Moreland & Beach, 1992; Moreland & Zajonc, 1982). Moreland and his colleagues use the term "affinity" for what they describe to be a "...complex blend of familiarity, attraction, and similarity that strengthens social relations by fostering a sense of closeness among people" (Moreland & Beach, 1992, p. 255). Through a series of studies they concluded that not only are the three constructs interrelated, but the direction of causality between the various pairings of the constructs may actually flow in both directions. Therefore, based upon previous research, it would appear that the relational dimension of social capital may influence the structural dimension and that the structural dimension may in turn influence the relational dimension. In addition, the level of information sharing that takes place within a collective, which was suggested in the previous section to lead to socially shared cognition (or collective knowledge), is also likely to increase with increased interaction, suggesting a link between the structural and cognitive dimensions of social capital.

Relational Dimension. The final dimension of social capital proposed by Nahapiet & Ghoshal (1998) is the relational dimension, which is suggested to include trust, norms, obligations and expectations, and identification. Each of the proposed elements of the

relational dimension has been previously discussed to some extent in conjunction with the cognitive and structural dimensions. This provides further indication of the overlapping and/or mutually reinforcing nature of the proposed dimensions of social capital. In particular, it suggests that the relational dimension influences and/or is influenced by each of the other dimensions. Accordingly, much of the previous work in the social capital literature has addressed the various elements proposed to comprise this relational dimension.

Drawing on the substantial body of trust research, Nahapiet & Ghoshal (1998) state that, "where relationships are high in trust, people are more willing to engage in social exchange in general, and cooperative interaction in particular" (p. 254). They also state that trust secures communication and dialogue, which serves to enhance the cognitive dimension of social capital. Other researchers have discussed the effects of shared (or generalized) trust on collective action and organizational outcomes (Leana & Van Buren, 1999), the effectiveness of national institutions (Brehm & Rahn, 1997), the collective outcomes of communities (Portes & Sensenbrenner, 1993; Putnam, 1993), and the economic performance of nations (Fukuyama, 1995; Paxton, 1999). Coleman (1988) added that trustworthiness is supported by closed network structures, and that trustworthiness in turn facilitates ongoing exchanges of obligations and expectations. Coleman implies that without shared trust (i.e., trust and trustworthiness) the norm of reciprocity and the expectation that individuals will appropriately discharge their obligations would not exist.

Two additional elements of the relational dimension of social capital, obligations/expectations and norms (particularly the norm of reciprocity) appear to be closely related. In fact, much of social exchange theory is predicated on the norm of reciprocity and the belief that we have an *obligation* to discharge favors that have been

performed for us. In addition, Kramer & Goldman (1995) describe norms as "*expectations* that bind." Obligations may be distinguished from generalized norms, however, in that obligations are typically incurred within a particular personal relationship, whereas norms are suggested to represent a degree of consensus in a given social system (Coleman, 1990; Nahapiet & Ghoshal, 1998). This distinction between generalized norms and specific obligations will be discussed in the following section at greater length in the context of social exchange. Much of the previous research on the public goods approach to social capital has included discussions of generalized norms (e.g., Fukuyama, 1995; Putnam, 1995), specific obligations (e.g., Bourdieu, 1985), or both (e.g., Coleman, 1988; Nahapiet & Ghoshal, 1998; Portes & Sensenbrenner, 1993).

A final element of the relational dimension of social capital as proposed by Nahapiet & Ghoshal (1998) is identification, or "the process whereby individuals see themselves as one with another person or group of people" (p. 256). It has been suggested that identification with a collective enhances concern for collective processes and outcomes and increases opportunities for exchange (Kramer, Brewer, & Hanna, 1996; Lewicki & Bunker, 1996; Nahapiet & Ghoshal, 1998). Identification is, thus, likely to play a key role in the social capital investment behavior of individuals in that it may influence an individual's motivation to invest in communal social capital in general, and it may also influence the level at which an individual chooses to invest in communal social capital (i.e., formally defined group, socially defined group, organization, etc.). Portes & Sensenbrenner (1993) offer a similar argument, as well as empirical support, in their discussion of "bounded solidarity" as a component of social capital. They describe bounded solidarity as an emergent sense of "we-ness" among those confronting a similar difficult situation. Similar

to identification, according to Portes & Sensenbrenner, bounded solidarity is dependent upon the existence of a collective identity with which members can identify. In addition, as is also the case with identification, bounded solidarity is suggested to lead to altruistic support of members of the collective and collective goals, rather than self-interested behavior.

In sum, while the dimensions of social capital and the value of social capital to individuals and organizations have received considerable attention from organizational researchers, an issue that has received less attention is the examination of likely antecedents and outcomes of individual contributions to the social capital of an organization. It is these antecedents and outcomes that are of primary interest to the present study, particularly those associated with the relational dimension of the construct. Given this focus on the relational dimension of social capital, an examination of the social exchange theory literature (particularly as it pertains to organizations) would likely inform our understanding of why individuals might contribute to communal social capital. Thus, in the next section I will briefly review the literature on social exchange theory and social exchange relationships in organizations.

Social Exchange Theory and the Norm of Reciprocity

Social exchange refers to the voluntary actions of individuals that are motivated by the returns they are expected to bring from others (Blau, 1964). According to Blau, the basic principle underlying social exchange is that by supplying rewarding services to another, one obligates that individual to furnish benefits in turn, thus discharging the obligation. However, since there is no way to assure what one considers to be an appropriate return for these rewarding services (favors), social exchange requires trusting

others to reciprocate accordingly. By the same token, the act of discharging their obligations allows others to demonstrate their trustworthiness. Over time, the gradual expansion of mutual service is accompanied by the parallel growth of mutual trust (Blau, 1964). This process is largely fueled by a generalized *norm of reciprocity*, which suggests that we owe others certain things because of what they have done for us in our previous interactions with them (Gouldner, 1960). Many scholars over the years have noted the importance of reciprocity in exchange relationships. Reciprocity has been referred to as *the vital principle of society* (Hobhouse, 1906), *almost a primordial imperative which pervades every relation of primitive life* (Thurnwald, 1932), and *the schema upon which all contacts among men rest* (Simmel, 1950).[3]

Gouldner (1960) contends that reciprocity contributes significantly to the stability of social systems, stating that it is morally improper to break off relations with those to whom you are still indebted. Similarly, Malinowski (1932) suggested that reciprocity represents a sociological explanation for conformity. According to Malinowski, conformity to norms arises out of the obligations that individuals owe to one another. Although most treatments of reciprocity in the literature maintain that it is a normative concept and that it is based on obligations, there are also some clear distinctions between the various theories of reciprocity that have been offered. According to Gouldner (1960), reciprocity entails two obligations, 1) helping a person who has helped you, and 2) not injuring that person. Mauss (1925), however, offered three conditions of reciprocity. He suggested that the obligations of reciprocity include 1) giving gifts, 2) receiving gifts when offered, and 3) repaying for gifts received. While Gouldner's conception of reciprocity deals with the latter obligation, it does not address the independent moral obligations suggested by Mauss's first two conditions.

[3] See Gouldner (1960) for additional discussion on historical views of reciprocity.

Expanding upon the work of both Malinowski (1922) and Gouldner (1960), Sahlins (1972) offered an even more developed view of reciprocity suggesting that it is best represented as a continuum defined by its extremes and midpoint. At one end of the continuum is what Sahlins refers to as *generalized reciprocity* or the solidarity extreme. This form of reciprocity represents acts that are generally regarded as altruistic in that there is no expectation regarding the time, quantity, or quality of reciprocation. At the midpoint of Sahlins' reciprocity continuum is what he labels *balanced reciprocity*, referring to direct exchange. According to Sahlins, balanced reciprocity is less personal and more economic than generalized reciprocity. With this form of reciprocity the expectation is repayment in kind within a finite and narrow period of time. Finally, at the other end of the continuum is what Sahlins refers to as the unsociable extreme or *negative reciprocity*. Sahlins suggests that negative reciprocity is, "the attempt to get something for nothing with impunity" (p. 195). He adds that this form of reciprocity is the most impersonal and economic form of exchange in that the parties of the exchange view one another as opposed interests, each looking to maximize their own utility at the expense of the other.

Other work in various literatures builds upon and/or lends support to Sahlins' (1972) conception of a continuum along which the nature of exchange between individuals may be placed. A brief discussion of relevant examples of this work along with a conceptual integration follows.

Social versus Economic Exchange. Social exchange is distinguishable from *purely* economic exchange in that the former is characterized by unspecified obligations and requires (as well as promotes) trust, while the latter rests on formal contracts stipulating specific quantities to be exchanged (Blau, 1964). A further distinction between these two

forms of exchange can be made in considering the manner in which obligations are discharged. With economic exchange, agreements are enforced and guaranteed. Whereas with social exchange, gratitude establishes a "bond of interaction" between exchange partners, leading to the reciprocity of service (Simmel, 1950). While economists and sociologists have clearly articulated distinctions between economic and social exchange (c.f., Blau, 1964; Williamson, 1975), Granovetter (1985) suggested that views of exchange as purely economic or purely social represent undersocialized and oversocialized views of human action respectively. According to Granovetter, all economic action is embedded within structures of social relations, but individuals do not "...adhere slavishly to a script written for them by the particular interaction of social categories that they happen to occupy" (p. 487). Based on Granovetter's arguments, one can consider exchange type as a continuum where pure economic exchange lies at one end of the spectrum and pure social exchange lies at the other, with most actual exchanges having at least some social component and falling somewhere in between the two extremes.

Communal versus Exchange Relationships. Clark & Mills (1979) make a similar distinction between social and economic exchange. However, arguing that all relationships where individuals give and receive benefits are social, and that many of the exchanges between individuals cannot be quantified monetarily, they use the terms *communal relationship* and *exchange relationship* rather than social exchange and economic exchange. According to Clark & Mills, in a communal relationship individuals are each concerned about the welfare of the other person in the relationship. In addition, they suggest that immediate or comparable repayment of benefits is not expected and is, in fact, viewed as inappropriate in

communal relationships. Thus, the behavior in communal relationships is consistent with the generalized reciprocity discussed by Sahlins (1972).

Exchange relationships as discussed by Clark & Mills (1979), on the other hand, are characterized by individual self interest, with each person in the relationship being concerned with how much he or she receives in exchange for benefiting the other and how much is owed the other for any benefits received. This form of relationship is thus consistent with Sahlins' (1972) conceptualization of balanced reciprocity and potentially negative reciprocity, in the case of an exchange relationship where there is a failure to repay benefits received (see Clark, 1984).

Social Value Orientation. Within a social exchange perspective, social values can be conceived of as individuals' preferences for their own and others' outcomes (Maki & McClintock, 1983). In outcome-interdependent relationships, individuals have consistently been shown to assign different weights to their own and others' outcomes (see McClintock & Liebrand, 1988). McClintock & Liebrand offer that among the several possible value orientations are *altruism* (maximization of others' gain), *cooperation* (maximization of joint gain with others), *individualism* (maximization of one's own gain), and *competition* (maximization of one's own gain relative to that of others). Relative to the reciprocity and exchange continuum, competition would be situated to the left along with negative reciprocity with individualism and the exclusive focus on self interest slightly further to the right. With a focus on maximizing joint gain, cooperation would fall in the middle of the continuum along with balanced reciprocity and mutuality of interests. Finally, altruism would be placed at the far right of the continuum with generalized reciprocity and concern for others given its focus on maximizing the gain of others.

Cultural Value Orientation. Another overriding factor that may influence how individuals view exchange situations, and thus how they behave in those situations, is cultural value orientation. Researchers have found that cultural value orientations or "integrative ethos" can provide a basis for better understanding differences in human behavior across various parts of the world (Hall, 1976; Hofstede, 1980; Vida, 1999). Hofstede (1980) proposed four basic dimensions of cultures (power distance, uncertainty avoidance, individualism/collectivism, and masculinity/femininity). Considerable research has focused on the individualism/collectivism dimension (see Gomez, Kirkman, & Shapiro, 2000 for a discussion). And, although individualism/collectivism is generally regarded as a culture-level construct, researchers have also begun to examine the construct at the individual level of analysis (cf. Eby & Dobbins, 1997; Gomez et al., 2000).

Hofstede (1980) describes individualism/collectivism as a polarity contrasting the value placed on autonomy and individual initiative (individualism) with that placed on collective identity and interdependence (collectivism). Further, research has shown that individuals with a collectivistic value orientation reciprocate cooperation with more cooperation, while individuals with an individualistic value orientation do not (Chatman & Barsades, 1995; Cox, Lobel, & McLeod, 1991). Thus, in relation to the reciprocity and exchange continuum, individualism would be placed at the left of the continuum (as suggested in the discussion of social value orientations) and collectivism would be placed toward the right of the continuum along with cooperation, mutuality, and concern for others.

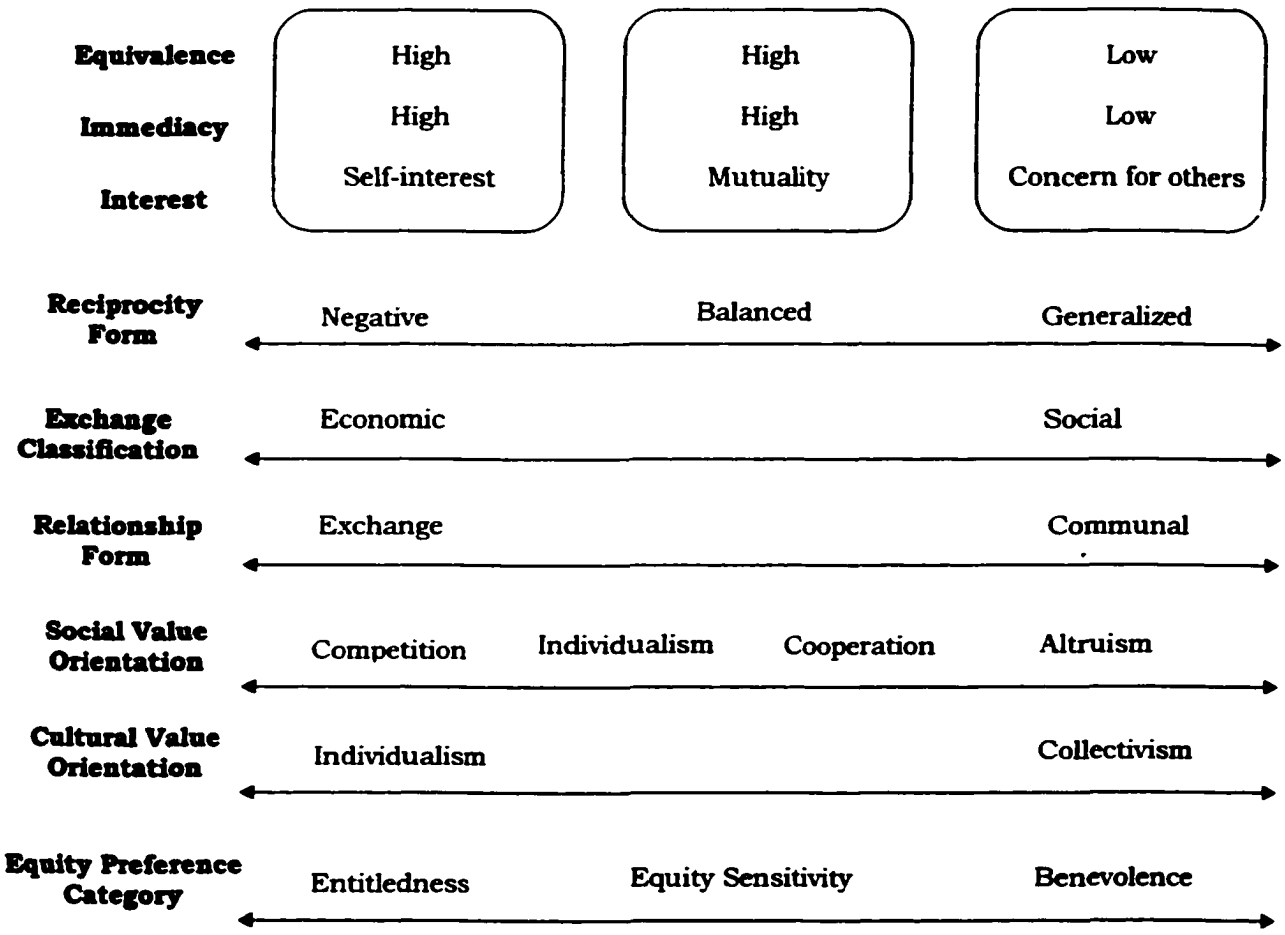
Equity Preference. Finally, along the same lines as the social value orientation is the previously discussed equity sensitivity preference. Similar to Sahlins' (1972) reciprocity

continuum, Huseman et al. (1987) suggest that the continuum of equity preferences can be best described by its extremes and midpoint. At one extreme, is "Entitledness," where outcome/input ratios that exceed those of a comparison other's are preferred. At the midpoint of the continuum is "Equity Sensitivity," or the preference for an outcome/input ratio that is equal to those of a comparison other. Finally, at the other extreme is "Benevolence." In direct contrast to Entitledness, the Benevolence classification represents a preference for an outcome/input ratio that is less than that of a comparison other. If one considers the case where the comparison other is a social exchange partner, then Huseman et al.'s equity sensitivity continuum can also be mapped onto Sahlins' reciprocity continuum. At one extreme is Entitledness, where individuals are more likely to engage in self-interested behavior characterized by negative reciprocity. This also corresponds to the competitive social value orientation with its focus on maximizing one's gain relative to others. At the midpoint is Equity Sensitivity, represented by individuals who prefer to behave in a form consistent with mutual interests and characterized by balanced reciprocity. This may be likened to cooperation on the social value orientation continuum. And finally, at the other extreme is Benevolence, characterized by individuals whose primary concern is for others and who are thus likely to behave in a manner that could be characterized as generalized reciprocity. This equity preference category with its concern for others is consistent with the altruistic social value orientation.

Sparrowe & Liden (1997) present a figure that succinctly summarizes Sahlins' (1972) conception of reciprocity, highlighting the differences between the various forms of reciprocity on the dimensions of equivalence and immediacy of returns, as well as the

interests of the parties involved in the exchange. A portion of their figure is merged with each of the related works discussed above and is presented in Figure 1.

Figure 1
Reciprocity and Exchange Relationship Continuums[4]



Collectively, the views of reciprocity and exchange discussed in this section suggest that individuals' behavior in (and views toward) an exchange situation are likely to depend upon their primary interest (i.e., self versus others), their expectations regarding the equivalence and immediacy of reciprocation, their social as well as cultural value orientation, and their preferences toward the equity or fairness of the exchange relationship. Each of these approaches is consistent with the notion that exchange may be placed on a continuum based on the extent to which it is viewed as primarily economic or social in nature. It is the consideration of the social context within which exchange may take place that distinguishes social exchange from what can be described as purely economic exchange. Adopting this view of exchange, I now turn to a discussion of the various forms of social exchange that have been articulated in the literature and how they can help to inform our understanding of individual behavior in organizations.

Forms of Social Exchange

Two key dimensions along which social exchange has been previously classified are 1) whether the exchange type is *generalized* or *restricted* (Blau, 1964; Emerson, 1976; Takahashi, 2000), and 2) whether the nature of the exchange relationship is *negotiated* or *reciprocal* (Blau, 1964; Emerson, 1981; Molm, Takahashi, & Peterson, 2000). Generalized exchange represents an indirect rather than a direct correspondence between what individuals give to and receive from one another. With this type of exchange, an individual's beneficial act toward another may not necessarily be reciprocated by that person, but instead by a third party. For example, I may do you a favor and because of my generosity toward you, someone else may do me a favor. You may then at some point do

[4] Figure adapted from Sparrowe & Liden (1997) & Sahlins (1972)

someone else a favor to reciprocate for the favor that I did for you. Following this process, within a defined social context everyone eventually both supplies resources and receives benefits, although not necessarily from the same person (see Takahashi, 2000 for a more detailed discussion of generalized exchange). Ekeh (1974) describes the process of generalized exchange as follows:

> "The individual feels obligated to reciprocate another's action not by directly rewarding his benefactor, but by benefiting another actor implicated in a social exchange situation with his benefactor and himself." (p. 48)

This process of generalized exchange is made possible in part due to reputation effects. An individual's reputation is embodied in the beliefs that others hold regarding how that individual will behave in various situations, and is established largely through observing the actions of that individual when interacting with others (Axelrod, 1984). Thus, if individuals attempt to "free ride" and consistently take (i.e., benefit from favors from others) but never give (i.e., perform favors for others), then it is likely that they would establish a reputation for such behavior ultimately resulting in others choosing to withhold favors from them. Ekeh further adds that such a system of exchange necessitates a credit (or risk-taking) mentality on the part of individuals, and requires high levels of trust. One could thus classify organizational (communal) social capital as presented by Leana & Van Buren (1999) and as discussed in the previous section, as a resource created by generalized social exchange. Consistent with the Ekeh's description of generalized exchange, Leana & Van Buren's proposed components of communal social capital (shared or generalized trust and associability) are not specific to individuals, but instead the collective as a whole.

Unlike generalized exchange, restricted exchange refers to a specific relationship between individuals or entities, where the parties exchange resources directly with one

another. In other words, with restricted exchange if I do something for you, you are then obligated to reciprocate by doing something for me in return. Restricted exchange is perhaps the most common type of exchange, and accordingly it serves as the basis for most of the social network research published in the area of sociology over the past twenty years (Takahashi, 2000). Restricted exchange is also the basis for research on social exchange relationships in organizations, which deals with perceptions of the exchange relationship quality between individuals and/or between an individual and a particular entity (e.g., organization or work group).

Restricted exchanges can be further classified as either *negotiated* or *reciprocal* (Blau, 1964; Emerson, 1981; Molm, Takahashi, & Peterson, 2000). In negotiated exchanges, the parties of the exchange engage in explicit bargaining or contracting processes, which lead to an agreement regarding the specific terms of the exchange. The contractual nature of these exchanges, as well as accompanying mechanisms of contract enforcement, provide a degree of "assurance" that the parties of the exchange will honor their specified obligations. Due to this assurance, however, there is little opportunity for either party to demonstrate trustworthiness. Therefore, shared or mutual trust is less likely to develop in negotiated exchanges (Molm et al., 2000; Yamagishi, Cook, & Watabe, 1998).

In reciprocal exchanges, on the other hand, one party initiates the exchange by performing a beneficial act for another without any assurance that the other party will reciprocate (Blau, 1964; Molm, et al., 2000). Due to the absence of assurance structures, the behaviors of the parties engaged in reciprocal exchanges are more likely to be attributed to personal traits and intentions rather than contract compliance. Thus, feelings of trust and affective commitment are more likely to emerge among parties involved in this form of

exchange. Molm et al. provided empirical support for this assertion by conducting a laboratory experiment in which they manipulated the nature of the exchange between individuals. The results of their study strongly supported their hypothesis that trust in one's exchange partner, as well as related feelings of positive affect and commitment, are greater in reciprocal exchanges than in negotiated exchanges.

This distinction between negotiated and reciprocal exchange can be said to represent the nature or the quality of the exchange relationship. In organizational research, reciprocal exchanges have traditionally been labeled as "high quality" exchanges due to the fact they are based on feelings of mutual respect, trust, and obligation (Graen & Uhl-Bien, 1995). Thinking in terms of Sahlins' (1972) reciprocity continuum, these exchanges would likely be placed somewhere between the midpoint (balanced reciprocity) and the right hand extreme (generalized reciprocity).[5] Negotiated exchanges, on the other hand, have typically been considered to be "low quality" exchanges since they are based primarily on clearly specified, contractual obligations for both parties of the exchange, thus requiring little trust as well as little opportunity to demonstrate one's trustworthiness (Graen & Cashman, 1975; Liden & Graen, 1980). Again, referring to the reciprocity continuum as developed by Sahlins, this form of exchange would fall somewhere between the balanced reciprocity midpoint and the left extreme, which represents negative reciprocity.

To summarize, distinctions have historically been made between purely economic exchanges, characterized by clearly specified contractual obligations, and social exchanges, where obligations are unspecified and individuals must trust that exchange partners will

[5] Sahlins notes that his use of the term "generalized reciprocity" does not have the same meaning as "generalized exchange" as discussed by sociologists. While the former term refers to the nature of an exchange in terms of the immediacy and equivalence of the reciprocation that takes place, the latter is

appropriately reciprocate when favors are performed for them. In addition, social exchange can be further distinguished by the type of exchange (generalized/indirect versus restricted/direct) and the nature or quality of the exchange (negotiated versus reciprocal). Figure 2 provides a graphical depiction of the suggested relationship between these exchange classifications. Further, crossing the two dimensions of social exchange discussed here (generalized—restricted and negotiated—reciprocal) yields four distinct exchange categories (see Figure 3). As shown in Figure 3, communal social capital investment behavior, which was discussed in the above review of the social capital literature, can be considered to be a form of *generalized* and *reciprocal* exchange. While based on trust and reciprocal obligations, the behaviors and expectations associated with communal social capital are generalized to the broader collective rather than to any specific individual. On the other hand, specific forms of social exchange relationships in organizations, which will be discussed further in the following section, are more appropriately classified as *restricted* exchanges, in that they pertain to mutual expectations and obligations that an individual has of a specific individual or to a specific entity. These restricted social exchange relationships may, in turn be classified as *negotiated* exchanges, which represent lower quality contractual arrangements or *reciprocal* exchanges, which are higher quality in nature and are characterized by feelings of mutual respect, obligations, and trust. Also depicted in Figure 3 is the effect of overlaying the reciprocity and equity sensitivity continuums on the exchange classifications. The dotted lines in the figure represent divisions between the continuums' extreme and midpoint categories. The resulting splits suggest that ad hoc transactional exchanges and low-quality social exchange relationships may be characterized by either

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concerned with the lack of direct person-to-person correspondence between benefiting from and performing favors.

balanced or negative reciprocity, with the former being more likely for those with a preference for equity sensitivity and the latter more likely for those with a preference for entitledness. The splits also suggest that high-quality social exchange relationships and communal social capital contributions may be either balanced or generalized, with the balanced reciprocity scenario again being more likely for those with a preference for equity sensitivity, while the generalized reciprocity scenario is more likely for those who prefer benevolence.

Finally, as noted in Figure 3, the exchange classifications presented here could conceivably be viewed as a stage model where exchange quality evolves from low quality, self-interested, generalized exchange, into first low-quality and then high-quality social exchange relationships, which are restricted in nature, and finally to the more generalized exchange form of communal social capital contributions where self-interested behavior is subordinated to collective interests (each suggested stage is numbered accordingly in Figure 3). Clark & Mills (1979) and Chen et al. (1998) both discuss the potential for relationship development similar to that described here. The former discusses relationship development from an exchange to a communal form of relationship, while the latter discusses the expansion of trusting relationships where exchange partners faithfully adhere to their obligations to one another, leading over time to the development of a personal relationship.

In sum, I offer that communal social capital contributions and social exchange relationships in organizations both represent forms of social exchange. The key distinction between the two, however, is that with the former, social exchange is generalized within the overall collective. Whereas with the latter, social exchange is restricted to a specific exchange partner or entity (e.g., supervisor, team, or the "personified organization"). The

specific nature of both, however, is likely to be influenced by individual views/preferences regarding reciprocity and equity.

Figure 2
Social Exchange Classifications

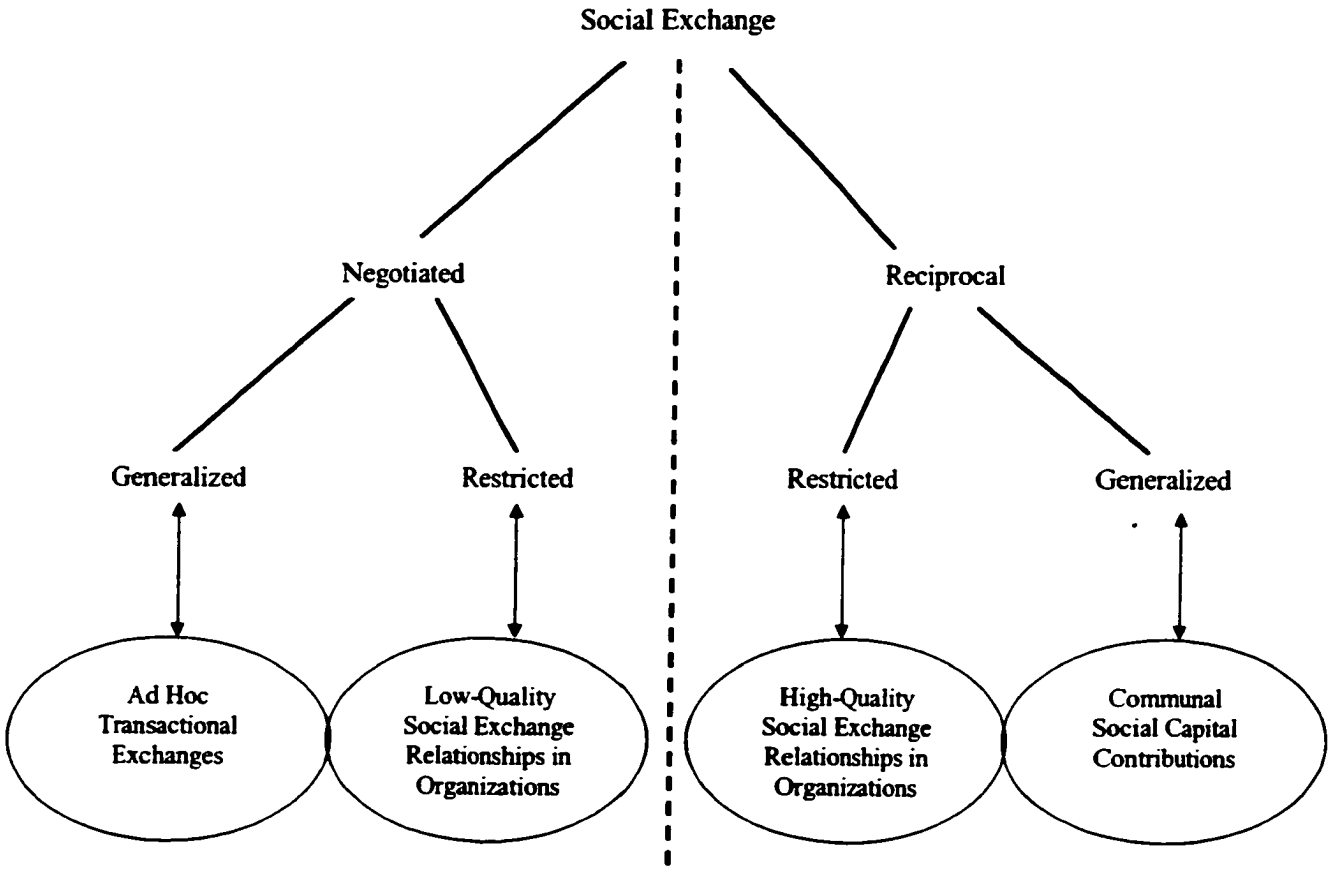
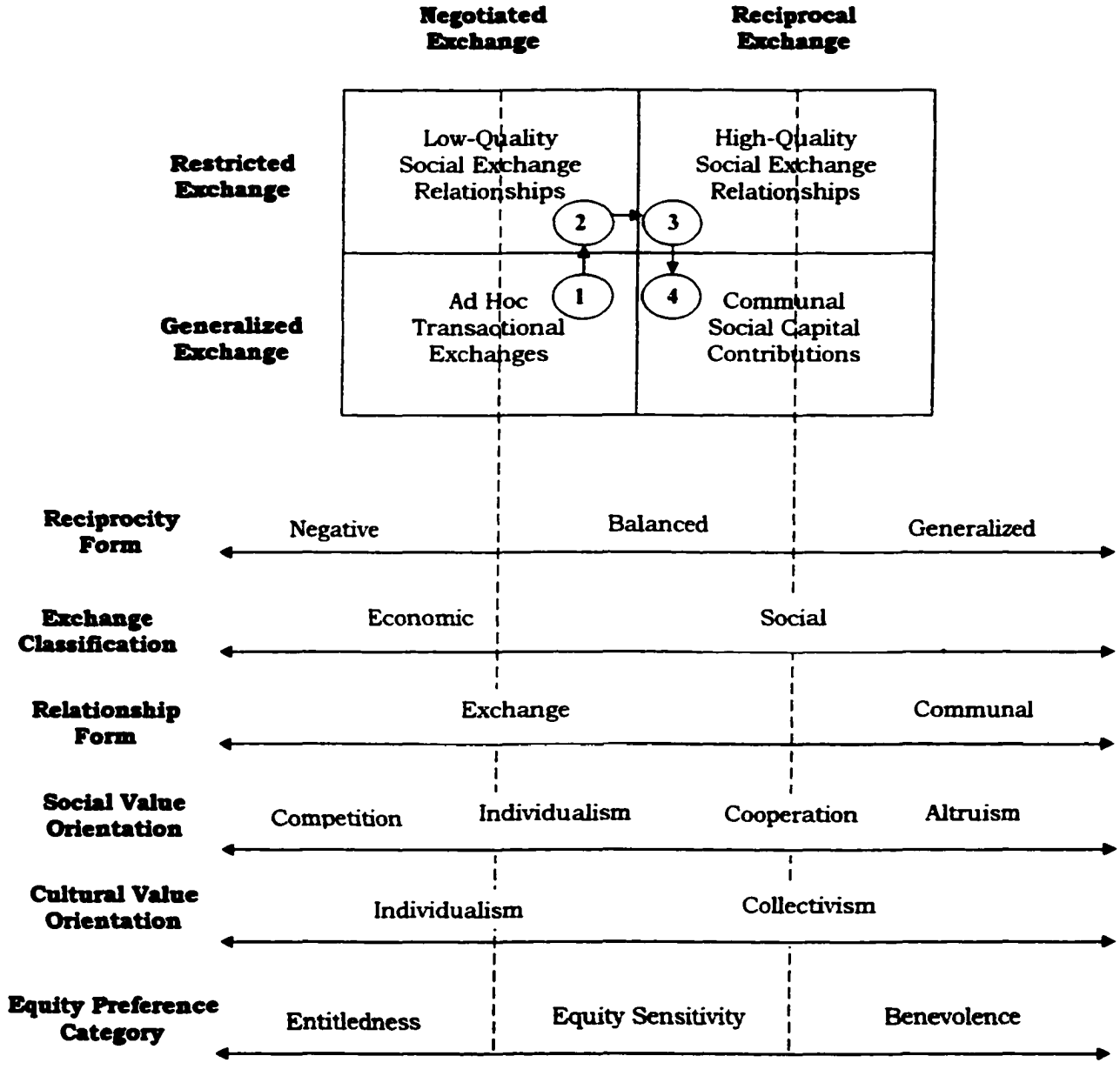


Figure 3
Integrated Conceptualization of Social Exchange and Reciprocity



Social exchange quality as described here has been the focus of considerable research on relationships in organizations (Wayne, Shore, & Liden, 1997; Settoon, Bennett, & Liden, 1996). Prior research has examined the work-related effects of the relationship quality between individuals and their immediate supervisor (for comprehensive reviews see Gerstner & Day, 1997; Schriesheim, Castro, & Cogliser, 1999), between individuals and the other members of their work group (c.f., Seers, 1989; Sherony & Green, 2000), and between individuals and the organization as an entity (e.g., Eisenberger, Huntington, Hutchison, & Sowa, 1986). Each of these forms of social exchange relationships in organizations will be examined below in greater detail, including a discussion of the relevant theory as well as a summary of significant empirical results to date.

Social Exchange Relationships in Organizations

Organizational researchers have frequently drawn upon social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) in their examinations of the employment relationship and other relationships between individuals in the work place. One line of research (leader-member exchange; Graen & Scandura, 1987) focuses on the quality of the relationship between a superior (leader) and a subordinate (member). A similar area of research (team-member exchange; Seers, 1989) considers the effects of an individual's perceptions of the quality of the exchange relationships with the members of his or her work group. Moreland & Levine (2001) also consider person-work group social exchange in their discussion of the work group socialization process. They discuss the importance of work groups in the employee socialization process, suggesting that many organizational socialization tactics rely on work groups and work groups also more likely to satisfy the psychological needs of employees. This, in turn, is likely to foster stronger

commitment to the work group than to the organization. Finally, a third area of research on social exchange relationships in organizations (perceived organizational support; Eisenberger et al., 1986) is concerned with employees' perceptions regarding the degree to which their organization supports them and recognizes their contributions. I will briefly review each of these lines of research in the sections that follow.

Leader-Member Exchange

One of the most crucial and, therefore, one of the most often researched forms of social exchange within organizations is that between an individual and his or her immediate supervisor (Gerstner & Day, 1997; Schriesheim, Castro, & Cogliser, 1999). Originally referred to as the *vertical dyad linkage* (VDL) approach to leadership (Dansereau, Cashman, & Graen, 1973; Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975), and later renamed *leader-member exchange* (LMX; Graen, Novak, & Sommerkamp, 1982), research on this form of social exchange relationship emerged as leadership researchers began to seek alternative means of predicting leader effectiveness. In contrast to the average leadership style (ALS) approach to leadership, which concentrates on the leader as the unit of analysis and maintains that leaders behave in the same prescribed manner toward each member of their group, leader-member exchange theory focuses on the leader-member dyad as the unit of analysis and suggests that the leader and each member of the group have a unique relationship (Graen & Uhl-Bien, 1995).

Early LMX research drew its theoretical basis from role theory (Katz & Kahn, 1978). Later theoretical treatments and empirical examinations of LMX began to also draw upon social exchange theory (Blau, 1964). From the perspective of role theory, it has been suggested that the relationship between leaders and subordinates develops in a three-phase

socialization process that consists of role-taking, role-making, and role routinization (Graen, 1976; Graen & Scandura, 1987). Graen & Scandura further describe these phases as the sampling, role development, and commitment phases (respectively) of the relationship between a supervisor and a subordinate. During this three-phase process, social exchange plays a key role as the dyadic relationship between the superior and the subordinate develops around the dimensions of trust, respect, loyalty, liking, intimacy, support, openness, and honesty.

LMX research draws further on social exchange theory by suggesting that leaders, largely due to time pressures, are only able to develop close relationships with a few key subordinates (Graen, 1976). Thus, an "in-group" (characterized by high levels of trust, interaction, support, and rewards) and an "out-group" (characterized by low levels of each of the aforementioned categories) are formed based on the quality of the exchange relationship that emerges between the leader and each of his or her subordinates (Dienesch & Liden, 1986). Dansereau et al. (1975) describe this distinction as the leader's "cadre" (high-quality relationship, in-group members) versus his or her "hired hands" (low-quality relationship, out-group members). They further suggest that subordinates with whom the leader develops a high-quality relationship are said to enjoy greater "negotiating latitude" in defining their roles and in performing assigned tasks, which is consistent with the previously discussed reciprocal form of social exchange. Those subordinates, however, with whom the leader has a low-quality exchange relationship enjoy very little negotiating latitude and are therefore relegated to the negotiated form of exchange as discussed earlier, which is based primarily upon the specified, contractual obligations of the employment contract. While the majority of the LMX research has tended to focus on the in-group/out-group classification or high-

quality/low-quality exchange relationships, more recent work by LMX theorists suggests that leaders should engage in intentional efforts aimed at forming high-quality relationships with all subordinates (e.g., Graen & Uhl-Bien, 1995; Uhl-Bien et al., 2000).

LMX Outcomes

Prior research has suggested that LMX is significantly related to a variety of individual, work-related outcomes such as performance ratings (Duarte, Goodson, 1993, 1994; Howell & Hall-Merenda, 1999; Liden & Graen, 1980; Liden, Sparrowe, & Wayne, 1997; Scandura & Schriesheim, 1994; Schriesheim, Neider, & Scandura, 1998; Wayne et al., 1997), objective performance (Graen et al., 1982; Vecchio & Gobdel, 1984), job satisfaction (Graen et al., 1982; Green, Anderson, & Shivers, 1996; Liden, Wayne, & Sparrowe, 2000; Major, Kozlowski, Chao, & Gardner, 1995; Schriesheim et al., 1998), career satisfaction (Wayne, Liden, Kraimer, & Graf, 1999), career progress (Scandura & Schriesheim, 1994; Wakabayashi & Graen, 1984; Wayne et al., 1999), turnover (Graen, Liden, & Hoel, 1982; Ferris, 1985), turnover intention (Major et al., 1995; Vecchio & Gobdel, 1984), goal commitment (Klein & Kim, 1998), organizational commitment (Duchon, Green, & Taber, 1986; Liden et al., 2000; Major et al., 1995), innovative behavior (Basu & Green, 1997; Scott & Bruce, 1994), and organizational citizenship behavior (Settoon et al., 1996; Wayne & Green, 1993; Wayne et al., 1997).

In sum, the quality of the relationship between an employee and his or her supervisor appears to be significantly related to a wide variety of individual, work-related outcomes. Some of these outcomes are fairly isolated to the individual (e.g., job satisfaction, career satisfaction, and career progress). While other related outcomes are broader in nature (e.g., performance, turnover, innovative behavior, and citizenship behavior) and are thus more

likely to also have an impact (either directly or indirectly) on others in the organization and/or the organization as a whole.

Team-Member Exchange

Another important social exchange relationship in organizations is that between an individual and the other members of his or her work group. Recognizing that this exchange relationship had not been specifically addressed in the literature on social exchange in organizations, Seers (1989) introduced a measure of team-member exchange (TMX), which he proposed as a way to assess the reciprocity between an employee and his or her peer group. Seers suggested that TMX measures an individual's perception of his or her willingness to assist other work group members and to share ideas and provide feedback, as well as measuring perceptions regarding how readily information, help, and recognition are received from other members. In his development of the construct, Seers demonstrated that TMX is distinct from, although related to, leader-member exchange. TMX is similar to LMX in that both constructs focus on the reciprocity between parties to an exchange relationship, and in both cases reciprocity is analyzed in terms of the resources each party brings to bear on the exchange process (Seers, Petty, & Cashman, 1995). However, whereas the LMX construct is designed to jointly assess employee role making and supervisory leadership, the TMX construct is designed to jointly assess employee role making and work group dynamics (Seers, 1989; Seers et al., 1995). In addition, while both TMX and LMX are based on role theory and social exchange theory, TMX differs from LMX in that it is not dyadic. Instead, it involves an individual's perceived relationship with a *group* of peers with whom he or she identifies as a member, rather than with each member individually.

Sherony and Green (2000) have recently extended the work of Seers (1989) and proposed a construct similar to TMX that is based on individual members' perceptions regarding their relationships with *each other member* of their work group. They have termed this construct member-member exchange (MMX), suggesting that similar to LMX it represents a dyadic process between individuals. Accordingly, Sherony and Green's MMX measure assesses relationship quality along similar dimensions used to measure LMX. Although, unlike previous measures of TMX (e.g., Seers, 1989; Seers et al., 1995), the MMX variable provides information regarding the variance or diversity of the quality of relationships between each individual and other work group members. Much of the analysis in the study conducted by Sherony and Green, however, was based on the average level of MMX for each employee, which is in essence congruent to the TMX measure developed by Seers (1989).

Moreland & Levine (2001) in the discussion of their work group socialization model describe a process closely related to team-member exchange. They suggest that work group socialization is built around the psychological processes of evaluation (assessments by the group and the individual of mutual "rewardingness"), commitment, and role transitions (changes in membership status based on revised expectations on the part of the individual and the group). Although work along these lines may inform our understanding work group relationships, the empirical results discussed in the following section are limited to those studies that specifically examined the team-member exchange construct.

TMX Outcomes

Empirical studies have shown that TMX is significantly related to many of the same individual, work-related outcomes shown in prior research to be related to LMX. These

outcomes include performance ratings (Liden et al., 2000; Seers, 1989), job satisfaction (Major et al., 1995; Seers, 1989; Sherony & Green, 2000), turnover intention (Major et al., 1995), turnover (Hellman, Witt, & Hilton, 1993), and organizational commitment (Hellman et al., 1993; Liden et al., 2000; Major et al., 1995; Sherony & Green, 2000). Further, in addition to these individual-level results, at least one study has shown that an aggregated measure of TMX was significantly related to departmental production efficiency (Seers et al., 1995).

Perceived Organizational Support

At the organizational level, the social exchange relationship between an employer and an employee may be represented by the employee's global beliefs concerning the degree to which the organization values their contributions and cares about their well-being. This belief has been referred to in the literature as perceived organizational support (POS; Eisenberger et al., 1986). The notion that an organization could serve as an exchange partner in the eyes of an employee is not new, however, and is in fact consistent with the view proposed by Levinson (1965), who suggested that individuals engage in an anthropomorphic ascription of dispositional traits to the organization leading to organizational personification. Levinson contends that this occurs because individuals tend to view actions by organizational agents as actions of the organization itself. Thus, the personification of the organization is assumed to represent an employee's distillation of views concerning all organizational members who control material and/or symbolic resources with which they are concerned (Eisenberger et al., 1986).

The view of the organization as a party with which individuals may have an exchange relationship has also been supported by psychological contract researchers who

suggest that employees form an implicit contract with the organization as an entity based on perceived mutual obligations (see for example, Rousseau, 1989, 1990; Shore & Tetrick, 1994). According to research in this area, continued reciprocation of resources beyond those required by formal agreements in the employment relationship strengthens the psychological contract. Conversely, an employer's failure to fulfill the implied obligations of the psychological contract is suggested to reduce employees' inclination to expend work effort beyond their specified job responsibilities (Robinson & Morrison, 1995; Rousseau & Parks, 1993).

Similar to both leader-member exchange and team-member exchange, the theoretical foundation for the perceived organizational support construct is drawn from social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960). The basic premise of POS is that an employee's commitment to the organization, as well as the amount and nature of effort expended on behalf of the organization, is strongly influenced by their perceptions of the organization's commitment to them (Eisenberger et al., 1986). Whereas organizational commitment reflects employees' attitudes toward the organization, POS represents employees' perceptions of the organization's attitude toward them (Shore & Tetrick, 1991). Eisenberger et al. further argued that POS strengthens employees' effort-outcome expectancy in addition to their affective attachment to the organization, which results in greater effort to fulfill the organization's goals. They argued that this increased work effort should stem from an exchange ideology based upon the norm of reciprocity. This is consistent with the arguments of Scholl (1981) who suggested that, in an organizational context, reciprocity is the notion than an employee should repay benefits or opportunities through future performance. Thus, the literature suggests that many of the

same basic arguments that have been made regarding the reciprocal nature of the exchange relationship between employees and their immediate supervisor, as well as the exchange relationship between employees and their work group, also hold true for relationship between employees and the organization as an entity.

POS Outcomes

There is considerable empirical support for the suggested relationship between POS and organizational commitment (e.g., Eisenberger, Fasolo, & Davis-LaMastro, 1990; Guzzo, Noonan, & Elron, 1994; Hutchison, 1997; Hutchison & Garstka, 1996; Masterson, Lewis, Goldman, & Taylor, 2000; Settoon et al., 1996; Shore & Tetrick, 1991; Shore & Wayne, 1993; Wayne et al., 1997). There is also evidence to support the suggested relationship between POS and effort expended on behalf of the organization beyond the scope of specified job responsibilities or organizational citizenship behavior (e.g., Eisenberger et al., 1990; Masterson et al., 2000; Moorman, Blakely, & Niehoff, 1998; Shore & Wayne, 1993; Wayne et al., 1997; Witt, 1991). In addition, other studies have found POS to be significantly related to performance ratings and objective performance (Armeli, Eisenberger, Fasolo, & Lynch, 1998; Eisenberger et al., 1990), absenteeism (e.g., Eisenberger et al., 1986, 1990), turnover intentions (Guzzo et al., 1994; Masterson et al., 2000; Wayne et al., 1997), innovative behavior (Eisenberger et al., 1990), and job satisfaction (Masterson et al., 2000).

In sum, there is considerable overlap between the outcome measures associated with POS and those associated with both LMX, and TMX. Given this overlap, in order to truly understand the distinct effects of each of these social exchange relationships, it is necessary to simultaneously examine the effects of each of these exchange forms on various outcome

measures of interest. The following section reviews significant studies that have attempted to examine the differential effects of the various forms of social exchange in organizations.

Simultaneous Consideration of Multiple Exchange Relationships

Much of the empirical research on exchange relationships in organizations has concentrated on only one form of exchange or another. A few studies, however, have examined the differential effects of LMX and TMX. In addition, other recent studies have begun to examine the differential effects of LMX and POS. Further, as previously discussed, research on commitment profiles has examined the simultaneous effects of differential commitment to multiple organizational constituents on a variety of outcomes. Studies such as these serve as the platform upon which the present study will attempt to build. Therefore, the specific results of several key studies in this area are reviewed below.

Multiple Commitments

As was previously discussed, Reichers (1985) suggested that individuals may be differentially committed to different constituencies within an organization (e.g., supervisor, work group, or top management). Several studies have provided empirical support for this multiple foci approach to commitment (see Meyer & Allen, 1997 for a brief review). Becker (1992) found that employee commitment to top management, supervisor, and work group each contributed significantly to the prediction of job satisfaction, intention to quit, and prosocial organizational behavior beyond the effects of commitment to the organization. In another study of 1,217 recent college graduates, Becker et al. (1996) also found that individuals did indeed distinguish between commitment to their organization and commitment to their supervisor. In addition, they found that commitment to supervisor was

more strongly related to performance than was commitment to the organization. Siders, George, & Dharwadkar (2001) obtained similar results in a study that they conducted with 389 sales executives. They found that the sales executives exhibited clear distinctions between commitment to the organization, commitment to their supervisor, and commitment to the customer. Further, they found that commitment to supervisor had a significant influence on objective job performance above and beyond the influence of commitment to the organization. Becker et al. (1996) draw upon Lewin's (1943) field theory in suggesting that local commitment foci (e.g., supervisor or work group) are more psychologically proximal than are global commitment foci (e.g., the organization). Thus, they can be expected to have a more dominant effect on behavior. Mueller & Lawler (1999) draw a similar conclusion from studies they conducted in a school system and an Air Force base. Mueller & Lawler, however, focus on the effects of "nested" organizational units, and as predicted, their data showed that more proximate focal units (e.g., school) had stronger commitment effects than more distant units (e.g., school system and/or profession). They argue that this is largely due to the fact that employees' commitment to a particular organizational unit in the structure will be affected primarily by the work conditions that are created and controlled by that particular unit, and that these effects are likely to be stronger for more proximate units due to the day-to-day experiences that take place with and/or within those units.

Combined, the studies in this section suggest that there is merit to the simultaneous consideration of individual relationships with multiple constituencies within an organization. The following two sections discuss the results of specific studies that have simultaneously

examined two of the three most commonly studied organizational social exchange relationships (LMX, TMX, and POS) within a single study.

Leader-Member Exchange and Team-Member Exchange

The TMX construct emerged as a role-making construct suggested to be complementary to LMX (Seers, 1989). As such, much of the research on TMX has focused on examining whether the construct explains additional variance beyond LMX. In his initial development of the construct, Seers (1989) conducted a study among blue-collar industrial workers, which showed that TMX did indeed add to the prediction of job satisfaction beyond the variance explained by LMX. The results of the study also showed that TMX was significantly related to rated performance, suggesting that at least in some settings, peers may have a greater influence on the role-making process than does the supervisor. Seers, however, acknowledged that further research is needed to establish the relative importance of peers and supervisors in this process.

A further examination of the differential effects of TMX and LMX was conducted by Scott and Bruce (1994), who studied the effects of both TMX and LMX on innovative behavior in a large research & development facility. While LMX was significantly related to innovative behavior as expected, contrary to predictions, TMX was not. Scott and Bruce suggested that a possible explanation for the lack of a significant relationship between TMX and innovative behavior was the fact that there was a low degree of intragroup task interdependence among the teams studied. Thus, they suggest that task type may moderate the relationship between TMX and certain individual outcomes.

Major, Kozlowski, Chao, & Gardner (1995) also examined the effects of TMX and LMX within the same study. In a longitudinal study of new hire expectations and

socialization outcomes, they found that both LMX and TMX were significant predictors of organizational commitment, turnover intention, and job satisfaction. Additionally, their results showed that high-quality LMX and TMX relationships both ameliorated the negative effects of unmet expectations. Majors et al., however, do not report on the significance of the effects of either TMX or LMX on the dependent variables studied while controlling for the other. While TMX had significant effects when considered individually as well as when considered with LMX as a set, the effects were relatively small and it is unclear whether TMX explained significant variance in the outcome measures when LMX was also in the model.

A more recent study conducted by Liden, Wayne, & Sparrowe (2000) sheds additional light on this issue. In their study of 60 work groups in a large service company, Liden et al. found that LMX and TMX, when considered concurrently, equally predicted organizational commitment. In addition, their results showed that TMX significantly predicted rated job performance, while contrary to expectations and previous research, LMX did not.

In yet another recent study, Sherony and Green (2000) examined work relationships in 21 work groups in a sales and engineering company, and found that average MMX (a measure closely related to TMX) significantly predicted organizational commitment, as well as job satisfaction, after controlling for the effects of LMX. Contrary to previous findings, however, LMX was no longer a significant predictor of commitment and job satisfaction after controlling for average MMX. Sherony and Green also predicted that employees with both high average MMX levels and high LMX levels would experience the highest levels of

commitment and job satisfaction. The results of their study, however, failed to support their hypothesis.

Collectively, the results of these studies on the effects of TMX and LMX when considered simultaneously suggest that these two forms of social exchange appear to indeed have differential effects on various work-related outcomes. The results, however, are not entirely conclusive and suggest a need for further examination across a variety of organizational contexts.

Leader-Member Exchange and Perceived Organizational Support

While the previously discussed studies concurrently examined the effects of the relationship quality between employees and their immediate supervisor and between employees and their work group, other recent studies have examined the concurrent effects of employees' perceived relationship quality with their supervisor and the perceived quality of their relationship with the organization as an entity.

In an effort to examine whether individuals engage in different reciprocation efforts based upon the exchange partner, Settoon, Bennett, & Liden (1996) examined the relative contribution of LMX and POS to predictions of organizational commitment, in-role behavior, and citizenship behavior. The results of their study of 28 work groups in a regional hospital showed that, when considered concurrently, LMX and POS were differentially related to the outcome measures examined. Specifically, LMX was significantly related to citizenship behavior, while POS significantly predicted both organizational commitment and in-role behavior. Settoon et al. explain their results by suggesting that employee behaviors and attitudes are differentially related to LMX and POS since employees secure different forms of resources and support from each of these

exchange relationships. In a very similar study, Wayne, Shore, & Liden (1997) examined many of the same relationships tested by Settoon et al. (1996), finding that in a random sample of geographically dispersed, salaried employees form a large U.S. corporation LMX significantly predicted performance rating, citizenship behavior, and favor doing for the supervisor. POS, on the other hand, significantly predicted affective commitment and intentions to quit, but was also significantly related to citizenship behavior. Their results suggest that LMX and POS have similar effects on some work-related outcomes but not others. Providing further evidence relative to the differential effects of LMX and POS on various employee attitudes and behaviors, Masterson, Lewis, Goldman, & Taylor (2000) found that among employees at a large public university, LMX significantly predicted performance, job satisfaction, and citizenship behavior. They found that POS, on the other hand, significantly predicted organizational commitment and intentions to quit, but also predicted job satisfaction and citizenship behavior similar to LMX. Masterson et al., however, differentiated between *supervisor-directed* and *organization-directed* citizenship behavior, finding that the former was significantly predicted only by LMX, while only POS significantly predicted the latter. This suggests that employees do in fact distinguish between exchange relationships and reciprocate accordingly based upon the exchange partner.

Each of the above mentioned studies also examined the relationship between LMX and POS. Settoon et al. found that the two were significantly correlated, but did not attempt to infer any direction of causality. Wayne et al. found that LMX more strongly influences POS than the reverse, while Masterson et al. found that LMX significantly predicted POS, but the directional link from POS to LMX was not significant. It is apparent from these

equivocal results that additional research is needed before conclusions may be drawn regarding the nature of the relationship between LMX and POS.

In sum, the combined results of the studies conducted to date that have simultaneously examined the effects of LMX and TMX or LMX and POS on various work-related outcomes suggest at least two things. First, given that the results are somewhat equivocal, further research of this nature is needed to provide additional evidence and to begin to build a larger body of work upon which firmer conclusions may be drawn. Second, given the recognized need to examine the effects of LMX and TMX or LMX and POS concurrently, it appears that a logical and potentially informative extension would be the simultaneous examination of all three of these social exchange relationship forms (i.e., LMX, TMX, and POS). Based upon my review of the literature, such studies have not yet been conducted, thus representing one area of potential contribution of the present study.

Figures 4A and 4B present a graphical depiction of the focus of prior research on social exchange relationships in organizations as well as the intended focus of the present study. The Venn diagrams depicted indicate that while prior studies have simultaneously examined the effects of either LMX and POS or LMX and TMX on a variety of work-related outcomes, the present study simultaneously examines the effects of all three social exchange relationships on communal social capital contributions. It should be noted, however, that while the Venn diagram in Figure 4B depicts the intersections between LMX, TMX, and POS, the present study actually examines additive effects rather than the multiplicative effects represented by the two-way and three-way interactions.

Figure 4A
Focus of Previous Research on Social Exchange Relationships in Organizations

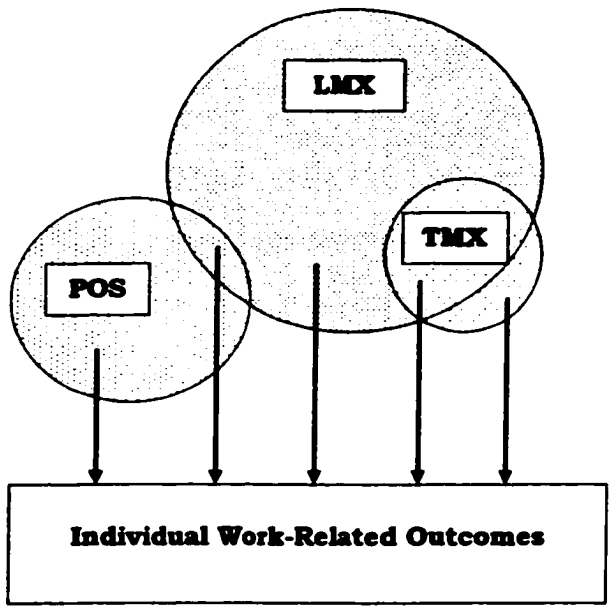
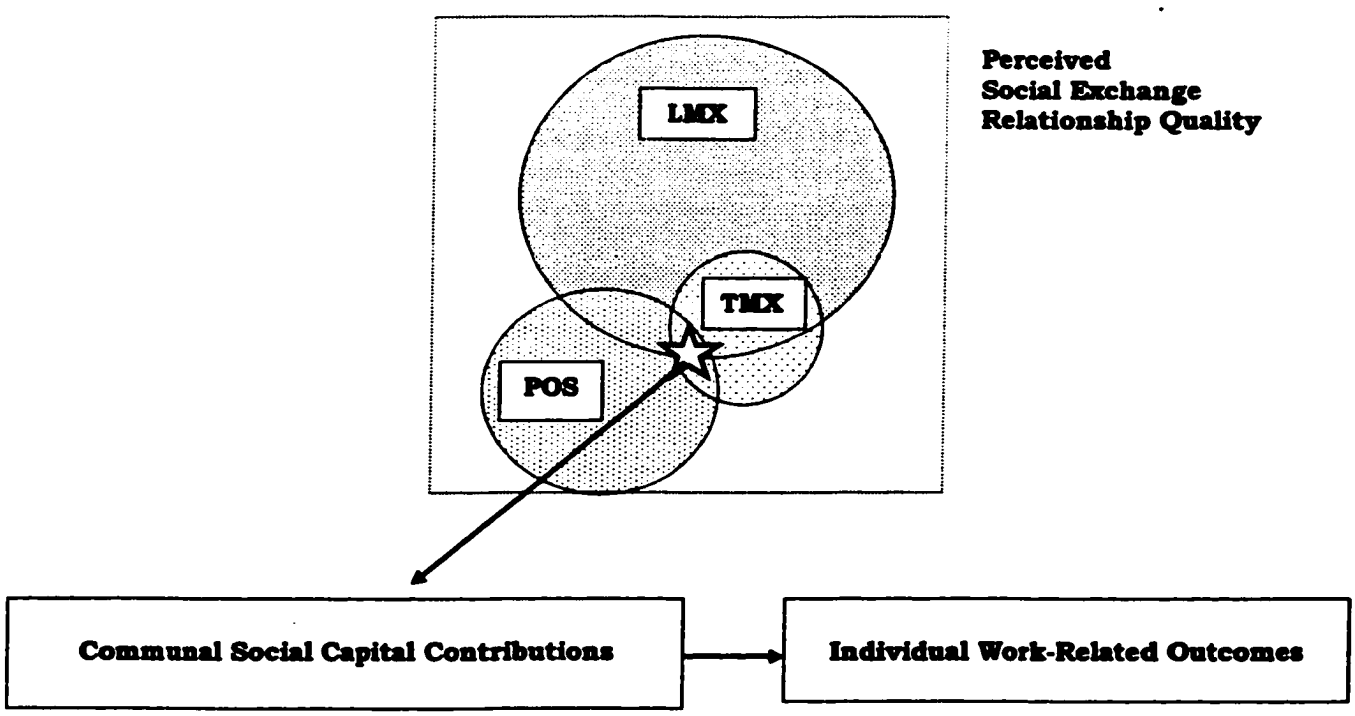


Figure 4B
Focus of Current Study



In the next chapter I will present and discuss the development of a theoretical model that considers antecedents and consequences associated with the communal social capital contributions of individuals. More specifically, I will offer hypotheses relative to the suggested relationship between communal social capital contributions, perceived social exchange relationship quality, and individual work-related outcomes.

Chapter III

THEORY DEVELOPMENT AND HYPOTHESES

This chapter begins with the development of a new construct: communal social capital investment behavior (CSCIB), representing individual contributions to the communal social capital of an organization. The theoretical model to be tested in this study is then presented, and hypotheses are developed relative to each of the specific relationships indicated by the theoretical model.

Communal Social Capital Investment Behavior

Before discussing hypothesized relationships between the factors related to individual contributions to the communal social capital of an organization, it is necessary to first define and develop the communal social capital investment behavior construct. While communal social capital has been described here and elsewhere as an organizational-level construct, its creation and maintenance are in essence dependent upon the specific behaviors of individuals within the organization, as well as the nature of the interactions between those individuals.

Drawing on the three-dimensional conceptualization of social capital presented by Nahapiet & Ghoshal (1998) and discussed in the previous section, I propose that communal social capital is created in large part by behaviors in which individuals engage that are observable by others and that contribute to the cognitive, structural, and relational dimensions of the construct articulated in the previous chapter.

Cognitive Dimension. The cognitive dimension of social capital is suggested to consist of shared codes and language, as well as shared narratives (Nahapiet & Ghoshal, 1998). This dimension of social capital thus falls in the domain of what has been described in the literature as shared cognition, collective interpretation, collective mind, shared meaning, and shared mental models (Klimoski & Mohammed, 1994; Levine & Moreland, 1999). Shared mental models represent knowledge structures that, when held by members of a group, enable that group to accurately understand group tasks, coordinate their actions, and adapt their behaviors to the task demands, as well as to other group members (Cannon-Bowers, Salas, & Converse, 1993; (Levesque, Wilson, & Wholey, 2001). Levine & Moreland (1991) discuss shared mental models in the context of workgroup culture, contending that culture has a cognitive component represented by shared knowledge. This knowledge, according to Levine & Moreland can be about the group, its members, or the work that they perform. Similarly, Cannon-Bowers & Salas (2001) concluded from their review of the literature that in addition to shared attitudes and beliefs, shared cognition is represented by three broad categories of shared knowledge. The first category is task-specific knowledge, which refers to the specific procedures and actions necessary to perform a task. The second category is task-related knowledge, or knowledge that applies across a variety of similar tasks. Finally, the third category discussed by Cannon-Bowers & Salas is knowledge that group members have of one another, which includes the previously discussed concept of transactive memory.

When members of work teams have different mental models about how tasks should be completed, they have a difficult time coordinating their activities (Levesque et al., 2001). When team members share knowledge (as well as attitudes and beliefs), however, it enables

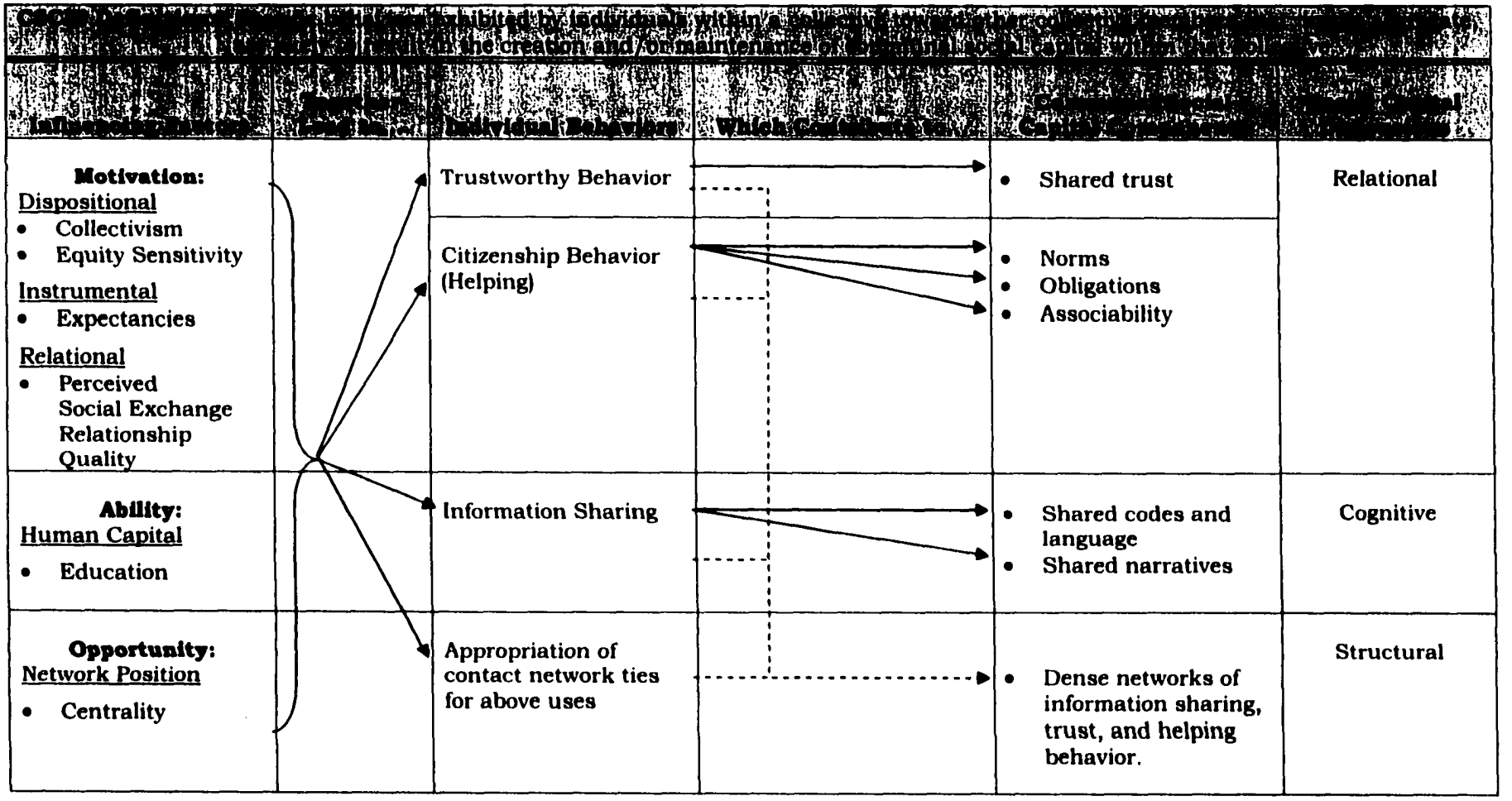
them to interpret cues in a similar manner, make compatible decisions, and take appropriate actions (Cannon-Bowers & Salas, 2001; Klimoski & Mohammed, 1994). Thus, it can be argued that knowledge or information sharing among group members contributes to group knowledge and facilitates collective action. Accordingly, I contend that an observable behavior on the part of individuals that contributes to the cognitive dimension of social capital is the sharing of information within the collective. Greater information sharing among individuals is likely to facilitate the emergence of shared mental models as represented by common language (and codes), as well as shared understanding.

Relational Dimension. According to Nahapiet & Ghoshal (1998), the relational dimension of social capital includes trust (and trustworthiness), norms, obligations, and identification. One observable individual behavior that is likely to contribute to this dimension is behaving in a trustworthy fashion, which should facilitate the building of shared or collective trust (see Leana & Van Buren, 1999; Knez & Camerer, 1994). Another individual action that should result in contributions to the relational dimension of social capital is engaging in organizational citizenship behaviors, or more specifically, engaging in helping behavior that is not explicitly required nor rewarded as part of one's employment contract. Several researchers have stressed the importance of norms and obligations as a relational element of social capital (e.g., Coleman, 1988; Nahapiet & Ghoshal, 1998). Additionally, Leana & Van Buren (1999) offer that associability (i.e., the willingness and ability to subordinate self-interests to those of the collective) is a key component of organizational social capital. I suggest that the extent to which an individual engages in helping behavior should serve as an indicator of associability, as well as norms and obligations (specifically the norm of reciprocity).

Structural Dimension. Finally, the structural dimension of social capital consists of both individual network ties and the overall network configuration of the collective (cf. Burt, 1992; Nahapiet & Ghoshal, 1998; Putnam, 1993). Consistent with the approach taken above with the cognitive and relational dimensions in specifying the individual contributions responsible for the creation of the various elements of social capital, I suggest that the network ties of individuals in essence represent their contributions to the overall network configuration of the collective. Also, given the suggested interrelatedness of each of the articulated dimensions of social capital (see Nahapiet & Ghoshal, 1998), I further suggest that the most relevant individual contributions to the structural dimension of social capital can be found in assessing the extent of individual ties (i.e., degree centrality) in the information-sharing, trust, and helping networks. This serves as an indicator of individual contributions to the structural dimension of the communal social capital of a collective in the context of both the cognitive and relational dimensions.

In sum, I have suggested that CSCIB can be represented by the extent to which others see an individual as sharing information, behaving in a trustworthy fashion, and engaging in helping behavior within the organization. A summary of these suggested components of CSCIB and how they are likely to contribute to the creation and maintenance of communal social capital can be found in Table 2.

Table 2
Communal Social Capital Investment Behavior and the Dimensions of Social Capital



Theoretical Model and Hypotheses

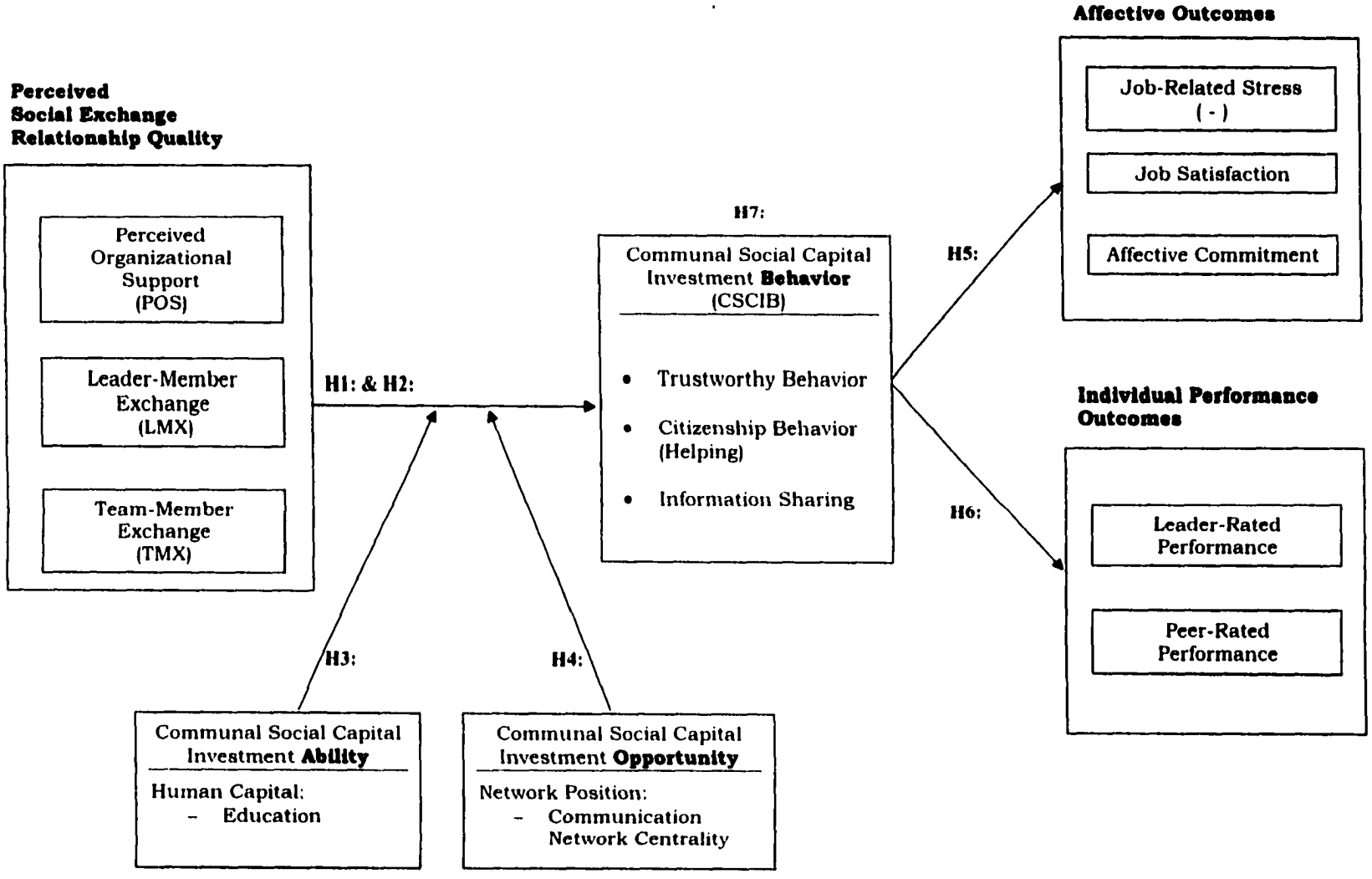
While prior research has not examined the correlates of CSCIB as defined here, considerable research has been conducted on the antecedents and consequences of the individual components that I have suggested comprise the CSCIB construct (i.e., information-sharing, trust/trustworthiness, and citizenship behavior). Drawing on this research, I develop a model of CSCIB offering specific hypotheses relative to suggested relationships between variables. Although dispositional and instrumental motivations are expected to influence CSCIB as suggested in Chapter 1, the focus of the present study is on the relational motivation factors. Thus, no hypotheses are offered on the relationship between the dispositional and instrumental factors and CSCIB. Instead, each of these factors will be treated as control variables in the examination of the effects of the various relational factors on the CSCIB of individuals. As such, it is not my intent to either challenge or confirm the individual differences or the rational choice approaches to explaining human behavior. Instead, I acknowledge that there is evidence that supports both views. I do contend, however, that even after considering the effects of both of these approaches, individual perceptions of the quality of their social exchange relationships with and within the organization will explain additional variance in their communal social capital investment behavior.

Social Exchange Relationships and CSCIB

In the sections that follow, I will draw on prior theory and empirical research on social exchange relationships in organizations to motivate hypotheses suggesting linkages between specific social exchange relationships (i.e., POS, LMX, TMX) and the proposed components of CSCIB (information sharing, trustworthiness, and citizenship behavior) as

articulated above. The overall theoretical model to be tested is shown in Figure 5. The specific hypothesized relationships between variables are labeled on the model and will be discussed in turn, beginning with the suggested antecedents of CSCIB, followed by the proposed moderators of the relationship between perceived social exchange relationship quality and CSCIB, the individual work-related consequences of CSCIB, and finally, the suggested mediating role of CSCIB on the relationship between perceived social exchange relationship quality and individual work-related outcomes.

Figure 5
Theoretical Model of Communal Social Capital Investment Behavior Antecedents and Consequences



Antecedents of Communal Social Capital Investment Behavior (CSCIB)

Perceived Organizational Support (POS) and CSCIB

Perceived organizational support represents an employee's beliefs regarding the extent to which the organization values their contributions and cares about their well being (Eisenberger et al., 1986). Eisenberger et al. suggest that these beliefs may be fostered by an anthropomorphic ascription of dispositional traits to the organization, resulting in a personification that represents an employee's distillation of views concerning all organizational members who control their material and symbolic resources. Numerous studies have found POS to be significantly related to the performance of extra-role behaviors in the form of organizational citizenship (e.g., Eisenberger et al., 1986, 1990; Lynch et al., 1999; Masterson et al., 2000; Moorman et al., 1998; Shore & Wayne, 1993; Wayne et al., 1997). Theory suggests that this relationship can be attributed to an increased affective attachment to and identification with the organization, as well as feelings of obligation to repay the organization for favorable treatment (Eisenberger et al., 1986). While prior research has not specifically examined the relationship between POS and the other two suggested components of CSCIB (trustworthy behavior and information sharing), given that these behaviors should be viewed as helpful to the organization and the achievement of organizational goals, it is plausible that individuals who perceive high levels of POS will be more likely to engage in these behaviors than will individuals who perceive low levels of POS. Therefore, I expect that perceptions regarding POS will be positively associated with CSCIB.

Hypothesis 1a: Individuals' perceptions regarding the quality of their social exchange relationship with the organization as an entity (POS) will be positively related to their communal social capital investment behavior.

Leader-Member Exchange (LMX) and CSCIB

While POS represents the perceived relationship quality between an individual and the organization, LMX represents perceptions relative to the relationship between an individual and his or her immediate supervisor. Liden & Graen (1980) contend that employees who perceive their LMX relationships to be of a high quality make contributions that go above and beyond their formal job duties. Those employees who report low-quality LMX relationships, on the other hand, according to Liden & Graen, are more likely to limit their performance to routine tasks specified in their employment contract. Brower et al. (2000) add that when a leader delegates authority and responsibility to a subordinate (as is the case with high quality LMX exchanges) the subordinate will likely value this behavior, and as a result be more satisfied, committed, and likely to engage in citizenship behaviors. Several previous studies have supported this suggested relationship between LMX and OCB (see Manogram & Conlon, 1993; Masterson et al., 2000; Settoon et al., 1996; Wayne & Green, 1993; Wayne et al., 1997).

Given that trust and trustworthiness are highly intertwined, and reciprocally related constructs, perceptions of an exchange partner's trustworthiness are likely to influence one's willingness to trust that individual, as well as one's own trustworthy behavior in the relationship. In his review of the trust literature, Kramer (1999) suggests that these perceptions of exchange partner trustworthiness are, among other things, based on the history of prior interactions with that particular individual. Kramer also states that, "a

number of studies have demonstrated that reciprocity in exchange relationships enhances trust" (p. 575). Similarly, Graen & Scandura (1987) suggest that the development of the LMX relationship, which is shaped through role taking, role making, and finally role routinization, is essentially a trust building process. Therefore, high quality LMX relationships, which are characterized by mutual trust, loyalty, and behaviors that extend beyond the employment contract (Brower, Schoorman, & Tan, 2000), should be positively associated with trustworthy behavior on the part of individuals.

Graen & Scandura (1987) argue that the role-making phase of LMX development, in addition to being based on trust, is also built on the mutual contribution of valued resources between the leader and the subordinate. An important potential resource that may be exchanged during this phase is information, especially information that is not widely available to all members of the organization. Graen & Scandura contend that the leader has control of information as a resource and can decide what information is shared and not shared with various subordinates. Therefore, individuals with high-quality LMX relationships are likely to have greater access to valuable information due to the quality of their exchanges with their supervisor. In addition, due to the reciprocal nature of the LMX relationship, I argue that these individuals are also more likely to share valuable information with their supervisor and with others in the organization to the extent that such behavior is consistent with the role expectations established through the LMX relationship. Supporting this view, in a longitudinal study examining the vertical dyad linkage approach to leadership, which became the precursor to current LMX research, Dansereau et al. (1975) found that members who became part of the leader's "in-group" (i.e., those with high-quality LMX relationships) reported receiving higher amounts of information from their

superior as compared to those with low quality LMX relationships. These high-quality exchange individuals also spent more time and energy on activities classified as "communicating."

In sum, previous theoretical work together with the results of several empirical studies suggests that LMX perceptions on the part of an employee are likely to be positively related to each of the suggested components of CSCIB (i.e., the performance of citizenship behaviors, engaging in trustworthy behavior, and the sharing of information). Therefore, it follows that individuals who perceive their LMX relationship as being high in quality should be more likely to engage in CSCIB.

Hypothesis 1b: Individuals' perceptions regarding the quality of their social exchange relationship with their immediate supervisor (LMX) will be positively related to their communal social capital investment behavior.

Team-Member Exchange (TMX) and CSCIB

The relationship between TMX and the various suggested components of CSCIB have received little if any attention in the literature. Given, however, that the TMX construct was developed as an extension of LMX and is suggested to represent the reciprocity between an individual and his or her peer group (Seers, 1989), I contend that the arguments discussed above suggesting a link between LMX and each component of CSCIB should also hold true for TMX. In this case, however, the team or work group replaces the leader as the exchange partner or focal referent. In fact, in his initial introduction of the TMX construct to the organizational literature, Seers (1989) suggested that TMX represents "the member's perception of his or her willingness to assist other members, to share ideas and feedback and in turn, how readily information, help, and recognition are received from

other members" (p. 119). Further, prior research suggests that high quality TMX relationships are positively associated with greater cooperation, collaboration, and teamwork within a group of peers (Seers, 1989; Seers, Petty, & Cashman, 1995), all of which are consistent with the behaviors suggested to represent CSCIB. Thus, I offer the following hypothesis:

> **Hypothesis 1c:** Individuals' perceptions regarding the quality of their social exchange relationship with their work group (TMX) will be positively related to their communal social capital investment behavior.

Simultaneous Effects of POS, LMX, and TMX on CSCIB

Much of the existing research on social exchange relationships in organizations is based on examinations of the effects of one particular form of exchange (i.e., POS, LMX, or TMX) or another on various individual outcomes. More recent work, however, has begun investigating combinations of these exchange relationships simultaneously due to their common foundation in social exchange theory (Hofmann & Morgeson, 1999). Some studies have shown that social exchange relationships at different levels of the organization differentially predict certain individual attitudes and behaviors (cf. Masterson et al., 2000; Settoon et al., 1996; Wayne et al., 1997). Collectively, these studies support the argument that individuals engage in different reciprocation efforts depending upon the exchange partner (i.e., organization, leader, or co-workers) and the quality of exchange relationship with that particular partner.

Other studies, however, have shown that certain reciprocation behaviors may benefit (and thus be influenced by) multiple exchange partners. Hoffman & Morgeson (1999), for example, found that POS and LMX jointly influenced employee initiated safety-related

communication, which was suggested to be beneficial to both the organization and the employee's leader. Another behavior likely to benefit multiple exchange partners is organizational citizenship behavior (OCB). While OCB may have different targets (see Masterson et al., 2000), helping behavior (the most commonly researched form of the construct) is likely to simultaneously benefit and be influenced by one's supervisor, one's work group, and the organization as an entity. In support of this argument, Wayne et al. (1997) found that both POS and LMX were positively related to OCB when the two relationship forms were examined concurrently. Although they did not examine the effects of TMX on OCB, I argue that these effects would also be observed at the work group level. In addition, drawing upon the previously discussed work on multiple commitments and the stronger influence of more proximate relationships on individual attitudes and behaviors (Becker et al., 1996; Mueller & Lawler, 1999), I suggest that LMX and TMX should both have stronger effects on helping behavior than should POS, which represents a relatively more distant relationship. Along those same lines, Moreland & Levine (2001) contend that work groups provide the context within which the relationship between an individual and the organization is largely shaped, suggesting that this occurs during the work group socialization process. I, therefore, argue that group level relationships (e.g., TMX) would more likely influence an individual's collective oriented behavior than would the individual relationship with a supervisor (LMX). Further, I offer that information sharing and trustworthy behavior, while distinct from OCB (helping behavior), are related constructs, and that collectively they represent what I am describing to be communal social capital investment behavior (CSCIB). I, therefore, expect that of the three organizational social

exchange relationships TMX will serve as the strongest predictor of CSCIB, thus leading to the following hypothesis:

Hypothesis 2: Individual perceptions of TMX will significantly explain additional variance in CSCIB beyond the effects of both POS and LMX.

Potential Moderators of the Perceived Social Exchange Quality – CSCIB Relationship

According to Angle & Lawson (1994), any complex behavior is governed by a variety of factors, including one's knowledge, skills, and abilities (human capital); the resources to which one has access (individual social capital); and one's motivation to engage in the particular behavior. Similarly, previous theoretical work concerning the creation of intellectual capital (Moran & Ghoshal, 1996; Nahapiet & Ghoshal, 1998) and social capital (Adler & Kwon, 2002), suggests that contributions to the social capital of a collective are likely to depend not only on individual motivation, but also on individual ability and opportunity to make such an investment. Thus, ability and opportunity also warrant consideration as potential moderators of the relationship between perceived social exchange quality and CSCIB.

Communal Social Capital Investment Ability

Drawing on the work of Cohen & Levinthal (1990), Nahapiet & Ghoshal suggest that organizational learning requires the ability to recognize new knowledge, as well as the ability to assimilate and use it. Along similar lines, Leana & Van Buren (1999) argue that a key component of organizational social capital is "associability" or "the *willingness* and *ability* of individuals to define collective goals that are then enacted collectively" (p. 542). They further suggest that, while the propensity to socialize may be largely universal, the

ability to do so in order to achieve a collective purpose is not. Other authors have also discussed the role of ability in the creation of social capital. Lin (1999), for instance, offers that education and experience (indicators of ability) are sources of social capital in that they impact the resources to which one has access. Additionally, Adler & Kwon (2002), discuss the importance of ability as they suggest that individual motivation to contribute to social capital is of little use without the requisite ability or expertise to do so. Based on these prior theoretical arguments, I hypothesize that individual ability (i.e., human capital) will positively moderate the relationship between perceived social exchange relationship quality, which I have argued represents individual motivation to contribute to communal social capital, and actual contributions.

> **Hypothesis 3:** Individuals' human capital, as measured by their highest level of education completed will have a positive moderating effect on the relationship between a) POS, b) LMX, and c) TMX and CSCIB.

Communal Social Capital Investment Opportunity

Several researchers have stressed the importance of information and its access to the social capital construct. Coleman (1988) for instance, discusses a dimension of social capital that functions as an information channel used for acquiring valuable information. Similarly, Burt (1992) stresses the information benefits of social capital that result from 1) being made aware of opportunities, 2) before others, and 3) often through an indirect contact. Burt refers to these as access, timing, and referral benefits respectively. In essence, these information channels, which may be utilized to give as well as receive information, are based on an individual's network position and determine to an extent that individual's *opportunity* to contribute to the social capital of a collective.

While Coleman (1988) and Burt (1992) both discuss the role of information access or opportunity in the creation of social capital, they approach the issue from different viewpoints. As discussed earlier, Coleman argues the benefits of network closure and dense networks of redundant contacts. According to Coleman, networks of this type facilitate the emergence and enforcement of norms and promote trustworthiness, thereby strengthening social capital (Adler & Kwon, 2002). Burt, on the other hand, argues the benefits of sparse networks of non-redundant contacts. According to Burt, individuals create social capital by spanning what he calls structural holes, or gaps between otherwise non-connected individuals in a network. Although the dense network arguments of Coleman and the sparse network arguments of Burt relative to the creation of social capital appear to be diametrically opposed, recent work has argued that both approaches can yield significant, albeit different, benefits (see Adler & Kwon, 2002; Oh, Kilduff, & Brass, 1999; Pil, Smith, & Leana, 2000). I argue here, however, that it is the first approach based on network centrality that represents an individual's opportunity to contribute to the communal social capital of the organization. By being centrally located in the communication network of the organization and having direct ties to a number of others, an individual is likely to have greater access to information, as well as greater potential outlets for sharing that information. Thus, I hypothesize that, similar to ability, network centrality will positively moderate the relationship between perceived social exchange relationship quality and individual contributions to the communal social capital of the organization.

Hypothesis 4: Individuals' social network position in the organization's communication network, as measured by *network centrality* will have a positive moderating effect on the relationship between 1) POS, 2) LMX, and 3) TMX and CSCIB.

Consequences of CSCIB

The previous hypotheses represent the posited antecedents of CSCIB based on an individual's motivation to contribute to the communal social capital of the collective and suggest that they are moderated by his or her ability and opportunity to do so. I now turn to an examination of the individual consequences of CSCIB, focusing on work-related outcomes such as the affective measures of job stress, job satisfaction, and organizational commitment, as well as individual performance as measured by both supervisor and peer assessments.

CSCIB and Affective Outcomes

One work-related outcome that has received increased attention over the past two decades is workplace stress (Beehr, 1998). This increased research attention has been driven largely by a dramatic increase in work-related stress (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). Cavanaugh et al. reported that in recent surveys of managers, 88% reported elevated stress levels with many feeling more stress now than ever before in their careers. These feelings of stress are not limited to the corporate sector, however, as suggested by research in the field of education, which indicates that teachers are also experiencing stress due to heavy workloads, time pressures, and role stressors (Conley & Woosley, 1999; Pierce & Molloy, 1990).

Role stress has been described as anything about an individual's organizational role that produces adverse consequences for that individual (Kahn & Quinn, 1970). Role stressors include role ambiguity (lack of clear role-related information), role conflict (inconsistent and incompatible role-related information), and role overload (role demands greater than individual's capacity to handle them; Jex, 1998). Pil, Leana & Smith (2001) suggested that engaging in entrepreneurial network building behaviors resulting in a personal network rich in structural holes would lead to higher levels of role stress due to the complexity of the resulting social network. They predicted the reverse to be true, however, for individuals who engaged in CSCIB, arguing that the role expectations for individuals engaging in such behavior is likely to be more and clear and consistent, thus reducing the presence of role stressors. In addition, engaging in CSCIB and being embedded within a network characterized by norms of trust, information sharing and helping behavior, is likely to provide an individual a source of social support that has not only been found to reduce job stress (Beehr, 1995: Cohen & Willis, 1985), but also to increase job satisfaction (Spector, 1997) and levels of affective commitment (Meyer & Allen, 1997). Therefore, I hypothesize that:

> **Hypothesis 5:** Individuals' communal social capital investment behavior will be negatively related to a) job stress, and positively related to b) overall job satisfaction and c) affective organizational commitment.

CSCIB and Supervisor-Rated Performance

In addition to its suggested effects on affective, work-related outcomes, CSCIB is likely to have an influence on individual performance outcomes as well. In a related area of research, as part of their recent review of the organizational citizenship behavior (OCB)

literature, Podsakoff, MacKenzie, Paine, and Bachrach (2000) summarized the results of seven studies (eleven sample populations) that examined the relationship between OCB and individual performance. They concluded from their analysis that OCB, in particular the helping behavior dimension, accounted for a substantial portion of the variance in managerial performance evaluations[6].

Podsakoff et al. offer several potential reasons for the relationship between OCB and managerial performance ratings. One such explanation is based on the norm of reciprocity and suggests that if an individual exhibits citizenship behaviors that benefit the manager and/or the organization, then the manager might reciprocate by giving the employee higher performance ratings. Another potential explanation offered by Podsakoff et al. is based on the work of Denisi, Cafferty, and Meglino (1984) and suggests that OCBs represent distinctive forms of behavior that managers look for and then recall during the evaluation process[7]. These potential explanations for the link between OCB and managerial performance evaluations should also hold true for CSCIB since information sharing and trustworthy behavior are likely to be viewed in the same light as OCB. Therefore, I offer that CSCIB will be positively related to individual performance as rated by the employee's supervisor.

> **Hypothesis 6a:** Individuals' communal social capital investment behavior will be positively related to their performance as rated by their immediate supervisor.

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[6] Podsakoff et al. reported that objective performance uniquely accounted for 9.5% of the variance in performance evaluations, OCB uniquely accounted for 42.9% of the variance and the combination of the two accounted for a total of 62.1% of performance evaluation variance, suggesting that OCB accounts for substantially more variance in performance evaluations than objective performance.

[7] See Podsakoff et al. (2000; p. 535) for additional discussion of potential reasons for the link between OCB and performance ratings.

CSCIB and Peer-Rated Performance

In addition to objective indicators and supervisor ratings, individual performance may also be assessed by others in the organization with whom one interacts. Organizations are increasingly turning to multi-rater feedback as either a formal or informal element of employee performance management (Mabey, 2001). In fact, sources suggest that nearly all of the Fortune 500 companies are now using some form of multi-rater feedback for employee development and/or appraisal. As a result, peer group assessments are more likely than ever before to hold importance for employees.

I have suggested that CSCIB represents the extent to which one shares information with others within the organization, as well as the extent to which one engages in helping behavior and behaves in a trustworthy fashion. Each of these behaviors represents a form of action that is likely to be beneficial to those with whom one interacts, which in turn should have a positive impact on the perceptions of those individuals regarding the quality of one's relationship with them. This may predispose those individuals to favorably rate one's performance. In fact, research has shown that perceptions of relationship quality do indeed influence traditional ratings of performance (Borman, White, & Dorsey, 1995; Jackson & Greller, 1998). I therefore suggest that CSCIB will have a favorable impact on peer assessments of an individual's performance.

Hypothesis 6b: Individuals' communal social capital investment behavior will be positively related to their performance as rated by their work group peers.

Mediating Effects of CSCIB

As suggested by the theoretical model presented in Figure 5, the above hypotheses collectively suggest that CSCIB plays a mediating role in the relationship between perceived social exchange relationship quality and affective and performance related individual outcomes. That is, I contend that the relationship between the organizational social exchange variables and individual outcomes goes through CSCIB. As suggested by hypotheses 1a – 1c, individuals' perceptions regarding the quality of their organizational social exchange relationships are likely influence their contributions to the communal social capital of their organization due to felt obligations to reciprocate for what they perceive to be favorable treatment by the organization, their work group and/or their supervisor. In turn, as argued above, contributing to CSCIB and being embedded in a socially supportive network of contacts should serve to reduce stress, and increase job satisfaction and commitment. Further, by engaging in behaviors that contribute to the organization's communal social capital (sharing information, behaving in a trustworthy fashion, and performing organizational citizenship behaviors such as helping others) individuals are likely to be viewed more favorably by their supervisor, as well as their peers. This is suggested to result in more favorable subjective judgments regarding the individuals' performance. Accordingly, I hypothesize that:

> **Hypothesis 7:** Individuals' communal social capital investment behavior will mediate the relationship between their perceptions of a) POS, b) LMX, and c) TMX and their 1) leader-rated performance, 2) peer-rated performance, 3) job stress, 4) overall job satisfaction, and 5) affective organizational commitment.

Summary

In this chapter I have presented a theoretical model depicting proposed antecedents and individual level consequences of communal social capital investment behavior (CSCIB). I have also offered specific hypotheses relative to the relationships suggested by the model presented. A summary of the hypotheses to be tested is found in Table 3. In the next chapter, I will discuss the research methods utilized in conducting this study.

Table 3
Summary of Hypotheses

Individuals' perceptions regarding the quality of their social exchange relationship with a) the organization as an entity (POS), b) their immediate supervisor (LMX), and c) their work group peers (TMX) will be positively related to their communal social capital investment behavior.
Individual perceptions of TMX will significantly explain additional variance in CSCIB beyond the effects of POS and LMX.
Individuals' human capital, as measured by their highest level of education completed, will have a positive moderating effect on the relationship between a) POS, b) LMX, and c) TMX and CSCIB.
Individuals' position in the organization's communication network, as measured by *in-degree centrality* will have a positive moderating effect on the relationship between 1) POS, 2) LMX, and 3) TMX and CSCIB.
Individuals' communal social capital investment behavior will be negatively related to a) job stress, and positively related to b) overall job satisfaction and c) affective organizational commitment.
Individuals' communal social capital investment behavior will be positively related to their performance as rated by a) their immediate supervisor, and b) their work group peers.
Individuals' communal social capital investment behavior will mediate the relationship between their perceptions of a) POS, b) LMX, and c) TMX and their 1) leader-rated performance, 2) peer-rated performance, 3) job stress, 4) overall job satisfaction, and 5) affective organizational commitment.

Chapter IV

RESEARCH METHODS

This chapter describes the methods utilized to test the hypotheses developed in Chapter III. The chapter begins by discussing the study design, as well as the research sites and data collection procedures. Next, the operationalization of each of the constructs examined in the study is described. Finally, the chapter outlines the statistical procedures utilized in the analysis of the collected data.

Study Design

The current study examines why and how individuals contribute to the communal social capital of the organizations that employ them. Therefore, the chosen design for this research was a field study in which surveys were utilized to gather data on employee attitudes and behaviors. Further, given that several of the constructs examined in the study are based on an individual's position within the organization's network of social ties, the survey was designed to collect sociometric data in addition to the more traditional demographic, attitudinal, and behavioral data.

Research Setting

Data for the current study were collected in schools selected from a mid-sized, urban public school district in the eastern United States. The district consisted of 91 schools serving approximately 39,000 students, and was governed by an elected nine-member Board of Education along with the District Superintendent and his appointed cabinet. At the time

of the study, the district was participating in a district wide instructional improvement initiative led by a major university in the area.

Why Schools?

Improving the quality of education in our public schools has been articulated as an important priority for federal, state, and local officials across the country. As school administrators attempt to improve instructional quality within their school systems, a key factor that has been identified as instrumental to the achievement of that objective is the development of a professional learning community within schools, which includes the creation of an environment characterized by a clear, shared purpose for student learning, as well as collaboration among staff to achieve that purpose (King & Newmann, 2001). This has led in many cases to the creation of team-based organizational structures to facilitate the sharing of ideas and information among teachers with diverse backgrounds, perspectives, disciplines, and expertise. Senge et al. (2000) state that, "[s]chools are rife with team activity." They note that there are nested teams throughout a school system including curriculum teams, site teams, staff development teams, and at the core, the teams of teachers who return to the classrooms and interact with students day after day.

The use of these team-based organizational structures in schools is largely predicated on the belief that team work offers the potential to achieve outcomes that could not be achieved with teachers working in isolation (Drach-Zahavy & Somech, 2002). In that regard, teams of teachers within schools are not unlike teams within any other organization in that they are often designed to increase members' responsibility for group performance and outcomes, as well as creating work interdependence (Pounder, 1999). A key issue facing administrators, however, as they attempt to foster the development of collaborative,

professional learning communities within their schools is encouraging individual teacher efforts aimed at creating and maintaining such a community, given that these efforts extend beyond their traditional classroom accountabilities. This makes schools an interesting setting for testing the hypotheses set forth in the current study. Teacher perceptions regarding their relationship with the organization (school district), their leader (school principal), and their team members (other teachers) can be examined in relation to their contributions to the communal social capital of the school (contributions to the creation and maintenance of a professional learning community) to determine the extent to which the perceived quality of these relationships influences social capital contributions.

Specific schools were targeted for participation in the study based upon the need to satisfy the following objectives: 1) achieve a total sample size of 100 to 150 subjects to allow for adequate statistical testing of the proposed model, and 2) encompass varied school demographic profiles to provide an opportunity to examine the potential effects of various contextual factors, and to enhance the generalizability of the findings. These objectives were most likely to be met by targeting high schools within the participating district. It was determined that adequate participation from three high schools in the district that differed along a variety of dimensions would provide a sufficient sample for testing the stated hypotheses.

Data from a prior study conducted in the school district was utilized to rank each of the eleven high schools based on the level of communal social capital in the school as measured by a district wide teacher survey. Out of a possible score of 5.0, three of the schools had a score of greater than 3.50 (high group), five schools had scores between 3.25 and 3.49 (middle group), and three schools had a score less than 3.25 (low group). Based

upon knowledge of the principals at each school (gained during the conducting of the prior study), as well as recommendations from personnel in the district office regarding which schools' principals might be willing to allow their school to participate in the study, first and second choices within each grouping were established as targets for the study sample. Principals at each of the first choice schools were then contacted regarding participation in the study. All three of the principals at the schools selected as first choices from each grouping agreed to allow access to their schools for the study.

Procedures

Data collection for the current study was completed in the spring semester of the 2001-2002 school year. A survey designed to capture attitudinal, behavioral, demographic, and sociometric data was administered to all instructional staff members (permanent teachers, full-time substitutes, and full-time teacher aides) at the participating schools.[8] In addition, a staff assessment survey was given to the principal at each participating school. This survey instrument was designed to capture the principal's perceptions regarding each staff member's overall performance, as well as his/her perceptions regarding each staff member's contributions to the communal social capital of the school.

In order to gain a qualitative understanding of the school environments in which the data were to be collected and to aid in the construction of the survey instruments utilized, I spent several months prior to the actual administration of the surveys meeting with individuals and groups at all levels of the school system. I first met with officers from the local teachers union to share with them the nature of the intended study and to secure their input and support. I then held similar meetings with the deputy superintendent of schools,

the executive director in charge of high schools, and the district program officer in charge of measurement and evaluation. The objective at each level was to secure additional support for the study and to gather input that would enhance the survey design, as well as the planned survey administration procedures.

After securing union and district administration support, I then met individually with the principals at each of the participating schools. In each case, while the principal had granted access to the school, the actual decision as to whether the survey could be administered to the teachers was left to the schools' instructional cabinets, which consisted of the appointed instructional teacher leader (ITL) from each academic department and any other school administrators closely involved in the instructional process. I therefore, met with the instructional cabinet at each school to present an overview of the intended study, to answer any questions that they may have had, and to ask for their support of the study. In addition, I asked for permission to observe their instructional cabinet meetings over a several week period and to conduct informal interviews with various cabinet members as well as other groups of teachers within the school. Permission was granted at all three schools.

Input from this period of observation and informal interviews was utilized to fine tune the survey and to develop an appropriate administration procedure for each school. In all cases, surveys were administered on site at the school during a window of time agreed upon by the school's on-site union representative, the instructional cabinet, and the school principal. At two of the schools the surveys were distributed to teachers as they checked in at the front office before the start of the school day. Teachers at the first of the two schools

[8] Ninety-six percent of the 150 survey respondents were permanent teachers. Running the statistical analyses excluding the full-time teacher aides and full-time substitutes had no material effect on the results.

(School A) were also instructed by the principal that they would be allowed to utilize the time originally scheduled for an after school faculty meeting to complete the survey if they so desired. In both cases I remained on site the entire day and personally collected the surveys throughout the day as they were completed and returned. At the third school (School C), I was stationed in the library and teachers who elected to participate in the study were instructed to go to the library during their daily preparation period to complete the survey. Teachers were given the option of completing the survey in the library or returning to their classroom to complete the survey there. In either case I remained in the library throughout the day to collect the surveys as they were completed and returned. At all three schools, teachers were also given the option of taking the survey home to complete if they did not have time to complete it during the school day. A box for surveys completed in this manner was left at the school front office and picked up at the end of the following day. Any teachers who were absent on the day that the survey was administered were also given the option of completing the survey the following day. Teachers were provided with envelopes in which to seal their surveys so that their survey responses would not be known to others. In addition, teachers who chose to complete the survey at home (or at school the following day) were given the option of mailing their responses directly to me via a pre-addressed, stamped envelope. For those individuals who chose not to participate on the day that the survey was administered, a second appeal was made the on the following day (with the assistance of the principal and front-office administrators).

A letter explaining the purpose and the parameters of the study, as well as a participant consent form, was also provided to each participant at the time that the surveys were administered in accordance with the University's Institutional Review Board

guidelines. By remaining on-site the entire day of the survey administration, I was able to answer any questions that teachers had at any time regarding the survey. A detailed description of the sample obtained is presented in the following section.

Sample Description

Out of a total of 239 eligible participants, 150 completed the attitudinal and behavioral portion of the survey and of those individuals, 138 also completed the network portion of the survey. The overall response rate was thus, 63% for the attitudinal and behavioral survey and 58% for the network survey. Given that the network metrics for each individual utilized in the analysis of the data were based on the responses of *all others* in the network regarding various ties to that individual, network measures were calculable for all 239 individuals in the population. Therefore, usable matched data (attitudinal/behavioral and network) were available for 150 individuals (63% of the population).

Response rates by school ranged from 49% to 96% on the descriptive survey and from 44% to 95% on the network survey. While obtaining 100% response rates when collecting network data is desired, that type of response rate is rarely achieved in practice (Stork & Richards, 1992). Nonetheless, response rates received from two of the three schools in the present study were in the neighborhood of fifty percent, which is appreciably lower than the desired one hundred percent response. This raises potential concerns regarding the extent to which the reported relationships truly represent the actual structure of the networks being measured. Provisions were taken, however, to minimize the effects of less than complete network data in the present study. This response rate issue and the provisions taken to address it are discussed at greater length in the discussion of specific the measures utilized, as well as in the discussion of the limitations of the present study.

Of the 150 individuals who responded to the descriptive portion of the survey, 59.1% were females and 40.9% were males. Over two thirds of the respondents were over the age of forty (67.8%) with nearly thirty percent (29.5%) being at least fifty years of age. Just over three percent of the teachers who responded to the survey hold doctorate degrees (3.4%). However, over 81% either have a master's degree (63.3%) or have at least completed some graduate work (17.7%). Over eighty-seven percent of the respondents were White (87.1%), and of the remaining thirteen percent of the respondents, 47.3% were African-American, 10.9% were Native Americans, 5.4% were Asian, another 5.4% were Hispanic, and the remaining 31.8% classified themselves as "other." On average, the respondents had been at their present school for 9.5 years and in the school district for nearly sixteen years (15.8). Overall, the sample was representative of the participating schools and of the district as a whole. A summary of the specific demographics of the study sample are presented in Table 4.

Table 4
Study Sample Demographics

Category	N	Number in Category	Percent in Category
Gender:	149		
- Female		88	59.1%
- Male		61	40.9%
Race:	147		
- Asian		1	0.7%
- African-American		9	6.1%
- Hispanic		1	0.7%
- Native American		2	1.4%
- White		128	87.1%
- Other		6	4.1%
Education:	147		
- College		23	15.6%
- Some College		26	17.7%
- Masters		93	63.3%
- Doctorate		5	3.4%
Age:	149		
- (20 – 29)		19	12.8%
- (30 – 39)		29	19.5%
- (40 – 49)		56	37.6%
- (50 – 59)		44	29.5%
- (60+)		1	0.7%

Measures

In this section the operationalization of each the variables examined in the current study will be discussed. The response format for each previously developed scale was the same format utilized in the cited source(s). Unless otherwise specified, all measures described in this section employed a 7-point Likert-type scale response format (1 = strongly disagree, 7 = strongly agree). A full item listing of each scale utilized in the survey, including the source(s) of the scale items for each variable is provided in Appendix A. In

addition, an actual copy of the surveys administered (minus the names that appeared in sociometric portion of the surveys) is provided in Appendix B.

Demographic Data. In order to control for traditional factors that may possibly be systematically related to the dependent variables of interest in the present study, data was collected from each participant on their age, gender, race/ethnicity, and educational attainment.

Perceived Organizational Support (POS). POS was measured using Eisenberger, Cummings, Armeli, & Lynch's (1997) shortened version of the Survey of Perceived Organizational Support (SPOS) originally developed by Eisenberger, Huntington, Hutchison, & Sowa (1986). This shortened version of the SPOS contains eight items that loaded highly on the main POS factor as reported by Eisenberger et al. (1986) in the scale's source article. The items were also selected due to their applicability to a wide variety of organizations. Eisenberger et al. (1997) reported a Cronbach's alpha of .90 for this shortened SPOS scale. The response format used for the scale was based on a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree).

Leader-Member Exchange (LMX). An adapted version of the 12-item multi-dimensional measure of LMX (LMX-MDM) developed by Liden & Maslyn (1998) was used to measure employee perceptions of LMX. The LMX-MDM is based on the theoretical work of Dienesch & Liden (1986) and assesses the relationship quality between a supervisor and a subordinate on the dimensions of affect, loyalty, contribution, and professional respect. Coefficient alphas reported by Liden & Maslyn for each of the sub-

dimensions of the scale in their initial organizational employee sample were .90, .74, .77, and .89 respectively.[9]

While no specific hypotheses have been offered in the present study on the sub-dimensions of LMX captured by the LMX-MDM, Liden & Maslyn suggest that a composite of the combined dimensions still serves as a valid and reliable measure of LMX. As evidence of the convergent validity of the LMX-MDM scale used as a composite measure, they report a correlation of .84 with the most widely used measure of LMX, the LMX-7 scale (Scandura & Graen, 1984). In addition, Liden & Maslyn reported a reliability estimate of .89 for the composite scale. They further offer (and support with confirmatory factor analysis results) that when using structural equation modeling, each of the four dimensions may be used as indicators of global LMX. As an additional note, wording of the each of the LMX-MDM scale items as shown in Appendix A has been adapted slightly to be more appropriately worded for the educational context of the selected research site. Further, the leader in this setting refers to the school principal.

Team-Member Exchange (TMX). Liden, Wayne, & Sparrowe's (2000) adaptation of the TMX scale developed by Seers (1989) was used to assess team-member exchange. This measure of TMX utilizes a 9-item scale to assess individual perceptions of exchange quality with other members of the work group (in aggregate). Liden et al. reported high internal consistency for the scale (α = .88). In the context of the currently proposed study, "team" refers to other teachers in the school. The Liden et al. scale was chosen rather than the original TMX scale developed by Seers due to the fact that the former seems better suited

[9] Each of the dimensions of the original LMX-MDM scale contained three items with the exception of the contribution dimension, which contained only two items. However, in an addendum to their publication in which the LMX-MDM scale was introduced, Liden & Maslyn reported that further psychometric research led to an improved 3-item measure

for a professional work environment where item references of the latter scale such as switching job responsibilities are less appropriate.

Equity Sensitivity. Equity sensitivity was measured with the 5-item Equity Sensitivity Index (ESI) developed by Miles, Hatfield, & Huseman (1989). The ESI is designed to measure an individual's preference for outcomes versus inputs in a general work situation. The instrument utilizes a forced distribution approach, and requires respondents to distribute 10 points between a benevolent statement and an entitled statement. Theoretically, a benevolent person would give the majority of the points to the benevolent statement, an entitled person would give the majority of the points to the entitled statement, and an equity sensitive person would give equal points to each statement. Miles et al. (1989) reported a scale reliability estimate of .80 for the scale. In a more recent use of the scale, Bing & Burroughs (2001) reported a coefficient alpha of .87.

Collectivistic Orientation. Twelve items from Wagner's (1995) 20-item individualism-collectivism scale were used to assess collectivistic orientation. Wagner's original scale measures five separate dimensions of collectivism (beliefs in personal independence/self-reliance, importance of competitive success, solitary work preferences, values regarding the supremacy of group interests, and beliefs regarding the effects of personal pursuits on group productivity). Given that individualism-collectivism is not the primary focus of the present study, but instead is treated as a control, I chose to utilize only those dimensions of the measure that were particularly relevant to the study in order to limit the total number of survey items dedicated to this construct. The dimensions capturing competitiveness and beliefs regarding the effects of personal pursuits on group productivity

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of the contribution dimension, yielding the reported coefficient alpha of .77 with an organization sample. Therefore, the revised contribution measure was utilized in the present study (see scale items seven through nine in Appendix A).

seemed less germane to the CSCIB construct than the other dimensions and were thus not included in the measure. The coefficient alphas reported by Wagner (1995) for the three individual sub-scales utilized ranged from .72 to .83. No reliability estimate was reported for a combined composite of all the collectivism sub-scales.

CSCIB Expectancies. Expectancies associated with communal social capital investment behavior on the part of individuals were operationalized using the procedure employed by Miller & Grush (1988). Participants were presented with three outcomes for which they were to rate the valence of the outcome (from –3 = *very undesirable* to +3 = *very desirable*), and the likelihood of attaining the outcome given two specified levels of CSCIB related effort (from 1 = *very unlikely* to 7 = *very likely*). Expectancies were determined by first computing a return-on-effort measure by subtracting the likelihood rating for the low level of effort from the likelihood rating for the high level of effort. Likelihood-valence cross-products were then obtained by multiplying the return-on-effort measure for each of the three outcomes by the corresponding valence rating. Finally, the three likelihood-valence cross-products for each outcome were summed to form an expectancy index.

Human Capital. According to human capital theory (Becker, 1964), schooling is a key means by which individuals increase their stock of human capital. The theory suggests that incremental investments in education directly enhance one's skill, which in turn leads to greater productivity and, ultimately, greater earnings. I draw on the work of Friedman & Krackhardt (1997), who in their examination of the effects of human capital on social capital and career mobility operationalized human capital as educational attainment. For the current study, education level attained was measured using four specified categories (1=Bachelors, 2=Some Graduate Work, 3=Masters, and 4=Doctorate).

Network Variables. Network data was gathered for communication, information-sharing reputation, trustworthy behavior reputation, and helping behavior reputation using the questions presented in Appendix B. The response format for the communication network was open-ended as participants were asked to specify how many times during a typical month they communicate with each individual listed. The response format for the other networks was a five-point rating scale (see Appendix B for specific questions and scale anchors). This resulted in the creation of valued networks for information-sharing, trustworthy behavior, and helping behavior reputation networks. Using this approach provided a measure of tie strength rather than a dichotomous measure of the presence or absence of ties between individuals, which adds richness to the data (see Krackhardt & Stern, 1988; Scott, 1991). To aid in recall and to provide study participants with an opportunity to respond relative to every other staff member in the school, the survey instrument contained an alphabetized roster of the school's instructional staff. The use of alphabetized rosters has been found to be a reliable means of facilitating individual recall of typical interaction patterns (Marsden, 1990), and is a commonly used means of collecting sociometric data (see for example Brass & Burkhardt, 1993; Ibarra & Andrews, 1993; Mehra, Kilduff, & Brass, 1998; Shah, 1998, 2000).

One specific measure derived from the data collected via the network portion of the staff survey was *Communication Network Position,* which was operationalized as an individual's *in-degree centrality* in the communications network. This measure represents the extent to which others in the network report that they communicate with the focal individual (Freeman, 1979). Another key measure derived from the sociometric survey data was *Communal Social Capital Investment Behavior (CSCIB).* A description of the CSCIB

measure, as well as a discussion of the way in which it was operationalized, is presented in the following section.

Communal Social Capital Investment Behavior (CSCIB). I have suggested that CSCIB is comprised of three components (information sharing, trustworthy behavior, and helping behavior). For the purposes of this study, CSCIB was operationalized using the following steps. First, using the collected sociometric data, the in-degree centrality of each individual in the information sharing, trustworthy behavior, and helping behavior reputation networks was calculated after dichotomizing the scaled responses for each individual. A response of one, two, or three (representing a negative or neutral response) was coded as a "0." A response of four or five (representing a positive response) was coded as a "1." This in-degree centrality measure was then normalized to allow for comparison across networks of different sizes (see Wasserman & Faust, 1994)[10]. Finally, a composite measure of CSCIB was be created by averaging the three centrality scores for each individual.[11]

Job Stress. Job stress was measured with a 5-item scale utilized by Conely & Woosley (1995) in their study of role stress among elementary and secondary schoolteachers. The scale lists specific stress conditions and asks respondents to specify how often they experienced the described condition in the past month. The scale utilizes a 4-point response format with the following possible responses: 1 = seldom or never, 2 =

[10] Although in-degree centrality can be calculated from valued network data, for valued data only non-normalized results should be utilized (Freeman, 1979). The use of a normalized centrality measure is required in this instance, however, due to the integration of data from two separate organizational networks. Hence the decision to dichotomize the scaled responses before calculating network centrality.

[11] Confirmatory factor analysis was conducted to determine whether each of the three items did indeed load on the same factor, and whether CSCIB was a separate and distinct construct from the other latent variables measured in the study. The CFA results (presented in the following section) supported the aggregation of the three items. Each of the three items loaded on the CSCIB factor, and CSCIB was found to be a distinct factor from the social exchange variables (POS, TMX, and LMX), affective commitment, job satisfaction, and job stress.

occasionally, 3 = frequently, and 4 = almost always. Conely & Woosley reported a reliability estimate of .93 for this measure in their study.

Job Satisfaction. A 5-item scale utilized by Judge, Bono, & Locke (2000) and originally developed by Brayfield & Rothe (1951) was used to measure overall job satisfaction. The scale measures global job satisfaction by asking general questions regarding the respondent's feeling regarding their job. The responses are measured using a 7-point Likert-type scale with the anchors of 1 = strongly disagree and 7 = strongly agree. Cronbach's for the scale as reported by Judge et al. was .89.

Affective Commitment. Organizational commitment was measured using the 6-item affective commitment scale originally developed by Allen & Meyer (1990) and Meyer & Allen (1991) and revised by the same authors in 1993. This scale was selected the due to extensive use in studies of organizational commitment, and due the fact that it has consistently been shown to be a valid and reliable measure of the affective component of the organizational commitment construct. The scale utilizes a standard 7-point Likert-type response format where 1 = strongly disagree and 7 = strongly agree. Meyer & Allen (1997) report that the mean coefficient alpha for the scale across numerous studies is .85.

Performance. Performance data was gathered from two sources. First, *Supervisor-Rated Performance* data was gathered using an assessment survey completed by the school principal to provide an assessment of each teacher in the areas of information sharing, trustworthy behavior, helping behavior, and overall effectiveness. The performance measure consisted of a single-item, five-point scale that asked the principals to rate the extent to which each teacher serves as a role model for others in the education profession. Second, *Peer-Rated Performance* was measured with the same item asked of the principals.

This item was placed in the network portion of the teacher survey with a complete roster listing, as previously mentioned, to aid recall and to provide teachers with an opportunity to provide performance feedback on every other teacher in the school.

Statistical Analysis

After calculating and evaluating summary statistics for the collected data, as well as assessing the validity and reliability of the scales utilized, the stated hypotheses were tested using a combination of statistical techniques. Given that the focus of the current study was on testing the effects of a number of independent variables on a single dependent variable at a time, as well as on the relative contribution of each independent variable to the explanation of variance in the dependent variable, multiple regression analysis was used to test the majority of the hypothesized "main effects" relationships.

Hypotheses suggesting a moderating effect were also tested using multiple regression analysis. The dependent variable was regressed sequentially on a) the independent variable and the moderator variable, and b) the variable created by forming the cross products of the independent variable and the moderator.

Finally, to test the mediating role of CSCIB, structural equation modeling was utilized in addition to multiple regression analysis. Classical path analysis (a multivariate method based on linear regression) allows for the testing of both direct effects between variables and indirect effects through intervening variables within the context of a theoretical model specified a priori (Mueller, 1996). In addition, the theory presented in the present study suggests a causal ordering of variables. The current study, however, uses a cross-sectional design, which does not allow for the testing of causality. The use of structural equation modeling (also referred to as causal modeling), while it does not actually

allow for the adequate testing of causality using cross-sectional data, does allow one to draw inferences regarding the direction of influence between related variables.

Missing Data

A variety of approaches were utilized to address missing data in the various statistical analyses. Given that the bivariate correlations presented in the correlation table represent the relationship between pairs of variables, pairwise deletion of missing data was utilized in the calculation of the correlation coefficients. With pairwise deletion only cases with missing values for one or both of a specific pair of variables for which a correlation coefficient is being calculated are excluded from the analysis (Byrne, 2001). This results in the use of maximum available information for each calculation.

In contrast to pairwise deletion where only the cases with missing values for a specific pair of variables involved in a calculation are excluded, listwise deletion involves the exclusion of all cases having a missing value for any data set variable being utilized in the analysis. This approach was therefore utilized for the conducting of the regression analyses since they involved the simultaneous consideration of multiple variables.

Missing data in the structural equation modeling analyses was addressed using the Maximum Likelihood (ML) estimation procedure of Amos 4.0. Arbuckle (1996) discusses the comparative advantages of the ML estimation procedure versus pairwise or listwise procedures when conducting structural modeling on incomplete data sets. Byrne (2001) summarizes the comparisons and suggests that the ML estimation approach exhibits the least bias. Byrne further illustrated via example that in a data set with twenty-five percent of the data points randomly removed, the ML estimation procedure of Amos 4.0 yielded parameter

estimates and goodness-of-fit statistics that were very close to those generated utilizing the complete data set.

Finally, with regard to the handling of missing data from the sociometric data collected, as was previously discussed the network metrics for each individual utilized in the analysis of the data were based on the responses of *all others* in the network regarding various ties to that individual. Thus, network measures were calculable for all individuals in each of the school networks. However, the calculated network metrics were based on less than 100 percent of the population at each school.[12] While it would be ideal to collect data from all network members when conducting research involving sociometric data, in practice, 100% response rates are seldom achieved. In addressing this issue, Stork & Richards (1992) state that, "although higher response rates are obviously preferred over lower response rates, attempts to encourage a 100% response rate are rarely successful, and network analyses are typically performed on incomplete data sets" (p. 206).

A commonly used method of compensating for incomplete network data sets involves ascribing respondents' reported relationships with non-respondents to those non-responding partners (Knoke & Kuklinski, 1982; Stork & Richards, 1992). This approach, however, leads to the creation of a symmetrical data set, which in the case of certain types of relations (e.g., advice or trust) is ill advised given that relations such as these are not inherently symmetrical (Ibarra, 1993). Therefore, given the nature of the network relationships examined in the present study (information sharing, trust, and helping behavior), I chose not symmetrize the data. Limitations due to the less than ideal network response rates at two of the three schools will be discussed in the strengths and limitations section of the final chapter.

The results of the specific statistical analyses performed in assessing the collected data and in testing the stated hypotheses will be discussed in the following section.

[12] Network survey response rates for schools A, B, and C were 95%, 44%, and 49% respectively.

Chapter V

RESULTS

This chapter presents the results of the statistical analyses. First, the results of the confirmatory factor analysis of the items comprising the communal social capital investment behavior (CSCIB) construct and the organizational social exchange relationship scales (POS, LMX, and TMX) are discussed. Next, the summary statistics, zero-order correlations, and scale reliabilities are reported. Finally, the results of the multiple regression analyses conducted to test the stated hypotheses, as well as additional analyses performed using structural equation modeling, are reviewed and then summarized.

Confirmatory Factor Analysis Results

Since the self-reported organizational social exchange measures (POS, LMX, TMX) were expected to be intercorrelated, and since these measures were expected to be highly correlated with communal social capital investment behavior, confirmatory factor analysis was performed on the scale items to determine whether the measures were empirically distinct. Factor loadings from a requested four-factor solution performed using principal component analysis with varimax rotation, are presented in Table 5. Examination of the factor loadings revealed that there were no cross-loadings and that all items loaded on the expected factors, thus supporting a four-factor solution consisting of perceived organizational support, leader-member exchange, team-member exchange, and communal social capital investment behavior. Given, however, that the three organizational social exchange measures represent a reporting of one's own attitudes and behaviors, while the communal social capital investment behavior measure utilized in this study represent one's

perceptions about the behaviors of others, confirmatory factor analysis was also performed using a self-report measure of one's own communal social capital investment behavior also included in the survey questionnaire.

Repeating the previously performed principal component analysis with varimax rotation, a four-factor solution was again requested, this time using the substituted self-report CSCIB measure.[13] While the results still generally support the expected four-factor solution, there were three of the twelve items from the leader-member exchange scale that cross-loaded on the factor representing self-report CSCIB. The three items represent the contribution dimension of the leader-member exchange scale, which explains why they also loaded on the factor that essentially represents an individual's contributions to the social capital of the organization. This suggests that any results obtained using this self-report measure of CSCIB along with the measure of LMX that includes the contribution dimension should be interpreted with caution. Additionally, one item from the self-report CSCIB scale ("I often share information with others in the school") also loaded on the factor representing team-member exchange. However, the weight of the cross-loading item on the secondary factor (.407) was just above the suggested threshold level of .40 (Gorsuch, 1983) as compared to a weight of .600 on the primary factor. Taken together, the results of the confirmatory factor analyses performed provide a reasonable assurance that the organizational social exchange scales and the communal social capital investment behavior measure as used in the present study are indeed empirically distinct constructs.

[13] The resulting factor loadings are presented in Table A of Appendix A.

Table 5
Confirmatory Factor Analysis Results – CSCIB and Social Exchange Constructs

Item	Factor 1	Factor 2	Factor 3	Factor 4
1. When I am in a bind, my coworkers will take on extra work to help ensure the completion of my important tasks.	.148	-.047	**.517**	.136
2. My coworkers have asked for my advice in solving a job-related problem of theirs.	.094	.033	**.602**	.307
3. I would come to a co-worker's defense if he/she were being criticized.	.072	-.157	**.599**	-.035
4. I respect my coworkers as professionals in our line of work.	.092	.059	**.652**	-.064
5. My coworkers create an atmosphere conducive to accomplishing my work.	.147	.159	**.780**	.116
6. My coworkers are the kind of people one would like to have as friends.	.135	.127	**.775**	.093
7. Even when they disagree with me, my coworkers respect the value of my judgments and decisions.	.092	.069	**.750**	.158
8. I feel that I am loyal to my coworkers.	.199	-.052	**.731**	-.032
9. My coworkers value the skills and expertise that I contribute to our work group.	.096	.085	**.664**	.080
10. XXXXXX Public Schools upper-level administrators care about my opinions.	.231	**.837**	.107	.038
11. XXXXXX Public Schools upper-level administrators really care about my well-being.	.170	**.885**	.097	-.038
12. XXXXXX Public Schools upper-level administrators strongly consider my goals and values.	.167	**.880**	.074	-.013
13. Help is available from XXXXXX Public Schools upper-level administrators when I have a problem.	.212	**.827**	.105	-.024
14. XXXXXX Public Schools upper-level administrators would forgive an honest mistake on my part.	.242	**.763**	-.049	-.093
15. If given the opportunity, XXXXXX Public Schools upper-level administrators would take advantage of me.	.002	**.756**	-.084	-.015
16. XXXXXX Public Schools upper-level administrators show very little concern for me.	.012	**.773**	-.045	.101
17. XXXXXX Public Schools upper-level administrators are willing to help me if I need a special favor.	.085	**.591**	.073	-.090

Table 5 (Continued)
Confirmatory Factor Analysis Results – CSCIB and Social Exchange Constructs

Item	Factor 1	Factor 2	Factor 3	Factor 4
18. I like my principal very much as a person.	**.875**	.112	.097	-.137
19. My principal is the kind of person one would like as a friend.	**.892**	.089	.089	-.133
20. My principal is a lot of fun to work with.	**.852**	.149	.183	.144
21. My principal defends my work actions to a superior, even without complete knowledge of the issue in question.	**.703**	.223	.121	.147
22. My principal would come to my defense if I were "attacked" by others.	**.812**	.236	.159	.179
23. My principal would defend me to others in the district if I made an honest mistake.	**.792**	.229	.173	.161
24. I do work for my principal that goes beyond what is required of me in my role as a teacher.	**.557**	-.346	.160	.101
25. I am willing to apply extra effort, beyond what is normally required, to meet my principal's goals for the school.	**.597**	-.080	.189	.069
26. I do not mind working my hardest for my principal.	**.784**	.059	.204	.022
27. I am impressed with my principal's knowledge of his job.	**.860**	.262	.118	.177
28. I respect my principal's knowledge of and competence on the job.	**.869**	.247	.094	.163
29. I admire my principal's professional skills.	**.887**	.242	.028	.089
30. This individual often shares useful information with others in the school.	.167	-.059	.172	**.959**
31. This individual always keeps commitments made to others in the school.	.169	-.061	.177	**.958**
32. This individual often helps others in the school even if there is no immediate personal reward for doing so.	.166	-.057	.177	**.959**
Eigenvalue (unrotated solution)	**10.496**	**5.022**	**3.479**	**2.472**
Percent of Variance Explained	**32.80%**	**15.69%**	**10.87%**	**7.73%**
Cumulative Percent	**32.80%**	**48.49%**	**59.36%**	**67.09%**

Scale Reliability Analyses

The scale reliabilities for the measures utilized in the present study are presented in the diagonals of the correlation table (Table 6). The Cronbach's alpha of each of the scales utilized was above the .70 threshold recommended by Nunnally (1978). The reliability estimates ranged from a low of .77 for the 12-item collectivism scale adapted from Wagner (1995), to a high of .96 for the 12-item leader-member exchange scale adapted from Liden & Maslyn (1998). Further, additional analysis indicated that none of the scale reliabilities would be improved by deleting items. Therefore, no modifications were made to the existing scales.[14] Although the reliability estimates for each scale utilized are reported in the diagonal of the correlation table, a summary of the results of the reliability analyses (number of items per scale and corresponding Cronbach's alpha coefficients) may also be found in Table B of Appendix A.

Summary Statistics and Correlations

The means, standard deviations, and zero-order correlations for the study variables are presented in Table 6. Examination of the correlations between the demographic control variables and the other variables in the study revealed that age was significantly correlated with education ($r = .47$, $p < .001$) with older teachers being more likely to have pursued additional education beyond a four-year college degree. In addition, gender was significantly correlated with age ($r = .17$, $p < .05$), communication network centrality ($r = .19$, $p < .05$), team-member exchange ($r = .18$, $p < .05$), and communal capital investment behavior ($r = .21$, $p < .05$), suggesting that on average male teachers tended to be older, and

[14] It should be noted that the 3-item, self-report measure of CSCIB referred to in the discussion of the confirmatory factor analysis results had a reliability coefficient of .69, which is just below Nunnally's (1978) recommended threshold of .70. The scale was not utilized, however, in the testing of the stated hypotheses.

more central in the school's communication network. The pattern of correlations for the gender variable also indicate that male teachers had higher perceptions of the quality of their social exchange relationships with their work group and that they were more likely to engage in the behaviors suggested to contribute to the communal social capital of the school. Finally, the dummy variables representing each participating school were significantly correlated to several of the independent and dependent variables in the study including level of education, communication centrality, leader-member exchange, communal social capital investment behavior, affective commitment, and peer-rated performance. Given these significant correlations it was imperative that any potential school specific effects be controlled for when conducting the tests of hypotheses. The significant correlations between school code and a number of the key variables of the study also suggests that there is an opportunity to look beyond the stated hypotheses (qualitatively as well as quantitatively) to further examine the role of context in understanding the communal social capital investment behavior of individuals within organizations.

Additional control variables included in the study were collectivism, benevolence (as measured by the equity sensitivity scale), and instrumentalism. Of theses variables, collectivism was significantly correlated with benevolence ($r = .27$, $p < .001$) and team-member exchange ($r = .26$, $p < .01$), while instrumentalism (operationalized as specific expected returns from engaging in communal social capital investment behaviors) was significantly correlated with communication network centrality ($r = .17$, $p < .05$) and communal social capital investment behavior ($r = .27$, $p < .001$). There were no other significant correlations between these additional controls and the remainder of the variables in the study.

It was not anticipated that the two hypothesized moderating variables in the study, ability (highest level of education attained) and opportunity (communication network centrality), would be directly related to the outcome variables. However, education was significantly correlated with affective commitment ($r = .20$, $p < .05$), and communication network centrality was highly correlated with both communal social capital investment behavior ($r = .89$, $p < .001$) and peer-rated performance ($r = .46$, $p < .001$). The extremely high correlation between communication network centrality and CSCIB raises a potential question regarding the utility of attempting to separate the purely structural component of CSCIB from the remaining components as operationalized in the present study (centrality in the trustworthiness, helping, and information sharing networks). This issue will be discussed in greater detail in the discussion of the tests of the hypotheses and additional analyses.

Each of the organizational social exchange variables (perceived organizational support, leader-member exchange, and team-member exchange) was expected to be significantly correlated with each of the affective and performance-related outcome variables examined in the study. While this was true of leader-member exchange, which was significantly correlated with all of the outcome variables in the study, team-member exchange was not significantly correlated with leader-rated performance, and perceived organizational support was surprisingly not correlated with communal social capital investment behavior or either of the performance measures.

It was anticipated that many of the outcome measures examined in this study would be interrelated. For instance, a great deal of prior research suggests that there is a positive link between job satisfaction and affective commitment (see Mathieu & Zajac, 1990 for a

review). As expected, the relationship was significant in this study as well (r = .58, p < .001).

Multicollinearity is a problem that exists when two or more independent variables are very highly correlated, or when almost all of the variance in one independent variable can be accounted for by a set of the other predictor variables (Hays, 1994). Although several of the outcome variables in the present study were significantly correlated, of all of the correlations among variables used as predictors, only the previously discussed correlation between communication network centrality and communal social capital investment behavior had an absolute value greater than .70. An examination of the variance inflation factors (VIF) in each of the regression equations utilizing these variables, however, revealed that all VIF values were less that 1.5. This was well below the value of 10 suggested to indicate potential problems of multicollinearity (Neter, Kutner, Nachtsheim, & Wasserman, 1996). Therefore, multicollinearity was not an issue of concern with the data in the present study.

Table 6
Means, Standard Deviations, Correlations, and Scale Reliabilities [a]

Variables	Means	s.d.	1	2	3	4	5	6	7	8	9
Demographic Controls:											
1. Age	2.86	1.01									
2. Gender [b]	.41	.49	.17 *								
3. Race [c]	.87	.34	.18 *	.11							
4. School 1	.35	.48	-.12	.07	-.01						
5. School 2	.31	.46	.04	.01	-.06	-.49 ***					
6. School 3	.34	.48	.09	-.07	.07	-.53 ***	-.48 ***				
Additional Controls:											
7. Collectivism	4.82	.76	-.06	.16	.08	.13	-.11	-.03	(.77)		
8. Equity Sensitivity – Benevolence	30.65	6.41	.04	.00	-.09	.05	.04	-.09	.27 ***	(.84)	
9. Instrumentalism	6.53	14.26	.03	-.01	.11	.10	.01	-.10	.02	-.04	
Independent Variables:											
10. Education	2.54	.80	.47 ***	.04	.04	-.31 ***	.00	.31 ***	-.04	-.02	-.03
11. Communication Centrality	53.06	24.35	.12	.19 *	.01	.42 ***	-.16	-.27 ***	.08	.00	.17 *
12. Perceived Organizational Support	3.03	1.29	-.04	-.03	-.07	.03	.01	-.05	-.05	.10	-.02
13. Team-Member Exchange	5.59	.82	.16	.18 *	.08	-.27 ***	.32 ***	-.03	.26 **	.12	.14
14. Leader-Member Exchange	5.03	1.47	.04	.07	.02	-.13	.59 ***	-.44 ***	.03	.10	.13
Dependent Variables:											
15. Communal Social Capital Investment Behavior	43.22	22.40	.12	.21 **	.04	.24 **	.15	-.39 **	.09	.01	.27 ***
16. Affective Commitment	4.99	1.33	.11	.03	.02	-.29 ***	.30 ***	.00	.06	.11	.10
17. Job Satisfaction	5.55	1.15	.01	.08	-.03	-.21 *	.18 *	.03	.13	.14	.07
18. Job-Related Stress	2.29	.85	.07	-.10	.11	.06	.00	-.07	-.05	-.08	.03
19. Peer-Rated Performance	.36	.17	.09	.15	.04	.02	.42 ***	-.43 ***	.02	.04	.14
20. Leader-Rated Performance	3.53	.97	.06	.03	.01	-.04	n.a.	.04	.11	.11	.02

[a] $N = 150$
[b] Coding: 0 = female, 1 = male
[c] Coding: 0 = non-white, 1 = white
* $p < .05$, ** $p < .01$, *** $p < .001$

Note: Scale reliability estimates (Cronbach's alpha) for multi-item scales appear in parentheses along the diagonal

Table 6 (Continued)
Means, Standard Deviations, Correlations, and Scale Reliabilities [a]

Variables	Means	s.d.	10	11	12	13	14	15	16	17	18	19
Demographic Controls:												
1. Age	2.86	1.01										
2. Gender [b]	.41	.49										
3. Race [c]	.87	.34										
4. School 1	.35	.48										
5. School 2	.31	.46										
6. School 3	.34	.48										
Additional Controls:												
7. Collectivism	4.82	.76										
8. Equity Sensitivity – Benevolence	30.65	6.41										
9. Instrumentalism	6.53	14.26										
Independent Variables:												
10. Education	2.54	.80										
11. Communication Centrality	53.06	24.35	.03									
12. Perceived Organizational Support	3.03	1.29	-.02	.01	(.93)							
13. Team-Member Exchange	5.59	.82	.13	.13	.12	(.87)						
14. Leader-Member Exchange	5.03	1.47	.02	-.01	.34 ***	.37 ***	(.96)					
Dependent Variables:												
15. Communal Social Capital Investment Behavior	43.22	22.40	.07	.89 ***	.04	.25 **	.19 *	(.69)				
16. Affective Commitment	4.99	1.33	.20 *	.11	16 *	.55 ***	.40 ***	.18 *	(.86)			
17. Job Satisfaction	5.55	1.15	.01	.07	.25 **	.40 ***	.39 ***	.13	.58 ***	(.90)		
18. Job-Related Stress	2.29	.85	-.03	.02	-.43 ***	-.20 *	-.21 *	.04	-.30 ***	-.57 ***	(.92)	
19. Peer-Rated Performance	.36	.17	.14	.46 ***	-.03	.20 *	.39 ***	.62 ***	.29 ***	.22 **	-.01	
20. Leader-Rated Performance	3.53	.97	.18	.07	.01	.03	.24 *	.15	.20 *	.21 *	.01	.45 ***

[a] $N = 150$
[b] Coding: 0 = female, 1 = male
[c] Coding: 0 = non-white, 1 = white
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

Note: Scale reliability estimates (Cronbach's alpha) for multi-item scales appear in parentheses along the diagonal

Tests of Hypotheses

The first set of hypotheses of this study proposed a direct effect of each of the organizational social exchange variables (POS, LMX, and TMX) on communal social capital investment behavior (CSCIB). Hypotheses 1a – 1c posited that a) POS, b) LMX, and c) TMX would significantly predict CSCIB. These Hypotheses were tested in three steps. In the first step, CSCIB was regressed on the demographic variables (age, gender, race, and school). In step two, the dispositional and instrumental CSCIB motivation factors (collectivism, benevolence, and instrumentalism) were added to the regression equation. Finally, in step three POS, LMX and TMX were independently added to the regression equation to test their incremental effect on CSCIB. The results of the hierarchical regression analyses are presented in Table 7.

Contrary to predictions, neither POS nor LMX significantly explained additional variance in CSCIB after considering the effects of the demographic controls as well as the dispositional and instrumental motivation factors. While the overall model was significant in both cases (R^2 = .25, $p < .001$), in each case the variance in CSCIB was primarily explained by age (older teachers more likely to contribute than younger teachers), school (contributions greater in schools one and two than in school three), and instrumentalism. Thus, hypotheses 1a and 1b were not supported. TMX did, however, significantly predict CSCIB after considering the effects of the demographic variables and additional controls as hypothesized (b = .197, $p < .05$; ΔR^2 = .03, $p < .05$), therefore supporting Hypothesis 1c.

Based upon the expectation that an individual's perceived relationship with his or her workgroup would be the most influential of the organizational social exchange relationships due to the nature of the behaviors suggested to represent contributions to communal social

capital, Hypothesis 2 posited that TMX would explain additional variance in CSCIB after considering the effects of all controls and those of both POS and LMX. To test this hypothesis, POS and LMX were entered into the regression equation simultaneously with the previously discussed controls. TMX was then added to the equation in a second step. As can be seen from the results presented in Models 4a and 4b of Table 7, TMX did indeed significantly predict CSCIB after considering the effects of the controls as well as POS and LMX ($\underline{b} = .193$, $\underline{p} < .05$; $\underline{\Delta R^2} = .03$, $\underline{p} < .05$). Hypothesis 2 was therefore, supported.

Hypotheses 3 and 4 predicted that individual ability, as represented by the highest level of education one has attained, and opportunity, which was operationalized as one's centrality in the school's communication network, would serve as moderators of the relationship between each of the organizational social exchange variables and CSCIB. It was anticipated that even if perceived social exchange relationship quality motivates an individual to *want to* engage in behaviors that build the organization's communal social capital, having the requisite ability and opportunity to do so should increase the likelihood that such behaviors would actually be exhibited. The moderation effects predicted by hypotheses 3 and 4 were tested using hierarchical linear regression with interaction terms. CSCIB was first regressed on the demographic variables, the additional controls (dispositional and instrumental factors), each of the social exchange relationship variables (POS, LMX, and TMX entered in separate equations), and either the ability or the opportunity variable. The appropriate interaction term, representing the cross product of each of the social exchange variables and either ability or opportunity alternatively, was then added to the equation in a second step. A significant regression coefficient for the interaction term when also considering the effects of the social exchange relationship

variables and either ability or opportunity would provide evidence of a significant moderation effect. The results of these tests are presented in Tables C, D, & E in Appendix A.

Examination of Model 1b in Tables C, D and E reveals that the interaction term representing the cross product of ability (i.e., level of education) and POS, LMX, and TMX alternatively was not significant in any of the equations, thus failing to provide support for Hypotheses 3a – 3c. Model 2b in those same tables shows that the interaction terms representing the cross products of opportunity (i.e., communication network centrality) and POS, LMX, and TMX also failed to reach significance in either case. Hypothesis 4 was, therefore, also not supported. While neither ability nor opportunity was found to moderate the relationship between the social exchange variables and CSCIB, regression results suggest that both of the variables may *directly* predict CSCIB. Given this observation, consideration of both education and communication network centrality as predictors of CSCIB appears warranted and will thus be incorporated into additional analyses to be discussed after the results of the remaining hypotheses tests are presented.

Whereas the previous hypotheses predicted relationships between several independent variables and CSCIB as a dependent variable, the next set of hypotheses posited that CSCIB would serve as a significant predictor of a variety of affective outcomes, as well as performance as rated by two separate sources. Hypothesis 5 posited that CSCIB would significantly predict a) job stress, b) job satisfaction, and c) affective commitment. To test this hypothesis, each of the affective outcome variables was first regressed independently on the set of demographic control variables, which this time included education[15]. Next,

[15] Education was not considered as a demographic control in the previous hypotheses since it was hypothesized to be a moderator variable and was tested as such.

CSCIB was entered into the regression equation to determine whether it explained additional variance in each of the affective outcome variables above and beyond that explained by the demographic controls. The results of these analyses are presented in Table 8A.

A comparison of Model 1b to Model 1a in Table 8A indicates that CSCIB does not significantly add to the explanation of variance in job stress above that explained by the control variables ($\underline{b}$ = .057, n.s.; $\underline{\Delta R^2}$ = .00, n.s.). Thus, Hypothesis 5a was not supported. Contrary to predictions, CSCIB does not appear to be related to lower levels of job stress. The comparison of Model 2b to Model 2a, shows that the variance in job satisfaction explained by CSCIB fell slightly short of being significant at the $p < .05$ level ($\underline{b}$ = .176, $\underline{p}$ < .069; $\underline{\Delta R^2}$ = .02, $\underline{p}$ < .069), providing only marginal support for Hypothesis 5b. Finally, a similar comparison between Model 3b and Model 3a reveals the fact that CSCIB does serve as a significant predictor of affective organizational commitment ($\underline{b}$ = .192, $\underline{p} < .05$; $\underline{\Delta R^2}$ = .03, $\underline{p} < .05$), thereby providing support for Hypothesis 5c. Overall, Hypothesis 5 was partially supported by the results. While CSCIB appears to be unrelated to job stress, results suggest that individuals engaging in higher levels of communal social capital investment behavior are more likely to be affectively committed to their organization, and potentially (although to a lesser degree) more satisfied with their job.

Hypothesis 6 stated that CSCIB would significantly predict individual performance as rated by a) the individual's immediate supervisor, and b) the individual's work group peers. This hypothesis was tested using the same two-step procedure used to test Hypothesis 5. The results of these analyses are presented in Table 8B. Examination of Models 1a and 1b shows that, contrary to expectations, CSCIB failed to significantly predict teacher performance as assessed by the school principal ($\underline{b}$ = .177, n.s.; $\underline{\Delta R^2}$ = .02, n.s.). Thus,

Hypothesis 6a was not supported. As predicted in Hypothesis 6b, however, CSCIB did explain significant variance in peer-rated performance. This can be seen from a comparison of Model 2b to Model 2a of Table 8B ($\underline{b}$ = .506, $\underline{p}$ < .001; $\underline{\Delta R^2}$ = .20, $\underline{p}$ < .001). The data suggest that individuals who engage in greater levels of CSCIB are likely to receive more favorable performance assessments from their peers.

While the above results lend support to Hypothesis 6b, they should perhaps be interpreted with some degree of caution due to the fact that the measures of CSCIB and peer-rated performance were both collected from the same source (work group peers). The results of this particular test are, therefore, potentially subject to single-source response bias. To address this potential concern, another test of Hypothesis 6b was performed using a both a self-report, as well as a leader-rated measure of CSCIB (correlations among the three alternative measures of CSCIB, as well as peer- and leader-rated performance are presented in Table F in Appendix A). The results of these additional tests are presented in Table 9. As with the previously reported tests, peer-rated performance was first regressed on the demographic control variables. This time, however, either the self-report or leader-rated measure of CSCIB was then added to the regression equation in the second step. As can be seen in Table 9, both the self-report ($\underline{b}$ = .151, $\underline{p}$ < .05; $\underline{\Delta R^2}$ = .02, $\underline{p}$ < .05) and leader-rated ($\underline{b}$ = .587, $\underline{p}$ < .001; $\underline{\Delta R^2}$ = .32, $\underline{p}$ < .001) measures of CSCIB also significantly predicted peer-rated performance. These results, together with the results of the test presented in Table 8B, provide support for Hypothesis 6b.

The hypothesis test results presented thus far provide have provided some degree of support for the notion that perceived social exchange relationship quality may predict individual engagement in behaviors suggested to contribute to the communal social capital

of an organization. The test results also suggest that engaging in CSCIB may be associated with favorable individual outcomes in the form of job satisfaction, affective commitment, and peer-rated performance. The final hypothesis of this study (Hypothesis 7) went one step further in predicting that CSCIB would partially or fully mediate the relationship between the organizational social exchange variables (POS, LMX, and TMX) and affective and performance related individual work outcomes. This hypothesis was tested using Baron & Kenny's (1986) three-step procedure for testing mediation. Baron & Kenny suggest that mediation is determined based upon the significance level, as well as the relative size of the regression coefficients. Mediation is said to occur when the independent variable is significantly related to both the mediating variable and the dependent variable when examined separately, and when the effect of the independent variable on the dependent variable decreases significantly when both the independent and mediating variable are considered simultaneously. Full mediation is said to occur if there is no longer a significant relationship between the independent and dependent variable when the mediating variable is included in the regression equation. If, however, the relationship between the independent and dependent variable decreases, but still remains significant, when the mediating variable is included in the equation, then partial mediation is said to occur. Test results of the mediation effects predicted in Hypothesis 7 are presented in Tables 10A through 10C.

Hypothesis 7a posited that CSCIB would mediate the relationship between POS and each of the affective and performance related outcomes discussed in Hypotheses 5 and 6. Examination of the test results presented in Table 10A, as well as a review of the results of the test of Hypothesis 1a, indicates that POS does not significantly predict CSCIB ($\underline{b}$ = .042,

n.s), thus failing the first step of the mediation effects test. Consequently, Hypothesis 7a is not supported.

Hypothesis 7b predicted a significant mediation effect for CSCIB on the relationship between LMX and the above mentioned outcome measures. The results of these mediation tests are presented in Table 10B. The first step of the test indicated that LMX did significantly predict CSCIB when considered in isolation (b = .193, p < .05). Examination of the results of further tests for each of the dependent variables in question shows that LMX was also significantly related to each of the outcome measures. However, CSCIB significantly predicted only affective commitment (b = .183, p < .05) and peer-rated performance (b = .611, p < .001), resulting in a failed test for job stress, job satisfaction, and leader-rated performance. The third and final step of the mediation test shows that only in the case of predicting peer-rated performance did CSCIB remain significant (b = .563, p < .001) while LMX decreased in significance (b = .277, p < .001 versus b = .385, p < .001 in previous step). Therefore, Hypothesis 7b received only partial supported, holding true for only one of the five outcome variables tested.

Finally, Hypothesis 7c predicted that CSCIB would mediate the relationship between TMX and each of the affective and performance assessment variables. Results of this final test are presented in Table 10C. The results of this test mirrored those of performed for the LMX variable. As was indicated by the results presented in Table 10B, CSCIB was not a significant predictor of job-related stress, job satisfaction, or leader-rated performance. And once again, the mediation test for the affective commitment variable failed the third step, as CSCIB no longer significantly predicted affective commitment when considered simultaneously with TMX. CSCIB does, however, appear to mediate the relationship

between TMX and peer-rated performance as shown in Table 10C. In addition, the mediation effect in this case was full rather than partial, given that TMX was no longer a significant predictor of peer-rated performance in the presence of CSCIB ($\underline{b}$ = .049, n.s., versus $\underline{b}$ = .200, $\underline{p} < .05$ in previous step). Overall, Hypothesis 7c again receives only partial support, with the predicted relationship holding true for only one of the five outcome variables.

Table 7
Main Effects Regression Models
Predictors of Communal Social Capital Investment Behavior (CSCIB) [a]

Variable	Communal Social Capital Investment Behavior						
	Model 1	Model 2	Model 3a	Model 3b	Model 3c	Model 4a	Model 4b
Age	.172 *	.170 *	.170 *	.174 *	.152	.172 *	.146
Gender	.154	.155	.156	.148	.138	.161	.141
Race	.005	-.017	-.014	-.018	-.022	-.021	-.028
School 1	.427 ***	.397 ***	.392 ***	.376 ***	.431 ***	.392 ***	.436 ***
School 2	.351 ***	.336 ***	.338 ***	.286 *	.262 **	.300 *	.277 *
Collectivism		.041	.046	.039	-.018	.042	-.014
Equity Sensitivity – Benevolence		-.013	-.019	-.011	-.017	-.019	-.024
Instrumentalism		.198 *	.199 *	.188 *	.142	.171 *	.145
Perceived Organizational Support			.054			.039	.023
Leader-Member Exchange				.064		.030	-.006
Team-Member Exchange					.197 *		.193 *
R^2	.21 ***	.25 ***	.25 ***	.25 ***	.27 ***	.25 ***	.27 ***
ΔR^2		.04 [b]	.00 [c]	.00 [c]	.03 *[c]	.00 [c]	.03 *[b]

a = Standardized Beta coefficients

b = Change versus previous model

c = Change versus Model 2

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

Table 8A
Main Effects Regression Models
CSCIB as a Predictor of Affective Outcomes [a]

	Job Stress		Job Satisfaction		Affective Commitment	
Variable	**Model 1a**	**Model 1b**	**Model 2a**	**Model 2b**	**Model 3a**	**Model 3b**
Age	.122	.119	-.015	-.023	.000	-.010
Gender	-.129	-.135	.075	.055	-.002	-.023
Race	.126	.124	-.036	-.041	.021	.018
School 1	.106	.077	-.172	-.263 *	-.097	-.196
School 2	.063	.040	.083	.011	.233 *	.154
Education	-.060	-.074	-.028	-.069	.191 *	.144
Communal Social Capital Investment Behavior (CSCIB)		.057		.176		.192 *
R^2	.05	.05	.05	.08	.13 **	.16 ***
$\Delta R^{2\,b}$		.00		.03		.03 *

a = Standardized Beta coefficients

b = Change versus previous model

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

Table 8B
Main Effects Regression Models
CSCIB as a Predictor of Performance Outcomes [a]

Variable	Leader-Rated Performance		Peer-Rated Performance	
	Model 1a	Model 1b	Model 2a	Model 2b
Age	-.018	-.028	-.028	-.050
Gender	.029	.041	.077	.023
Race	.061	.037	.059	.043
School 1	.083	-.023	.372 ***	.117
School 2	.000	.000	.621 ***	.422 ***
Education	.202	.150	.274 **	.148 *
Communal Social Capital Investment Behavior (CSCIB)		.177		.506 ***
R^2	.04	.06	.32 ***	.52 ***
$\Delta R^{2\,b}$		.02		.20 ***

a = Standardized Beta coefficients

b = Change versus previous model

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

Table 9
Main Effects Regression Models
Self-Reported and Leader-Rated CSCIB as Predictors of Peer-Rated Performance [a]

Variable	Peer-Rated Performance			
	Model 1a	Model 1b	Model 2a	Model 2b
Age	-.028	-.055	.009	.044
Gender	.079	.090	.020	.004
Race	.057	.048	.095	-.007
School 1	.374 ***	.380 ***	.428 ***	.410 ***
School 2	.614 ***	.601 ***	.000	.000
Education	.275 **	.292 ***	.301 *	.169
Self-Reported Communal Social Capital Investment Behavior (CSCIB)		.151 *		
Leader-Rated Communal Social Capital Investment Behavior (CSCIB)				.587 ***
R^2	.32 ***	.34 ***	.18 **	.50 ***
ΔR^2 [b]		.02 *		.32 ***

a = Standardized Beta coefficients

b = Change versus Previous Model

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

Table 10A
Mediation Effects Regression Models
CSCIB as a Mediator between Perceived Organizational Support and Individual Outcomes [a]

Variable	CSCIB	Job-Related Stress			Job Satisfaction			Affective Commitment		
		1	2	3	1	2	3	1	2	3
Perceived Organizational Support (POS)	.042	-.427 ***		-.430 ***	.248 **		.242 **	.164 *		.156
Communal Social Capital Investment Behavior (CSCIB)			.035	.049		.132	.128		.183 *	.185 *
R^2	.00	.18 ***	.00	.19 ***	.06 **	.02	.08 **	.03 *	.03 *	.06 *

Variable	Peer-Rated Performance			Leader-Rated Performance		
	1	2	3	1	2	3
Perceived Organizational Support (POS)	-.031		-.058	.007		-.001
Communal Social Capital Investment Behavior (CSCIB)		.611 ***	.640 ***		.125	.167
R^2	.00	.37 ***	.41 ***	.00	.02	.03

a = Standardized Beta coefficients

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

Table 10B
Mediation Effects Regression Models
CSCIB as a Mediator between Leader-Member Exchange and Individual Outcomes [a]

Variable	CSCIB	Job-Related Stress			Job Satisfaction			Affective Commitment		
		1	2	3	1	2	3	1	2	3
Leader-Member Exchange (LMX)	.193 *	-.208 **		-.224 **	.391 ***		.380 ***	.401 ***		.379 ***
Communal Social Capital Investment Behavior (CSCIB)			.035	.080		.132	.053		.183 *	.104
R^2	.037 *	.04 **	.00	.05 *	.15 ***	.02	.16 ***	.16 ***	.03 *	.17 ***

Variable	Peer-Rated Performance			Leader-Rated Performance		
	1	2	3	1	2	3
Leader-Member Exchange (LMX)	.385 ***		.277 ***	.240 *		.218 *
Communal Social Capital Investment Behavior (CSCIB)		.611 ***	.563 ***		.125	.099
R^2	.15 ***	.37 ***	.45 ***	.06 *	.02	.07 *

a = Standardized Beta coefficients

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

Table 10C
Mediation Effects Regression Models
CSCIB as a Mediator between Team-Member Exchange and Individual Outcomes [a]

Variable	CSCIB	Job-Related Stress			Job Satisfaction			Affective Commitment		
		1	2	3	1	2	3	1	2	3
Team-Member Exchange (TMX)	.248 **	-.199 *		-.220 **	.402 ***		.395 ***	.545 ***		.537 ***
Communal Social Capital Investment Behavior (CSCIB)			.035	.083		.132	.028		.183 *	.032
R^2	.06 **	.04 *	.00	.05 *	.16 ***	.02	.16 ***	.30 ***	.03 *	.30 ***

Variable	Peer-Rated Performance			Leader-Rated Performance		
	1	2	3	1	2	3
Team-Member Exchange (TMX)	.200 *		.049	.025		.003
Communal Social Capital Investment Behavior (CSCIB)		.611 ***	.611 ***		.125	.146
R^2	.04 *	.37 ***	.39 ***	.00	.02	.02

a = Standardized Beta coefficients

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

Additional Analyses

As a further test of the mediation effects predicted in Hypothesis 7, structural equation modeling (SEM) was performed using AMOS 4.0 (Arbuckle & Wothke, 1999). The use of SEM in the testing of hypotheses has the advantage of allowing for the hypothesized model to be tested via a simultaneous analysis of the entire system of variables to determine the extent to which it is consistent with the data. Adequate *goodness of fit* provides support for the suggested relationships between variables. If the goodness of fit is deemed to be less than adequate, however, then the hypothesized relationships should be rejected (Byrne, 2001).

Before testing the structural model, it was necessary to first perform confirmatory factor analysis (CFA) on the measurement model to determine whether the measured items (indicator variables) loaded on the theoretical constructs (latent variables) as expected. There were a total of 51 items that represented the seven constructs included in the measurement model. However, given the improbability of achieving adequate fit with more than thirty items (see Joreskog & Sorbom, 1993), the confirmatory factor analysis was performed using items combined into parcels as suggested by West, Finch, & Curran (1995). The items within each scale were randomly assigned to parcels of either two or three items. The result was the creation of from two to four parcels per construct, each consisting of two or three items.[16] The mean values of the items comprising each parcel were then utilized as the indicator variables in the CFA procedure. The resulting measurement model is presented in Figure 6. (The items making up each parcel, as well as parcel means and standard deviations, can be found in Table G of Appendix A).

[16] The one exception was the CSCIB measure. Since the measure consisted of only three items, the items were not combined to form a parcel.

Results of the confirmatory factor analysis appear in Table 11. Following the suggestions of previous researchers (cf. Byrne, 2001; Hoyle, 1995), several fit indices were utilized to assess how well the model fit the data. While the X^2 statistic is the most commonly reported test of model fit, sensitivity to sample size and reliance on perfect fit as the standard of comparison (e.g., Bollen, 1989; Byrne, 2001) have led to problems of fit (rarely non significant in practice). Therefore, although the X^2 statistic is reported for each of the models discussed below, it is utilized primarily for the purposes of model comparison.

Indices reported for the purpose of assessing goodness-of-fit include the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root-mean square error of approximation (RMSEA). The TLI is the mathematical equivalent of the commonly reported nonnormed fit index (NNFI), and along with the CFI it provides an estimate of the relative improvement of the hypothesized model over a baseline (independence) model (Bentler & Bonnett, 1980). Models with CFI and TLI estimates above .90 are considered to have an adequate fit to the data (Bentler & Bonnett, 1980). The RMSEA is a discrepancy function that indicates the extent to which the residuals in the model differ from zero (MacCallum, Browne, & Sugawara, 1996). In addition, the discrepancy is expressed per degrees of freedom, thus factoring in model complexity (number of parameters in the model; Byrne, 2001). According to Browne & Cudeck (1993), models with RMSEA estimates of less than .05 are considered to reflect a very good fit, while those with values between .05 and .08 represent a reasonable fit. MacCallum et al. (1996) add that RMSEA values between .08 and .10 indicate a fair to mediocre fit, and those above .10 indicate a poor fit to the data.

Measurement Model Evaluation

Analysis of the seven-factor measurement model revealed that the model provides a good fit to the data (X^2 (152, N=245) = 292.18, $p < .001$, CFI=.99, TLI=.98, RMSEA=.061). Although the X^2 is significant, each of the other indices indicates acceptable fit of the model. In addition, the chi-square per degrees of freedom (X^2/df = 1.92) is well below the 5.0 threshold suggested by some to represent adequate model data fit (e.g., Carmines & McIver, 1981; Marsh & Hocevar, 1985).

To further examine the adequacy of fit of the seven-factor measurement model, the model was compared to a one-factor, "common method" model (see Podsakoff & Organ, 1986), as well as an alternative, theoretically-feasible, six-factor model. The goodness-of-fit indices and the results of the chi-square difference test for each model relative to the base (seven-factor) measurement model are presented in Table 11. As can be seen in Table 11, the seven-factor measurement model provided a better fit to the data than either the one-factor model (X^2 (171, N=245) = 2889.24, $p < .001$, CFI=.75, TLI=.69, RMSEA=.255; ΔX^2 = 2,597.06, Δd.f. = 19, $p < .001$) or the six-factor model (X^2 (158, N=245) = 589.34, $p < .001$, CFI=.96, TLI=.95, RMSEA=.097; ΔX^2 = 297.16, Δd.f. = 6, $p < .001$), further confirming the adequacy of the proposed measurement model.

Figure 6
Confirmatory Factor Analysis - Measurement Model

Item Parcel	Loadings*
POS-P1	.987**
POS-P2	.488**
POS-P3	.637**
LMX-P1	.822**
LMX-P2	.759**
LMX-P3	.572**
LMX-P4	.901**
TMX-P1	.771**
TMX-P2	.667**
TMX-P3	.764**
CSCIB-M1	.978**
CSCIB-M2	.990**
CSCIB-M3	.989**
STRESS-P1	.709**
STRESS-P2	.900**
JOBSAT-P1	.829**
JOBSAT-P2	.780**
AFFCOM-P1	.772**
AFFCOM-P2	.739**
AFFCOM-P3	.628**
* - Squared multiple correlations	
** - $p < .01$	

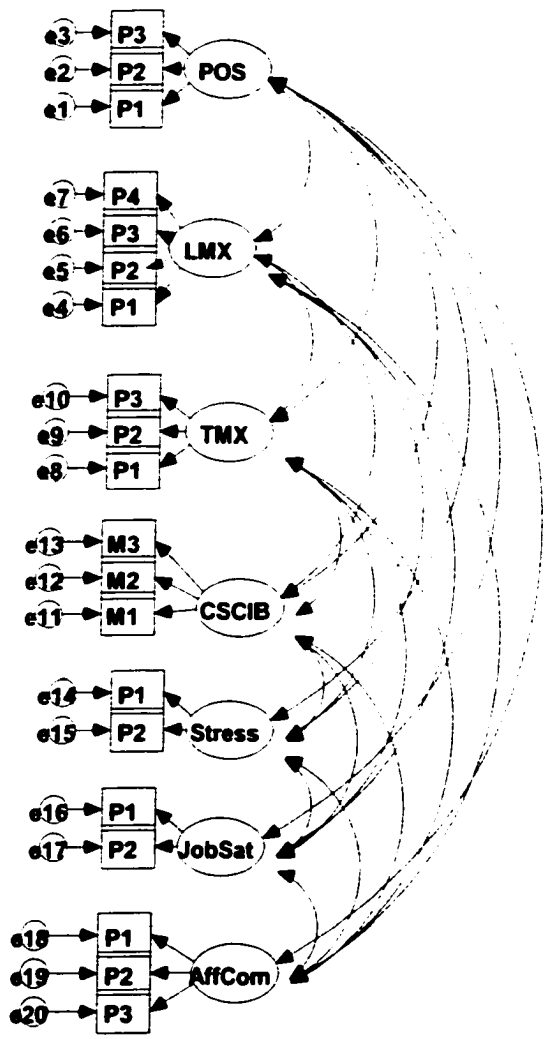


Table 11
Confirmatory Factor Analysis
Measurement Model Comparisons

	X^2	df	ΔX^2 [a]	ΔX^2 df	CFI	TLI / NNFI	RMSEA
7 factor model (baseline)	292.18***	152	--	--	.99	.98	.061
1 factor model	2,889.24***	171	2,597.06***	19	.75	.69	.255
6 factor model	589.34***	158	297.16***	6	.96	.95	.097

*** $p < .001$
[a] – change versus baseline model

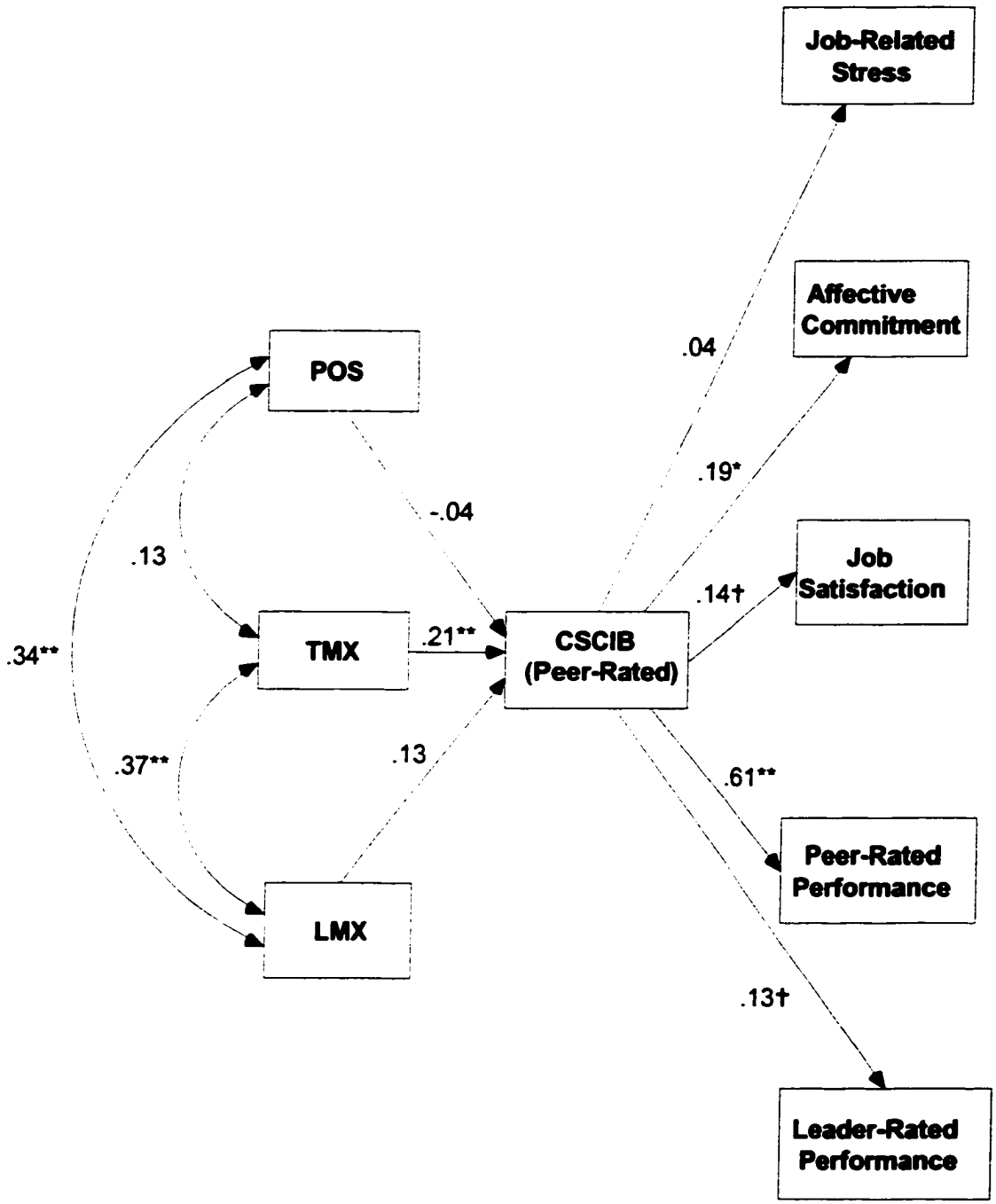
Structural Model Evaluation

The path diagram for the hypothesized structural model is presented in Figure 7. While the AMOS structural equation modeling results were consistent with the previously presented multiple regression results, examination of the goodness of fit indices revealed that the model data fit was less than adequate (X^2 (25, N=245) = 279.60, $p < .001$, CFI=.93, TLI=.88, RMSEA=.204). Of the examined indices, the CFI was the only one that indicated at least a reasonable fit, thus suggesting that model modification was necessary in order to develop a model that better fit the data. Recognizing, however, that there is a danger that data-driven model modifications may capitalize on chance characteristics of the sample data and result in a final model that fails to generalize to the population or to other samples (MacCallum, Roznowski, & Necowitz, 1992), model modifications were limited to those that were theoretically plausible and/or supported by prior research.

Bentler & Chou (1987) suggest that when conducting model modification, it is generally safer to delete paths than to add paths. Therefore, the first set of modifications involved dropping the insignificant path between perceived organizational support (POS) and communal social capital investment behavior (CSCIB; $p = .666$), as well as the insignificant path between CSCIB and Job Stress ($p = .663$). The results of a chi-square difference test indicated that Alternative Model 1 represents a significant improvement over the originally hypothesized model ($\Delta X^2 = 94.22$, Δd.f. = 9, $p < .001$). The goodness of fit indices, however, indicated that the model data fit was still less than adequate (X^2 (14, N=245) = 185.37, $p < .001$, CFI=.95, TLI=.89, RMSEA=.224). Therefore, drawing on prior theory and empirical research (Mathieu & Zajac, 1990; Mowday, Porter, & Steers, 1982; Mueller & Lawler, 1999), a path was added between job satisfaction and affective

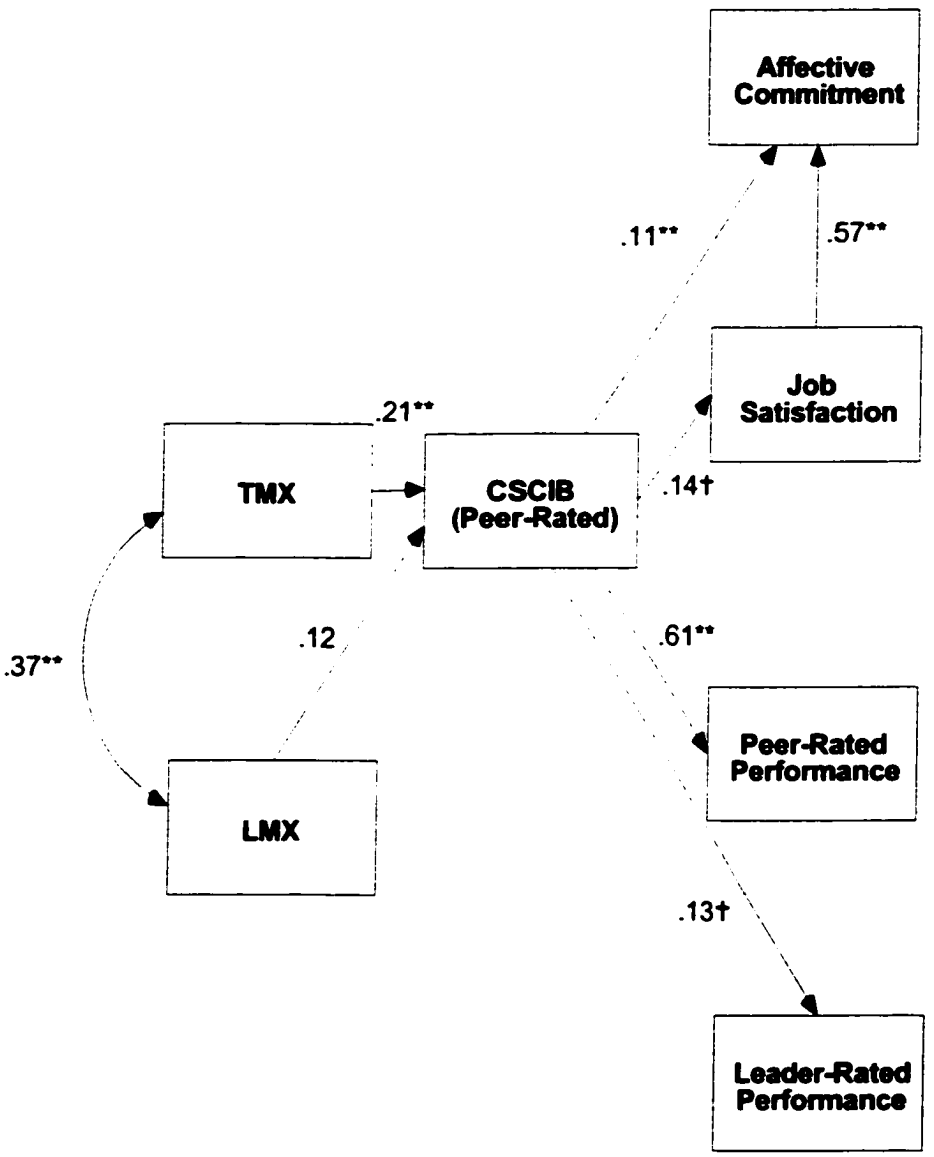
commitment in an attempt to further improve model data fit. The revised model (Alternative Model 2) is presented in Figure 8. The addition of the path between job satisfaction and affective commitment resulted in a significant improvement in fit over Alternative Model 1 ($\Delta X^2 = 57.78$, Δd.f. = 1, $p < .001$). In addition, Alternative Model 2 demonstrates adequate model data fit as each of the examined goodness of fit indices reached the reasonable fit level with the exception of the RMSEA index of .190 (X^2 (13, N=245) = 127.59, $p < .001$, CFI=.96, TLI=.92, RMSEA=.190). A summary of the model modification results is presented in Table 12.

Figure 7
SEM Base Model – Peer-Rated CSCIB



** - $p \leq .01$
* - $p \leq .05$
† - $p \leq .10$

Figure 8
SEM Alternative Model 2 – Peer-Rated CSCIB



** - $p \leq .01$
* - $p \leq .05$
† - $p \leq .10$

Table 12
Structural Model Comparisons
With Goodness-of-Fit Indices
Peer-Rated CSCIB

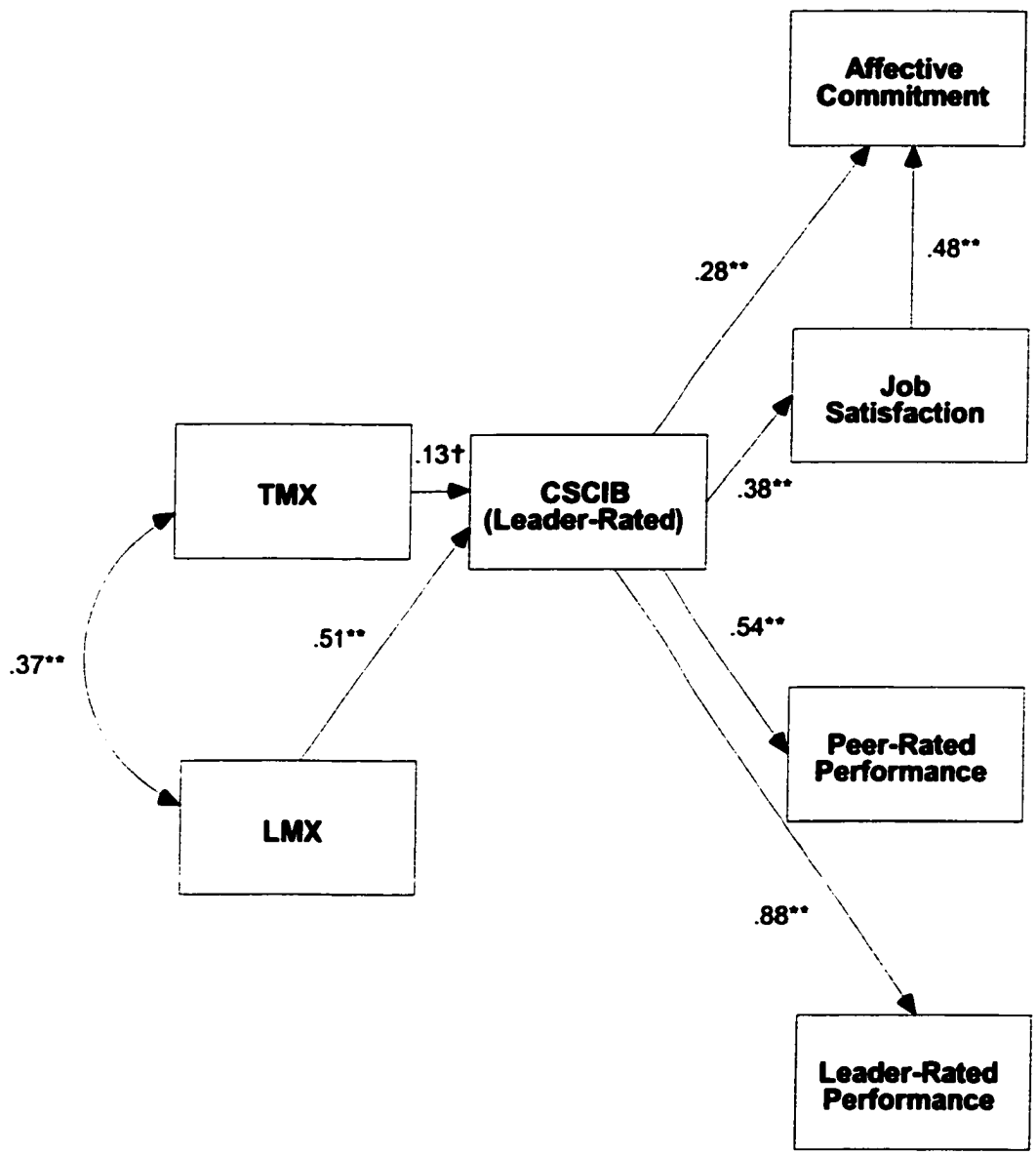
	X^2	df	ΔX^2 [a]	ΔX^2 df	CFI	TLI / NNFI	RMSEA
Hypothesized Model	279.60***	25	--	--	.93	.88	.204
Alternative Model 1	185.37***	14	94.23***	9	.95	.89	.224
Alternative Model 2	127.59***	13	57.78***	1	.96	.92	.161

*** $p < .001$
[a] – change versus previous model

Although the model modifications performed resulted in a theoretically plausible model that fit the data significantly better than the original hypothesized model, the path coefficients of several of the hypothesized relationships in the final model were insignificant. Thus, a final set of analyses was performed on the structural model using a leader-rated operationalization of the CSCIB construct rather than the previously discussed peer-rated operationalization. The same series of modification steps reported above were performed using the leader-rated CSCIB measure. The result was a significant improvement in model data fit, as well as an increase in the number of significant path coefficients in the final model (see Figure 9).

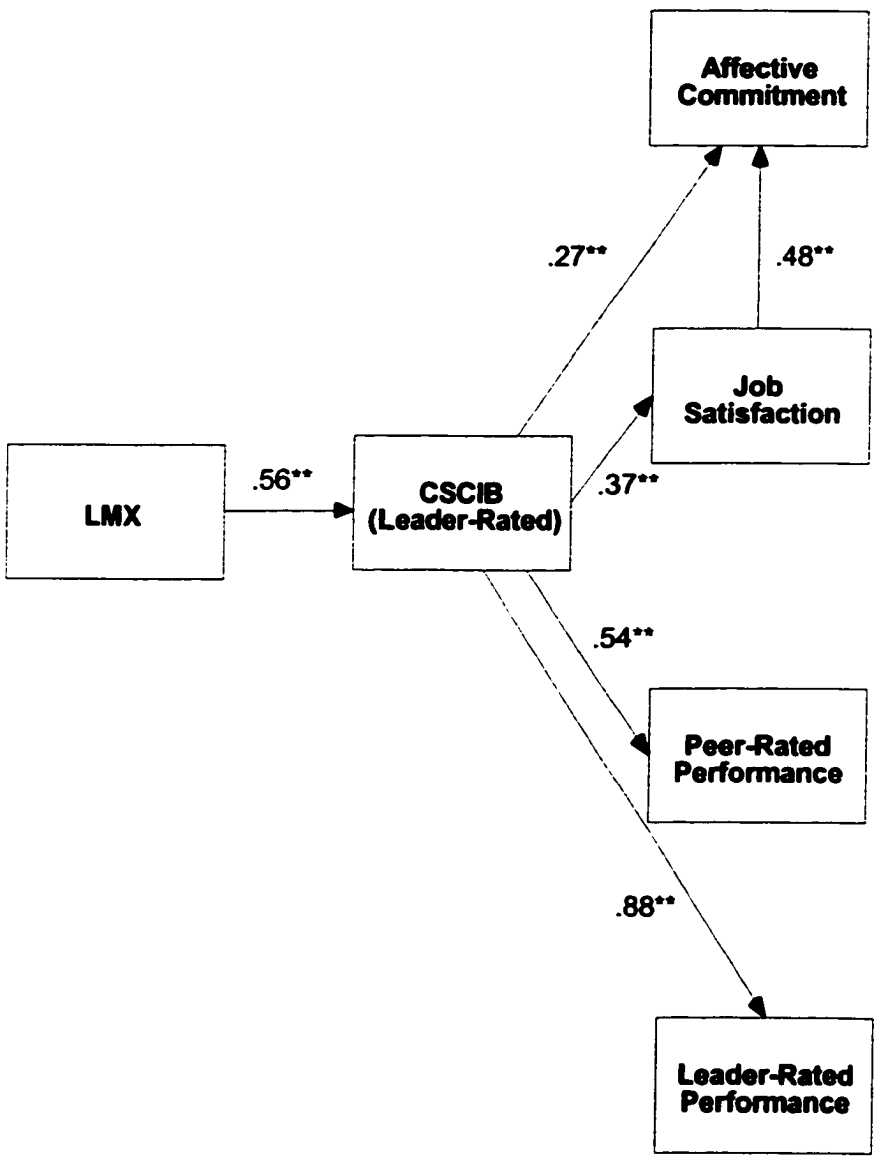
While model data fit improved significantly with the use of leader-rated CSCIB, the RMSEA index of .114 was still outside of the suggested range for reasonable fit (.05 to .08) and even mediocre fit (.08 to .10) to the data. In addition, the chi-square per degrees of freedom ratio of 4.16, while below the 5.0 guideline suggested by some (cf., Carmines & McIver, 1981; Marsh & Hocevar, 1985), was still considerably larger than the 2.0 threshold recommended by other researchers (cf., Byrne, 1989). Therefore, in a final attempt to improve model data fit, the TMX variable, which was shown to be only a marginally significant predictor of leader-rated CSCIB, was dropped from the model. The resulting model represented a significant improvement over the previous model ($\Delta X^2 = 36.25$, Δd.f. = 4, $p < .001$) and demonstrated good model data fit by all of the evaluated standards (X^2 (9, N=245) = 17.83, p =.037, CFI=1.00, TLI=.99, RMSEA=.063). This final model along with the associated path coefficients is presented in Figure 10. In addition, a summary of all model modification results utilizing the leader-rated CSCIB variable is presented in Table 13.

Figure 9
SEM Alternative Model 2b – Leader-Rated CSCIB



** - $p \leq .01$
* - $p \leq .05$
† - $p \leq .10$

Figure 10
SEM Alternative Model 3 – Leader-Rated CSCIB
Final Model



** - $p \leq .01$
* - $p \leq .05$
† - $p \leq .10$

Table 13
Structural Model Comparisons
With Goodness-of-Fit Indices
Leader-Rated CSCIB

	X^2	df	ΔX^{2a}	ΔX^2 df	CFI	TLI / NNFI	RMSEA
Hypothesized Model	183.28***	25	--	--	.96	.93	.161
Alternative Model 1B	94.41***	14	88.87***	9	.98	.95	.153
Alternative Model 2B	54.08***	13	40.33***	1	.99	.98	.114
Alternative Model 3	17.83*	9	36.25***	4	1.00	.99	.063

* $p < .05$
** $p < .01$
*** $p < .001$
[a] – change versus previous model

Ability and Opportunity as Direct Predictors of CSCIB

While neither ability nor opportunity significantly moderated the relationship between either of the three social exchange relationship variables (POS, TMX, LMX) and communal social capital investment behavior (CSCIB) as predicted, both did appear to have a direct effect on CSCIB (see Tables C, D, and E in Appendix A). Therefore, additional regression analyses were conducted to examine the effects that these variables would have on the prediction of CSCIB when added to the regression equation along with the other predictor variables.

In order to examine which if any of the social exchange relationship variables still significantly predict CSCIB after considering the potential effects of ability (education) and opportunity (communication network centrality), hierarchical regression analysis was once again utilized. The analysis was conducted in three steps. In the first step, CSCIB was regressed on the demographic variables (age, gender, race, and a dummy variable for school), as well as the dispositional and instrumental CSCIB motivation factors (collectivism, benevolence, and instrumentalism). In step two, ability and opportunity were added to the regression equation. Finally in step three, POS, LMX and TMX were simultaneously added to the regression equation to test their incremental effect on CSCIB in the presence of ability and opportunity. The results of the hierarchical regression analyses are presented in Table 14. As can be seen in Table 14, both education ($\underline{b} = .112$, $\underline{p} < .05$) and communication network centrality ($\underline{b} = .814$, $\underline{p} < .001$) significantly explained additional variance in CSCIB when added to the regression model ($\underline{\Delta R^2} = .57$, $\underline{p} < .001$). Further, the addition of the social exchange relationship variables in a subsequent step still resulted in the explanation of additional variance in CSCIB above and beyond that explained by all of the previously entered variables ($\underline{\Delta R^2} = .03$, $\underline{p} < .01$), thus continuing to support the

hypothesized relational explanation for CSCIB. Examination of the individual social exchange relationship variables, however, revealed that whereas in previous analyses TMX was the only one of the three social exchange variables to reach significance (see Table 7), after considering the effects of education and communication network centrality, it was in fact LMX ($\underline{b}$ = .158, $\underline{p}$ < .001) that significantly explained incremental variance in CSCIB (see Table 14, Model 3a). Rerunning the analyses using leader-rated CSCIB rather than the original peer-rated measure yielded similar results. However, as can be seen in Table 14, Model 2b, when the leader-rated measure of CSCIB is utilized, adding education and communication network centrality results in a model that does not reach overall significance. The addition of the social exchange relationship variables in the next step does again, however, result in a significant change in R^2, as well as a significant R^2 for the overall model. Further, as was the case with peer-rated CSCIB, of the three social exchange variables only LMX ($\underline{b}$ = .353, $\underline{p}$ < .01) significantly predicted leader-rated CSCIB.

Based upon the above reported regression results, it appeared unlikely that the inclusion of the ability and opportunity variables would significantly improve the fit of the final model presented in Figure 10. However, an additional structural equation model was constructed with the additional variables and goodness-of-fit statistics were computed and compared to the previously presented final model. While the newly constructed model had an acceptable CFI (.98) and TLI (.96), the RMSEA of .147 was outside of the recommended range for a reasonably fitting model, and as anticipated the model failed to improve upon the fit of the final model presented in Figure 10. The addition of the ability and opportunity variables resulted in a significant increase in the chi-square of the model (ΔX^2 = 64.8, Δd.f. = 11, $\underline{p}$ < .001).

Table 14
Main Effects Regression Models
Predictors of Communal Social Capital Investment Behavior (CSCIB) [a]
(With Ability and Opportunity)

Variable	Communal Social Capital Investment Behavior (Peer Rated)			Communal Social Capital Investment Behavior (Leader Rated)		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Age	.194 *	-.010	-.029	.069	-.069	-.082
Gender	.123	.044	.029	-.021	.029	.009
Race	.131	.090 *	.048	.071	.037	.002
School	-.346 ***	-.070	-.036	.067	.189	.292 *
Collectivism	.005	-.007	-.019	.106	.105	.082
Equity Sensitivity – Benevolence	-.005	.011	-.001	-.003	.007	.012
Instrumentalism	.179 *	.116 **	.089 *	.175	.145	.108
Ability (Education)		.112 *	.092		.115	.090
Opportunity (Network Centrality)		.814 ***	.831 ***		.335 **	.325 **
Perceived Organizational Support			-.031			-.002
Leader-Member Exchange			.158 ***			.353 **
Team-Member Exchange			.056			-.008
R^2	.24 ***	.80 ***	.83 ***	.06	.16	.27 *
ΔR^2		.57 ***[b]	.03 ***[c]		.10 *[b]	.11 *[c]

a = Standardized Beta coefficients

b = Change versus previous model

c = Change versus Model 2

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

Summary of Results

Hypothesis 1 posited that a) POS, b) LMX, and c) TMX would each significantly predict CSCIB. However, contrary to predictions, neither POS nor LMX significantly explained additional variance in CSCIB after considering the effects of the demographic controls as well as the dispositional and instrumental motivation factors. Thus, Hypotheses 1a and 1b were not supported. TMX did, however, significantly predict CSCIB after considering the effects of the demographic variables and additional controls as hypothesized, therefore supporting Hypothesis 1c.

According to Hypothesis 2, TMX was expected to still explain additional variance in CSCIB after considering the effects of all controls and those of both POS and LMX. This Hypothesis was supported.

Hypotheses 3 and 4 predicted that education level (i.e., ability) and communication network centrality (i.e., opportunity) respectively would serve as moderators of the relationship between each of the organizational social exchange variables and CSCIB. Results provided no support for either hypothesis, with each of the examined interaction terms failing to reach significance. However, while neither ability nor opportunity was found to moderate the relationship between the social exchange variables and CSCIB, regression results suggest that both of the variables may directly predict CSCIB.

Hypothesis 5 posited that CSCIB would significantly predict a) job stress, b) job satisfaction, and c) affective commitment. Results indicated that, contrary to predictions CSCIB did not appear to be related to lower levels of job stress. Thus, Hypothesis 5a was not supported. However, results showed that CSCIB did significantly predict job

satisfaction and affective commitment as anticipated, providing support for Hypotheses 5b and 5c.

Hypothesis 6 stated that CSCIB would significantly predict individual performance as rated by a) the individual's immediate supervisor (the school principal), and b) the individual's work group peers (other teachers). Examination of the data showed that, contrary to expectations, CSCIB failed to significantly predict teacher performance as assessed by the school principal. Therefore, Hypothesis 6a was not supported. As predicted in Hypothesis 6b, however, CSCIB did explain significant variance in peer-rated performance. The data suggest that teachers who engage in greater levels of CSCIB are likely to receive more favorable performance assessments from their peers. Given that CSCIB and peer-rated performance were reported from the same source the test results supporting Hypothesis 6b are potentially subject to single-source response bias. Therefore, a second test of Hypothesis 6b was performed using both a self-report measure and a leader-rated measure of CSCIB. Whether operationalized as a self-report or a leader-rated measure, CSCIB again significantly predicted peer-rated performance. This together with the results of the previous test results provided support for Hypothesis 6b.

The final set of hypotheses of this study predicted that CSCIB would partially or fully mediate the relationship between the organizational social exchange variables (POS, LMX, and TMX) and affective and performance related individual work outcomes. Hypothesis 7a posited that CSCIB would mediate the relationship between POS and each of the affective and performance related outcomes discussed in Hypotheses 5 and 6. Examination of the test results indicated that POS did not significantly predict CSCIB, thus failing the first step of the mediation effects test. Consequently, Hypothesis 7a is not

supported. Hypothesis 7b predicted a significant mediation effect for CSCIB on the relationship between LMX and the above mentioned outcome measures. The first step of the mediation test indicated that LMX did significantly predict CSCIB when considered in isolation. Examination of the results of further tests for each of the dependent variables in question shows that LMX was also significantly related to each of the outcome measures. However, CSCIB significantly predicted only affective commitment and peer-rated performance, resulting in a failed test for job stress, job satisfaction, and leader-rated performance. The third and final step of the mediation test shows that only in the case of predicting peer-rated performance did CSCIB remain significant while LMX decreased in significance. Therefore, Hypothesis 7b received only partial supported, holding true for only one of the five outcome variables tested. Finally, Hypothesis 7c predicted that CSCIB would mediate the relationship between TMX and each of the affective and performance assessment variables. The results of this hypothesis test mirrored those of performed for the LMX variable. Hypothesis 7c again received partial support, with the predicted relationship holding true for only one of the five outcome variables.

A summary of the hypothesis test results discussed above is presented in Table 15.

Table 15
Summary of Hypotheses Testing Results

	Individuals' perceptions regarding the quality of their social exchange relationship with a) the organization as an entity (POS), b) their immediate supervisor (LMX), and c) their work group peers (TMX) will be positively related to their communal social capital investment behavior. **Partially Supported.**
	Individual perceptions of TMX will significantly explain additional variance in CSCIB beyond the effects of POS and LMX. **Supported.**
	Individuals' human capital, as measured by their highest level of education completed, will have a positive moderating effect on the relationship between a) POS, b) LMX, and c) TMX and CSCIB. **Not Supported.**
	Individuals' position in the organization's communication network, as measured by *in-degree centrality* will have a positive moderating effect on the relationship between 1) POS, 2) LMX, and 3) TMX and CSCIB. **Not Supported.**
	Individuals' communal social capital investment behavior will be negatively related to a) job stress, and positively related to b) overall job satisfaction and c) affective organizational commitment. **Partially Supported.**
	Individuals' communal social capital investment behavior will be positively related to their performance as rated by a) their immediate supervisor, and b) their work group peers. **Partially Supported.**
	Individuals' communal social capital investment behavior will mediate the relationship between their perceptions of a) POS, b) LMX, and c) TMX and their 1) leader-rated performance, 2) peer-rated performance, 3) job stress, 4) overall job satisfaction, and 5) affective organizational commitment. **Partially Supported.**

Chapter VI

DISCUSSION AND IMPLICATIONS

The primary purpose of this study was to examine the effects of perceived social exchange relationship quality as measured by perceived organizational support (POS), team-member exchange (TMX), and leader-member exchange (LMX) on the communal social capital investment behavior (CSCIB) of individuals. The study also examined whether an individual's level of education and/or centrality in the organization's communication network, which were suggested to represent an individual's ability and opportunity to engage in behaviors that lead to the creation and maintenance of organizational social capital, might moderate the effects of the social exchange relationship variables on CSCIB. Finally, the effect of CSCIB on a variety of individual work-related outcomes was examined, including the examination of CSCIB as a mediating variable between perceived social exchange relationship quality and each of the work-related outcome measures.

This final chapter includes a discussion of the results of the hypotheses tests performed, as well as the results of additional analyses conducted. It then identifies strengths and limitations of the present study, as well as significant research contributions and implications for practice. Finally, the chapter closes with suggestions for future research and overall conclusions.

Discussion of Results

This study predicted that the individual contributions of teachers to the communal social capital of their school could be explained by the perceived quality of their social exchange relationships with the school district (POS), other teachers in the school (TMX),

and their principal (LMX). It was believed that this relational explanation would significantly predict communal social capital investment behavior (CSCIB) even after considering any dispositional or instrumental explanations for such behavior. Findings from the study suggest that, as predicted, the more favorable their perceived social exchange relationship with other teachers, the more likely a teacher was to engage in CSCIB as reported by their peers.

While TMX was predicted to be the strongest predictor of CSCIB when each of the social exchange relationships were considered simultaneously, it was also hypothesized that both LMX and POS would significantly influence CSCIB when each of the exchange relationships were considered in isolation. Initial tests of the hypotheses, however, did not support this prediction. Instead, TMX was the only social exchange relationship variable that significantly predicted CSCIB even when each relationship was considered separately. One possible explanation for the lack of the expected effect of POS on CSCIB might be that teachers' social exchange relationship with the district is more distant than the more proximate relationship that they have with their fellow teachers. Work in the area of multiple commitments suggests that more immediate relationships are more salient to individuals and thus have an "interaction advantage" since face-to-face interactions occur with greater frequency in these more proximate relationships (Lawler, 1992; Mueller & Lawler, 1999). This may lead to stronger effects of the more proximate relationships on individual attitudes and behaviors.

Another potential explanation for the lack of a relationship between POS and CSCIB is that, although the organization was defined as the school district in the present study, it may be that teachers do not view the district in that way. It may instead be that teachers

view their school as the organization and the district as an outside entity, even though the school is nested within, and ultimately governed by, the district. Comments received in the open comment section of the data collection survey tend to support this explanation in that teachers seemed to consistently use "we" versus "they" language when discussing the school in relation to the district, indicating feelings of separation rather than inclusiveness, as well as a lack of identification with the district as an organization (see Johnson, Smith, & Gambill, 2000 for more on conceptions of "we").

Surprisingly, in the initial tests of the hypotheses, LMX was also not significantly related to CSCIB after controlling for dispositional and instrumental factors. This was despite the fact that unlike the teachers' perceived social exchange relationship with the district, an individual's relationship with his or her immediate supervisor is generally considered to be one of the more proximate organizational relationships. It could possibly be the case, however, that the above mentioned "interaction advantage" typically associated with proximate relationships is less evident in the context of principal-teacher relationships due to the large number of teachers for which a principal is typically responsible (e.g., that number is over one hundred at the largest high school in the current study). This greatly reduces the amount of time potentially available for one-on-one interaction between the principal and any individual teacher.

Another potential explanation for the lack of a significant relationship between LMX and CSCIB might be that if any one of the perceived organizational social exchange relationships is strong enough, it may render the others less important. In other words, if I have for instance a highly favorable social exchange relationship with my fellow teachers in

the school (TMX), then I may be more likely to engage in CSCIB regardless of my perceived social exchange relationship with the principal and/or the district.

Finally, it could also be that the failure of LMX to significantly predict CSCIB in the initial tests of the hypotheses is attributable to the source of the CSCIB rating. Individuals in different roles often view the same behavior differently because of different expectations and/or selective perception (Lawler, 1967; Van Dyne & LePine, 1998). Van Dyne & LePine cite research that supports the applicability of this assertion for performance ratings and reputational effectiveness, as well as extra- and in-role behaviors. Further, they conducted a study in which they found support for the convergent, discriminant, and predictive validity of in-role and extra-role behaviors as measured via self, peer, and supervisor ratings. Taking a similar approach in the present study, I also collected self-report and supervisor-rated measures of CSCIB in addition to the peer-rated measure in order to examine the construct from various perspectives (correlations among the various ratings of CSCIB are presented in Table F of Appendix A).

Additional analyses conducted with the multiple measures of CSCIB suggest that the source of the rating does indeed make a difference as LMX successfully predicted leader-rated CSCIB even though it failed to predict CSCIB as rated by peers. As previously discussed, TMX on the other hand significantly predicted peer-rated CSCIB but not leader-rated CSCIB. POS was not significantly related to either measure of CSCIB, again suggesting the possibility that teachers do not view the school district as the "organization" for which they work. Although I also collected a self-report measure of CSCIB as discussed, that measure was not utilized in examining the relationship between perceived social exchange relationship quality and CSCIB. Given that the social exchange variables

were self-report measures as well, any relationships found to exist between them and self-reported CSCIB would be subject to single source response bias, potentially resulting in artificially inflated results. The self-reported measure of CSCIB was utilized, however, in additional analyses of the relationship between CSCIB and measures of performance to be discussed later in this section.

The current study further predicted that even if teachers are motivated to engage in behaviors that contribute to the communal social capital of their school, as gauged by the perceived quality of their social exchange relationships with the district and within the school, the likelihood that they will actually engage in such behaviors should be positively influenced by their ability and opportunity to do so. Tests of the predicted moderating effects of education (ability) and communication network centrality (opportunity) failed to support the stated hypotheses. Instead, the data suggest that the effects of ability and opportunity on CSCIB are direct rather than moderating. Thus, regardless of perceived social exchange relationship quality, teachers with higher levels of education and those who are more centrally located in their school's network of communication appear to be more likely to engage in CSCIB.

Recent work by Settoon & Mossholder (2002) may offer potential explanations for the direct effect of network centrality, as well as education, on CSCIB. Although they did not specifically examine the CSCIB construct as operationalized in the present study, Settoon & Mossholder studied a similar construct (interpersonal citizenship behavior; ICB), that represents behaviors such as listening and being accessible, providing work-related advice, and supplying factual information and direct assistance to others. In discussing the results of their study in which they found a direct link between network centrality and ICB.

Settoon & Mossholder suggest that "...some individuals help more often because they are integral to the workflow, possess necessary expertise, or are simply more available in a temporal or physical sense" (p. 255). Engaging in CSCIB may thus be partially explained by being more available (network centrality) and/or possessing what is perceived to be more relevant expertise (education), both providing an individual with a greater opportunity to engage in such behaviors and a greater likelihood of being asked to do so.

It was also predicted that CSCIB would be negatively associated with job related stress and positively associated with job satisfaction as well as affective commitment. While results showed that CSCIB did indeed predict satisfaction and commitment, there was no relationship between CSCIB and job related stress. The predicted relationship was based upon the belief that engaging in CSCIB and being embedded in networks characterized by norms of trust, information sharing, and helping behavior would provide teachers with a source of social support. Social support, in turn, has been suggested to reduce levels of stress / psychological strain (Cohen & Willis, 1985). Given that stress has been suggested to result when there is a lack of balance in the demands and constraints placed upon a person in relation to the supports available to that person (Jones & Fletcher, 1996), the lack of a negative relationship between CSCIB and job related stress in the present study may indicate that the demands that teachers face in being central in the school's trust, information sharing and helping networks are not sufficiently offset by the social support associated with being deeply embedded in such networks.

In addition to the predicted effects of CSCIB on the discussed affective outcome measures, this study also predicted that CSCIB would significantly predict teacher performance as rated by the school principal as well as other teachers. Results of initial

hypothesis tests confirmed the predicted effects of peer-rated CSCIB on peer-rated performance, but failed to support the prediction regarding leader-rated performance. Again, to address potential single-source response bias concerns, analyses were also conducted utilizing self-report and leader-rated measures of CSCIB. Results revealed that both of the additional measures of CSCIB also significantly predicted peer-rated performance indicating that the previously observed effects are attributable to more than just statistical bias. Further analyses were conducted to examine the effects of self-rated and leader-rated CSCIB on leader-rated performance. Results of these analyses indicate that only leader-rated CSCIB significantly predicted leader-rated performance. The suggested relationship between CSCIB and leader-rated performance should thus be interpreted with some degree of caution since both measures were collected from the same source and CSCIB measures from other sources failed to support the predicted relationship. Overall, the results suggest that individuals who engage in behaviors that create and/or maintain communal social capital within their organization, regardless of the rating source, receive more favorable performance attributions from their peers. Further, there is some evidence that engaging in such behaviors may also be associated with more favorable performance attributions from the perspective of an individual's immediate supervisor, to the extent that the supervisor perceives that the individual engages in CSCIB.

Finally, this study provides at least some evidence, albeit limited, that the relationship between perceived social exchange relationship quality and peer-rated performance goes through CSCIB. More specifically, CSCIB was found to mediate the relationship between LMX and peer-rated performance, as well as the relationship between TMX and peer-rated performance. One possible reason for the failure of the results to

provide support for the predicted mediating effect of CSCIB on the relationship between the social exchange variables and the affective outcomes examined is the strength of the direct relationship between those variables. Another potential reason for the lack of support for the study's predicted mediating effects is the fact that the strength of the direct relationship between the perceived social exchange relationship quality variables and the affective outcome variables may be artificially inflated given that both sets of those variables represent self-report data. This results in the creation of an overly stringent test of the predicted mediation effects of CSCIB. Nonetheless, while the mediation hypotheses were not strongly supported, the fact that both TMX and LMX were found to predict CSCIB (from peer- and leader-rated perspectives respectively), as well as the fact that CSCIB was also found to significantly predict job satisfaction, affective commitment, and attributed performance has potentially significant implications for research and practice. These implications will be discussed in the following sections along with the discussion of the strengths and limitations of the study conducted.

Strengths and Limitations

The present study has several strengths. First, the research site selected for the study (urban public school districts) is not one that is commonly found in organizational research. It represents, however, an interesting and fertile environment for developing and testing organizational theories due to: 1) the variety of stakeholders involved and the nature of the relationships between them, 2) the on-going efforts to bring about changes to a major institution that continues to experience performance declines despite long-standing reform efforts, and 3) the importance of the "end product" involved (students) and the highly visible evidence of the failure of the institution to perform up to public expectations.

A second strength of the current study is the number of different sources from which data were collected. In addition to self-report data, data were also collected from participants' peers (other teachers) and immediate supervisor (school principal). The use of different data sources together with the variety of scale formats utilized reduces potential issues regarding common method variance.

And finally, a third strength of the current study is the use of a variety of statistical techniques to test the stated hypotheses and to conduct additional analyses. In particular, the use of structural equation modeling, while not required to test the mediation hypotheses, provided a more stringent test than the ordinary least squares regression alone. The use of structural equation modeling also allows inferences to be drawn regarding the direction of causality between correlated variables.

Although there are several strengths of the current study as noted, it is not without limitations. In fact, some of the very items that have been suggested to represent methodological strengths can also be discussed from the viewpoint of study limitations. For instance, while the selection of an educational research site is attractive for the reasons discussed above, caution may be warranted in generalizing any significant findings beyond an educational setting.

In addition, even though care has been taken to gather data from different sources, perceptual independent variables (perceived social exchange relationship quality) and affective outcome measures (stress, job satisfaction, and commitment) are based on individual, self-reported data. Therefore, there is a possibility that observed correlations between these variables may be inflated due to single source response bias. The collection of some measures from multiple sources and the conducting of additional statistical analyses

to also examine certain relationships utilizing measures collected from different sources, however, served to reduce bias concerns.

Another potential limitation of the current study is that the network survey response rates at two of the three schools surveyed (44% and 49%), were less than normally suggested for sociometric data collection. While missing data are always a concern, for network analysis the consequences of each missing case are more severe since each missing respondent represents the loss of a potential reporting on N – 1 possible relationships with other individuals in the network (Knoke & Kuklinski, 1982). Although there is no failsafe solution for addressing missing data in network analysis, Knoke & Kuklinski suggest that one means of compensating for non-respondents is to ask respondents to report on the behavior of others, which allows for the reconstruction of at least a portion of the relationships involving noon-respondents. This suggested approach was employed in the present study. In addition, the only network metric utilized in the analysis of the data was a measure of in-degree centrality, which can be calculated for both respondents and non-respondents thus somewhat reducing the concerns resulting from non-response.

A related limitation to the lower than desired response rate at two of the three schools in the study concerns the overall sample size given the nature of some of the statistical analyses conducted. More specifically, the sample obtained in the present study was less than ideal for conducting structural equation model (SEM) analyses. This was especially true of the confirmatory factor analysis (CFA) procedure. Even with the use of the parceling technique to reduce the number of parameters to be estimated, the analysis involved the estimation of 78 parameters, which given a sample size of 150, exceeds the recommended minimum of five observations for each parameter to be estimated (Hatcher,

1994). Bollen (1989), however, suggests that small sample sizes often result in noncovergence in confirmatory factor analyses. The fact that the CFA model converges in the present study somewhat reduces the sample size concern. In addition, Guadagnoli & Velicer (1988) report that studies have shown that a sample size of approximately 150 should be sufficient to replicate the factor pattern that would be expected with a larger sample if the factor solution is expected to have average loadings of greater than .60. The fact that a confirmatory factor analysis was also performed in the present study using the varimax rotation procedure in SPSS, and that the average factor loadings were sufficient per the standard recommended by Guadagnoli & Velicer (see Table 5), further reduced concerns regarding the sample size. In addition, subsequent structural equation model analyses conducted after performing the CFA all involved the estimation of a number of parameters that fell within the five observations per estimated parameter guideline.

Finally, the theory presented in this study suggests causal direction in certain relationships, yet causality cannot truly be tested without longitudinal data and the use of adequate controls. The use of structural equation modeling, however, does at least allow for the testing of the "plausibility" of the suggested causal model while decreasing the plausibility of alternative models (Mueller, 1996).

In sum, although there are limitations associated with the present study, a number of steps have been taken to minimize the impact of these potential limitations on the study results. In addition, these limitations are also offset by a number of strengths in the study design as previously discussed. As a result, on balance the study stands to make useful contributions to both research and practice. These contributions are discussed in the following sections.

Research Contributions

By examining the effects of perceived social exchange relationship quality within an organization on the social capital investment behavior of individuals, the current study makes a number of contributions to the organizational literature. First, the results of this study inform the social capital literature by adding to our understanding of why individuals might contribute to the communal social capital of an organization even though they themselves may benefit only indirectly. The results of the study suggest that while instrumental motivations (i.e., expected returns) may explain in part the individual behaviors that lead to the creation and maintenance of an organization's social capital, relational factors, which were characterized in the present study as perceived organizational social exchange relationship quality, significantly add to the explanation of such behavior. Specifically, individuals who perceive that they have relatively more favorable team-member exchange relationships and leader-member exchange relationships were more likely to engage in communal social capital investment behavior as reported by peers and their immediate supervisor, respectively.

Second, the results of this study also inform the literature on organizational social exchange relationships in at least two ways. For one, the study provides a link between the literature on organizational social exchange relationships and that on social capital in organizations by drawing on social exchange theory and the norm of reciprocity in the examination of the relationship between communal social capital investment behavior and perceived social exchange relationship quality. Additionally, the current study informs the social exchange literature through its simultaneous consideration of three of the most common forms of social exchange relationships within an organization (leader-member,

team-member, and organization-member). Previous research has generally investigated the effects of only one of these exchange relationships or another on various work-related attitudes, behaviors, and performance outcomes. And, while more recent research has begun to examine the simultaneous effects of two forms of social exchange relationships within a single study, the consideration of the potential effects of including a third form of social exchange has generally been limited to brief discussion commentary and calls for future research. The recent work of Cole, Schaninger, & Harris (2002) begins to offer theoretical consideration of the three relationships simultaneously. However, the present study goes a step further and provides an empirical examination incorporating perceived organizational support, team-member exchange, and leader-member exchange in a single study.

Third, the current study offers evidence that the rating source of an extra-role behavior such as CSCIB can materially impact observed results. Building on the work of Van Dyne & LePine (1998), this study confirmed that constructs measured by the same items but rated by individuals in different roles (in this case ,self, peer, and supervisor) can lead to distinct, albeit related, conceptualizations of the construct. A key implication from this finding is that when designing a study or when interpreting the results of previously conducted research, it is important to carefully consider from a theoretical, as well a statistical point of view, the rating source of measures that have typically been operationalized using a variety of potential sources.

Finally, while the focus of the present study is on individual behaviors and resulting individual outcomes, the value of its contribution to the literature is partially predicated on the belief that the communal social capital created by the behavior of individuals within a collective represents a potentially valuable resource to that collective (Leana & Van Buren,

1999; Nahapiet & Ghoshal, 1998). Prior research has demonstrated that social capital in this form can lead to favorable collective outcomes (e.g., Fukuyama, 1995; Putnam, 1993). Thus, while specific organizational-level outcomes were not examined in the present study, the study makes an indirect contribution to the macro-organizational literature by enhancing our understanding of how a valuable organizational resource (communal social capital) may be and created maintained.

Practical Implications

The present study also has practical implications for both individuals and organizations. First, the study has implications for individuals in that it shows that engaging in communal social capital investment behavior may lead to higher levels of job satisfaction and more favorable attributions of performance from both peers and one's supervisor. Second, this study can inform organizational practice by providing direction regarding which social exchange relationships are likely to have the greatest impact in terms of promoting contributions by employees to the communal social capital of the organization. The results of the current suggest that similar to findings from research on multiple organizational commitments, more proximate relationships (i.e., LMX or TMX) are likely to have a greater impact on the communal social capital investment behavior of employees than will more distant relationships (i.e., POS). Developing this understanding could enable organizations to more effectively allocate attention and resources to the development of those social exchange relationships that are most likely to result in individual behavior that adds to the organization's store of social capital. An example of a potentially useful activity might include providing training for leaders on how to build high quality relationships with their direct reports. Another example might be to consider the implementation of structural

and/or behavioral changes in the organization designed to foster greater interaction, as well as a spirit of teamwork and collaboration.

One additional practical implication that stems from the lack of support for the predicted relationship between POS and CSCIB is that organizations with fairly autonomous work units, especially those that are physically separated from the corporate offices, may find it more difficult to influence CSCIB of individuals through actions at the corporate office level. In addition to the potential "interaction *dis*advantage" of the relatively more distant POS social exchange relationship versus LMX or TMX relationships, organizations may have to consider to what extent individuals in physically remote or otherwise autonomous work units are able to identify with the larger organization. To the extent that the overall organizational identity is not a significant part of how individual employees define themselves, then the organization may have a more difficult time of affecting individual behavior through efforts aimed at enhancing the POS exchange relationship. In cases such as these the organization may have more success with work group level or leader level interventions designed to encourage CSCIB.

Future Research

There are several potentially fruitful avenues down which future research may proceed. First, given the limitations posed in the present study by the less than ideal sample size for conducting SEM analyses, future research may benefit from attempting to replicate the significant findings of this study using a larger sample. Replication of the present study would also provide an opportunity to address potential concerns regarding the generalizability of the findings by collecting data in a different context than the educational setting of the current study. Conducting a follow-up study in a more traditional corporate

setting, or if possible in multiple settings, would enhance the generalizability of any findings replicated from the current study. Additionally, attempted replication of the SEM results of the present study is recommended since the best fitting structural model was generated through a series of model modifications, which poses the potential risk of creating a model that fits the current data set well but that does not necessarily generalize to other samples.

A second direction in which future research might proceed would be to also examine leader-member exchange and team-member exchange from the perspective of the leader and from individual team members in addition to the self-reported measures utilized in the present study. Although the primary interest of the current study was to examine how individuals' perceptions regarding their organizational social exchange relationships might impact behaviors suggested to create and maintain organizational social capital, it would also be interesting to explore how social exchange relationship quality as perceived by others might be related to those same behaviors. Considerable previous work has utilized a leader rated LMX measure in addition to a member rated measure (see Gerstner & Day, 1997 for a review), and recent work by Sherony & Green (2000) utilizes a measure of member-member exchange that captures the perceptions of each member of a group regarding every other member of that group. Incorporation of measures such as these would represent a potentially valuable extension to the present study.

Yet another potential avenue for future research would be to explore the implications of social exchange relationship development (or deterioration) over time. Conducting a longitudinal rather than a cross-sectional study would allow for the examination of how changes in social exchange relationship quality might potentially influence CSCIB. It could be the case that changes in relationship quality are as strong a predictor of CSCIB as the

actual quality of the relationship itself. Further extensions of this line of research might also then explore potential causes of favorable and/or unfavorable changes in social exchange relationship quality.

Conclusion

The concept of social capital has received considerable attention in recent years in both the academic and practitioner communities. Organizational social capital has been described as a resource that creates organizational value by facilitating collective action (Leana & Van Buren, 1999). Given this increased attention and perceived value of social capital as an organizational resource, it is important that we develop a better understanding of potential processes by which social is developed in organizations

This study represents an attempt to explore one such process by examining why and how individuals contribute to the creation and maintenance of social capital in the organizations for which they work. It was hypothesized that perceived social exchange relationship quality, as represented by perceived organizational support (POS), team-member exchange (TMX), and leader-member exchange (LMX), would significantly predict individual contributions to the communal social capital of the organization (communal social capital investment behavior; CSCIB). Further, it was predicted that individuals who engaged in such behavior would experience more favorable work-related outcomes. Results showed that LMX and TMX did significantly predict CSCIB (as rated by individual's immediate supervisor and work group peers), and CSCIB in turn significantly predicted affective commitment, job satisfaction, and attributed performance.

In sum, the findings from this study suggest that in accordance with social exchange theory and the norm of reciprocity, employees who have a perceived high quality

relationship with their immediate supervisor and/or their work group peers are more likely to engage in behaviors that lead to the creation and maintenance of organizational social capital. In turn, these individuals appear to enjoy more favorable work related outcomes.

Appendices

Appendix A

Additional Tables

Table A
Confirmatory Factor Analysis Results – CSCIB (Self-Report) and Social Exchange Constructs

Item	Factor 1	Factor 2	Factor 3	Factor 4
1. When I am in a bind, my coworkers will take on extra work to help ensure the completion of my important tasks.	.178	-.070	**.545**	-.022
2. My coworkers have asked for my advice in solving a job-related problem of theirs.	.070	.088	**.557**	.388
3. I would come to a co-worker's defense if he/she were being criticized.	.033	-.102	**.500**	.341
4. I respect my coworkers as professionals in our line of work.	.057	.067	**.613**	.174
5. My coworkers create an atmosphere conducive to accomplishing my work.	.182	.127	**.816**	-.044
6. My coworkers are the kind of people one would like to have as friends.	.132	.123	**.768**	.131
7. Even when they disagree with me, my coworkers respect the value of my judgments and decisions.	.119	.040	**.783**	.016
8. I feel that I am loyal to my coworkers.	.158	-.465	**.710**	.231
9. My coworkers value the skills and expertise that I contribute to our work group.	.105	.079	**.675**	.092
10. XXXXXX Public Schools upper-level administrators care about my opinions.	.234	**.847**	.101	.047
11. XXXXXX Public Schools upper-level administrators really care about my well-being.	.172	**.896**	.083	.015
12. XXXXXX Public Schools upper-level administrators strongly consider my goals and values.	.173	**.889**	.064	-.008
13. Help is available from XXXXXX Public Schools upper-level administrators when I have a problem.	.220	**.829**	.101	.005
14. XXXXXX Public Schools upper-level administrators would forgive an honest mistake on my part.	.261	**.748**	-.037	-.106
15. If given the opportunity, XXXXXX Public Schools upper-level administrators would take advantage of me.	.035	**.741**	-.060	-.175
16. XXXXXX Public Schools upper-level administrators show very little concern for me.	.026	**.787**	-.040	.001
17. XXXXXX Public Schools upper-level administrators are willing to help me if I need a special favor.	.106	**.566**	.104	-.147

Table A (Continued)
Confirmatory Factor Analysis Results – CSCIB (Self-Report) and Social Exchange Constructs

Item				
18. I like my principal very much as a person.	**.860**	.092	.086	.069
19. My principal is the kind of person one would like as a friend.	**.877**	.068	.083	.073
20. My principal is a lot of fun to work with.	**.867**	.114	.216	.049
21. My principal defends my work actions to a superior, even without complete knowledge of the issue in question.	**.742**	.178	.170	-.074
22. My principal would come to my defense if I were "attacked" by others.	**.840**	.194	.210	.002
23. My principal would defend me to others in the district if I made an honest mistake.	**.817**	.189	.221	.000
24. I do work for my principal that goes beyond what is required of me in my role as a teacher.	**.486**	-.273	.046	**.499**
25. I am willing to apply extra effort, beyond what is normally required, to meet my principal's goals for the school.	**.509**	.016	.041	**.616**
26. I do not mind working my hardest for my principal.	**.725**	.110	.108	**.433**
27. I am impressed with my principal's knowledge of his job.	**.876**	.237	.144	.069
28. I respect my principal's knowledge of and competence on the job.	**.889**	.216	.127	.031
29. I admire my principal's professional skills.	**.893**	.222	.037	.078
30. I often share useful information with others in the school.	.148	.031	**.407**	**.600**
31. I always keep commitments that I make to others in the school.	-.001	-.096	.180	**.555**
32. I often help others in the school even if there is no immediate personal reward for doing so.	.019	-.157	.158	**.776**
Eigenvalue (unrotated solution)	**10.316**	**5.056**	**3.561**	**1.661**
Percent of Variance Explained	**32.24%**	**15.80%**	**11.13%**	**5.19%**
Cumulative Percent	**32.24%**	**48.04%**	**59.17%**	**64.35%**

Table B
Summary Results of Scale Reliability Analyses

Scale	Number of Items	Reliability Estimate (Cronbach's alpha)
Collectivism	12	.77
Equity Sensitivity	5	.84
Job Stress	5	.92
Job Satisfaction	5	.90
Affective Commitment	6	.86
Perceived Organizational Support	8	.93
Leader-Member Exchange	12	.96
Team-Member Exchange	9	.87

Table C
Moderation Effects Regression Models
(Ability and Opportunity on POS – CSCIB Relationship) [a]

Variable	Communal Social Capital Investment Behavior			
	Model 1a	Model 1b	Model 2a	Model 2b
Age	.081	.080	.026	.025
Gender	.136	.136	.049	.049
Race	-.021	-.022	.030	.030
School Code	-.402 ***	-.402 ***	-.003	-.003
Collectivism	.003	.003	.000	.000
Equity Sensitivity – Benevolence	-.001	.001	.020	.020
Instrumentalism	.216 **	.216 **	.126 **	.126 **
Perceived Organizational Support (POS)	.023	-.005	.017	.011
Ability	.253 **	.232		
Opportunity			.851 ***	.845 ***
POS x Ability		.036		
POS x Opportunity				.009
R^2	.27 ***	.27 ***	.80 ***	.80 ***
ΔR^2		.00 [b]		.00 [c]

a = Standardized Beta coefficients

b = Change versus Model 1a

c = Change versus Model 2a

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

Table D
Moderation Effects Regression Models
(Ability and Opportunity on LMX – CSCIB Relationship) [a]

Variable	Communal Social Capital Investment Behavior			
	Model 1a	Model 1b	Model 2a	Model 2b
Age	.084	.094	.010	.012
Gender	.128	.132	.038	.032
Race	-.023	-.022	.014	.014
School Code	-.379 ***	-.393 ***	.031	.030
Collectivism	.005	.003	.005	.004
Equity Sensitivity – Benevolence	-.004	-.009	.005	.006
Instrumentalism	.198 *	.193 *	.097 *	.095 *
Leader-Member Exchange (LMX)	.109	.404	.186 ***	.129
Ability	.244 **	.551		
Opportunity			.866 ***	.771 ***
LMX x Ability		-.437		
LMX x Opportunity				.115
R^2	.28 ***	.28 ***	.83 ***	.83 ***
ΔR^2		.00 [b]		.00 [c]

a = Standardized Beta coefficients

b = Change versus Model 1a

c = Change versus Model 2a

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

Table E
Moderation Effects Regression Models
(Ability and Opportunity on TMX – CSCIB Relationship) [a]

Variable	Communal Social Capital Investment Behavior			
	Model 1a	Model 1b	Model 2a	Model 2b
Age	.037	.036	.008	-.001
Gender	.119	.129	.036	.026
Race	-.022	-.012	.019	.024
School Code	-.456 ***	-.448 ***	-.033	-.038
Collectivism	-.058	-.065	-.028	-.027
Equity Sensitivity – Benevolence	-.012	-.003	.007	.006
Instrumentalism	.142	.140	.102 *	.103 *
Team-Member Exchange (TMX)	.227 **	.015	.121 **	.025
Ability	.283 **	-.170		
Opportunity			.836 ***	.543
TMX x Ability		.534		
TMX x Opportunity				.324
R^2	.33 ***	.33 ***	.81 ***	.81 ***
ΔR^2		.00 [b]		.00 [c]

a = Standardized Beta coefficients

b = Change versus Model 1a

c = Change versus Model 2a

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

Table F
Correlations among Multi-Source Ratings of CSCIB and Performance [a]

Variables	Means	s.d.	1	2	3	4
1. Peer-Rated CSCIB	43.22	22.40				
2. Leader-Rated CSCIB	9.98	2.26	.28 **			
3. Self-Rated CSCIB	6.07	.63	.22 **	.16		
4. Peer-Rated Performance	.36	.17	.62 ***	.56 ***	.16	
5. Leader-Rated Performance	3.53	.97	.15	.84 ***	.11	.45 ***

[a] $N = 150$
* $p < .05$
** $p < .01$
*** $p < .001$

Table G
Item Parcels for Confirmatory Factor Analysis

Variable	Parcel Label	Items	Mean (s.d.)
Perceived Organizational Support (POS)	POS-P1	POS 1,4,7	3.00 (1.44)
	POS-P2	POS 5,6,8	3.29 (1.27)
	POS-P3	POS 2,3	2.76 (1.55)
Team-Member Exchange (TMX)	TMX-P1	TMX 2,5,9	5.54 (0.99)
	TMX-P2	TMX 1,3,8	5.74 (0.81)
	TMX-P3	TMX 4,6,7	5.54 (0.98)
Leader-Member Exchange (LMX)	LMX-P1	LMX 1,2,3	4.97 (1.81)
	LMX-P2	LMX 4,5,6	4.46 (1.79)
	LMX-P3	LMX 7,8,9	5.63 (1.15)
	LMX-P4	LMX 10,11,12	5.04 (1.84)
Communal Social Capital Investment Behavior (CSCIB)	CSCIB-M1	Information Sharing	5.84 (0.91)
	CSCIB-M2	Helping	6.12 (0.73)
	CSCIB-M3	Trustworthiness	6.26 (0.80)
Affective Commitment	AffCom-P1	AffCom 1,3	5.16 (1.46)
	AffCom-P2	AffCom 2,4	4.75 (1.53)
	AffCom-P3	AffCom 5.6	5.02 (1.51)
Job Satisfaction	JOBSAT-P1	JOBSAT 3,4,5	5.59 (1.13)
	JOBSAT-P2	JOBSAT 1,2	5.50 (1.36)
Job Related Stress	STRESS-P1	STRESS 2,5	2.55 (0.98)
	STRESS-P2	STRESS 1,3,4	2.12 (0.84)

Appendix B
Teacher Survey (Attitudinal/Behavioral Scales)

Perceived Organizational Support (Adapted from Eisenberger et al., 1997)

1. [Name of school district] upper-level administrators care about my opinions.
2. [Name of school district] upper-level administrators really care about my well-being.
3. [Name of school district] upper-level administrators strongly consider my goals and values.
4. Help is available from [Name of school district] upper-level administrators when I have a problem.
5. [Name of school district] upper-level administrators would forgive an honest mistake on my part.
6. If given the opportunity, [Name of school district] upper-level administrators would take advantage of me. (R)
7. [Name of school district] upper-level administrators show very little concern for me. (R)
8. [Name of school district] upper-level administrators are willing to help me if I need a special favor.

Scale anchors: 1 = Very Unlikely and 7 = Very Likely

Leader-Member Exchange (Adapted from Liden & Maslyn, 1998)

Affect

1. I like my principal very much as a person.
2. My principal is the kind of person one would like as a friend.
3. My principal is a lot of fun to work with.

Loyalty

4. My principal defends my work actions to a superior, even without complete knowledge of the issue in question.
5. My principal would come to my defense if I were "attacked" by others.
6. My principal would defend me to others in the district if I made an honest mistake.

Contribution

7. I do work for my principal that goes beyond what is required of me in my role as a teacher.
8. I am willing to apply extra effort, beyond what is normally required, to meet my principal's goals for the school.
9. I do not mind working my hardest for my principal.

Professional Respect

10. I am impressed with my principal's knowledge of his or her job.
11. I respect my principal's knowledge of and competence on the job.
12. I admire my principal's professional skills.

Scale anchors: 1 = Very Unlikely and 7 = Very Likely

(R) – Item reversed coded.

Appendix B
Teacher Survey (Attitudinal/Behavioral Scales)

Team-Member Exchange (Liden, Wayne & Sparrowe, 2000; Adapted from Seers, 1989)

1. When I am in a bind, my coworkers will take on extra work to help ensure the completion of my important tasks.
2. My coworkers have asked for my advice in solving a job-related problem of theirs.
3. I would come to a co-worker's defense if he/she were being criticized.
4. I respect my coworkers as professionals in our line of work.
5. My coworkers create an atmosphere conducive to accomplishing my work.
6. My coworkers are the kind of people one would like to have as friends.
7. Even when they disagree with me, my coworkers respect the value of my judgments and decisions.
8. I feel that I am loyal to my coworkers.
9. My coworkers value the skills and expertise that I contribute to our work group.

Scale anchors: 1 = Very Unlikely and 7 = Very Likely

Equity Sensitivity (Miles, Hatfield, & Huseman, 1989)

The items below ask what you'd like your relationship to be with any organization for which you might work. On each item, divide 10 points between the choices (choice A and choice B) by giving the most points to the choice that is most like you and the fewest points to the choice that is least like you. You can, if you like, give the same number of points to both choices (for example, 5 points to choice A and 5 points to choice B) and you can use zeros if you like.

Just be sure to allocate all 10 points per item between each pair of possible responses.

In any orgnization I might work for:

1. It would be important for me to:
   A. Get from the organization
   B. Give to the organization
2. It would be important for me to:
   A. Help others
   B. Watch out for my own good
3. I would be more concerned with:
   A. What I received from the organization
   B. What I contributed to the organization
4. The hard work I would do should:
   A. Benefit the organization
   B. Benefit me
5. My personal philosophy in dealing with the organization would be:
   A. If I don't look out for myself, nobody else will
   B. It's better for me to give than to receive

Appendix B
Teacher Survey (Attitudinal/Behavioral Scales)

Individualism-Collectivism (Adapted from Wagner, 1995)

Beliefs in personal independence/self-reliance

1. Only those who depend on themselves get ahead in life. (R)
2. To be superior a person must stand alone. (R)
3. If you want something done right, you've got to do it yourelf. (R)
4. What happens to me is my own doing. (R)
5. In the long run the only person you can count on is yourself. (R)

Solitary work preferences

6. I prefer to work with others in a group rather than working alone.
7. Given the choice I would rather do a job where I can work alone rather than doing a job where I have to work with others in a group. (R)
8. Working in a group is better than working alone.

Supremacy of group interests

9. People should be made aware that if they are going to be part of a group then they are sometimes going to have to do things they don't want to do.
10. People who belong to a group should realize that they're not always going to get what they personally want.
11. People in a group should realize that they sometimes are going to have to make sacrifices for the sake of the group as a whole.
12. People in a group should be willing to make sacrifices for the sake of the group's well-being.

Scale anchors: 1 = Very Unlikely and 7 = Very Likely

CSCIB Expectancies (Format adapted from Miller & Grush, 1988)

Outcomes

1. My performance will be evaluated favorably by my principal.
2. I will be viewed favorably by other teachers in the school.
3. Other teachers in the school will readily share information with me, as well as help me when I am in need of assistance.

Valences (7-point scale)

- How desirable is this outcome to you?

Scale anchors: -3 = Very Undesirable and +3 = Very Desirable

Likelihood ratings (7-point scale)

1. How likely is it that you could attain this outcome by sharing information with, providing assistance to, and keeping commitments made to one or two teachers in the school?
2. How likely is it that you could attain this outcome by sharing information with, providing assistance to, and keeping commitments made to half of the teachers in the school or more?

Scale anchors: 1 = Very Unlikely and 7 = Very Likely

(R) – Item reversed coded.

Appendix B
Teacher Survey (Attitudinal/Behavioral Scales)

Job Stress (Conley & Woosley, 1999)
How often have you experienced the following during the past month?

1. Feeling fatigued and unable to "get going."
2. Feeling physically used up at the end of the day.
3. Being emotinally drained from your work.
4. Feeling "burned out" from your work.
5. Feeling "run down" at the end of the workday.

Scale anchors: 1 = Seldom or Never and 4 = Almost always

Job Satisfaction (Judge, Bono, & Locke, 2000; Brayfield-Rothe, 1951))

1. I feel fairly satisfied with my present job.
2. Most days I am enthusiastic about my work.
3. Each day at work seems like it will never end. (R)
4. I find real enjoyment in my work.
5. I consider my job to be rather unpleasant. (R)

Scale anchors: 1 = Strongly Disagree and 7 = Strongly Agree

Affective Commitment (Adapted from Meyer & Allen, 1993)

1. I would be very happy to spend the rest of my career with this school.
2. I really feel as if this school's problems are my own.
3. I do not feel like "part of the family" at my school. (R)
4. I do not feel "emotionally attached" to this school. (R)
5. This school has a great deal of personal meaning for me.
6. I do not feel a strong sense of belonging to my school. (R)

Scale anchors: 1 = Strongly Disagree and 7 = Strongly Agree

(R) – Item reversed coded.

Appendix C
Teacher Survey (Network Items)

Communication Network

- Approximately how many times do you talk to this individual during a typical month?

Scale: Open ended

Communal Social Capital Investment Behavior

Information Sharing

- To what extent does this individual share useful information with others in the organization?

Trustworthy Behavior

- To what extent does this individual live up to commitments made to others in the organization?

Citzenship Behavior (Helping)

- To what extent does this individual help others in the organization even if there is no immediate personal reward for doing so?

Scale Anchors: 1 = Not at all and 5 = To a great extent

Peer Assessment

- To what extent does this teacher serve as a role model for others in the education profession?

Scale Anchors: 1 = Not at all and 5 = To a great extent

Appendix D
Principal Survey (Teacher Assessment)

Communication Network

- Approximately how many times do you talk to this individual during a typical month?

Scale: Open ended

Communal Social Capital Investment Behavior

Information Sharing

- To what extent does this individual share useful information with others in the school?

Trustworthy Behavior

- To what extent does this individual live up to commitments made to others in the school?

Citzenship Behavior (Helping)

- To what extent does this individual help others in the school even if there is no immediate personal reward for doing so?

Scale Anchors: 1 = Not at all and 5 = To a great extent

Performance Assessment

- To what extent does this teacher serve as a role model for others in the education profession?

Scale Anchors: 1 = Not at all and 5 = To a great extent

Appendix E

Teacher Survey Document

XXXXXX Public School District Faculty Survey
Spring 2002

I am a researcher from the University of Pittsburgh who is interested in developing an understanding of how the relationships that exist among faculty and staff members in a public school environment impact various individual outcomes. I hope to learn from this study how relationships and networks of relationships impact individual outcomes and ultimately school effectiveness. The overall results of the study will ideally prove to be useful in facilitating the achievement of positive change within the XXXXXX Public Schools.

To better understand the nature and impact of the relationships that exist within the school, I need to gather data on the attitudes and opinions of faculty and staff members. I, therefore, ask that you take a moment to share this information by completing this survey. I recognize that your time is valuable and I appreciate your willingness to take the time to assist me with my data collection efforts. The survey should take no more than 30 to 45 minutes to complete. **This research study has been reviewed with the XXXXXX Federation of Teachers, and has been approved by the XXXXXX Public Schools Internal Review Board, as well as the University of Pittsburgh Institutional Review Board.**

In order to map the patterns of interactions among school faculty/staff members, it is necessary that each survey contains an identifier code, and that I ask for your opinion regarding other individuals in the school. I realize that this is sensitive information, but I assure you that it is for research purposes only and it will be treated with strict confidence. Names associated with the survey identifiers will be maintained in a separate locked storage cabinet. **The surveys will be returned to me directly. Any reported findings will be in aggregated form only, and all of your responses will be strictly confidential. No one in any way affiliated with the school or the district office will have access to any of your individual survey data.**

Specific instructions are provided at the beginning of each section of the survey. Please read them carefully and be sure to answer every item in each section. There are no "trick" questions or "right" or "wrong" answers. I simply want your honest opinions.

When you have finished the survey, please double-check to make sure you have responded to all items in each section. Then place the survey in the envelope provided, seal the envelope, and return it to my attention. **I will remain on-site during the administration of the survey and will collect each survey personally.**

Thank you again for your participation!

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Survey Code _____

SECTION 1

This section asks for your opinions regarding the XXXXX Public School district as a whole, your principal, and other faculty and staff members in your school. Using the scale below, please indicate how much you agree or disagree with the following statements.

1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=Neutral, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree

[redacted]

2. My coworkers have asked for my advice in solving a job-related problem of theirs. 1 2 3 4 5 6 7

[redacted]

4. I respect my coworkers as professionals in our line of work. 1 2 3 4 5 6 7

[redacted]

6. My coworkers are the kind of people one would like to have as friends. 1 2 3 4 5 6 7

[redacted]

8. I feel that I am loyal to my coworkers. 1 2 3 4 5 6 7

[redacted]

10. I would be very happy to spend the rest of my career with this school. 1 2 3 4 5 6 7

[redacted]

12. I do not feel like "part of the family" at my school. 1 2 3 4 5 6 7

[redacted]

14. This school has a great deal of personal meaning for me. 1 2 3 4 5 6 7

1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=Neutral, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree

15. I do not feel a strong sense of belonging to my school. 1 2 3 4 5 6 7

17. To be superior a person must stand alone. 1 2 3 4 5 6 7

19. What happens to me is my own doing. 1 2 3 4 5 6 7

21. I prefer to work with others in a group rather than working alone. 1 2 3 4 5 6 7

23. Working in a group is better than working alone. 1 2 3 4 5 6 7

25. People who belong to a group should realize that they're not always going to get what they personally want. 1 2 3 4 5 6 7

27. People in a group should be willing to make sacrifices for the sake of the group's well-being. 1 2 3 4 5 6 7

29. Most days I am enthusiastic about my work. 1 2 3 4 5 6 7

31. I find real enjoyment in my work. 1 2 3 4 5 6 7

33. I often share useful information with others in the school. 1 2 3 4 5 6 7

35. I often help others in the school even if there is no immediate personal reward for doing so. 1 2 3 4 5 6 7

1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=Neutral, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree

37. XXXXXX Public Schools upper-level administrators really care about my well-being. 1 2 3 4 5 6 7

39. Help is available from XXXXXX Public Schools upper-level administrators when I have a problem. 1 2 3 4 5 6 7

41. If given the opportunity, XXXXXX Public Schools upper-level administrators would take advantage of me. 1 2 3 4 5 6 7

43. XXXXXX Public Schools upper-level administrators are willing to help me if I need a special favor. 1 2 3 4 5 6 7

45. My principal is the kind of person one would like as a friend. 1 2 3 4 5 6 7

47. My principal defends my work actions to a superior, even without complete knowledge of the issue in question. 1 2 3 4 5 6 7

49. My principal would defend me to others in the district if I made an honest mistake. 1 2 3 4 5 6 7

51. I am willing to apply extra effort, beyond what is normally required, to meet my principal's goals for the school. 1 2 3 4 5 6 7

53. I am impressed with my principal's knowledge of his job. 1 2 3 4 5 6 7

55. I admire my principal's professional skills. 1 2 3 4 5 6 7

How often have you experienced the following during the past month?

1=Seldom or Never, 2=Occasionally, 3=Frequently, 4=Almost Always

[redacted]

57. **Feeling physically used up at the end of the day.** **1 2 3 4**

[redacted]

59. **Feeling "burned out" from your work.** **1 2 3 4**

[redacted]

SECTION 2

The items below ask what you'd like your relationship to be with any organization for which you might work. On each item, divide 10 points between the choices (choice A and choice B) by giving the most points to the choice that is most like you and the fewest points to the choice that is least like you. You can, if you like, give the same number of points to both choices (for example, 5 points to choice A and 5 points to choice B) and you can use zeros if you like (i.e., zero points to one choice and 10 points to the other).

Just be sure to allocate all 10 points per item between each pair of possible responses.

In any organization I might work for:

6. It would be important for me to:
   A. Get from the organization. _____
   B. Give to the organization. _____

7. It would be important for me to:
   A. Help others. _____
   B. Watch out for my own good. _____

8. I would be more concerned with:
   A. What I received from the organization. _____
   B. What I contributed to the organization. _____

9. The hard work I would do should:
   A. Benefit the organization. _____
   B. Benefit me. _____

10. My personal philosophy in dealing with the organization would be:
    A. If I don't look out for myself, nobody else will. _____
    B. It's better for me to give than to receive. _____

SECTION 3

In this section you will be presented with three different outcomes. For each outcome you will be asked to first specify how desirable that outcome is to you. You will then be asked to specify how likely it is that you could attain that outcome given certain behaviors.

Outcome 1: **To have your performance be favorably evaluated by your principal.**

A. How desirable is this outcome to you?
(1=very undesirable, 7 =very desirable) 1 2 3 4 5 6 7

B. How likely is it that you could attain this outcome by sharing information with, providing assistance to, and keeping commitments made to just one or two faculty and staff members in the school?
(1=very unlikely, 7 =very likely) 1 2 3 4 5 6 7

C. How likely is it that you could attain this outcome by sharing information with, providing assistance to, and keeping commitments made to more than half of the faculty and staff members in the school?
(1=very unlikely, 7 =very likely) 1 2 3 4 5 6 7

Outcome 2: **To be viewed favorably by other faculty and staff members in the school.**

A. How desirable is this outcome to you?
(1=very undesirable, 7 =very desirable) 1 2 3 4 5 6 7

B. How likely is it that you could attain this outcome by sharing information with, providing assistance to, and keeping commitments made to just one or two faculty and staff members in the school?
(1=very unlikely, 7 =very likely) 1 2 3 4 5 6 7

C. How likely is it that you could attain this outcome by sharing information with, providing assistance to, and keeping commitments made to more than half of the faculty and staff members in the school?
(1=very unlikely, 7 =very likely) 1 2 3 4 5 6 7

Outcome 3: **To have other faculty and staff members in the school readily share information with you, as well as help you when you are in need of assistance.**

A. How desirable is this outcome to you?
(1=very undesirable, 7 =very desirable) 1 2 3 4 5 6 7

B. How likely is it that you could attain this outcome by sharing information with, providing assistance to, and keeping commitments made to just one or two faculty and staff members in the school?
(1=very unlikely, 7 =very likely) 1 2 3 4 5 6 7

C. How likely is it that you could attain this outcome by sharing information with, providing assistance to, and keeping commitments made to more than half of the faculty and staff members in the school?
(1=very unlikely, 7 =very likely) 1 2 3 4 5 6 7

SECTION 4

The following questions ask for some general demographic data. Please respond to each item by either filling in the blank or by checking the box next to the most appropriate response.

1. How long have you worked in the XXXXXX Public School District? _____ Years ❑ Less than one year

2. How long have you worked at your current school? _____ Years ❑ Less than one year

3. At how many schools have you worked? _____ Schools

4. Have you worked in a district other than XXXXXX? ❑ No ❑ Yes

   If Yes, how many other districts? _____ Districts

5. What is the highest degree that you have attained? College ❑ Masters ❑ Some Graduate Work ❑ Doctorate ❑

6. What is your age? 20-29 ❑ 30-39 ❑ 40-49 ❑ 50-59 ❑ 60+ ❑

7. What is your gender? Female ❑ Male ❑

8. What is your race/ethnicity? Asian ❑ African American ❑ Hispanic ❑ Native American ❑ White ❑ Other ❑

9. What is your current position? Teacher ❑ Teacher Aide ❑ Administrator ❑ Other (specify) ❑ _____

SECTION 5

In this section I would like to learn more about your interaction with other faculty and staff members in your school. I am interested in knowing with whom you interact on a regular basis and the nature of those interactions. Specifically, on the following pages, for each listed faculty/staff member with whom you interact I would like you to record:

1. Approximately how many times you talk to this individual during a typical month.
2. To what extent you believe this individual shares useful information with others in the school.
3. To what extent you believe this individual keeps commitments made to others in the school.
4. To what extent this individual helps others in the organization even if there is no immediate personal reward for doing so.
5. To what extent you believe this individual serves as a role model for others in the education profession.

Example scenarios along with the appropriate response formats may be found below.

Scenario 1: You communicate with Michael Cox three times during a typical month. In your opinion, he frequently shares useful information with a wide variety of people in the school, he always keeps his commitments to others, and he is almost always willing to help others when they are in need of assistance. Finally, you believe fairly strongly that he serves as a role model for other educators.

Scenario 2: You do not normally communicate with Marge Jones during a typical month. However, from what you know of Marge, she rarely shares information with others in the school, she also rarely lives up to her commitments, and never seems to help others. In your opinion, Marge is not necessarily a role model for others in the profession.

Scenario 3: You communicate with Jill Simpson at least ten times a month. You believe that Jill shares information with others to a fair extent, she usually keeps her commitments to others, she often helps others, and you are not sure whether or not you believe that she serves as a role model for other educators.

Your responses to the above scenarios would look like the following:

	Communication (Times/month)	Shares Information (1=Not at All,	Keeps Commitments 2=Very Little,	3=Neutral,	Helps Others 4=Somewhat,	Role Model for Others 5=To a Great Extent)
Cox, Michael	[3]	1 2 3 4 (5)	1 2 3 4 (5)		1 2 3 4 (5)	1 2 3 (4) 5
Simpson, Jill	[10]	1 2 3 (4) 5	1 2 3 (4) 5		1 2 3 (4) 5	1 2 (3) 4 5

Communication (Times/month)		Shares Information (1=Not at All,	Keeps Commitments 2=Very Little,	Helps Others 3=Neutral,	Role Model for Others 4=Somewhat,	5=To a Great Extent)
(List of Names)	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
[redacted]	[ ]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	

In the space below, please share any additional thoughts or comments you may have, regarding your job, the school, the district, or anything else you would like to share. Again, any comments you make will remain completely confidential. **However, please do not reference any individual by name in your comments. Any such references will be marked out on the survey form and will not be included in the electronic recording of the comments.**

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