A NETWORK OF WORKING RELATIONSHIPS AND ITS INFLUENCE ON

INDIVIDUAL JOB OUTCOMES

BY

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A Thesis
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Abstract

A model of the interpersonal relationships among work group members was developed and tested. Leader-Member Exchange (LMX) theory and Team-Member Exchange (TMX) theory provided the foundation for this work. The model extends the findings of a quarter-century of LMX research to all dyadic relationships within a work group. This cluster of dyadic member-member relationships ($M_{xi}M_{yj}XCO$), as well as the Leader-Member relationship (LMX) and Team-Member relationship (TMX), were analyzed for their association with individual job outcomes. Four hundred (400) individual workers' networks of work relationships were tested in a field study of three organizations in two North American countries.

The leaders in the sample did not differentiate their relationships with their followers to the extent that previous research had established. Subordinates within the work groups, however, made clear distinction among their relationships with co-workers and reported having relatively different relationships with the leader as well. Respondents reported relationships with higher levels of trust, support, and loyalty with individuals whom they perceived to be similar to themselves in values, perspective, and work behaviours.

The leader-member relationship (LMX) was confirmed as a correspondent with the outcomes of job satisfaction and affective organizational commitment. The cluster of dyadic member-member relationships ($M_{xi}M_{yj}XCO$) was related to an individual's perceptions of group cohesiveness, group effectiveness, and group performance. The relationship between an individual and the work group as a whole (TMX) proved to be the most significant of the three relationships, as it was related to all five of the job outcomes tested. Significant interactions were minimal.

Introduction

The chronicle of leadership research throughout the twentieth century is one of shifting focus and emphasis. Researchers have attempted to predict emergence of leadership and its effectiveness by examining personal traits and behaviours of those in positions of leadership, by incorporating characteristics of the follower and the situation, and by investigating leader-member relationships. The Leader-Member Exchange model of leadership has demonstrated the important role of differentiated leader-member relationships in individual member outcomes. As businesses embrace teamwork and team building, the hierarchical position of leaders and their influence on the effectiveness of the organization is being supplanted by recognition of the influence and contributions of all members. The development of the team environment implies that all relationships, not just those between leader and members, may contribute to member outcomes. This paper presents a model of the network of working relationships that an individual forms within a work unit, develops hypotheses relating that network to individual outcomes, and reports the results of a field study that tested the model and hypotheses.

CHAPTER 1

REVIEW OF THE LITERATURE

At the outset of the twentieth century, leadership concepts were framed by the "great man theory" which postulated that leaders were born with certain characteristics that would enable them to take their rightful place in positions of leadership, power, and authority. This perspective guided the research on leadership until mid-century, when Stogdill (1948) and Mann (1959) provided review articles in which they concluded that, although there was a positive relationship between some traits and leadership status, the strength of the relationship was insufficient to explain or predict leadership on the basis of personal traits. They further suggested that researchers turn their attention to behaviours exhibited by the leaders as the focus of leadership research.

In response to these reviews, researchers (Lewin & Lippitt, 1938; Likert, 1967; Stogdill & Shartle, 1948) turned to a leader behaviour approach. Common to the studies was identification of two distinct styles of leader behaviours: consideration (concern for people) and initiating structure (concern for task or performance). Studies found that effective leaders focus on both performance and interpersonal behaviours, but also determined that patterns of behaviour, and the effectiveness of such behaviours, vary with the situation. This finding effectively changed the direction of leadership research again, this time toward contingency theories, or the implication of situational variables in determination of performance.

Contingency theories identify situational variables that moderate the relationship between leader behaviour and effectiveness of group performance. Situational variables identified include leader-member relations, task structure, and position power of the leader (Fiedler, 1954); personal characteristics of group members, the work

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environment, and the work group itself (Evans, 1970; House, 1971); and job-relevant maturity of subordinates (Hersey & Blanchard, 1988). Research on contingency theory has sought to discover how situational variables moderate the relationship between leader behaviours and leader effectiveness. According to path-goal theory (Evans, 1970; House, 1971), effective leader behaviours, i.e., those leading to goal achievement and high performance in subordinates, are contingent upon aspects of the situation and characteristics of the subordinate. The work environment and task structure are two of the situational variables thought to influence selection of appropriate behaviours. This stream of research parallels that of some research on motivation, particularly Job Characteristics Theory (Hackman & Oldham, 1980). Job Characteristics Theory concerns the relationship of specific job characteristics, such as feedback and autonomy, to job satisfaction and work motivation. The original Job Characteristics Model (JCM) suggested that feedback, autonomy, task identity, task significance, and task variety create psychological states that, in turn, lead to favorable job outcomes such as job satisfaction, intrinsic motivation, and effective work behaviour. Recent research provided general support of the JCM and the role of task characteristics in individual job outcomes (Johns, Xie, & Fang, 1992). Job design elements were also found to be influential in predicting effectiveness in work groups (Campion, Medsker, & Higgs, 1993).

Several of the models referenced establish that the follower and the situation are important elements in researchers' attempts to explain and predict organizational effectiveness, but the primary focus of leadership research has been the leader. While there is an ongoing need to assess the contributions of the leader, there is an equally compelling need to investigate the implications of the social network that exist within a work unit (Meindl, 1993). To focus entirely on the leader is to ignore the richness of the socially interactive processes that occur when people are configured in structured work groups. These working relationships are a special case of interpersonal relationships, in

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that they generally focus on task achievement within an organizational context (Gabarro, 1987). The working relationship between leader and member has been addressed by the Leader-Member Exchange model (Graen & Scandura, 1987) and its derivative, Leadership-Making (Graen & Uhl-Bien, 1995).

Leader-Member Exchange theory was developed as a descriptive model of the interactive processes between leaders and each of their subordinates. These processes were especially evident in the context of unstructured tasks (Graen & Scandura, 1987) rather than with tasks of a repetitive and highly structured nature. The theory has evolved to take on a more prescriptive tone by identifying relationship behaviours that can lead to greater effectiveness (Graen & Uhl-Bien, 1995). Most theories of leadership have emphasized the average leadership style in which the leader exhibits consistent behaviours with all subordinates. However, the leader-member exchange theory model (Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975; Graen & Scandura, 1987) stresses the differentiated relationships a leader develops with his/her members. A leader enters into a different quality relationship with each of his/her subordinates, based on an exchange of personal and positional resources between leader and member. The definition of the LMX cannot be clearly distinguished from the constructs used to measure it. The early studies measured the amount of latitude a leader allowed a subordinate in defining his/her role. In over a quarter century of research, LMX has evolved into a general assessment of a work relationship between leader and member, measured by the extent to which there is a mutual sense of trust, loyalty, understanding, and support.

The distinction among leader-member relationships was only one departure that Leader-Member Exchange theory took from traditional leadership theories. While other theories fixed the work group as the unit of analysis, the Leader-Member Exchange

(LMX) view of leadership focuses on the dyadic relationship between leader and member as the unit of analysis.

The foundation of dyadic organizing can be traced to Chester Barnard (Graen & Scandura, 1987) and his sense that cooperation between individuals in an organization was based on acts of negotiation in which individuals sought balance between contributions and inducements. Simon (1957) expanded on this process of balance between contributions and inducements by stating that the negotiations take place largely at the dyadic level. Social exchange theory (Blau, 1964; Homans, 1958; Hollander & Julian, 1969) also proposed that each party to an exchange offers contributions deemed valuable to the other with expectation of mutually derived benefit. Individual interaction patterns between two people can be seen as the basis for more complex patterns of social behavior in groups (Jacobs, 1970). These patterns of interlocked behaviour (Weick, 1969) represent the process through which individuals come to know their roles in the organization (Graen, 1976).

Leadership in the Leader-Member Exchange (LMX) model is developed from this role-making process, in which leaders and members exchange behaviours and develop mutual expectations about future behaviours (Gabarro, 1987). In role-making, leaders may develop relationships marked by high levels of support and trust with some of their subordinates and relationships based strictly on the formal employment contract with others (Graen & Cashman, 1975). A leader thus builds a working team or unit composed of some members with whom he/she shares a high quality relationship ("in-group") and others with whom he/she shares a low quality relationship ("out-group") based on these differential leader-member exchanges.

Research has shown that in 85% or more of work units, members have differential relationships with the leader (Graen & Cashman, 1975; Liden & Graen, 1980). The individuals who perceive the leader to be relatively open to the member for

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individual assistance (negotiating latitude) are those identified as having high quality

relationships with the leader. The leader will then delegate some of the work to those

whom he/she considers most capable and trusted (Deinisch & Liden, 1986; Liden &

Graen, 1980). This group ("in-group") receives in exchange more organizational

resources, more supportive and sensitive treatment from the leader, greater latitude in

decision-making, and greater involvement in administration and boundary spanning

activities (Graen & Cashman, 1975) than do members of the "out-group". They also

receive higher performance ratings and feel greater levels of organizational commitment

(Dansereau, Graen, & Haga, 1975), reduced propensity to quit, and greater satisfaction

with the supervisor (Vecchio & Gobdel, 1984) than those in the "out-group". The leader

expects more from members of the "in-group" and they tend to act according to those

expectations and are rewarded for it. The "out-group", in contrast, deviates more from

the behavioural preferences of the supervisor and experiences less satisfaction, more

problems with the supervisor, and more turnover (Dansereau, Graen, & Haga, 1975). A

large number of empirical studies have confirmed the relationship between the quality of

the Leader-Member Exchange (LMX) relationship and individual member outcomes. A

recent meta-analysis (Gerstner & Day, 1995) of 86 studies reported that LMX was

correlated at significant levels with member-reported outcomes of organizational

commitment (.35), overall job satisfaction (.46), satisfaction with supervisor (.64), role

clarity (.34), and role conflict (-.29). Organizational measures of performance ratings

(.29), and turnover (-.12) were also significantly correlated with the quality of the leader-

member relationship (LMX).

Individual outcomes of a high quality leader-member relationship (LMX) may be

well established, but studies to establish the antecedents of those relationships are

fewer and the results more equivocal (Deinisch & Liden, 1986; Gerstner & Day, 1995).

Demographic variables have been inconsistent, but generally non-significant indicators

of strong LMX relationships (Basu & Green, 1995; Duchon, Green, & Taber, 1986; Gerstner & Day, 1995; Graen & Cashman, 1975; Liden, Wayne, & Stilwell, 1993). Conflicting results have been shown in studies using relational demographic (demographic differences) variables. Liden, Wayne, & Stilwell (1993) reported non-significant correlation of demographic similarity with LMX, but Basu & Green (1995) found education similarity to be positively related to LMX. Tsui & O'Reilly (1989) found that differences in gender, age, education level, and job tenure were negatively related to supervisor affect and assessed effectiveness and were positively related to role ambiguity. Actual similarity of work attitudes (Basu & Green, 1995) and perceived similarities between leader and member are strongly correlated with high quality LMX relationships (Liden, Wayne, & Stilwell, 1993; Phillips & Bedeian, 1994).

Despite relative uncertainty about the antecedents of differentiated leader-member relationships, their presence in the workplace is well-established (Graen & Cashman, 1975), and the process by which they evolve is well-developed (Graen & Scandura, 1987; Graen & Uhl-Bien, 1995). Role development provides an archetype for that process, and Graen & Scandura (1987) have outlined a three-stage model of the LMX development process. This process is dynamic as each exchange causes reciprocal behaviours and expectations, but it is also relatively stable, because with each exchange, expectations may be confirmed and reinforced. The first stage (*role-taking*), which may last for only a few hours or for months, is dominated by leader-initiated activities during which he/she discovers the member's job growth potential and his/her motivation to go beyond the job description (Graen & Cashman, 1975). The *role-making* phase, or second stage, involves mutually reinforcing interlocking behaviour cycles. Although the leader continues to initiate much of the activity, the leader and member develop a working relationship by acquiring an understanding of how each will behave in various situations. In the third stage, *role routinization*, the leader and member reach a

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stage of mutual interdependence that is characterized by high levels of trust, respect, support, and loyalty. These interlocked expectation and behaviour response patterns form a reciprocal process of reinforcement in the relationship and contribute to the stability and continuity of relationships at differentiated quality levels. This interactive process in which partners in the dyad affect behaviours and attitudes of the other was confirmed by Herold (1977).

Recent theoretical development (Graen & Uhl-Bien, 1995) re-configured this role-making process as the more prescriptive Leadership-Making, based on studies (Graen, Novak, & Sommerkamp, 1982; Scandura & Graen, 1984) showing improved productivity and satisfaction among employees following an LMX-based intervention. This intervention, a seminar presentation, encouraged leaders to use 'active' listening skills, to be attentive to the member's problems, concerns, and expectations; to share their expectations regarding their own and the member's jobs and the relationship; and to resist imposing their own frame of reference on issues discussed. Subordinates who responded to these overtures from the leader to develop a high quality relationship with the leader showed dramatic improvement in performance. The Leadership-Making model, like the role-making model, is illustrated as one in which leaders and members progress through the three phases in the development of a dyadic relationship to become "partners". The "stranger" phase is seen as existing on a nearly pure exchange basis, as the individuals act within the prescriptions of the job contract. There may then be an 'offer' to extend the relationship beyond the contractual confines of the "stranger" phase to the "acquaintance" stage. In this second stage, there is an extension of the relationship to exchanges beyond those required, but the relationship is still in the formative stages. If the 'offer' is accepted, the relationship then moves into the third, or "mature", phase. Individuals come to depend on one another and develop high levels of trust, loyalty, and respect.

While the role-making model focused primarily on the expectations and behaviors of the leader, the Leadership-Making model emphasizes the participation by both members of the leader-member dyad. Both the role-making and the Leadership-Making perspectives on the evolution of dyadic relationships suggest that leader-member relationships develop differentially, both in time and ultimate configuration.

There are several points that have not been addressed by either the role-making or the leadership-making models. Leader-Member Exchange, as a descriptive model, does not address the desirability or the fairness of such differentiation within a work unit. The prescriptive emphasis in the Leadership-Making model, however, is on both the process of differentiation and the benefits that can accrue to a work unit in which greater numbers of "mature" relationships are formed. Additionally, both of these models are confined to the leader-member relationship.

The recently developed Team-Making model (Uhl-Bien & Graen, unpublished) extends the role making (Graen & Scandura, 1987) and the Leadership-Making (Graen & Uhl-Bien, 1995) processes to all relationships in a work unit. The focus here is the dyadic relationship each member of the unit forms with each other member, including the leader. The relationship building process does not assume that all relationships will reach the mature stage; rather, some will remain at the "stranger" or "acquaintance" stage. This is consistent with empirical findings regarding leader-member relationships (Graen & Cashman, 1975; Vecchio & Gobdel, 1984). Other research also supports a four-stage development process and the stabilization of relationships at varying degrees of mutuality, efficacy, and intensity (Gabarro, 1987). The team model (Katzenbach & Smith, 1993) also acknowledges that the leader does not treat all members equally, but recognizes different contributions to the team at different times.

Current business practices call for investigation of this entire network of relationships. Since the 1980s, business in North America has been increasingly

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influenced by an emphasis on teamwork, team building, collaboration, and empowerment. Most major U.S. companies are using, or considering the use of, some form of work teams (Manz & Sims, 1995). These authors also estimated that, by the end of the 20th century, nearly half of the U.S. work force would work in some type of empowered work team (p. 12). The manufacturing sector has led this movement, with the service and public sectors lagging in the institution of the team-based organization. Improved productivity and quality, as well as cost savings, are the goals of this restructuring and there is strong evidence that teams can effect such change. Large corporations (Alcoa, Weyerhaeuser, Rubbermaid, and Corning) report a variety of improvements, such as increased productivity, reduced waste, improved customer service, improved workflow, and cost savings resulting from team-based structures. Proctor and Gamble reports a 30 to 50 percent savings in manufacturing costs as well as improvements to quality, customer service and reliability (Manz & Sims, 1995). Thus, the team-based organization may transcend the status of the latest management fad and fundamentally transform the way work is done.

In a team environment, the leader assumes a significantly different role than in a hierarchically structured organization. Leadership effectiveness in this setting cannot be measured by the level of influence exerted on the followers, but rather on the partnerships and common goals the leader is able to establish with his/her team members (Katzenbach & Smith, 1993). Hirschhorn (1991) asserts that leaders must balance empowerment and collaboration and create a setting in which people are authorized to think for themselves and are also able to collaborate with one another. Teams that work effectively depend on highly developed levels of trust and interdependence among its members. In such a setting, the focus thus expands beyond the leader-subordinate relationship to the web of interlocking relationships and processes among all members of the work unit. This makes acknowledgment of all

intra-group relationships more important, as each member establishes a network of relationships: with the leader, with each individual co-worker, and with the whole group as a single entity

Although the theoretical framework for the growth and influence of these relationship processes is well developed, there has been very little empirical investigation beyond that of the leader-member relationship. One notable exception is that of Seers and his colleagues (Seers, 1989; Seers, Petty, & Cashman, 1995), who have examined the relationship between an individual member and the work group as a whole. Conceptualized as comparable to leader-member exchange relationship (LMX), the team-member exchange relationship (TMX) is founded on the reciprocation of influence and behaviours between the member and the entire team as a group. High quality team-member relationships (TMX) significantly influenced job satisfaction beyond that demonstrated by LMX (Seers, 1989). Members of self-managed teams reported higher levels of TMX than those of traditional groups and the higher the quality of TMX in those self-managed groups, the higher was the group's effectiveness (Seers et al., 1995).

Despite the implication of relationship influence on individuals in a work group and on the group as a whole, examination of an individual's network of work relationships and its antecedents and consequences is in its infancy. Given the increasing importance of collaborative work groups and teams in the work place, this is an area in need of both theoretical development and empirical testing.

CHAPTER 2

DESIGN

Model

The model and study detailed in this paper address the need for theoretical

development and empirical testing of the association between the full complement of an

individual's working relationships and that individual's job outcomes. The proposed

model of an individual's network of working relationships and its antecedents and

consequences is found in Figure 1. For the sake of simplicity, a four-member group is

illustrated. As the size of a work group increases, the number of dyadic relationships

becomes larger and the network increasingly complex. The quality of each of the

interpersonal relationships is a latent variable, as illustrated by the oval in the model.

The model defines the network of relationships that an individual member

(Member $_x$ in the model) forms within a work unit as a cluster of differentiated dyadic

relationships, with both peers and leader. The dyad is the basic unit of relational

analysis, which has been widely applied in the social sciences (Anderson, 1994). Its

application in work unit research has been the leader-member dyad (Duchon, Green, &

Taber, 1987; Tsui & O'Reilly, 1989), and the proposed model acknowledges both the

importance and the differentiation of the leader-member relationship and extends it to

member-member relationships. Thus, an individual will form a relationship with the

leader, marked by particular characteristics and quality level; this relationship is

identified as the Subordinate Leader-Member Exchange Relationship or SLMX. The

leader's perspective of that dyadic relationship is the Leader-Member Exchange

Relationship or LMX.

The individual will also form a relationship with each of a number of co-workers

and a quality level characterizes each of these member-member relationships (e.g.,

M_xM_i and (M_yM_i). The combination of the member-member relationships among peers is

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the Cluster of Member-Member Relationships ($M_{xi}M_{yj}$XCO) indicated in the model. The quality level, or value, of this cluster is the averaged quality of all the member-member relationships an individual has within the established work group.

The third type of work relationship illustrated in the model is that of the individual with the team as an entire group, based on Team-Member Exchange (TMX) (Seers, 1989; Seers, et al., 1995). Studies have suggested that an individual member may evaluate the relationship he/she has with individual group members differently than he/she would evaluate the relationship with the group as a whole (Cartwright, 1968). Thus, it is expected that perception of dyadic relationships and the average of those dyadic relationships ($M_{xi}M_{yj}$XCO) will be distinct from the relationship an individual perceives with the group as a whole (TMX).

The proposed model thus addresses three discrete types of intra-group relationships: leader-member (LMX and SLMX), member-member (MMX), and team-member (TMX). Each of these relationships is characterized by a degree of quality, based on the levels of mutual support, trust, and loyalty found in the relationship. The model also includes the averaged quality value of the cluster of member-member relationships ($M_{xi}M_{yj}$XCO).

Individuals may form differentiated working relationships with the leader and members of their work units for a number of reasons. Studies examining the antecedents of these relationships are far fewer than those that have looked at effects (Gerstner & Day, 1995). Demographic variables such as gender, age, race, group size, job tenure, and organization tenure were all found to be non-significant in predicting LMX relationships (Basu & Green, 1995; Duchon, Green, & Taber, 1986; Liden, Wayne, & Stilwell, 1993; Phillips & Bedeian, 1994). One demographic variable that was significant in predicting LMX was education level (Phillips & Bedeian, 1994) and education similarity (Basu & Green, 1995). Basu & Green (1995) also found organizational citizenship

behaviours and attitude similarity to be positively related to LMX relationships. Similarity in attitudes toward family, money, career strategies, goals in life, and overall perspective were significant predictors of LMX (Phillips & Bedeian, 1994) as were expectations, liking, and a member's perceived similarity to the leader (Liden, Wayne, & Stilwell, 1993). Based on these results, demographic variables are not considered predictors of either the leader-member or the member-member relationships in this model. The focus of the proposed model is work relationships within a task group; thus it is perceived similarity of work behaviors—perspective and values, and the methods used to approach and solve problems—that are likely to influence the quality of the work relationship (Liden, Wayne, & Stilwell, 1993). The model proposes that perceived similarity of work behaviors will contribute positively to the quality of all the interpersonal work relationships that an individual develops.

The effects of the entire network of working relationships on behavioural outcomes can be derived from LMX research. That research, spanning several decades, documents the mediating role that LMX has on the relationship between leader behaviours and outcomes of the follower and work unit (Gerstner & Day, 1995). High quality LMX relationships have consistently led to the most positive outcomes for the member and the work group as a whole (e.g., Crouch & Yetton, 1988; Kozlowski & Doherty, 1989). Members who have high quality relationships with the leader have been found to enjoy greater job satisfaction (Gerstner & Day, 1995; Graen, Novak, & Sommerkamp, 1982; McClane, 1991; Turban, Jones, & Rozelle, 1990) and higher levels of organizational commitment (Gerstner & Day, 1995; Kinicki & Vecchio, 1994; Seers & Graen, 1984). Members who reported higher quality relationships with the group as a whole (TMX) were also found to have greater job satisfaction (Seers, 1989). Katzenbach & Smith (1993) have noted that high performance teams are characterized by members' deep commitment to one another, implying that working relationships

among members will influence outcomes as well. Extending these findings to the relationships identified in the model, Figure 1 suggests that the quality level of the cluster of member-member relationships ($M_{xi}M_{yj}XCO$) and the quality level of the team-member relationship (TMX), as well as LMX, will be positively related to individual outcomes and perceptions of the group and its work.

Hypotheses

Extending the findings in Leader-Member research to the full complement of relationships among co-workers, individuals will form distinct and differentiated relationships with other members of the work group. In the model, the quality of the cluster of member-member relationships ($M_{xi}M_{yj}XCO$) derives from the individual relationships themselves. Likewise the quality of the Leader-Member relationship reported by the leader (LMX) and the quality of that same relationship reported by the member (SMLX) draw from the perceptions of the relationships themselves

H_1. *Individuals will form differentiated relationships with co-workers in the work group.*

Extending previous findings relating the influence of perceived similarity of leader and member on the quality of a Leader-Member relationship (LMX) (Dockery & Steiner, 1990; Liden, Wayne, & Stilwell, 1993; Philips & Bedeian, 1994), individuals are expected to form higher quality relationships with co-workers whom they perceive to be like themselves in work behaviours.

H₂: *Individuals will form higher quality relationships with those whom they perceive to be like them in work behaviours.*

Job satisfaction, an emotional response to different facets of a job, is one of the most-often-studied outcome variables in organizational behaviour, and has been shown to be related to a variety of organizational factors, such as organizational commitment and turnover. Furthermore, LMX has been shown consistently to influence levels of job satisfaction. The interpersonal work relationships are expected to be positively related to job satisfaction.

H_{3a}: *The quality of the Leader-Member relationship, LMX ,will be positively related to an individual's job satisfaction.*

H_{3b}: *The average quality of Member-Member relationships, $M_{xi}M_{yj}XCO$, will be positively related to an individual's job satisfaction.*

H_{3c}: *The quality of the Team-Member relationship, TMX, will be positively related to an individual's job satisfaction.*

The second outcome variable is that of affective organizational commitment, defined as an emotional attachment to the organization such that a committed individual identifies with the organization, is involved in it, and enjoys membership in the organization. Organizational commitment is strongly and positively related to job satisfaction (Tett & Meyer, 1993) and has been found to positively influence one's performance (Matheiu & Zajac, 1990). This emotional facet of organizational commitment has shown to be more closely related to job satisfaction and turnover intention than has the continuance component, defined as a motivation to stay with an organization because of the high cost of leaving it.

H_{4a}:   *The quality of the Leader-Member relationship, LMX, will be positively related to an individual's affective organizational commitment.*

H_{4b}:   *The average quality of Member-Member relationships, $M_{xi}M_{yj}XCO$, will be positively related to an individual's affective organizational commitment.*

H_{4c}:   *The quality of the Team-Member relationship, TMX, will be positively related to an individual's affective organizational commitment.*

Group cohesiveness may be defined as an interpersonal attraction among members and between a member and the group as a whole, a closeness or identification with the group, and the extent to which members feel they want to remain in a group. It is thought to contribute to a group's strength and viability as well as increasing the importance of group membership for an individual (Cartwright, 1968). It is expected that as the quality of an individual's relationships increase, so too will his/her perception of group cohesiveness.

H_{5a}:   *The quality of the Leader-Member relationship, LMX will be positively related to an individual's perception of group cohesiveness.*

H_{5b}:   *The average quality of Member-Member relationships, $M_{xi}M_{yj}XCO$, will be positively related to an individual's perception of group cohesiveness.*

H_{5c}:   *The quality of the Team-Member relationship, TMX, will be positively related to an individual's perception of group cohesiveness.*

Intra-group processes, such as open communication of ideas and feelings, supportiveness, and low interpersonal conflict, are likely to be present in high quality

relationships. These processes have been found to be a significant predictor of member-rated effectiveness and satisfaction (Gladstein, 1984). Therefore, the higher quality relationship will produce positive perceptions of group effectiveness. Effectiveness has diverse definitions, but the literature (Gladstein, 1984; Sundstrom et al., 1990) confirms the inclusion of the two factors of productivity and satisfaction with group output. It is expected that individuals who believe that their group is effective will rate the performance of the group as superior and will report satisfaction with the productivity of the group.

H_{6a}: *The quality of the Leader-Member relationship, LMX, will be positively related to an individual's perception of group effectiveness.*

H_{6b}: *The average quality of Member-Member relationships, $M_{xi}M_{yj}XCO$, will be positively related to an individual's perception of group effectiveness.*

H_{6c}: *The quality of the Team-Member relationship, TMX, will be positively related to an individual's perception of group effectiveness.*

H_{7a}: *The quality of the Leader-Member relationship, LMX, will be positively related to an individual's perception of group performance.*

H_{7b}: *The average quality of Member-Member relationships, $M_{xi}M_{yj}XCO$, will be positively related to an individual's perception of group performance.*

H_{7c}: *The quality of the Team-Member relationship, TMX, will be positively related to an individual's perception of group performance.*

H_{8a}: *The quality of the Leader-Member relationship, LMX, will be positively related to the group performance as assessed by the leader.*

H_{8b}: *The average quality of Member-Member relationships, $M_{xi}M_{yj}XCO$, will be positively related to the group performance as assessed by the leader.*

H_{8c}: *The quality of the Team-Member relationship, TMX, will be positively related to the group performance as assessed by the leader.*

Although there is no empirical foundation to support such a hypothesis, it is unlikely that the three types of relationships will be completely independent of one another. Because the relationships between leader and the member and between the member and his/her co-workers involve a single individual, they are likely to be related to one another. One worker may compensate for a less-than-ideal relationship with the superior by forging strong relationships with co-workers. Another individual may find him/herself in high quality relationships with co-workers who all share an equally good relationship with the leader. Therefore, interactive effects from the quality of the Leader-Member relationship (LMX), the quality of the cluster of Member-Member relationships ($M_{xa}M_{yj}XCO$), and the quality of the Team-Member relationship (TMX) on individual job outcomes are possible and were explored in the analysis of data.

Job Satisfaction

Affective Organizational Commitment

Perceived Group Effectiveness

Perceived Group Performance

Perceived Group Cohesiveness

Leader Assessed Performance

+
$H_{3b, 4b}$
$5b, 6b$
$7b, 8b$

+
$H_{3a, 4a}$
$5a 6a$
$7a 8a$

+
$H_{3a, 4a}$
$5a 6a$
$7a 8a$

+
$H_{3c, 4c}$
$5c 6c$
$7c, 8c$

Cluster of Member-Member Relationships $(M_{xi}M_{yi}XCO)$

Leader-Member$_i$ Relationship By Leader (LMX)

Leader-Member$_i$ Relationship By Member (SLMX)

Member$_x$ Relationship with Group as a Whole (TMX)

$+ H_2$

Perceived Similarity of Work Behaviours

Member$_x$Member$_y$ Relationship (M_xM_yX)

$+ H_2$

Member$_x$

Leader

Member$_i$

Member$_y$

Figure 1. An Individual's Network of Work Group Relationships, Its Antecedents and Consequences

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Chapter 3

METHOD

Sample

In February 1994, the city council of a medium-sized city in mid-western Canada

recommended a significant reform of the city administrative structure to achieve more

affordable municipal administration. City commissioners then undertook the task of

restructuring the civic administration and of reducing the management structure. Over a

three-year period, there would be a reduction in management and professional staffing

from 977 to approximately 750, with an average reduction of 23% across all departments

(Frost, 1994).

The restructuring process within the civic administration offered a research

opportunity to investigate relationships in evolving, newly developed, and ongoing work

units in a wide variety of civic departments. The Chief Commissioner outlined the

proposed research project in a letter to group leaders and invited participation from all

units affected by the restructuring. The researcher further detailed the project in an open

meeting for potential participants and followed that with individual phone calls to the

contact person in each unit. A total of 23 work units, varying in size from 5 to 21 agreed

to participate for a total sample size of 139 (23 leaders and 116 members). All members

of a work unit agreed to participate so that a complete picture of a single unit could be

achieved.

The work units were from diverse departments: corporate services, parks and

recreation, water and waste, streets, land and development, transit, civic buildings, and

libraries. Within departments, there was also diversity among specific work groups. Some of them were more consultative and collaborative in nature and others were more highly interactive and interdependent. Some groups not only interacted frequently, but also accomplished their work in close physical proximity to one another. This heterogeneity both within and between groups was balanced by the fact that all the participants were employees of a single organization with common policies, procedures. and overall mandate. Further, the focus of the administration had been that of systems thinking, continuous improvement, and team building, and many of the research participants had undergone training in those areas.

Following completed data collection from employees in that city, it was concluded that the sample size (107 individuals; 5 complete groups) was inadequate to assure the validity of the conclusions drawn. Therefore, administrators of two relatively large employers in a small northern U.S. city were contacted in early 1998 to request their participation in the study. One organization was a multi-specialty medical clinic and the other was the municipal government. The clinic employed approximately 250 employees (excluding doctors) in health-related and administrative units. The municipal employees numbered approximately 350 in units ranging from police and fire officers to street, sanitation, engineering, and finance departments. The municipal government was a stable organization, with change occurring only gradually. In contrast to the municipal government in the Canadian city, there has been relatively little training in continuous improvement processes, systems thinking, or team-building.

The clinic operated in a fairly dynamic industry, with change occurring rapidly and being precipitated by many sources, both internal and external. The local medical community had become extremely competitive and volatile in recent years. Both of the U.S. organizations agreed in principle to participation, and presentations were subsequently made: first to the department heads, and then to each department of

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employees. The purpose of these meetings was to introduce the researcher and the study, to establish a sense of trust, and to assure employees of their confidentiality. These meetings were invaluable in setting a professional tone for the study and for answering employees' questions and concerns. Had the survey been distributed without such an introduction, it is unlikely that the response rate would have been as high as it was.

The sample was thus comprised of professional and non-professional employees in both the public and private sectors. This diversity of occupation, structure, and individuals provided a strong sample with which to test the hypotheses of this work. Nearly all departments in all three organizations were well represented, given the number of employees in each. One hundred seven (107) of the140 surveys distributed were completed and returned in the Canadian city (76%), 232 of the 350 sent to the U.S. municipal employees were completed (66%), and 193 of 250 sent to clinic employees were completed (77%). This represents an overall response rate of 72%; however, some of the departments in two of the organizations were not organized in appropriate structures to assess relationship data. When those surveys were removed from the database, 429 surveys remained, representing a 58% response rate. All members of forty-four of 115 possible work groups (38%) returned complete relationship data. The entire group of 429 respondents was used for individual analysis purposes.

Of the 429 respondents retained in the database, 43.8% were male and 55.5% female. They had a relatively high level of education, with over 30% having a bachelor's degree or more and another 32.4% reporting a professional designation or 1-2 years of college. The sample tended to be in the 36-55 year age groups (63.4%), with much smaller numbers in the younger and older age categories.

The employees in this sample had relatively short tenure in their present jobs, with 55.5% reporting less than 5 years in the current position. Other data suggest that

employees move from one department to another or from one work group to another, as 46.2% had worked for their specific organization in some capacity for more than 10 years. The groups in which these employees work were of four different sizes: 19.3% in very small groups (1-3 people); 47.6% in medium size (4-6); 19.8% in large groups (7-10); and 13.3% in very large (over 10) groups. The demographic and organizational profile of the sample is shown in Table 1 below. Complete content of all demographic questions may be found in Appendix A.

Table 1
Sample Characteristics (reported in % of total sample)*

Gender	% of sample	Education Completed	% of sample
Male	43.8	elementary	.2
Female	55.5	some high school	1.6
		high school or equivalent	35.0
Age		1-2 yrs college	29.6
less than 20 years	2.1	professional designation	2.3
21-25 years	6.8	bachelor's degree	18.9
26-30 years	8.2	some grad school	5.8
31-35 years	12.4	graduate degree	5.4
36-40 years	11.2	**Tenure in Organization / Job**	
41-45 years	21.0	less than 6 mos	2.6 / 5.1
46-50 years	19.1	6 mos to 1 year	11.2 / 18.4
51-55 years	12.1	1 to 5 years	22.4 / 35.0
56-60 years	4.7	5 to 10 years	16.6 / 20.0
greater than 60 years	1.6	10 to 15 years	8.9 / 5.4
		15 to 20 years	12.8 / 8.9
Organization		20 to 25 years	16.6 / 3.3
Canadian City	24.9	more than 25 yrs	7.9 / 2.6
U.S. City	32.9		
Medical Clinic	42.2	**Group Size (under 1 leader)**	
		Very Small (1-3 members)	19.3
		Small (4-6 members)	47.6
		Large (7-10 members)	19.8
		Very Large (over 10 members)	13.3

* *Totals may not equal 100%, due to non-responses and rounding.*

Measures

In this study, as in much of social science research, the constructs of interest cannot be measured directly. Attitudes such as job satisfaction and perceptions of task characteristics such as autonomy must be extrapolated from observed variables. In this study, these constructs were measured by responses to survey questions. With nearly all measured variables, the scales that were used had been tested for reliability and validity in previous research.

Demographic Variables

Individual Demographics

Individual demographic data was gathered on age, gender, and education levels. Age was measured by 5 year categories, with the first *"less than 20 years"* and the last *"greater than 60 years."* Gender was a dichotomous variable with *Male* (1) and *Female* (2) as the responses. Education was identified by 7 categories ranging from *"completed elementary school"* to *"graduate degree"*. Individual demographic variables have been largely insignificant in predicting the quality of a relationship, but may influence the connection between the relationship variables and job outcomes. They were used as control variables in assessing that relationship.

<u>Employment-Related Demographics</u>

   <u>Tenure.</u>

   Employment tenure was measured both in terms of present position and length

of employment with the employer. They were both measured by 8 time length

categories, from *"less than 6 months"* to *"more than 25 years"*.

   <u>Task Characteristics.</u>

   Task characteristics of autonomy and feedback from others, and task

interdependence were assessed using items from the Job Descriptive Survey (Hackman

& Oldham, 1980). These three facets of a job are interpersonal in nature and thus may

influence the correlation of the relationships to job outcomes, and were used as control

variables. Each characteristic was measured by three items with two different types of

response scales. The first type of scale asks the respondent to what extent a

characteristic is present in a job. Feedback from others was measured by items such

as: "To what extent do managers or co-workers let you know how well you are doing on

your job?". The interdependence, or dealing with others, items are represented by

items such as: "To what extent does your job require you to work closely with other

people in your group?" The response was a 7-point Likert-type scale anchored by *Very

Little* (1) and *Very Much* (7). The second type of question was also a 7-point Likert-type

scale of *Strongly Agree* (7) to *Strongly Disagree* (1). An example of an item measuring

autonomy was: "The job gives me considerable opportunity for independence and

freedom in how I do the work". The wording of some items was adapted slightly so that

the responses were limited to intra-group processes. These nine items constitute a

composite measure of task characteristics, named "job complexity", derived by

averaging the responses.

Relationship Antecedents

Perceived Similarity

Perceived similarity of work behaviours between members of each dyadic relationship was measured by four items that were adapted from Turban & Jones (1988) and Liden, Wayne, & Stilwell (1993) to be suitable for all to complete. The items were then summed to create the measure of perception of similarity, which has had high reliability in previous research (α=.91 and α=.92 in Liden, Wayne, & Stilwell, 1993). Examples of these items included: "My leader (co-worker) and I are similar in terms of our outlook, perspective, and values", and "My supervisor (co-worker) and I analyze problems in a similar way". Respondents answered on a 5-point scale ranging from Strongly Agree (5) to Strongly Disagree (1).

Relationship Variables

The relationship variables were hypothesized both as dependent and independent variables. The relationships were predicted to derive from the antecedent variable, perceived similarity, and to influence the outcome variables. Each dyadic relationship in an individual's network was assessed and data was collected from both partners of each relationship (Anderson, 1994). High quality ("partnership") relationships are characterized as having high levels of trust, loyalty, respect, and support.

Leader Member Relationship

The LMX VII scale (Graen & Scandura, 1987; Graen & Uhl-Bien, 1995) was designed to reflect the multi-dimensionality of the leader-member relationship. Of the many scales used to measure the LMX construct, the LMX VII scale has been used most widely (Gerstner & Day, 1995). It has proven to have high reliability (e.g., α=.87 in

Phillips & Bedeian, 1994) and consistent criterion-related validity (Liden, Wayne, & Stilwell, 1993). Six of the items of the LMX VII scale were used to measure both the leader's and the member's perceptions of their dyadic leader-member relationship. Item #5, "Again, regardless of the amount of formal authority he/she has, to what extent can you count on your leader to 'bail you out' at his/her own expense when you really need it?" was eliminated due to apparent repetitive language. The reliability of this six-item scale was equivalent to that of the seven-item scale. All LMX items may be found in Appendix A.

Member Member Relationship

The LMX VII scale was also used to measure the MMX construct. The items were altered only to replace "leader" with "this member". Reliability and validity were high for this scale, as illustrated in analysis results in Chapter 4. As with the LMX, Item #5 was not included in the composite scale, but this exclusion did not affect the validity of the scale. The MMX items are found in Appendix A.

Team Member Relationship

It was proposed that the quality of the dyadic relationships an individual formed with other individuals would be distinct from the perception that the individual has of the relationship between him/her and the group as a single entity. The relationship between the member and the group was measured by the ten-item Team-Member Exchange scale developed by Seers (1989). A sample item, measured with a 5-point Likert type scale of *Strongly Agree* (5) to *Strongly Disagree* (1), was "In busy situations, other group members often volunteer to help me out." Half of the items deal with the contributions of the individual to the group and the other half with what the person receives from the

group. Reliability of the 10-item TMX scale was $\alpha=.83$ in a recent field study (Seers et al., 1995). Complete items of the TMX scale are found in Appendix A.

Constructed Relationship Variables

The quality of the cluster of member-member relationships, $M_{xi}M_{yj}XCO$, is an average of all dyadic relationships that an individual has with his/her peers in the work group. This average is calculated by dividing the summed values of all member-member relationships by the number of peer relationships an individual has.

Outcome Variables

Outcome variables for this study included the personal job outcomes of general job satisfaction and organizational commitment. Also included as outcome variables were the individual's perception of group effectiveness and group cohesiveness, as well as the leader's assessment of the group's performance.

Job Satisfaction

General job satisfaction was measured with the three general job satisfaction measures from the revised Job Descriptive Survey (Hackman & Oldham, 1980). This measure has been widely used in the organizational behaviour literature. The "affective responses" facet, of which general job satisfaction is one factor, has shown Spearman-Brown internal consistency estimates from .56 to .84 (Bearden, Netemeyer, & Mobley, 1993). Meta-analysis of 14 samples reported reliability scores in a range of .65 to .95 for the overall job satisfaction items, with the median of .82 (Fried & Ferris, 1987). A sample item is, "Generally speaking, I am very satisfied with this job." The response scale was a 5-point Likert-type scale of *Strongly Agree* (5) to *Strongly Disagree* (1).

Affective Organizational Commitment

Affective organizational commitment was assessed with items developed by Allen and Meyer (1990). These authors conceived of organizational commitment as a multi-dimensional construct of *affective, normative, and continuance* commitment. While evidence confirms both conceptual and empirical distinction among the three components (Hackett, Bycio, & Hausdorf, 1994), the affective component has shown the lowest error variance of the three (Allen & Meyer, 1990; Hackett, et al, 1994). Affective commitment bears the closest resemblance to the often-used Organizational Commitment Questionnaire (Mowday, Steers, & Porter, 1979), but without the behavioural aspects such as intention to leave the organization. This affective component of organizational commitment was found to be associated with increased job satisfaction and decreased turnover intentions (Jenkins & Thomlinson, 1992) and better performance record (Hackett et al., 1994). Based on this research, organizational commitment was measured using the 8 affective commitment items from the Allen and Meyer scale. An example of those items is "This organization has a great deal of personal meaning for me". The response scale was a 5-point Likert-type of *Strongly Agree* (5) to *Strongly Disagree* (1).

Perceived Group Cohesiveness

Several approaches have been taken to measuring group cohesiveness. Among them are measures of interpersonal attraction among members and between a member and the group as a whole, closeness or identification with the group, and an expressed desire to remain with the group. There are also composite indexes that capture these

diverse dimensions, and for this study, we used a composite index based on items developed by Seashore (1954). This scale had a Cronbach's alpha reliability score of $\alpha = .88$ in a recent study (Bushe & Coetzer, 1995). An example of the four items was "If you had the chance to do the same kind of work for the same pay in another work group within the organization, would you do so?" and the response categories ranged from *Definitely Would* (5) to *Definitely Would Not* (1). This particular item was reverse-scored. Another example was "Do you feel that you are really a part of your work group?" with a response scale ranging from *Definitely Yes* (5) to *Not Sure* (3) to *Definitely No* (1).

Perceived Group Effectiveness and Performance

Each member of the group, including the leader, was asked to assess the group's effectiveness in its contribution to the organization. The two items developed by Bushe & Coetzer (1995) that measure the perception of the group's work are: "*I am satisfied with the work of this team*", and "*We do an excellent job for this department and the organization*" and were shown to have a reliability score of $\alpha=.85$ (Bushe & Coetzer, 1995). The third item included in the perceived group effectiveness measure was developed for this study and has not been tested for reliability, but has face validity and complements the other two items: "*Our group's efforts have positively affected the organization*". The response scale for these three items was *Strongly Agree* (5) to *Strongly Disagree* (1).

In a second format based on judgments of performance (Campion, Medsker, & Higgs., 1993), respondents are asked to rate "*quality of work*", "*customer service*", and "*productivity*" on a scale of *Exceptional* (5) to *Very Poor* (1). In the Campion et al. study (1993), items were averaged into a composite scale after principal components factor

analysis revealed a single factor. The internal consistency was .82 and inter-rater reliability was .75 in that study.

Performance Indicators

Objective performance measures could not be included in this test of the model, as such measures were not available from the participating organizations. Furthermore, the diversity of the positions and tasks of the individuals and groups involved precluded any realistic comparison. The perceived quality or level of effectiveness measured from members of a group, and the leader's assessment of that performance, were substituted for actual performance indicators.

Procedure

Data Collection

Due to the personal nature of the data being gathered and the requirement of identification for dyadic matching, the researcher met with nearly all of the work units in all three organizations participating in the study. Employees were given a careful explanation as to the purpose of the research, the methods to be employed in the project, and means by which confidentiality was assured. These meetings took place over a two month period in early fall of 1996 in Canada and in early spring of 1998 in the U.S.

Data were collected from each member of a work group and from the group's leader by means of a survey questionnaire. Survey questionnaires were delivered to each employee via the internal mail system of each organization (see Appendix A for a complete copy of the survey questions). The survey was to be completed on the

individual's own time and returned directly to the researcher by postage-paid mail.

Follow-up memos were sent to all employees to encourage full response.

Data Analysis

The data was analyzed using the SPSS for Windows (version 9.0) statistical software. Prior to any analysis, items that were reverse-scored were re-coded to make the responses compatible, and multi-item scales were averaged to derive a single score that reflected the original scale. The first step in the data analysis involved descriptive statistics, internal reliability estimates, and principal components and confirmatory factor analysis of the scales. Abstract constructs such as relationship quality and job attitudes cannot be measured directly or on strictly interval scales; thus, the normality of such measured data is questionable. This data was examined for skewness and kurtosis and while not perfectly normal in nature, all variables were judged to be sufficiently normal to meet the assumptions required.

The reliability estimates and factor analysis results are reported in Chapter 4. The confirmatory factor analysis was done with AMOS 3.61, structural equation modeling software (Arbuckle, 1997). This analysis allows the researcher to more carefully examine the validity and reliability of scale items.

Analysis of the model hypotheses included multiple regression analysis and structural equation modeling. These procedures attempt to establish relationships between predictors and outcomes—in this study, the influence of relationship quality on perceived job outcomes.

CHAPTER 4

RESULTS

Scale Testing

Most of the scale items used in the survey instrument had documented reliability and validity data and could be used with confidence in this study. Some items were adapted to suit the specific situation. Full results of scale item testing follows.

Perceived Similarity

Each respondent in a work group was asked to complete a one-page questionnaire about the relationship with, and perceived similarity to, another individual in the group. If there was a group of five members and a leader, each person completed five of these individual assessments. The questionnaires were labeled with names to avoid any confusion in responding. During data entry, each member of a group was assigned a number and that number was used to record all data supplied by and about that individual person.

The first scale to be tested was that of perceived similarity of work behaviour with the leader. Internal consistency was high on this composite scale for this sample (α = .91). Results of confirmatory factor analysis for the leader similarity construct are found in Table 2 below.

Table 2
Confirmatory Factor Analysis: Perceived Similarity to Leader

Item	Standardized Regression Weight	Squared Multiple Correlations
Leader & I Alike in Values	.807	.651
Leader and I Think Alike	.852	.726
Leader & I Alike in Number of Areas	.850	.723
Leader & I Handle Problems Same	.878	.771

The output of this analysis includes standardized regression weights, similar to the factor loadings of principal components factor analysis and an indication of the amount of variance in the latent construct explained by this observed item. The squared multiple correlation estimates the amount of variance in the observed variable that is accounted for by the variance in the latent variable. If this variance could be attributed to measurement error only, it would be an estimate of reliability; however, the variance may also comprise systematic unique variance components in addition to the random error. The squared multiple correlation output can then be identified as a "lower-bound estimate of the reliability" (Arbuckle, p. 401) of the observed variable. The results of confirmatory factor analysis verify the content validity of the similarity construct, measured by the four items.

<u>Job Complexity</u>

The three task characteristics, autonomy, feedback, and interdependence, were measured by three questions each, and the nine items were then combined into a single measure of "job complexity". Meta-analytic results (Fried & Ferris, 1987) revealed reliability scores in the range of $\alpha=.35-.90$ for the autonomy variable and $\alpha=.36-.94$ for the feedback items. Reliability data were not available for the interdependence items. In this study, reliability of the autonomy construct (3 items) was $\alpha = .68$; of the feedback scale (3 items) $\alpha = .80$; and of the interdependence scale (3 items) was $\alpha = .60$. The

nine-item "job complexity" scale had a reliability score of $\alpha = .67$. Furthermore, the

principal components factor analysis, as detailed in Table 3 below, revealed the three

components of autonomy, feedback, and interdependence. Items intended to measure

each of the components loaded appropriately on each factor, as indicated by the

underlined loading scores in Table 3. The table also illustrates the results of

confirmatory factor analysis of the nine items comprising job complexity.

Table 3
Principal Components[a] & Confirmatory Factor Matrix: Job Complexity

Item	Standardized Regression Weights	Squared Multiple Correlations	Factor 1	Factor 2	Factor 3
You can decide how to go about work	.784	.614	-3.459E-03	.825	9.132E-02
Personal initiative in carrying out work	.524	.275	.167	.489	.225
Opportunity for independence	.658	.433	6.200E-02	.632	-5.232E-02
Others let you know how well you're doing	.819	.671	.767	7.062E-02	8.889E-02
Supervisors & co-workers give feedback	.777	.603	.791	.199	.161
Supervisors let me know how I'm doing	.700	.490	.722	-3.246E-03	-2.343E-02
Work closely with other people	.744	.554	9.457E-02	7.362E-04	.534
Job can be done alone (R)	.523	.273	-2.061E-02	4.976E-02	.542
Requires a lot of cooperative work	.568	.323	9.420E-02	.143	.746

[a]Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 4 iterations. % Variance Explained: 65.28%

Although the job characteristics scales have been used extensively, the reliability

and validity of the items has been mixed in previous research and the moderately

consistent results in this study were congruous with previous findings. None of the items

were found to be unusable, however, and all scale items were included in hypothesis

testing.

Leader Member Relationship

Cronbach's alpha for the six items of the LMX VII scale (Items 1, 2, 3, 4, 6, 7)

was α = .92, indicating a high level of inter-item reliability. Confirmatory factor analysis,

the results of which are found in Table 4 below, verify the viability of this scale.

Table 4
Confirmatory Factor Analysis: LMX

Item	Standardized Regression Weight	Squared Multiple Correlations
I know where I stand	.803	.645
Leader understands my problems	.855	.730
Leader recognizes my potential	.822	.676
Leader would use power to help me	.813	.660
I have confidence in leader	.803	.644
Description of relationship	.819	.672

The Member-Member Exchange (MMX) items, measuring the quality of a dyadic

peer relationship, were adaptations of the LMX scale items; they were altered only to

refer to "this member" rather than "my leader". This scale was equally reliable as the

LMX, as evidenced by the Cronbach's alpha, α = .91. All items are detailed in Appendix

A.

Team Member Exchange

Reliability of the Team Member Exchange (TMX) scale (10 items) in this study

was nearly identical to that reported in a previous study (α =.82). The scale (TMX) has

not been tested frequently, and some of the items appear to more clearly define the

construct than other items. In subsequent analysis, the item "I often make suggestions

about better work methods to other team members" was eliminated from the scale. This

decision was based on slightly improved reliability (from α =.82 to α =.83) if the item

were removed and the relatively low regression weight and squared multiple correlation

score for the item.

Table 5
Confirmatory Factor Analysis: TMX

Item	Standardized Regression Weights	Multiple Squared Correlations
Others recognize my potential	.406	.165
Others let me know when I help	.480	.230
Others volunteer to help me	.712	.508
I volunteer to help others	.742	.551
I let others know when they help	.515	.265
Others willing to help me finish	.663	.440
Others understand my needs	.609	.471
I make suggestions to others	.375	.141
I'm willing to help others finish	.648	.420
I'm flexible about switching resp	.567	.322

Job Satisfaction

The job satisfaction scale had relatively low internal consistency (α = .58) for this sample. Analysis indicates that the reliability (as measured by Cronbach's alpha) would not be appreciably improved by removing any one item from the scale, and the three items were used as a composite scale in subsequent analysis.

Table 6
Principal Components[a] and Confirmatory Factor Analysis: Job Satisfaction

Item	Standardized Regression Weight	Squared Multiple Correlations	Factor 1[a]
Generally speaking, I am very satisfied with this job.	1.031	1.062	.719
Most people in this group are very satisfied with their jobs.	.357	.128	.416
I am generally satisfied with the kind of work I do in this job.	.490	.184	.520

[a] Extraction Method: Principal Component Analysis, 1 component extracted
% of Variance Explained: 55.167

Affective Organizational Commitment

Principal components factor analysis of the affective organizational commitment

scale revealed one factor. The eight-item scale has sufficiently high reliability (α=.80)

and deleting Item 7, which had fairly low loading on Factor 1, from the scale would only

marginally improve the reliability. Therefore, the full scale was used in further analysis.

Table 7
Principal Components[a] and Confirmatory Factor Analysis Matrix:
Affective Organizational Commitment

Item	Standardized Regression Weight	Squared Multiple Correlations	Factor 1
Sense of belonging	.626	.391	.666
Emotionally attached	.822	.676	.812
Personal meaning	.720	.518	.760
Part of the family	.716	.512	.755
Remain for career	.570	.325	.667
Attached to org	.447	.200	.543
Org problems are mine	.301	.091	.377
Discuss organization	.426	.182	.553

[a]Extraction Method: Principal Component Analysis, 1 component extracted
% of Variance Explained: Component 1 – 42.992%

Perceived Group Cohesiveness

The perceived group cohesiveness scale had an internal consistency of α = .74.

Principal components factor analysis indicated one component for this multi-item

construct, but also showed that item 2 ("If you had the chance to do the same kind of

work for the same pay in another work group within the organization, would you do so?")

loaded very low (.16) on that component. Further, the reliability analysis indicated that

the alpha score would have been α = .85 had this item been deleted. Based on these

results, item 2 was deleted from the composite scale for subsequent analysis.

Table 8
Principal Components[a] and Confirmatory Factor Analysis:
Perceived Group Cohesiveness

Item	Standardized Regression Weight	Squared Multiple Correlations	Factor 1
Feel a part of group	.559	.313	.696
Same kind of work, other group	.124	.015	.164
People get along	.866	.751	.880
People stick together	.862	.744	.884
People help each other	.791	.626	.861

[a]Extraction Method: Principal Component Analysis, 1 component extracted
% of Variance Explained: 56.171

Perceived Group Effectiveness

In this study, three items formed a single component construct of perceived

group effectiveness and this scale had an internal reliability score of α = .65.

Table 9
Principal Components[a] and Confirmatory Factor Analysis:
Perceived Group Effectiveness

Item	Standardized Regression Weight	Squared Multiple Correlations	Factor 1
Satisfied with the work of this team	.696	.484	.800
Group efforts had positive effect on org	.511	.261	.716
Group does an excellent job for org	.667	.445	.793

[a] Extraction Method: Principal Component Analysis, 1 component extracted
% of Variance Explained: 59.430

Perceived Group Performance

Internal consistency for the three perceived group performance items was α =

.76 and factor analysis revealed one component for the three items, explaining 68.30%

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of the variance. Complete results of principal components and confirmatory factor

analyses for each of these performance items are shown in Table 10 below.

Table 10
Principal Components[a] and Confirmatory Factor Analysis:
Perceived Group Performance

Item	Standardized Regression Weight	Squared Multiple Correlations	Factor 1
Quality of Work	.808	.652	.855
Customer Service	.656	.430	.799
Productivity	.714	.509	.806

[a]*Extraction Method: Principal Component Analysis, 1 component extracted*
% of Variance Explained: 68.303

Inter-Rater Reliability

Inter-rater reliability regarding perceived similarity and the nature of the dyadic

relationships was assessed using bi-variate correlations. The results of that analysis are

detailed in Tables 11, 12, 13, and 14 below. There was a relatively low level of

agreement between leader and member and between members in regard to both

perceptions of similarity and the quality of their relationships, based on the correlation

coefficients (.177, .100, .382, and .263). Furthermore the variance accounted for by this

perceived similarity is very small (3%, 1%, 7.6%, and 4.6%, respectively).

Table 11
Inter-Rater Reliability: Leader Member Relationship

		Relationship Quality with Member$_x$ by Leader	Relationship Quality with Leader by Member$_x$
Relationship Quality with Member$_x$ by Leader	Pearson Correlation	1.000	.177**
Relationship Quality with Leader by Member$_x$	Pearson Correlation	.177**	1.000
	N	395	395

** Correlation is significant at the 0.01 level (2-tailed).

Table 12
Inter-Rater Reliability:
Perceived Similarity Leader & Member

		Perceived Similarity with Member$_x$ by Leader	Perceived Similarity with Leader by Member$_x$
Perceived Similarity with Member$_x$ by Leader	Pearson Correlation	1.000	.100*
Perceived Similarity with Leader by Member$_x$	Pearson Correlation	.100*	1.000
	N	395	395

* Correlation is significant at the 0.05 level (2-tailed).

Table 13
Inter-Rater Reliability: Member Member Relationship

		Relationship Quality with Member$_x$ by Member$_y$	Relationship Quality with Member$_y$ by Member$_x$
Relationship Quality with Member$_x$ by Member$_y$	Pearson Correlation	1.000	.382**
Relationship Quality with Member$_y$ by Member$_x$	Pearson Correlation	.382**	1.000
	N	395	395

** Correlation is significant at the 0.01 level (2-tailed).

Table 14
Inter-Rater Reliability:
Perceived Similarity Member & Member

		Perceived Similarity with Member$_x$ by Member$_y$	Perceived Similarity with Member$_y$ by Member$_x$
Perceived Similarity with Member$_x$ by Member$_y$	Pearson Correlation	1.000	.263**
Perceived Similarity with Member$_y$ by Member$_x$	Pearson Correlation	.263**	1.000
	N	395	395

** Correlation is significant at the 0.01 level (2-tailed).

In the absence of objective performance data, perceptions of the group members and the leaders were used. Although there were some differences among individuals as to the quality of the group's performance, those differences were not significant. It is especially notable that the leader's assessment of the performance did not differ greatly from those of the members. For all respondents, the averaged group performance measure ranges from 3.47 to 4.12, with the leaders' average at 4.10 on a 5-point scale.

Descriptive Statistics and Correlations

Means and standard deviations of all relationship and criterion variables are shown in Tables 15 and 16. Means are based on five-point scales, except for "job complexity", which was measured on a seven-point scale. With the exception of organizational commitment, the mean of which falls just above the median point of the

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scale, all variables show mean scores that approach 4 on the 5-point scale. The job complexity mean score is just above 5 on the 7-point scale.

Zero-order correlations among criterion variables are also displayed in Table 15. The data in Table 15 is based on bi-variate correlation analysis, using pairwise deletion, of the individual-level data (n=429). It reflects each individual's perception of his/her relationships and the workplace, as well as job attitudes. Performance variables (group cohesiveness, perceived group effectiveness, and perceived group performance) are highly correlated with one another, as are job satisfaction and organizational commitment. Of more interest is the significant correlation between relationship variables and those of individual job outcomes. As illustrated in previous studies, Leader-Member Exchange (LMX) and Team Member Exchange (TMX), were significantly correlated (p<.001) to all other variables except leader-assessed performance. Member-Member Exchange Composite ($M_x M_y XCO$), the average quality of dyadic relationships that an individual has with peers in the work group, also showed significant correlation (p<.001) with other relationship variables and with all job outcomes, including leader-assessed performance.

Partial correlations among the same variables are found in Table 15, above the diagonal. These are correlations among relationship and criterion variables, controlled for the influence of age, gender, education, organization, group size, tenure in the organization and tenure in the job. Some differences are evident between the partial correlations and the zero-order correlations, but those differences are confined to relationships between Leader-Assessed Performance and other variables. When effects from the group and the organization (and the corresponding leaders) are removed, the resulting partial correlations are rather distinct. Reliability estimates (Cronbach's alpha) of each variable are found on the diagonal of Table 15.

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Cohesiveness	3.717	.747	.85	.549**	.409**	.345**	.250**	.267*	.303**	.512**	.346**	.309**
2. Group Effectiveness	3.866	.665	.557**	.65	.542**	.446**	.278*	.358**	.218**	.399**	.329**	.206**
3. Group Performance	4.149	.574	.389**	.522**	.78	.314**	.235**	1.00**	.187**	.342**	.323**	.202**
4. Job Satisfaction	3.552	.643	.364**	.456**	.297**	.58	.585**	.653**	.423**	.331**	.223**	.425**
5. Affective Organizational Commitment	3.066	.668	.269**	.285**	.179**	.582**	.80	.570**	.413**	.276**	.231**	.369**
6. Leader-Assessed Performance	4.10	.409	.165	.262**	.954**	.466**	.298**	.63	.	.054	.566**	.281**
7. Leader Member Exchange (LMX)	3.623	.904	.322**	.257**	.170**	.440**	.416**	.141	.92	.346**	.381**	.504**
8. Team Member Exchange (TMX)	3.622	.570	.497**	.418**	.328**	.332**	.257**	.058	.394**	.82	.305**	.263**
9. Member Member Exchange (MxiMyjXCO)	3.746	.671	.384**	.328**	.356**	.225**	.190**	.487**	.370**	.323**	.91	.261**
10. Job Complexity	5.688	.870	.330**	.215**	.191**	.404**	.324**	.163	.437**	.194**	.316**	n/a

[a] Partial correlations, controlling for age, gender, education, group size, organization, tenure with organization and tenure in the job, shown above the diagonal
[b] Individual-level outcomes only   [c] Reliability estimates (α) of scales on the diagonal
*Significance level $p < .05$, two-tailed   **Significance level $p < .01$, two-tailed $n = 429$; for Leader Assessed Performance, $n = 98$

The descriptive statistics and correlations of the perceived similarity and relationships within dyads (two-person groups) are detailed in Table 16. The data used in this analysis was at the dyadic level and included only those dyads for which there was complete relationship data (n=395). Means, based on a 5-point scale, and standard deviations are provided for each variable. Zero-order correlations were calculated using pairwise deletion. Members and leaders show some agreement regarding their similarity to one another, although not at a significantly high level (r =.100, p<.05). Co-workers show stronger agreement concerning their likenesses (r =.263, p<.01).

In regard to the quality of their dyadic relationships, there is correlation between the perceptions of the two individuals involved. Leaders' and members' understanding of their relationship were correlated (r =.177, p<.01) and co-workers' perceptions of their relationships with one another were more closely related (r =.382, p<.01). The strongest correlations are between an individual's perception of similarity to the other person and the reported quality of that dyadic relationship. An employee's perception of similarity to his/her leader was very strongly correlated to the employee's opinion of the relationship quality between the two (r =.777, p<.001). The leader's sense of similarity was also correlated with his/her observation of the relationship (r = .413, p<001). Co-workers' relationships are also significantly correlated with the level of similarity (r = .738, p<.001 and r = .632, p<.001), as measured from both persons in each dyad.

The partial correlations, found above the diagonal in Table 16, were derived by controlling for age, gender, education, group size, organization, tenure in the job, and tenure in the organization. Based on a large number of differences between the bi-variate and partial correlations of these interpersonal variables, demographic variables were instrumental in many of the correlations. In analysis of Canadian sub-sample, there were no significant correlations among the relationship variables and individual outcomes, so organization was a crucial control variable.

Table 16

Descriptive Statistics, Zero-Order Correlations, and Partial Correlations[a,b]

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Similarity to Member$_x$ by Leader	3.482	.728		.089	.384**	.083	.025	-.121	.092	-.029	.070
2. Similarity to Leader by Member$_x$	3.377	.80	.100*		.103*	.772**	.320**	.170**	-.005	.076	-.028
3. Leader-Member$_x$ Relationship by Leader	3.848	.619	.413**	.188**		.067	-.064	.044	.146**	.032	.160**
4. Leader-Member$_x$ Relationship by Member$_x$	3.632	.878	.111*	.777**	.177**		.439**	.159**	-.006	.139**	-.026
5. Team-Member$_x$ Relationship	3.596	.612	.036	.359**	.068	.467**		.208**	.125*	.211**	.046
6. Similarity to Member$_y$ by Member$_x$	3.342	.884	-.097	.231**	.112*	.197**	.266**		.213**	.712**	.218
7. Similarity to Member$_x$ by Member$_y$	3.378	.859	.115*	.048	.175**	.018	.154**	.263**		.219**	.606**
8. Member$_x$-Member$_y$ Relationship by Member$_x$	3.470	.894	.019	.155**	.137**	.190**	.274**	.738**	.277**		.315**
9. Member$_x$-Member$_y$ Relationship by Member$_y$	3.507	.888	.106*	.046	.221**	.020	.102*	.279**	.632**	.382**	

[a] Partial correlations, controlling for age, gender, education, group size, organization, tenure with organization and tenure in the job, shown above the diagonal
[b] Dyadic relationship values
*Significance level p<.05, two-tailed
**Significance level p<.01, two-tailed
***Significance level p<.01, two-tailed $n = 395$

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Hypothesis Testing

Respondents were asked to assess the quality of their relationship with a particular individual in the work group and to indicate whether they perceived their work behaviours to be similar to those of the other person. To assure consistency, names were used so that a specific member was the same individual to everyone in the group.

Hypothesis 1, "Individuals will form differentiated relationships with co-workers in their work groups", was tested by determining the minimum and maximum and the range of the assessed quality of relationships within a specific work group. The first data examined were the leaders' assessments of the leader-member relationship within each group. The wider the range, the more differentiated is the leader's assessment of the leader-member relationship among his/her subordinates. The result of this analysis is found in Table 17. A range of two or more on a five-point scale was determined to indicate fairly high distinction among relationships. Over half of the leaders assessed relationships with their subordinates to be highly similar; in only one case are the leader's relationships highly differentiated. When the leader-member relationship is assessed by the member, however, the results are altered significantly. The members perceive much more differentiation of leader-member relationships within a work group. Therefore, the data does <u>not</u> support Hypothesis 1 in the case of the leader-member relationship reported by the leader, but <u>does support</u> Hypothesis 1 when the relationship is assessed by the subordinate. In nearly one-third (1/3) of the groups, members report relationships with the leader that differs from other members of the group by more than 1.5 points on a 5-point scale. Members' perceptions are probably closer to the truth, as the variance explained is 68.7%.

Table 17
Range of Differentiation by Leaders of Leader Member Relationship

	No Range	Range .01 - .5	Range .51 – 1.0	Range 1.01 – 1.50	Range 1.51 – 2.0	Range more than 2.0
# of Groups in this Category	8	26	18	7	3	1

Table 18
Range of Differentiation by Members of Leader Member Relationship

	No Range	Range .01 - .5	Range .51 – 1.0	Range 1.01 – 1.50	Range 1.51 – 2.0	Range more than 2.0
# of Groups in this Category	5	12	14	14	6	11

The individual members also differentiate their relationships with one another. This is evident from the number of groups within which there is a significant size range. Nearly 30% of the groups have a range of more than 2 (on a scale of 1-5) when assessing their relationships with their peers. It may be argued that the differentiation is between members of a group rather than a single individual distinguishing his/her own relationships. An examination of a cross-tab analysis provides evidence that the distinction is at the individual level. This provides partial support for Hypothesis 1. The leaders in these work groups do not form differentiated relationships with their subordinates, but those subordinates clearly distinguish among their peer relationships and differ in their reported relationships with the leader.

Table 19

Range of Differentiation by Members of Member-Member Relationship

	No Range	Range .01 - .5	Range .51 – 1.0	Range 1.01 – 1.50	Range 1.51 – 2.0	Range more than 2.0
# of Groups in this Category	2	14	9	16	3	18

Hypothesis 2 stated, "An individual will form higher quality relationships with those whom they perceive to be like themselves in work behaviors". Correlational analysis provided strong evidence favoring this hypothesis. Hierarchical regression analysis was conducted, with the control variables of age, gender, education, group size, organization, tenure in the job, and tenure in the organization entered first, followed by job complexity, and finally the independent variable of perceived similarity. The effects of perceived similarity on the quality of leader-member relationships are illustrated in Tables 20 and 21. Both the models were found to be highly significant; thus, from the perspectives of leaders and subordinates, the more they perceive the other to be similar to them, the higher the quality relationship is reported. In addition to perceived similarity, group size, the group and the organization to which both leaders and members belonged, all were related significantly to the quality of the dyadic relationship. Age was also a factor from the member's perspective.

Table 20

Summary of Regression Analysis
Dependent Variable: Leader-Member Relationship Assessed by Member

Independent Variable	Standardized β	t	Significance
Age	.104	3.125	.002
Group	-.089	-2.967	.003
Group Size	-.070	-2.095	.037
Organization	-.098	-2.409	.016
Job Complexity	.282	8.739	.000
Perceived Similarity to Leader	.777	24.490	.000

Overall Model: F = 85.996, p<.000; Adjusted R^2 = .687

Table 21
Summary of Regression Analysis
Dependent Variable: Leader-Member Relationship Assessed by Leader

Independent Variable	Standardized β	t	Significance
(Constant)		13.783	.000
Group	.114	2.605	.010
Group Size	-.345	-7.099	.000
Organization	-.134	-2.270	.024
Perceived Similarity to Member	.413	8.998	.000

Overall Model: F = 20.389, p<.000; Adjusted R^2 = .333

Similar results were found in analyzing member-member dyadic relationships, i.e., the quality of the relationship an individual (Member$_x$) has with another (Member$_y$) is heavily influenced by the perceived similarity between the two, based on the perception of Member$_x$ (Table 22). The results are equally significant, as perceived by Member$_y$ (Table 23). The more similarity an individual perceives between him/herself and another, the more likely he/she is to report a high quality relationship. In addition, group size has a significant negative effect and job complexity is related positively.

Hypothesis 2, that individuals will report higher quality relationships with those whom they perceive to be similar to them, is strongly supported for both leader-member relationships and member-member relationships.

Table 22
Summary of Regression Analysis
Dependent Variable: Member$_x$-Member$_y$ Relationship Assessed by Member$_x$

Independent Variable	Standardized β	t	Significance
(Constant)		3.364	.001
Group Size	-.131	-3.351	.001
Job Complexity	.111	3.177	.002
Perceived Similarity to Member$_y$	.694	19.702	.000

Overall Model: F = 52.334, p<.000; Adjusted R^2 = .570

Table 23

Summary of Regression Analysis
Dependent Variable: Member$_x$-Member$_y$ Relationship Assessed by Member$_y$

Independent Variable	Standardized β	t	Significance
(Constant)		3.844	.000
Group Size	-.144	-3.193	.002
Job Complexity	.095	2.359	.019
Perceived Similarity to Member$_x$	.595	14.863	.000

Overall Model: F = 29.219, p<.000; Adjusted R^2 = .421

Structural equation modeling was also used to analyze the role of similarity in determining quality of a member-member relationship, as it was with the leader-member relationship. Squared multiple correlations (amount of variance accounted for in the outcome variable [relationship] by the indicator variable [similarity of work behavior]) for the model in Figure 2 is .567. Results revealed that the path coefficient (similar to beta weight in linear regression) linking perceived similarity to the quality of the leader-member relationship, as measured by the LMX items, was .753. The critical ratio of the indicator variable (similarity) to the dependent variable (relationship quality) is 14.71. This ratio is the estimated regression weight divided by the standard error. Any critical ratio larger than 1.96 would indicate that the null hypothesis, i.e., that the regression weight would be zero, can be rejected at the .05 significance level.

| Perceived Similarity to Leader	$\xrightarrow{.753}$	Leader-Member Relationship
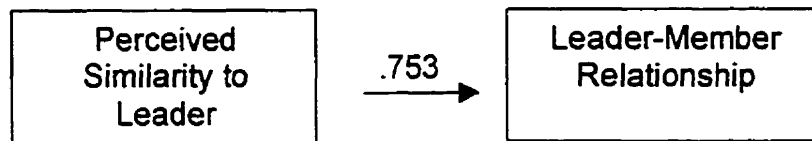
Figure 2. Influence of Perceived Similarity of Work Behaviors on Leader-Member Relationship Quality

In the analysis of a Member-Member relationship, the relationship between perceived similarities is even stronger (see Figure 3, below). The estimated regression

weight is .810 and the squared multiple correlation is .656. Both of these results confirm the link between perceived similarities in assessing the quality of the relationship.

```
┌─────────────────┐              ┌─────────────────┐
│   Perceived     │    .810      │  Member-Member  │
│  Similarity to  │─────────────▶│  Relationship   │
│    Member       │              │                 │
└─────────────────┘              └─────────────────┘
```
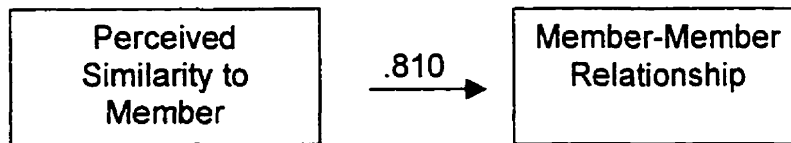
Figure 3. Influence of Perceived Similarity of Work Behaviors on Member-Member Relationship Quality

Hierarchical regression analysis was used to test the hypotheses concerning the connection between relationship quality on job outcomes. In each test, the control variables of age, gender, education, organization, tenure in the job and in the organization, group size were entered in the first step, followed by job complexity in the second step, followed (in order) by LMX, $M_{xi}M_{yi}XCO$, and TMX, in steps three, four, and five. Results of the analysis regarding job satisfaction follow in Table 24 below.

Table 24
Summary of Regression Analysis*
Dependent Variable: Job Satisfaction

Independent Variable	Standardized β	t	Significance	Change in R^2
(Constant)		3.062	.051	
LMX	.225	3.274	.001	.054
$M_{xi}M_{yi}XCO$	.015	.227	.821	.002
TMX	.183	3.010	.003	.026

*Overall Model: F = 10.320, p<.000; Adjusted R^2 = .289

Thus, Hypotheses 3a, "The leader-member relationship (LMX) will be positively related to job satisfaction" and 3c, "The team-member relationship (TMX) will be positively related to job satisfaction" were supported. Hypothesis 3b, "The average quality of member-member relationships ($M_{xi}M_{yi}XCO$) will be positively related to job satisfaction was not supported.

Hypothesis 4_a, "The leader-member relationship will be positively related to affective organizational commitment" was supported as evidenced by the results in Table 25, below. Member-member relationships ($M_xM_{yi}XCO$) did not enter the model at significant levels and the team-member relationship (TMX) was marginally significant (p=.051); therefore, Hypotheses 4_b, "The member-member relationship will be positively related to affective organizational commitment." and 4_c, "The team-member relationship will be positively related to affective organizational commitment", were not supported.

Table 25
Summary of Regression Analysis*
Dependent Variable: Affective Organizational Commitment

Independent Variable	Standardized β	t	Significance	Change in R^2
(Constant)		1.961	.051	
LMX	.260	3.626	.000	.065
$M_xM_{yi}XCO$	.049	.720	.472	.004
TMX	.125	1.965	.051	.012

*Overall Model: F = 7.907, p<.000; Adjusted R^2 = .232

Table 26 reveals the results of testing Hypotheses 5_a, 5_b, and 5_c. The leader-member relationship was found to have a non-significant correlation to this outcome, perceived group cohesiveness. Thus, Hypothesis 5_a, "The Leader-Member relationship (LMX) will be positively related to an individual's perception of group cohesiveness" was not supported. The relationships involving co-workers or peers in a work group were both determining factors in an individual's perception of group cohesiveness. Thus, Hypotheses 5_b, ("Member-member relationships ($M_xM_{yi}XCO$) will be positively related to an individual's perception of group cohesiveness") and 5_c ("The Team-Member relationship will be positively related to an individual's perception of group cohesiveness") were both well supported (p=.003 and p<.000, respectively).

Table 26
Summary of Regression Analysis*
Dependent Variable: Perceived Group Cohesiveness

Independent Variable	Standardized β	t	Significance	Change in R^2
(Constant)		-.133	.894	
LMX	.022	.337	.736	.027
$M_{xi}M_{yj}XCO$	.183	2.961	.003	.050
TMX	.415	7.134	.000	.131

*Overall Model: F = 13.539, p<.000; Adjusted R^2 = .354

In predicting an individual's perception of group effectiveness, both the relationship between the individual and the team as a whole and the cluster of dyadic peer relationships were significant predictors (p<.000 and p<=.001, respectively). Therefore, Hypotheses 6_b, "The Member-Member relationships ($M_{xi}M_{yj}XCO$) will be positively related to an individual's perception of group effectiveness" and 6_c "The Team-Member relationship (TMX) will be positively related to an individual's perception of group effectiveness" were strongly supported by the data, but Hypothesis 6_a "The Leader-Member relationship (LMX) will be positively related to an individual's perception of group effectiveness" was not.

Table 27
Summary of Regression Analysis*
Dependent Variable: Perceived Group Effectiveness

Independent Variable	Standardized β	t	Significance	Change in R_2
(Constant)		3.005	.003	
LMX	-.010	-.144	.885	.017
$M_{xi}M_{yj}XCO$	.235	3.441	.001	.064
TMX	.327	5.078	.000	.081

*Overall Model: F =7.045, p<.000; Adjusted R^2 = .209

Table 28, below, details the results of hypothesis testing of Hypotheses 7_a, 7_b, and 7_c. Those hypotheses stated that the leader-member relationship (LMX), the member-member relationship ($M_{xi}M_{yj}XCO$), and the team-member relationship (TMX) would each be positively related to an individual's perception of group performance. Similar to other hypotheses that address perceptions of the group rather than individual attitudes, the data

indicate that both the team-member relationship (TMX) and the member-member relationship (M_xM_{yj}XCO) are associated significantly with the group's performance, but the Leader-Member relationship (LMX) is not. These results indicate support for Hypothesis 7b, "The Member-Member relationship will be positively related to an individual's perception of group performance" and 7c, "The Team-Member relationship will be positively related to an individual's perception of the group's performance" and non-support for Hypotheses 7a, "The Leader-Member relationship will be positively related to an individual's perception of group performance".

Table 28
Summary of Regression Analysis*
Dependent Variable: Perceived Group Performance

Independent Variable	Standardized β	t	Significance	Change in R^2
(Constant)		3.731	.000	
LMX	-.039	-.535	.593	.009
M_xM_{yj}XCO	.247	3.624	.000	.063
TMX	.261	4.068	.000	.052

*Overall Model: F = 7.236, p<.000; Adjusted R^2 = .214

Evidence from the results of this study indicates that relationship variables are not well correlated with the level of leader-assessed performance. The statistics could not be calculated, as the variance-covariance matrix was singular. The collinearity statistics indicate that the independent variables are functionally dependent on one another. Most of the statistics could not be calculated. From this analysis, Hypotheses 8a, 8b and 8c, "The Leader-Member relationship...The Member-Member relationships...The Team-Member relationship will be positively related to leader-assessed performance" were not supported. Details of the analysis for Hypotheses 8a, 8b and 8c follow in Table 29.

Table 29
Summary of Regression Analysis*
Dependent Variable: Leader-Assessed Performance

Independent Variable	Standardized β	t	Significance[#]
(Constant)		.	.
Organization	-.050	.	.
Group Size	.091	.	.
Education	-.091	.	.
Tenure in Organization	-.227	.	.

*Overall Model: F = .   p = .   Adjusted R^2 = .071   [#]could not be calculated

The General Linear Model was used to explore the question of whether the three

types of relationships in the model interact with one another to affect perceptions of group

dynamics or individual job attitudes. Interactions among the relationship variables are

detailed in Table 30, below. Very few of the interactions were significantly related to the

outcome variables.

The Leader-Member and Member-Member relationships interact to account for

14.5% of the variance in perceived group effectiveness (p=.003). The Team-Member

relationship (TMX) interacts significantly with both the Leader-Member relationship (LMX)

and the Member-Member relationship ($M_{xd}M_{yi}XCO$) in affecting perceived group

effectiveness (p=.023 and p=.029, respectively). The two-way interaction between

$M_{xd}M_{yi}XCO$ and TMX and the three-way interaction of LMX, $M_{xd}M_{yi}XCO$, and TMX were not

significantly related to any of the outcome variables. The statistically significant interactions

accounted for relatively small amounts of variance, based on the ξ^2 statistic.

Table 30
Interactive Effects: Relationship Variables on Outcome Variables

	LMX * $M_{xi}M_{yj}XCO$	LMX * TMX	$M_{xi}M_{yj}XCO$ * TMX	LMX * $M_{xi}M_{yj}XCO$ * TMX
Job Satisfaction	ns[a]	ns[a]	ns[a]	ns[a]
Affective Org Commitment	ns[a]	ns[a]	ns[a]	ns[a]
Perceived Group Cohesiveness	ns[a]	ns[a]	ns[a]	ns[a]
Perceived Group Effectiveness	ns[a]	F = 4.174[c] ξ^2 = .146	ns[a]	ns[a]
Perceived Group Performance	F = 3.459[b] ξ^2 = .145	F = 3.334[d] ξ^2 = .120	ns[a]	ns[a]

[a]non-significant; [b]p<.01; [c]p<.01; [d]p<.01 ξ^2 is interpreted as the proportion of the variability accounted for by the independent variable.

Hypothesis Testing Using Structural Equation Modeling

Structural equation modeling (SEM) has emerged, in the past 20 years, as a valuable tool with which social science researchers can assess theoretically sound models using empirical evidence and, if the model is of adequate fit, to estimate model parameters (Aquino, 1997; Fan, 1998; Kacmar, 1997). Traditionally, the chi-square test has been used to assess model congruence. It is essentially a comparison of two covariance matrices (the one estimated by the original sample and one that is reconstructed based on the specified model). If there is a substantial discrepancy between the two, it will be an indication of poor model fit. The utility of the chi-square test is compromised, however, by the influence of sample size on the chi-square statistic. SEM requires large sample sizes and as sample sizes become large, the chi-square statistic becomes inflated, thus making it possible to

reject null hypotheses that are in fact true (Type I error). There have been alternative indices developed in recent years in response to this concern over chi-square. These indices are essentially descriptive and are not intended to test a null hypothesis.

The first type of alternative index is one that may be considered comparable to the coefficient of determination in regression analysis. These indices assess model fit by assessing the degree to which a reproduced covariance matrix based on the specified model accounts for the sample covariance matrix. The goodness-of-fit index (GFI) and the adjusted goodness of fit (AGFI) are two such indices (Joreskog & Sorbom, 1989).

Comparative model fits are the second type of alternative index. These assess a model's goodness of fit by comparing it to a more restricted null model (usually specifying no relationships among measured variables). The normed and nonnormed fit indices (NFI and N-NFI) are two such indices.

The comparative fit index (CFI) also uses a null model for a basis of comparison, but uses the sample noncentrality statistic (Bentler, 1990). Recent interest has also been shown in using the root mean square error of approximation (RMSEA) as a method to quantify model misfit (Steiger & Lind, 1980).

In structural equation modeling (SEM), there are a number of considerations relative to the viability of the results. As addressed above, the influence of sample size represents a threat to correct interpretation of the chi-square statistic. Data normality is another issue in SEM, as it is in other analytical techniques. Unfortunately, researchers are unsure of the exact effect non-normal data may have on the results of SEM.

The proposed model (Figure 1) represented the full complement of hypotheses outlined in Chapter 2. This model was analyzed with AMOS 3.61, structural equation modeling software and was found to contain too many unconstrained parameters and too few degrees of freedom. The results of regression analysis provide evidence that leader-member exchange quality did not contribute to perceptions of group behaviour, such as

effectiveness, performance, and cohesiveness. Those paths were removed, as were the

paths from the $M_{xi}M_{yj}XCO$ to the outcomes of job satisfaction and organizational

commitment, also based on previous analysis. The model shown in Figure 4, below, was

then analyzed and the results follow in Tables 30 and 31, below.
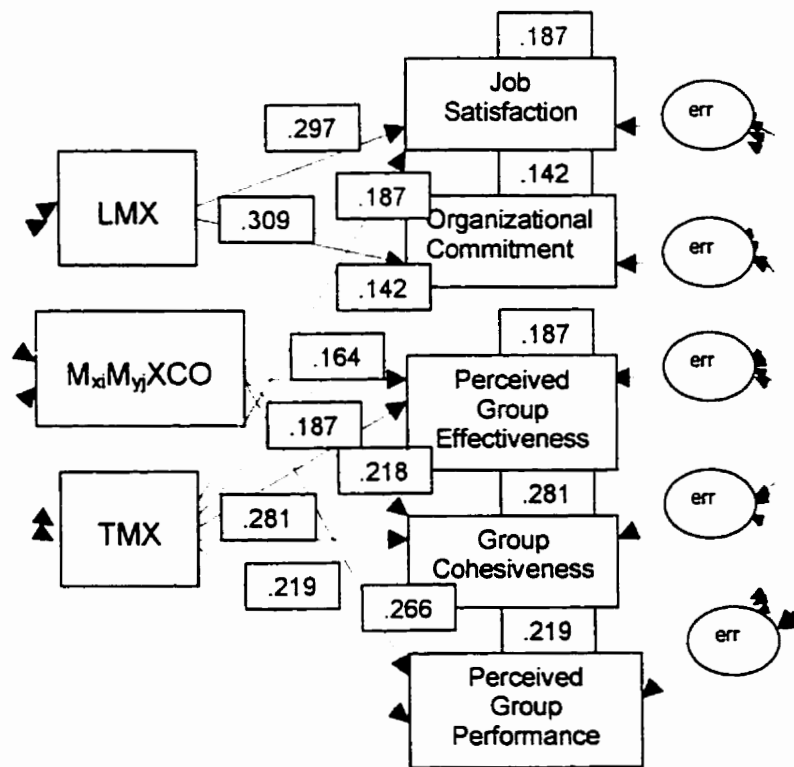
**Figure 4. Revised Model of Relationship Variables
and Outcome Variables**

Table 31

Maximum Likelihood Estimates: Regression Weights[a][b][c]

	Job Satisfaction	Organizational Commitment	Perceived Effectiveness	Perceived Performance	Perceived Cohesiveness
LMX	.297	.309	*	*	*
$M_{xi}M_{yj}XCO$	*	*	.164	.266	.218
TMX	.277	.167	.456	.341	.615
Squared Multiple Correlations	.187	.142	.187	.219	.281

[a]$\chi_b^2 = 11.536$　df = 6　p = .073
[b]Standardized Regression Weights given for each predictor on corresponding outcome
[c]Squared Multiple Correlations represent the amount of variance in outcome variable accounted for by the model. *path not drawn in the model

Table 32
Maximum Likelihood Estimates: Critical Ratios[a][b]

	Job Satisfaction	Organizational Commitment	Perceived Effectiveness	Perceived Performance	Perceived Cohesiveness
LMX	6.753	6.526	*	*	*
$M_{xi}M_{yj}XCO$	*	*	3.847	6.127	5.218
TMX	4.894	2.749	7.953	7.225	10.069

[a]$\chi^2 = 11.536$　df = 6　p = .073
[b]Critical ratios provided for each path between indicator variable and outcome variable
*path not drawn in the model

"The critical ratio is the parameter estimate divided by an estimate of its standard error. If the appropriate distributional assumptions are met, this statistic has a standard normal distribution under the null hypothesis that the parameter has a population value of zero. For example, if an estimate has a critical ratio greater than two (in absolute value), the estimate is significantly different from zero at the .05 level." (Arbuckle, 1997).

Although attempts were made to improve the model, the chi-square score (χ^2 = 11.536) is an indication that the model may not be a particularly good fit. Furthermore, the probability level (p = .073) indicates that the model is less than a 'perfect' fit. "The probability is the 'p value' for testing the hypothesis that the model fits perfectly in the

population" (Arbuckle, 1997, p. 554). Several indices, described earlier, were employed to assess the overall model. Goodness-of-fit tests applied are as follows:

$$CMIN/DF \quad (\chi^2 / df) \quad\quad\quad 2.137$$

This test (CMIN/DF) is the minimum discrepancy divided by the degrees of freedom. Several researchers have suggested this ratio as a goodness-of-fit indicator. The ratio should be as close as possible to 1 for correct models. Writers disagree as to how far one can deviate from 1 before rejecting the model. The most conservative indicates a " χ^2 / df ratio greater than 2 represents an inadequate fit" (Byrne, 1989, p. 55). The ratio for this sample thus indicates an inferior model fit.

$$CFI \quad .999 \quad\quad\quad RFI \quad .989$$

The CFI, or comparative fit index, relates the fit of the tested model against a baseline model. Values range from 0 to 1, with values close to 1 indicating a very good fit. The RFI, or Bollen's relative fit index, also measures the tested model against a baseline model and values close to 1.00 indicate a very good fit. In contrast to the two indices above, the CFI and RFI figures indicate a fairly close fit with a baseline or hypothetical model.

$$RMSEA \quad .071$$

The RMSEA test calculates the square root of the ratio of F to degrees of freedom or "root mean square of approximation". The lower and upper limit of a 90% confidence interval on this value is .000 and .07. Browne and Cudeck (1993) suggest that the

interpretation of this is subjective, but also state that a RMSEA of .05 or less indicates a 'close fit'. By this index, the model is not a good approximation.

The selected tests represent a variety of well-accepted methods for testing the model. The chi-square test and resulting p value, as well as the CMIN/DF are tests of minimum sample discrepancy. CFI and RFI both measure the adequacy of the tested model against a baseline model. The RMSEA uses the population discrepancy function to test the adequacy of the tested model. These tests give somewhat conflicting results, but several indicate a less than adequate fit. These results do not suggest that there is no validity to the model; rather, that the model is incomplete, i.e., there are variables that are not included in the model that are responsible for variance in the outcome variables.

The complete analytic results provide good evidence that interpersonal relationships within a work group play a role in at least some of an individual's job outcomes. The relationship with one's work group as a whole (TMX) is most influential, as it affects job satisfaction, affective organizational commitment, and perceptions of group effectiveness, group performance, and group cohesiveness. The averaged quality of dyadic Member-Member relationships, measured by M_xM_yXCO, proved to be a significant factor in the outcomes related to the group and its work, i.e., group cohesiveness, perceived group effectiveness, and perceived group performance. The Leader-Member relationship (LMX) was a significant variable in relationship with job satisfaction and affective organizational commitment, confirming many previous studies (Gerstner & Day, 1995). Interaction among the relationship variables was minimal.

CHAPTER 5

Discussion and Conclusions

This study moves the research of interpersonal work relationships within formal work groups forward at a time when organizations are increasingly assigning work. and resultant accountability and rewards, to groups rather than individuals (Katzenbach & Smith, 1993). Prior research has repeatedly confirmed the influence of the leader-member relationship upon individual job outcomes (Gerstner & Day, 1995; Graen, Novak, & Sommerkamp, 1982; Kinicki & Vecchio, 1994; McClane, 1991; Seers & Graen, 1984; Turban, Jones, & Rozelle, 1990). There has also been some early research into the relationship of an individual with his/her work group as a whole (Seers, Petty, & Cashman, 1995). The current study is the first to test the influence of an individual's entire network of dyadic relationships on his/her attitudes toward, and perceptions of the work group and organization.

Data Set

The data set employed in this study is a large and diverse one. Respondents were from both Canadian and U.S. employees in the public and private sectors. These individuals were from a wide range of employment levels (professional to unskilled), ages, and education. They worked in variously sized work groups and were both male (44%) and female (56%). The ethnicity of the Canadian subset is considerably more diverse than those from the U.S., but that characteristic is reflective of the general populations of both cities. There was no limit as to the type of work that was performed, and most job categories in municipal government and health care were included.

There was clearly some differentiation in responses according to the organization to which the respondent belonged. The medical clinic was significantly different from both

municipal organizations relative to levels of organizational commitment, but was not different from the Canadian city employees in regard to job satisfaction. The Canadian city was significantly different from both American employers relative to perceived group effectiveness and was different from only the clinic when it came to perceived group performance. There were no differences among the organizations as to group cohesiveness. When the Canadian sub-sample was analyzed using regression analysis, none of the three relationship variables had a significant effect on any of the outcome variables. This was an unexpected result, especially given the extent to which that organization had delivered training in team-building concepts. One possible explanation, which was illustrated by the model tested with structural equation modeling, is that other factors in that organization (but not included in the model) were substantially more influential in establishing job attitudes and perceptions. This is perhaps one reason that the model as proposed is not a good fit; there could be higher inter-correlations among the relationship variables in the Canadian sub-sample that would reduce the unique effects.

The data set draws strength from the response rates as well as the diversity of people and jobs. A total of 58% of possible individual respondents returned completed surveys and 38% of the work groups returned complete data. The overall return rate was considerably higher (73% average), but many did not include information on their work relationships and were excluded from further analysis. While it is possible that the non-respondents differ significantly from those who did respond, the size and quality of the data set inspires a level of confidence in the results and permits at least limited generalizability to the work force population.

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Measurement

With few exceptions, the scales used in this survey instrument had been well validated in prior research, and most performed very well. There have been some recent revisions to the LMX scale, some of which have demonstrated validity and reliability. However, it was decided to use the favoured form of this scale, the LMX VII. In an attempt to control the size of the survey, one item (deemed to be repetitive) was not used in the Canadian questionnaire, while all seven items were used in the two U.S. questionnaires. The reliability of this LMX construct was uniformly high, whether it was the six-item or the seven-item scale, and in order to maintain consistency among the three sub-samples, the six-item scale was used in all analyses.

To effectively measure the quality of dyadic relationships, the perception of such a relationship must be assessed by both parties to it. The relationships were not perceived similarly by both members, as evidenced by low correlations between perceptions of the two members of a single dyadic relationship. This result is not consistent with previous LMX research .

The distinguishing advancement made by LMX research was to propose and then repeatedly confirm the differentiation with which leaders interacted with followers. That differentiation results in quite distinct job outcomes for individual followers (Crouch & Yetton, 1988; Kozlowski & Doherty, 1989). This study failed to confirm those results, but did establish that most individuals had clearly differentiated relationships with their co-workers. By using an adaptation of the LMX VII scale for co-workers, each individual assessed the nature of his/her relationship with each of his/her peers. This form of the scale used for member-member relationships (MMX) also had high internal consistency, confirmation that the scale can be adapted to fit several types of relationship.

The Team-Member Exchange scale (TMX) may need some minor modification, as evidenced by the confirmatory factor analysis. However, the scale did prove to be valid in its relationship to all outcome variables. The relationship an individual has with his/her team did account for variance separate from that accounted for by the LMX construct, as reported earlier (Seers et al., 1995). There also appears to be discernible differences between the relationships measured by TMX and the network measured by a series of Member-Member Exchange relationships ($M_{xi}M_{yi}XCO$). In predicting the individual job outcomes, the TMX was the stronger of the two scales with $M_{xi}M_{yi}XCO$ having non-significant main effects on job outcomes of job satisfaction and affective organizational commitment.

The job satisfaction items, taken from the Job Descriptive Survey (JDS), did not measure up to previous use. Only one of three items had high validity and reliability, but the Cronbach's alpha of .586 for the composite scale would not have been appreciably improved by leaving out either of the other two items. The other widely used measure of Job Satisfaction is the Minnesota Satisfaction Questionnaire. While comprised of numerous items, this scale would perhaps have been a better choice.

Allen and Myer (1990) developed a construct to measure the affective, normative, and continuance dimensions they hypothesized to make up organizational commitment. In previous research, the affective component was associated with increased job satisfaction and decreased turnover intentions, while continuance commitment was related to decreased job satisfaction and showed a weak negative correlation with turnover (Jenkins & Thomlinson, 1992). The relationship between this affective component and job satisfaction was confirmed in this study by a correlation of .342 (p<.000).

Hypotheses

Hypothesis 1 was only partially supported by the data. It stated that individuals would differentiate their relationships with co-workers, distinguishing one from the other.

The leaders in the work groups sampled did not form significantly different relationships with members of their work groups. In only one group was the range large enough to be considered significant (2 on a 5-point scale). This may be accounted for by social desirability bias, as the subordinates in the relationships detected much more distinction than the leaders. Subordinates also made very clear distinctions among their co-worker relationships and had a much broader range of differentiation in their clusters of relationships. Most of the published research on LMX does not report the extent of relationship differentiation.

Furthermore, these results contradict earlier findings (Graen & Cashman, 1975; Graen & Schiemann, 1978; Kozlowski & Doherty, 1989) that there is relatively strong agreement between dyadic partners as to the quality of their relationship, although many studies have gathered relationship data from one party only. Reports of member-member relationships were more closely correlated than those between a leader and a member. The implication of this finding is that there is unclear, or nonexistent, communication between individuals as to the character of their work relationships. The understanding of where one stands with one's co-workers and leader are important to a sense of well-being in an organization.

Hypothesis 2, that individuals will form higher quality relationships with those perceived to be similar to them in work behaviour, was convincingly supported by the results of this study. While perhaps not surprising, these results do have implications in this era of increasing diversity in the work force. Companies have spent billions of dollars on diversity training, much of which has been ineffective in developing tolerance of, respect for, and value of those different from oneself (Flynn, 1998). The results reported here indicate that employees feel a closer kinship with those perceived to be similar in several ways. The stronger implication of this issue is found in other results, which indicate greater job satisfaction and organizational commitment and more positive assessment of performance

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by those having higher quality relationships. In order to promote more positive job outcomes, it appears that managers should first address the issue of stronger relationships among all employees, but especially among those who may perceive one another to be dissimilar.

It was expected that the relationships one develops in a work group would influence the attitudes toward, and perceptions of, the workplace and one's work. The role of the leader-member relationship is well documented over many years of research and the positive effect it has on job satisfaction and organizational commitment were confirmed here. It did not affect perceptions of the work group and its effectiveness and performance; however, it did interact with the other relationship variables to produce correlations with cohesiveness and effectiveness, as well as affective organizational commitment. Clearly, in the organizations sampled, the role of the leader remains central to an employee's feelings of job satisfaction and the desire to remain in the organization, but the leader's influence does not extend to opinions about the work group.

The relationship between a member of a work group and the group as a whole was first explored by Seers (1989) and Seers et al. (1995). This study confirms the distinctive role the Team-Member relationship has in determining positive personal job outcomes. It was the strongest and most consistent of the indicator variables and had significant correlations with all five of the measured job outcomes. The TMX scale does not define members of the "team" and the respondent may assume that it includes both leader and co-workers. This would help explain its significant role in relation to the job attitudes.

It was hypothesized that the cluster of dyadic relationships that a worker has with each of his/her co-workers would be a distinctive construct from that described in the previous paragraph. The two variables were operationalized in unique ways, and the two constructs differed in their effect on individual perceptions of personal and group outcomes. The Team-Member Exchange (TMX) measure was a significant factor in all of the outcomes,

while the cluster of Member-Member Relationships ($M_{xi}M_{yj}XCO$) was related only to the group level outcomes of effectiveness, performance, and cohesiveness. The Team-Member Exchange may imply the inclusion of the leader as well as co-workers and that may account for its being related to all of the outcome variables, where LMX correlates with only job satisfaction and affective organizational commitment and $M_{xi}M_{yj}XCO$ connects only group cohesiveness, effectiveness, and performance.

These results indicate that the extensive data-gathering process involved in measuring each dyadic relationship may not be worth the effort. The Team Member Exchange construct, measured by answers to ten survey questions appears to be more than adequate to capture the essence of those relationships. The $M_{xi}M_{yj}XCO$ measure did, however, contribute unique variance beyond of LMX and TMX in the group-based variables of cohesiveness, effectiveness, and performance.

We can conclude that interpersonal relationships within organizational work groups are formed for a variety of reasons, but one of the predominant forces in developing positive relationships is perceived similarity between two people. This has implications for an increasingly diverse workforce. A work group comprised of individuals with complementary skills and perspectives actually strengthens the group and improves its contributions (Katzenbach & Smith, 1993). The responsibility of organizational development experts is to educate people to not only recognize and appreciate their differences, but also to value those differences. In this way, other factors than similarity may play a larger role in the development of high quality work relationships.

We can also conclude from this study that individuals differentiate among their peers as to the quality of their relationship, to an even greater extent than the leader differentiates among subordinates. The leaders' reports in this study may stem not from the actual practice of treating all subordinates similarly, but rather from a social desirability bias and a reluctance to admit that differentiation exists. The origin of the differentiation has not been

addressed in this study. Whether it is based on liking as some authors have suggested (Liden, Wayne, & Stillwell, 1993) or on supportive work behaviours, as the LMX scale is intended to measure, it is worth pursuing in subsequent research. Another line of inquiry that offers opportunity is the lack of agreement between dyadic partners as to the quality of their shared relationship. It is possible that it is an anomaly of this sample, but the low correlations bear testing with another sample.

These results reveal the importance of not only the leader-member relationship, but also the peer relationships in developing attitudes of job satisfaction, affective organizational commitment, perceived group performance and effectiveness, and group cohesiveness. The structural equation modeling results reveal that the model, as proposed and tested is not a good fit with the population. This suggests that there are factors other than these relationships that play a role in forming an individual's job attitudes. Given the number of elements that an employee encounters during his/her tenure in an organization, it is not surprising that factors beyond interpersonal work relationships would be related to one's job satisfaction and other attitudes. The organizational structure and culture, its leadership, characteristics of the task, as well as personal characteristics such as needs, are just a few of the additional factors that may influence an individual's job attitudes. However, it has been demonstrated here that the relationships are a significant influence on job outcomes. Given that influence, it is crucial for an organization to nurture the existing relationships and to engage in team-building or organizational development efforts that can build others.

Limitations

Although fairly diverse, the employees may share some characteristics not evident in other regions of either country. This sample may reflect regional similarities that are different from those in other geographic areas of North America. With a sample size of over 400, the results may be statistically significant, but not substantively significant.

When data is collected by survey questionnaires from individuals only, the issue of common method variance is a concern (Avolio, Yammorino, & Bass, 1991). To address that issue, the dyadic reporting of the relationships helps to confirm the value or quality of each relationship. It should be noted that, while the relationships are clearly at a dyadic level, the job outcomes were measured and analyzed at an individual level only. Had an objective measure of job performance been available, it would also have helped to address the issue of common method variance.

The data for this study was collected at one time only, thus yielding cross-sectional data. Any attempt to interpret causal effects among the variables would violate standard research protocol. The results must be read as correlational in nature only.

Further Research

The strong implication of perceived similarity in the development of positive relationships is a major issue for a workforce with increasing diversity. Attempts have been made previously to establish the antecedents of these relationships and this study confirms the role of perceived similarity. Investigating the role of actual similarity of work attitudes and values may provide more insight.

We have now established that high quality relationships help employees to have positive attitudes toward the job, their performance, and the workplace. However, we have no definitive evidence that a happy employee is a productive employee. By testing the influence of relationships on a quantitative measure of job performance or group output, we would further validate the interpersonal needs of the individual in a work setting.

As noted in the discussion above, the data were collected at the individual level only. Although there were no attempts in this study to aggregate the data to a group or organizational level, it would be useful to employ the within-and-between analysis technique

(WABA) to mine the data for further understanding (Yammarino & Dubinsky, 1994; Yammarino, Dubinsky, Comer, & Jolson, 1997).

All of these avenues offer rich opportunity for continued research into the connections between interpersonal relationships within a work setting and other organizational characteristics.

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Appendix

May 8, 1998

Dear City Employee,

Thank you for your willingness to participate in this research project. The results of this project will help me to understand working relationships and resulting work attitudes, will assist the City in its ongoing effort to address the needs of municipal employees, and will give you a chance to express your opinions.

It is critical that all questions are answered by all individuals, so that the data is complete and meaningful. Any information you provide will be kept in strict confidence and at no time will any of your individual responses be revealed with identification. Results of this study will be released in composite form only.

This package contains a copy of the survey and a postage-paid return envelope. Please take a few minutes to answer the questions and return the completed the questionnaire forms to me at the University. If you have any questions or concerns about this survey, please do not hesitate to contact me. Thank you for taking some of your valuable time to complete this survey.

Sincerely,

Linda C. Keup

EMPLOYEE SURVEY

May, 1998

SPONSORED BY

The University Faculty of Management

State University

City

Please return completed questionnaire to: Linda C. Keup
College of Business

GENERAL INSTRUCTIONS

The following instructions are provided to assist you in quickly and accurately completing the questionnaire.

The questionnaire is designed to assess individual work attitudes and relationships in organized work groups. It includes items about yourself and your relationships with your supervisor and co-workers, as well as items regarding your opinions about your job.

Please remember that is *very important that you respond to the questionnaire honestly and independently.*

Most of the questionnaire items ask you to locate your response on a scale provided either below or to the right of the item. There is a brief description at the top of each scale specifying what each response of the scale represents. Please be sure that you *provide a response to every questionnaire item.* Also, make sure that you *mark only one answer for each item,* unless the instructions specify otherwise.

There are *no right or wrong answers* to these questions, and *this is not a test* of your ability or consistency in marking answers. Although a number of items may appear similar to each other, they express differences that are important in describing your work situation.

First impressions are usually best on questionnaires such as this one, so please do *not* spend a great deal of time on any one item.

When you have completed the questionnaire, please seal all forms into the postage-paid, return envelope provided. Then simply drop the envelope into the nearest mailbox.

SECTION I

INSTRUCTIONS: Below are several questions related to your *personal background.* This information is used for statistical purposes only. Please answer each item by circling the number that corresponds with your response to that item.

1. What is your age?

   1. less than 20 years
   2. 21 to 25 years
   3. 26 to 30 years
   4. 31 to 35 years
   5. 36 to 40 years

   6. 41 to 45 years
   7. 46 to 50 years
   8. 51 to 55 years
   9. 56 to 60 years
   10. greater than 60 years

2. What is your gender?

   1. Male

   2. Female

3. What is the highest level of education you have obtained?

   1. completed elementary school
   2. some high school
   3. completed high school or equivalent
   4. 1 or 2 year college degree/certificate

   5. bachelor's degree
   6. some graduate school
   7. graduate degree

4. For how long have you worked for the City of Minot (in any capacity)?

   1. less than 6 months
   2. 6 months to 1 year
   3. 1 year to 5 years
   4. 5 years to 10 years

   5. 10 years to 15 years
   6. 15 years to 20 years
   7. 20 years to 25 years
   8. more than 25 years

5. For how long have you worked in your present job?

   1. less than 6 months
   2. 6 months to 1 year
   3. 1 year to 5 years
   4. 5 years to 10 years

   5. 10 years to 15 years
   6. 15 years to 20 years
   7. 20 years to 25 years
   8. more than 25 years

6. In what department do you presently work?

   1. Assessor
   2. Auditorium/Recreation
   3. Building Division
   4. Engineering Division
   5. Fire
   6. Library
   7. Police

   8. Property Maintenance
   9. Sanitation
   10. Shop & Bus
   11. Streets
   12. Water & Sewer
   13. Water Treatment
   14. Traffic Division

7. Do you currently work full-time or part-time?

   1. Full-time

   2. Part-time

SECTION II

This section of the questionnaire asks you to describe your job, as *objectively* as you can. This is not designed to describe how much you like the job, but rather how you see the tasks that you do. Circle the number which most accurately describes your job.

8. To what extent does your job require you to *work closely with other people* (either "clients", or people in related jobs in your own organization)?

1----------2----------3----------4----------5----------6----------7

Very little; dealing with
other people is not at all
necessary in doing the job.

Moderately: some dealing
with others is necessary.

Very much: dealing with
other people is an absolutely
crucial part of the doing the job.

9. How much *autonomy* is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?

1----------2----------3----------4----------5----------6----------7

Very little; the job gives me
almost no personal "say"
about how and when the
work is done.

Moderate autonomy; many
things are standardized and
not under my control, but I
can make some decisions
about the work.

Very much; the job gives
me almost complete responsibility
for deciding how and when the
work is done.

10. To what extent do *managers or co-workers* let you know how well you are doing on your job?

1----------2----------3----------4----------5----------6----------7

Very little; people almost
never let me know how well
I am doing.

Moderately; sometimes
people may give me "feed-
back"; other times they don't

Very much; managers or
co-workers provide me with
almost constant "feedback"

Listed below are a number of statements which could be used to *describe a job*. Please indicate by placing the appropriate number on the line preceding each statement whether that statement is an accurate or inaccurate description of your job. Once again, please try to be as objective as you can in deciding how accurately each statement describes your job, whether you like or dislike your job.

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate		Very Accurate

_____ 11. The job denies me any chance to use my personal initiative or judgment in carrying out the work.

_____ 12. The supervisors and co-workers on this job almost *never* give me any "feedback" about how well I am doing in my work.

_____ 13. The job can be done adequately by a person working alone—without talking or checking with other people.

_____ 14.The job gives me considerable opportunity for independence and freedom in how I do the work.

_____ 15. Supervisors often let me know how well they think I am performing the job.

_____ 16. The job requires a lot of cooperative work with other people.

Indicate how important each of the following job characteristics is to you, *whether or not it is present in your current job:*

A job that...............is:	Highly Unimportant	Somewhat Unimportant	Neutral	Somewhat Important	Highiy Important
17. gives me social status and prestige	1	2	3	4	5
18. leaves me relatively free of supervision by others	1	2	3	4	5
19. gives me an opportunity to be helpful to others	1	2	3	4	5
20. provides me with adventure	1	2	3	4	5
21. provides an opportunity to use my special abilities or aptitude	1	2	3	4	5
22. provides me with a chance to earn a good deal of money	1	2	3	4	5
23. gives me the opportunity to work with people rather than things	1	2	3	4	5
24. permits me to be creative and original	1	2	3	4	5
25. gives me a chance to exercise leadership	1	2	3	4	5
26. enables me to look forward to a stable, secure future	1	2	3	4	5

SECTION III

This section of the questionnaire deals with *your attitudes regarding your job.*

For the following questions, *team* and *group* refer to the group of people you work most closely with. *Organization* refers to the overall corporation of the City of Minot. Please indicate how strongly you agree or disagree with each of the following statements by circling the appropriate number.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
27. I do not feel a strong sense of belonging to this organization.	1	2	3	4	5
28. I am satisfied with the work of this team.	1	2	3	4	5
29. I do not feel "emotionally attached" to this organization.	1	2	3	4	5
30. This organization has a great deal of personal meaning for me.	1	2	3	4	5
31. Generally speaking, I am very satisfied with this job.	1	2	3	4	5
32. Our group's efforts have positively affected the organization.	1	2	3	4	5
33. The city provides adequate team skills training for my group (for example. communication. interpersonal. etc.).	1	2	3	4	5
34. I do not feel like "part of the family" at my organization.	1	2	3	4	5

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
35. I would be very happy to spend the rest of my career with this organization.	1	2	3	4	5
36. I am satisfied with my current pay.	1	2	3	4	5
37. I think I could easily become as attached to another organization as I am to this one.	1	2	3	4	5
38. Most people in this group are very satisfied with their jobs.	1	2	3	4	5
39. Our group does an excellent job for this department and the organization.	1	2	3	4	5
40. I am generally satisfied with the kind of work I do in this job.	1	2	3	4	5
41. The city provides adequate training for me and my work group.	1	2	3	4	5
42. I really feel as if this organization's problems are my own.	1	2	3	4	5
43. The pay for my job is excellent.	1	2	3	4	5
44. I enjoy discussing my organization with people outside it.	1	2	3	4	5
45. My benefits package is inadequate.	1	2	3	4	5

On my job, this is how I feel about:

	Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
46. the way my boss handles his/her employees.	1	2	3	4	5
47. the competence of my supervisor in making decisions.	1	2	3	4	5
48. my pay and the amount of work I do.	1	2	3	4	5
49. the chances for advancement in this job.	1	2	3	4	5
50. the praise I get for doing a good job.	1	2	3	4	5
51. the benefits I receive as part of my compensation.	1	2	3	4	5

52. Do you feel that you are really a part of your work group?

```
1-------------2-------------3-------------4-------------5
Definitely No         Not Sure         Definitely Yes
```

53. If you had the chance to do the same kind of work for the same pay in another work group within the organization, would you do so?

```
1-------------2-------------3-------------4-------------5
Definitely No         Not Sure         Definitely Yes
```

How does your group compare with other work groups in city government on each of the following points:

54. the way people get along with one another

```
1--------------2--------------3--------------4--------------5
```
Others get along	About the same	We definitely get
much better than	as other groups	along much better
our group does		than other groups
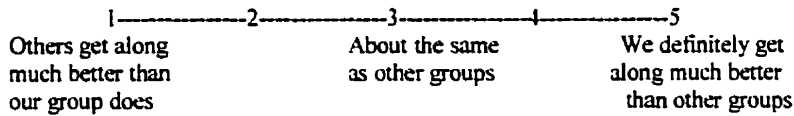
55. the way people stick together

```
1--------------2--------------3--------------4--------------5
```
Other groups stick	About the same	We definitely stick
together more than	as other groups	together more than
we do		other groups do
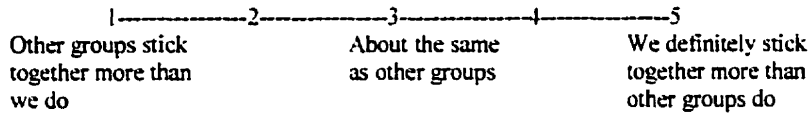
56. the way people help each other on the job

```
1--------------2--------------3--------------4--------------5
```
People help each other	About the same	We definitely help each
more in other groups	as other groups	other more than people
than we do		in other groups do
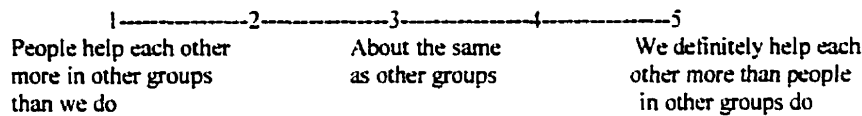
How would you rate the following items relative to the work your group performs?

		Very Poor	Barely Acceptable	Medium	Reasonably Good	Exceptional
57.	Quality of Work	1	2	3	4	5
58.	Customer Service	1	2	3	4	5
59.	Satisfaction of Group Members	1	2	3	4	5
60.	Productivity	1	2	3	4	5

This section deals with *your opinions of the relationships you have with your supervisor and your co-workers*.
Please be sure that you record your feelings *as of* today.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
61. Other group members clearly recognize my potential.	1	2	3	4	5
62. Other group members usually let me know when I've done something that makes their jobs easier (or harder).	1	2	3	4	5
63. In busy situations, other group members often volunteer to help me out.	1	2	3	4	5
64. When other group members are busy, I often volunteer to help them out.	1	2	3	4	5

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
65. I often let other team members know when they've done something that makes my job easier (or harder).	1	2	3	4	5
66. Other group members are willing to help finish work that was assigned to me.	1	2	3	4	5
67. Other group members clearly understand my job-related problems and needs.	1	2	3	4	5
68. I often make suggestions about better work methods to other team members.	1	2	3	4	5
69. I'm willing to help finish work that had been given to other group members.	1	2	3	4	5
70. I'm flexible about switching job responsibilities to make things easier for other team members.	1	2	3	4	5

Use the place provided below to make comments or suggestions, air concerns, or highlight areas that you believe should be brought to the attention of the Human Resources Department or administration.

Please check here if you would like to receive a report of survey results_____

Your Name_____

Leader's Name_____

The following set of questions asks about your relationship to the leader of your group. Indicate your response to each question *relative to that person* by circling the number of that response.

Do you know where you stand with your leader... do you usually know how satisfied your leader is with what you do?

1. Rarely
2. Occasionally
3. Sometimes
4. Fairly often
5. Very often

How well does your leader understand your job-related problems and needs?

1. Not a bit
2. A little
3. A fair amount
4. Quite a bit
5. A great deal

How well does your leader recognize your potential?

1. Not at all
2. A little
3. Moderately
4. Mostly
5. Fully

Regardless of how much formal authority your leader has built into his/her position, what are the chances that he/she would be personally inclined to use his/her power to help you solve problems in your work?

1. None
2. Small
3. Moderate
4. High
5. Very high

Again, regardless of the amount of formal authority he/she has, to what extent can you count on your leader to "bail you out" at his/her own expense when you really need it?

1. No chance
2. Might or might not
3. Undecided or neutral
4. Probably would
5. Certainly would

I have enough confidence in my leader that I would defend and justify his/her decisions if he/she were not present to do so?

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

How would you characterize your working relationship with your leader?

1. Extremely ineffective
2. Worse than average
3. Average
4. Better than average
5. Extremely effective

Please answer the following set of questions, *relative to your leader,* **by circling the appropriate response:**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
My leader and I think alike in terms of coming up with a similar solution for a problem.	1	2	3	4	5
My leader and I are similar in terms of outlook, perspective, and values.	1	2	3	4	5
My leader and I are alike in a number of areas.	1	2	3	4	5
My leader and I handle problems in a similar way.	1	2	3	4	5

How much influence does your leader have on your everyday activities?

```
1----------------2----------------3----------------4----------------5
Very                    Moderate              Very
Little                  Amount                Much
```

On the blanks provided below, rank the members of your work group (including your leader) as to the amount of influence they have on your everyday work tasks. Write their names on the blanks provided.

The **MOST** Influence   _____

                                _____

                                _____

_____

                                _____

_____

_____

_____

_____

_____

The **LEAST** Influence   _____

The following set of questions asks about your relationship to an employee in your group. Indicate your response to each question *relative to that person* **by circling the number of that response.**

Does this member know where he/she stands with you... does he/she usually know how satisfied you are with what he/she does?
1. Rarely
2. Occasionally
3. Sometimes
4. Fairly often
5. Very often

How well do you understand this member's job-related problems and needs?
1. Not a bit
2. A little
3. A fair amount
4. Quite a bit
5. A great deal

How well do you recognize this member's potential?
1. Not at all
2. A little
3. Moderately
4. Mostly
5. Fully

Regardless of how much formal authority you have built into your position, what are the chances that you would be personally inclined to use your power to help this member solve problems in his/her work?
1. None
2. Small
3. Moderate
4. High
5. Very high

Again, regardless of the amount of formal authority you have, to what extent would you "bail this person out" at your own expense when he/she really needs it?
1. No chance
2. Might or might not
3. Undecided or neutral
4. Probably would
5. Certainly would

I have enough confidence in this member that he/she would defend and justify my decisions if I were not present to do so?
1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

How would you characterize your working relationship with this member?
1. Extremely ineffective
2. Worse than average
3. Average
4. Better than average
5. Extremely effective

Please answer the following set of questions, *relative to this specific employee,* **by circling the appropriate response:**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
This member and I think alike in terms of coming up with a similar solution for a problem.	1	2	3	4	5
This member and I are similar in terms of outlook, perspective, and values.	1	2	3	4	5
This member and I are alike in a number of areas.	1	2	3	4	5
This member and I handle problems in a similar way.	1	2	3	4	5

Your Name_____

Co-Worker's Name_____

The following set of questions asks about your relationship to a co-worker in your group. Indicate your response to each question *relative to that person* by circling the number of that response.

Do you know where you stand with this member... do you usually know how satisfied he/she is with what you do?
    1. Rarely
    2. Occasionally
    3. Sometimes
    4. Fairly often
    5. Very often

How well does this person understand your job-related problems and needs?
    1. Not a bit
    2. A little
    3. A fair amount
    4. Quite a bit
    5. A great deal

How well does this person recognize your potential?
    1. Not at all
    2. A little
    3. Moderately
    4. Mostly
    5. Fully

Regardless of how much formal authority he/she has built into his/her position, what are the chances that this person would be personally inclined to use his/her power to help you solve problems in your work?
    1. None
    2. Small
    3. Moderate
    4. High
    5. Very high

Again, regardless of the amount of formal authority he/she has, to what extent can you count on this person to "bail you out" at his/her own expense when you really need it?
    1. No chance
    2. Might or might not
    3. Undecided or neutral
    4. Probably would
    5. Certainly would

I have enough confidence in this person that I would defend and justify his/her decisions if he/she were not present to do so?
    1. Strongly Disagree
    2. Disagree
    3. Neutral
    4. Agree
    5. Strongly Agree

How would you characterize your working relationship with this individual?
    1. Extremely ineffective
    2. Worse than average
    3. Average
    4. Better than average
    5. Extremely effective

Please answer the following set of questions, *relative to this specific group member,* **by circling the appropriate response:**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
This member and I think alike in terms of coming up with a similar solution for a problem.	1	2	3	4	5
This member and I are similar in terms of outlook. perspective, and values.	1	2	3	4	5
This member and I are alike in a number of areas.	1	2	3	4	5
This member and I handle problems in a similar way.	1	2	3	4	5