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AN EMPIRICAL ASSESSMENT OF THE RELATIONSHIP BETWEEN
LEADER-MEMBER EXCHANGE AND ORGANIZATIONAL COMMITMENT AND
ORGANIZATIONAL CITIZENSHIP BEHAVIOR

By
Yolanda B. Truckenbrodt

A DISSERTATION

Submitted to
Wayne Huizenga Graduate School of Business and
Entrepreneurship
Nova Southeastern University

in partial fulfillment of the requirements
for the degree of

DOCTOR OF PUBLIC ADMINISTRATION

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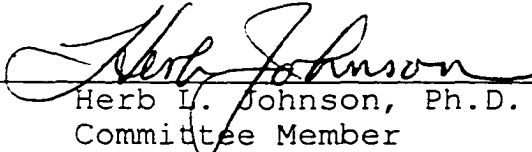
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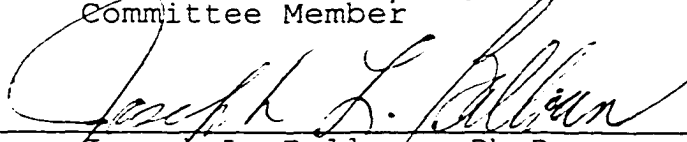
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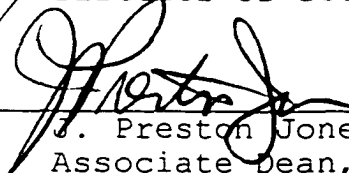
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CERTIFICATION STATEMENT

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ABSTRACT

AN EMPIRICAL ASSESSMENT OF THE RELATIONSHIP BETWEEN LEADER-MEMBER EXCHANGE AND ORGANIZATIONAL COMMITMENT AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR

By

Yolanda B. Truckenbrodt

Committee Chairperson: Ronald C. Fetzner, Ph.D.

The Leader-Member Exchange (LMX) theory (Dansereau, Graen, & Haga, 1975; Graen and Scandura, 1987) is a well-researched leadership construct in organizational behavior and business management studies. The notion is, LMX is a two-way relationship (dyad) between the Leader (supervisor) and the Member (subordinate). Supervisors exchange the following personal and positional resources in return for subordinates' performance: inside information, influence in decision-making, task assignment, job latitude, support, and attention (Graen and Cashman, 1975). Numerous research has identified various antecedents and consequences of LMX. This study focuses on two outcomes of LMX: organizational commitment and organizational citizenship behavior.

The research sample is 63 dyads of a high-technology information solutions company in the Midwest. The dyads are administered three widely used and established instruments, namely the Leader-Member Exchange (LMX-7) Scale (Scandura and Graen, 1984); Organizational Commitment Questionnaire (Mowday *et al.*, 1982); and Organizational Citizenship Behavior Scale (Smith *et al.*, 1983).

Data are analyzed to answer the research questions and test the hypotheses by using correlation analysis, Analysis of Variance, and *F* test for correlated means at the $p < .05$ significance level. The findings support the hypothesis that a positive relationship exists between Leader-Member Exchange and organizational commitment (Kinicki and Vecchio, 1994; Nystrom, 1990). The results also support a statistically significant correlation between Leader-Member Exchange and citizenship behavior and the altruism subscale, but not compliance. This is consistent with the Wayne and Green (1993) study of examining the relationship as reported by the member rather than the leader.

Implications for policy change and limitations of the study are discussed as well as recommendations for future research.

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CHAPTER I

INTRODUCTION

Background

As American business companies struggle with the pressure from takeovers, mergers, restructuring, and acquisitions, employees' commitment attitude and citizenship behavior are changing because employees perceive a lack of job security in the workplace. Until recently, before corporate downsizing and layoffs became common practice in the business world, there had been inherent expectations by management of employees' organizational commitment and citizenship behavior in the workplace.

Organizational commitment is an attitude of "company loyalty" exhibited by employees. It stems from the employees' personal beliefs that the organization's missions, goals, and values are congruent with their own (Nystrom, 1990). Mowday et al. (1982) cites Sheldon's (1971) definition of attitudinal commitment as: "the identity of the person (is linked) to the organization"

(p. 143) and quotes Hall et al. (1970): "the goals of the organization and those of the individual become increasingly integrated or congruent" (p. 176).

Organizational citizenship is behavioral, wherein subordinates accommodate their supervisors, other employees, and clients in the conduct of their assigned duties by performing what is normally expected such as not arriving late, not leaving early, and not abusing lunch hour. Organizational citizenship behaviors are extra-role behaviors which, when performed by the members of the organization, benefit the organization (Bateman and Organ, 1983). These are everyday acts of cooperation that go beyond the formal job description (Katz and Kahn, 1978).

The challenge for management is how to foster organizational commitment attitudes and citizenship behavior within their employees despite the reality of job cuts in the workforce. There is considerable research to suggest interpersonal interaction between supervisors and subordinates merits closer scrutiny.

The Leader-Member Exchange (LMX) Theory is a well-researched leadership construct in organizational behavior and business management studies. The notion is Leader-Member Exchange is a two-way relationship (dyad) between the Leader (supervisor) and the Member (subordinate) (Danserau, Graen, & Haga, 1975; Deluga, 1998; Graen and Cashman, 1975;

Graen and Scandura, 1987; Graen and Schiemann, 1978; Vecchio and Gobdel, 1984; Vecchio et al., 1986). The theory asserts that leaders treat each employee on a different level of social exchange, *i.e.*, supervisors do not interact with subordinates uniformly (Graen and Cashman, 1975; Wayne and Green, 1993). The quality of the relationships or exchanges varies because supervisors have limited time and resources. Supervisors exchange personal and positional resources in return for subordinates' performance on unstructured tasks. These personal and positional resources are: sharing of so-called inside information, influence in decision-making, task assignment, job latitude, support, and attention (Graen and Cashman, 1975). Two types of vertical dyadic exchanges develop between the supervisor and the subordinate: a high-quality relationships with the "in-group" and low-quality relationships with the "out-group" members. "In-group" subordinates perform their jobs in accordance with the employment contracts and can be counted on by the supervisor to perform unstructured tasks, to volunteer for extra work, and to take on additional responsibilities. As a result, for the in-group, research shows mutual trust, positive support, informal interdependencies, high degree of autonomy, satisfaction, and shared loyalty exist (Danserau, Graen, & Haga, 1975; Dienesch and Liden, 1986; Graen and Uhl-Bien, 1995). In contrast, subordinates who perform only

in accordance with the prescribed employment contract are characterized as "out-group" and are in low-quality relationships with their supervisors, with limited reciprocal trust and support, and few rewards (Deluga, 1998).

Statement of the Problem

Numerous studies on Leader-Member Exchange (LMX) Theory of leadership have identified various antecedents and consequences of LMX. This study will focus on two outcomes of LMX: organizational commitment and organizational citizenship behavior. In order for corporations to survive the challenges of the highly competitive and ever-changing global market of the twenty-first century, it might best serve them to understand the role the Leader-Member Exchange antecedent contributes to the survival and profitability of business operations. Therefore, this topic is worthy of further study to determine the relationship between Leader-Member Exchange and subordinates' organizational commitment and citizenship behavior. The results of the study might help management meet the challenges of competitive businesses, and support human resource initiatives such as employee relations, leadership training, professional development, personnel hiring, training and promotion, which are vital to any organizational planning.

The proposed research will add to the literature on Leader-Member Exchange theory, organizational commitment, and organizational citizenship behavior in a business corporation setting as called for by Liden *et al.* (1997).

This study seeks to support Wayne and Green's (1993) field research, which suggests there is a positive relationship between Leader-Member Exchange and the organizational citizenship behavior of the member, specifically, the altruism factor. Smith, Organ, and Near (1983) identified two constructs of organizational citizenship behavior: altruism and general compliance--also known as conscientiousness. Altruistic behaviors include helping specific individuals with work-related tasks, such as, working on a sick co-worker's project, filling in while the boss is on emergency leave, answering the telephone while the secretary is away, or assisting a co-worker in meeting a deadline. On the other hand, generalized compliance is required and prescribed role behaviors, *i.e.*, arriving to work on time, not abusing coffee breaks, not leaving early, not being late for a meeting. Unlike other previous research (Anderson and Williams, 1996; Settoon, Bennett, & Liden, 1996; Wayne, Shore, & Liden, 1997) that focused on the perception of the leader towards the member, Wayne and Green (1993) examine organizational citizenship behavior from the perception of the members, *i.e.*, the

members self-report their acts of organizational citizenship behavior, rather than the leader assessing the behaviors.

Awareness of these consequences will increase understanding of the organizational dynamics arising from the interaction between leaders and members, and the possible implications for employee turnover, morale, job satisfaction, performance, and absenteeism. The findings of this study will have significance for business managers, consultants, human-relations personnel, human-resource specialists, and supervisors who are responsible for strategic planning to better manage manpower and resources.

Purpose of the Study

The purpose of the study is to investigate the relationship between the quality of Leader-Member Exchange and subordinates' organizational commitment and organizational citizenship behavior. The study will attempt to determine the effects of Leader-Member Exchange variables in a highly specialized information technology organizational culture. A greater understanding of the resultant outcomes of the individuals' attitudes and behaviors in an organizational setting is important for management executives in policy-making and for human resource specialists to optimize strategic planning. The results from this study will provide management an

understanding of the relationships between Leader-Member Exchange, organizational commitment, and organizational citizenship behavior. Armed with such knowledge, management can use the study as a tool to shape the organization's future by implementing awareness training.

Significance of the Study

In order to maximize the effectiveness and efficiency of the organization, it is crucial to understand the impact of attitude and behavior among participants. The importance of this increased awareness has several implications for organizational success. Employees' organizational commitment is the outcome from the employees' combined belief in the goals, objectives, and values of the organization (Mowday et al., 1982). For employees, an attitude of organizational commitment creates a feeling of belonging to a work unit or a team, therefore enhancing their job performance. Although it is not possible to determine an employee's sense of commitment and citizenship behavior before the hiring process, these can be important considerations in the training, promoting, and retaining of employees once hired. Organizational commitment and voluntary acts of citizenship behavior are important because they create a positive working environment for employees. When such a climate exists, it benefits customers, clients,

and others with whom the organization conducts business such as vendors, suppliers, and other corporate citizens.

Organizational commitment and citizenship behavior creates a setting for organizational productivity and innovation, thereby affecting the performance of work to produce high-quality goods and services necessary for the long-term success of any organization. As noted by Katz (1964), performance of extra-role behaviors contribute to the success of organizations.

Core Theory

Leader-Member Exchange Theory (Graen, Novak, & Sommerkamp, 1982), originally named Vertical Dyad Linkage Model (Dansereau, Graen, & Haga, 1975), posits leaders treat their subordinates differently, *i.e.*, relationships or exchanges at varying degrees or levels depending upon whether the latter are part of the in-group (referred to as high-quality exchange relationship) or out-group (low-quality exchange) (Dansereau, Graen, & Haga, 1975; Graen, 1976; Graen and Cashman, 1975; Graen, Novak, & Sommerkamp, 1982; Graen and Scandura, 1987; Graen and Uhl-Bien, 1995; Liden and Graen, 1980). A social exchange process evolves between supervisor and subordinate in the development and maintenance of the following personal characteristics: mutual trust, interdependency, shared support, respect,

strong loyalty, and reciprocal influence (Graen and Cashman, 1975). As noted by Deluga (1998), the dynamics in the dyadic exchange of the supervisor and subordinate result in either high-quality or low-quality Leader-Member Exchange relationship.

Research Questions

This study will answer the following research questions:

1. Is there a positive relationship between the quality of Leader-Member Exchange and organizational commitment?
2. Is there a positive relationship between the quality of Leader-Member Exchange and organizational citizenship behavior?

Definition of Terms

For the purpose of this study, the following terms are defined and used in the context of this research:

Leader-Member Exchange (LMX)

A two-way relationship between the supervisor and the subordinate, a dyadic exchange. The theory states that leaders treat subordinates differently at different degrees and levels due to the leader's limited time and resources

(Graen and Cashman, 1975). The two categories of subordinates are in-group and out-group members (Graen and Cashman, 1975) and the two types of exchange are high- and low-quality relationships (Graen and Schiemann, 1978; Vecchio and Gobdel, 1984).

"In-group" Members

Supervisors believe that subordinates in this category can be counted on to volunteer and take additional responsibilities beyond what is prescribed in the job description. Supervisors perceive subordinates to be trustworthy, reliable, and competent. Consequently, supervisors treat their in-group members as "trusted assistants" or "cadre" who perform their jobs beyond role expectations (Dansereau et al., 1975). The relationship between the supervisor and the subordinate (dyad) is classified as "high-quality" exchange.

"Out-group" Members

Supervisors perceive that performance of subordinates in this category is solely based on formal job description, and subordinates are not exerting efforts "above and beyond" the employment contract. The term "hired hands" is used by Dansereau et al. (1975) to describe the subordinates in this

category. The relationship between the supervisor and the subordinate (dyad) is classified as "low-quality" exchange.

High-quality Leader-Member Exchange

A positive relationship between the supervisor and the subordinate, wherein feelings of mutual trust, respect, autonomy, mentoring, interdependencies, shared loyalty, and reciprocal support exist.

Low-quality Leader-Member Exchange

A relationship between the supervisor and the subordinate (dyad) wherein, the exchange is characterized by limited informal interaction, bound expectation, few rewards and career opportunities, lack of mutual trust, and low support.

Organizational Commitment

"The relative strength of an individual's identification with and involvement in a particular organization. Conceptually, it can be characterized by at least three factors: (a) a strong belief in and acceptance of the organization's goals and values; (b) a willingness to exert considerable effort on behalf of the organization; and (c) a strong desire to maintain membership in the organization. . . . It involves an active relationship with

the organization such that individuals are willing to give something of themselves in order to contribute to the organization's well-being" (Mowday et al., 1982, p. 27).

Organizational Citizenship Behavior

Organ (1988) defines organizational citizenship behavior as: "Individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective and efficient functioning of the organization" (Organ, 1988, p. 4). Smith, Organ, and Near (1983) conceptualize organizational citizenship behavior as a two-dimensional construct: the subscale of altruism and generalized compliance or conscientiousness.

Altruism

Smith, Organ, and Near (1983) identify this form of organizational citizenship behavior on a 6-item subscale which consists of cooperative gestures directly and intentionally aimed at helping a specific person. Altruistic behaviors are cooperative gestures that are not mandatory behaviors. For example, "Helps others who have been absent; Volunteers for things that are not required; Orients new people even though it is not required; Helps others who have heavy workloads; Assists supervisor with his

or her work; and Makes innovative suggestions to improve department" (Smith et al., 1983, p. 657).

Generalized compliance

Compliance or conscientiousness is a subscale of Organizational Citizenship Behavior Scale. It is characterized by impersonal forms of behavior aimed indirectly at others in the organization. The behaviors are what a "good employee ought to do" as defined by Smith et al. (1983). Employees carry out certain role behaviors that are conscientious and compliant in nature and consistent with internalized norms. The items on this subscale are "Punctuality; Takes undeserved breaks (reversed scored); Attendance at work is above the norm; Gives advance notice if unable to come to work; Great deal of time spent with personal phone conversations (reversed scored); Does not take unnecessary time off work; Does not take extra breaks; and Does not spend time in idle conversation" (Smith et al., 1983, p. 657).

Summary

Chapter I is an introduction to the study. It presents the background, statement of the problem, purpose and importance of the study. The results of this study will contribute to the Leader-Member Exchange Theory body of

knowledge. The aim is to better understand the relationships between Leader-Member Exchange and the organizational outcomes of commitment and citizenship behavior. This chapter also introduces the two research questions and four hypotheses as well as the definition of terms. Chapter II provides a review of related literature, the theoretical framework of the study, and the significant related theories and current research. Chapter III describes the Methodology (research design, measures, sample, procedures, and data collection) for this research, and Chapter IV presents the data analyses and results of the findings. Chapter V includes implications, limitations, recommendations for future research, and conclusions.

CHAPTER II

LITERATURE REVIEW

Theoretical Framework

The concept of leadership is clearly an important one in human affairs. It has attracted an extensive body of literature, ranging from fiction and biographies to how-to-manuals and scientific investigation. Leadership affects almost all facets of life. The influence of leadership is important in the military, politics, government, academia, and, indeed, in every profit or non-profit organizational unit. Thus, the study of leadership takes on many more challenging dimensions within the complex sphere of human interactions. As such, organizational leadership has been widely conceptualized and tested in behavioral psychology and business management studies. Despite the numerous research studies on leadership, attempts to classify them into categories of approaches (traits, behaviors, and styles) offer limited insight (Graen and

Uhl-Bien, 1995). The difficulties are illustrated by Stogdill (1974) who concludes, "There are almost as many different definitions of leadership as there are persons who have attempted to define the concept" (p. 7).

Early research defines leadership in terms of innate individual traits. This "Great Man" theory of leadership (Jennings, 1960) considers leaders to be larger-than-life figures who are somehow born with an inborn ability to lead. The model assumes leaders are born with combinations of qualities and invariant attributes (Mahoney, Jerdee, & Nash, 1960). However, numerous studies fail to find universal features or common characteristic traits of leaders (Stogdill, 1974).

In later research, emphasis is more on the behavioral aspect, thus replacing the dominant trait approach. It highlights two functions of leaders-Initiating Structure (task direction) and Consideration (employee-centered or person oriented behaviors)-to provide a balance between the job and human perspective (Behling and Schriesheim, 1976, p. 299).

Subsequently, researchers shift their attention to the interaction between the leader and the many variables in a work situation, known as Situational Theory (Hersey and Blanchard, 1982). Fiedler's Contingency Theory is an

example, wherein leaders exercise different leadership "styles" depending on the group-task situation, task structure, and nature of the interpersonal relations between the leader and the followers.

More recently, theorists shift their interest to the two dimensional constructs of transactional and transformational leadership (Bass, 1985; Burns, 1978). While transactional leadership relates to the efficient and effective management of day-to-day operation, transformational leadership applies to the leader's sense of higher purpose, shared vision, and willingness to change. Transformational leadership also refers to the capacity of leaders to influence their members to transcend their self-interest for the sake of the team and the organization (Yukl, 1989).

However, findings on these early traditional leadership theories are mixed. As a result, several theories have been introduced during the last two decades. One of the more recent is the Leader-Member Exchange (LMX) Theory (Graen, Novak, & Sommerkamp, 1982) of leadership, originally known as the Vertical Dyad Linkage (VDL) Model (Cashman, Dansereau, Graen, & Haga, 1976; Dansereau, Cashman, & Graen, 1973; Dansereau, Graen, & Haga, 1975; Graen, 1976; Graen and Cashman, 1975; Graen and Schiemann, 1978). The central focus of this leadership theory is the relationship and

interaction (a dyadic exchange), between the leader and the member or the supervisor and the subordinate, as opposed to the traits, behaviors, situational styles of the leader, or any other variables.

A review of the Leader-Member Exchange literature agrees with the notion that leaders treat subordinates differently at varying degrees and levels (Dienesch and Liden, 1986), contingent on whether the latter are part of the in-group (high-quality relationship) or out-group (low-quality relationship) (Dansereau, Graen, & Haga, 1975; Graen, 1976; Graen and Cashman, 1975; Graen, Novak, & Sommerkamp, 1982; Graen and Scandura, 1987; Liden and Graen, 1980; Scandura and Graen, 1984; Vecchio, 1982). Proponents of the theory assert the quality (in-group or out-group) of dyadic exchange between superior-subordinate is more predictive of positive organizational outcomes than the leader's traits or behaviors (Gerstner and Day, 1997; House and Aditya, 1997). The in-group reports mutual respect, trust, shared support, interdependencies, greater job latitude, common bonds, open communication, and reciprocal obligation between the supervisor and the subordinate (Dienesch and Liden, 1986; Liden and Graen, 1980; Snyder, Williams, & Cashman, 1984). Thus, the exchange between the superior-subordinate (dyad), a two-way relationship, is the

unique basic premise and the unit of analysis of the Leader-Member Exchange (Graen, 1976; Liden and Graen, 1980).

The conceptualization of the Leader-Member Exchange model's theoretical base and empirical support is based on role theory (Katz and Kahn, 1978) and social exchange relationship (Blau, 1964).

Role Theory

The basis of Leader-Member Exchange has its early theoretical foundation and empirical evidence in Role Theory (Liden, Sparrowe, & Wayne, 1997). Each individual in a society occupies a status position in a family unit, community, and various institutions and organizations, in which each individual is expected to play a particular role (Katz and Kahn, 1978). According to Graen (1976, p. 1201, as quoted by Dienesch and Liden, 1986), "Organizational members accomplish their work through roles. . . ." In an organization, there is a gradual adoption of an employee's "role" that develops out of informal interchanges between the supervisor and the subordinate (Graen, 1976).

Dienesch and Liden (1986) and Graen and Scandura (1987) theorize roles develop because there is mutual acceptance by both parties of the roles being assumed, and mutual expectation that resultant roles will benefit both the leader and the member. An example is a supervisor assigns

an extra project (not in the standard formal employment contract) to a subordinate who willingly accepts the task. Katz and Kahn (1978) refer to this as extra-role behavior. From then on, the supervisor will rely on the subordinate to assume other non-obligatory tasks beyond the formal job requirements, as opposed to employees who are only performing tasks prescriptive of their job description (in-role behavior). Graen and Cashman (1975) and Graen and Scandura (1987) state this process of development as role-taking and the latter as role-making. They suggest a series of exchanges and reciprocities exist in a relationship (a Vertical Dyadic role-making between the leader and the follower). Thus, because of the dyad exchange, a behavioral interdependency between the supervisor and subordinate develops as part of the role-making process (Dansereau, Graen, & Haga, 1975; Dienesch and Liden, 1986; Graen and Cashman, 1975). Hence, a supervisor is able to selectively shape, through episodes of role expectation events, a subordinate's assigned organizational role. In addition, researchers (Graen, 1976; Graen, 1989; Graen, Novak, & Sommerkamp, 1982; Graen and Scandura, 1987) further illustrate the dyadic role-making processes in their studies between leader and member (supervisor and subordinate) in high-quality exchanges and discover both have attitudinal similarities in their abilities to make decisions.

Social Exchange Theory

The Leader-Member Exchange model of leadership is also heavily dependent on the theoretical framework of Social Exchange Theory postulated by Blau (1964). Wayne and Green (1993, p. 1433) propose the social exchange model is seminal to understanding the Leader-Member Exchange Theory. The social exchange is based in the context of Gouldner's (1960) "norm of reciprocity" wherein he discusses reciprocity as a "mutually contingent exchange of benefits between two or more units" (p. 164). Leader-Member Exchange Theory posits that due to limited resources and lack of time to devote to each employee, the leader has an opportunity to develop a close social interaction (exchange) with only a few essential subordinates (in-group). This interpersonal social exchange "matures" and stabilizes into a dyadic relationship (Graen, 1976; Graen and Cashman, 1975; Graen and Scandura, 1987; Liden and Graen, 1980). The subordinates not in this special relationship are classified as the out-group. A member is part of the in-group exchange (Dansereau et al., 1975) when there is mutual support and reciprocal influence. In-group members perform acts (e.g., answering the phone when the secretary is absent, willingly doing somebody else's work to help out in an emergency, training a new coworker) beneficial to the supervisor since these actions add to the efficient functioning of the

office. The employee offers these voluntary acts of citizenship behavior as part of an exchange relationship with the organization and the supervisor. The perception is this type of reciprocity is mutually beneficial to both the leader and the member (a supervisor-subordinate dyadic exchange).

Leader-Member Exchange

In a 1973 study, Dansereau, Cashman, & Graen propose the Vertical Dyad Linkage (VDL) model as the new approach to the study of leadership. The Vertical Dyad Linkage has been renamed Leader-Member Exchange (LMX) (Graen, Novak, & Sommerkamp, 1982). The model describes a differentiated relationship existing between the employees and their immediate supervisor (Dansereau, Graen, & Haga, 1975). A dyadic relationship develops because of supervisor's finite time and resources. The relationship thus evolves quickly on a mature level, either as a high-quality (in-group) exchange (characterized by mutual trust and respect, reciprocal support, positive feedback) or a low-quality (out-group) exchange (Liden and Graen, 1980; Liden et al., 1993).

The early empirical research on the Vertical Dyad Linkage model consists of the results of a longitudinal study of 60 administrators and 17 supervisors in the housing

department of a large public university. The study describes how leaders develop different levels of exchange relationships with their subordinates. The study also measures the perceptions of exchange of both the leaders and the members, using data collected on four structured interviews in a span of nine months. The in-group exchanges are characterized by the leader providing greater personal attention and support, bestowing so-called inside information, and assigning tasks promoting professional growth and career development for the members. In turn, the members report fewer job problems, a greater amount of time and energy invested in the organization, and satisfaction with their job and their supervisors. In contrast, the out-group exchanges report the reverse (Dansereau *et al.*, 1975).

Similar results of these differences between the in-group and out-group exchanges are again replicated in a study of 109 leader-member dyads of a large public university (Graen and Cashman, 1975). Thus, a high-quality exchange is positively correlated with leader-member's mutual trust, respect, loyalty, interactions, rewards, cooperation, strong influence, and reciprocal support (Dienesch and Liden, 1986; Graen and Scandura, 1987).

The Leader-Member Exchange Theory is also heavily dependent on the upward influence of the supervisors to their immediate superiors. If the supervisors also have

positive and supportive relationships with their own superiors, the supervisors are then able to obtain resources. These financial and positional resources, in turn, establish the supervisor's own influence by providing these exchanges to their own subordinates (Graen and Scandura 1987; Green et al., 1996). These resources can be in the form of extra funding on a project or more latitude on assigned tasks. So, due to the hierarchical structure of the organization, the supervisors are now in a position to distribute financial resources within their unit, and likewise, now have the power to provide opportunities and rewards (better training, favorable performance ratings, "mentoring" for advancement) to their own subordinates (Graen and Schiemann, 1978; Sparrowe and Liden, 1997). Correspondingly, the exchange also benefits the supervisors in terms of favorable reports of supervisor effectiveness and positive performance ratings by their subordinates (Deluga and Perry, 1994). Deluga (1998) further clarifies the notion of how high-quality subordinates obtain their influence. He theorizes subordinates seek out the advice of their supervisor who provides the necessary guidance on performance expectations. With this knowledge, the subordinates are then motivated to act according to the cues of the supervisor who, in turn, provides positive feedback to these subordinates. The subordinates are now in-group

members, enjoying high-quality relationships with the supervisor. Thus, the subordinates' stature is enhanced by acting in tandem with the supervisor's role expectations (Dansereau *et al.*, 1975; Graen and Cashman, 1975; Liden and Graen, 1980).

As stated before, high-quality Leader-Member Exchange is characterized by mutual trust, respect, support, reciprocal influence, and shared obligations. There is an implied supervisor-subordinate interdependency for goal attainment. Managers treat their in-group members as "trusted assistants" or cadre, who perform their job beyond role expectations. This is in contrast with the out-group members who are basically equivalent to "hired hands" whose job compliance is limited to the formally defined in-role requirements (Dansereau *et al.*, 1975; Graen and Cashman, 1975; Graen and Uhl-Bien, 1995; Liden and Graen, 1980).

Determinants of Leader Member Exchange

A wealth of empirical research reveals a variety of predictors of Leader-Member Exchange. These research studies evaluate the source of the exchange (*i.e.*, member, leader, and interactional variables) and the antecedents of the exchange. The types of member antecedents are performance, belief in company paternalism, personality (affectivity, locus of control), and upward influence.

Leader antecedents are ability and affectivity (liking, perceived similarity). Lastly, the antecedents of interactional variables are demographic similarity, expectations, liking, and personality similarity (Liden, Sparrowe, & Wayne, 1997).

A stream of research supports the positive relationship between Leader-Member Exchange and member performance. A longitudinal design analysis by Bauer and Green (1996) finds supervisor's rating of their subordinates' performance or competence is positively connected with high level of positive interaction. This is consistent with the Liden et al. (1993) study of the positive relationship between Leader-Member Exchange and subordinates' elevated performance. The same is true with Wayne and Ferris's (1990) laboratory findings of member performance as an important antecedent of Leader-Member Exchange.

Wayne and Ferris (1990) find there is a relationship between subordinates' influence tactics and the level of exchange. Subordinates exhibit behavior intended to ingratiate them to their supervisor, such as being agreeable, not raising objections, etc. Results suggest this type of behavior produces a greater quality of Leader-Member Exchange ($R^2 = 0.62$) rewards in the form of favorable performance ratings ($R^2 = 0.64$) and being liked by the supervisor ($R^2 = 0.50$). These results are confirmed by

later findings from Deluga and Perry (1994) in their field study of 152 dyads of employed graduate and undergraduate evening students and their supervisors in a small Northeastern college. Deluga and Perry (1994) also discover subordinates reciprocate by providing positive evaluation and high performance ratings of their supervisor.

Additionally, there is a correlation between supervisor-subordinate positive affectivity (liking), perceived similarity, expectations, and Leader-Member Exchange (Bauer and Green, 1996; Dockery and Steiner, 1990; Liden *et al.*, 1993; Wayne and Ferris, 1990; Wayne, Shore, & Liden, 1997).

While Kinicki and Vecchio (1994) suggest supervisor and subordinate locus of control similarity predicts high-quality Leader-Member Exchange, Phillips and Bedeian (1994) find no support in their field study of 84 registered nurses and their immediate supervisors. Likewise, McClane (1991) concludes there is no correlation between employees' and supervisors' locus of control similarity and Leader-Member Exchange in a laboratory setting.

However, Phillips and Bedeian (1994) suggest there is positive agreement between Leader-Member Exchange and supervisors' and subordinates' attitudinal similarity (introversion or extroversion personality).

Furthermore, upward influence is negatively related to subordinate reports of Leader-Member Exchange (Deluga and Perry, 1991). Similarly, supervisor reports of negative relations between subordinate's upward influence and the quality of Leader-Member Exchange (Dockery and Steiner, 1990).

In addition, a team of researchers (Uhl-Bien, Tierney, Graen, & Wakabayashi, 1990) confirms the positive correlation between Leader-Member Exchange and members' belief in company paternalism in their research of a different corporate culture (a field study of 1075 line managers from five major companies in Japan).

Moreover, Duchon, Green, & Taber (1986) report a link between gender similarity and the quality exchange relationships between supervisors and subordinates. A study by Tsui & O'Reilly (1989) finds gender similarity is significantly related to performance ratings, perceived liking, and role expectations. However, the personal characteristic of gender and its direct effects on Leader-Member Exchange have not been widely researched (Larwood and Blackmore, 1978).

Consequences of Leader-Member Exchange

Considerable scientific support exists between the quality of Leader-Member Exchange and a variety of areas

affecting work outcomes, attitudes, and behaviors. Attitudinal variables are organizational commitment, overall job satisfaction, turnover intentions, belief in the supervisor's competence, promotions, satisfaction with supervision, and upward influence. Resultant outcomes of behavioral variables are organizational citizenship, performance, turnover, and innovation.

The Leader-Member Exchange research studies address many of the empirical issues of the quality of the relationships. An analysis by Steiner and Dobbins (1989) finds subordinate work values impact leaders' attributions (ability, effort, and luck) and, thus, the consequences (task assignment, negotiating latitude). Work-related values are defined as intrinsic (pride in work, job involvement) or extrinsic (social status, attitudes toward earning). Leaders credit past performance more to ability and effort rather than to luck or task easiness when the subordinates have high intrinsic and high extrinsic work values. As a result, leaders are more inclined to provide high intrinsic and high extrinsic subordinates with task assignments leading to promotability ($R^2 = 0.52$). Also, leaders allow the high intrinsic and high extrinsic subordinates more latitude in defining their roles ($R^2 = 0.17$). Because this study accounts for all four

attributes as dependent measures, the resulting correlations show a significant increase in the variance.

Moreover, research reports a relationship between in-group subordinates and positive job performance appraisals by their supervisors (Dansereau *et al.*, 1975; Duarte, Goodson, & Klich, 1993, 1994; Gerstner and Day, 1997; Graen and Ginsburg, 1977; Graen, Novak, & Sommerkamp, 1982; Liden and Graen, 1980; Scandura and Graen, 1984; Vecchio and Gobdel, 1984). In turn, the subordinates rate their supervisors favorably and report satisfaction with supervision (Dansereau *et al.*, 1975; Gerstner and Day, 1997; Graen and Ginsburg, 1977; Judge and Ferris, 1993; Vecchio and Gobdel, 1984).

Meanwhile, research on turnover shows a negative relationship between Leader Member Exchange and turnover. Literature reveals in-group subordinates are more likely to stay and have fewer turnover intentions (Dansereau *et al.*, 1975; Ferris, 1985; Gerstner and Day, 1997; Graen and Ginsburg, 1977; Graen, Liden, & Hoel, 1982; Liden and Maslyn, 1998; Major *et al.*, 1995). However, a field study by Vecchio (1985) of 45 bank tellers and their 12 branch managers fails to support this same conclusion.

Still, results of literature review on the relationship between Leader-Member Exchange and overall job satisfaction are mixed. Studies by Dansereau *et al.* (1975), Gerstner and

Day (1997), Graen, Liden, & Hoel (1982), and Scandura and Graen (1984) show a positive relationship between high-quality relationship and job satisfaction. Although, Graen and Ginsburg (1977), Liden and Graen (1980), and Vecchio and Gobdel (1984) find no correlation with overall job satisfaction.

The literature also supports the notion of positive association between Leader-Member Exchange and supervisors-subordinates agreement on the following dependent variables: Leader's support for innovation and innovative behavior (Scott and Bruce, 1994); Productivity (Graen, Novak, & Sommerkamp, 1982); Decision Influence (Scandura, Graen, & Novak, 1986); Job-Related Matters (Graen and Schiemann, 1978); Value Agreement (Graen and Schiemann, 1978; Kozlowski and Doherty, 1989); and Affective Commitment (Wayne, Shore, & Liden, 1997).

For this study, the research will analyze the relationship between the Leader-Member Exchange model of leadership and its influence on two individual outcomes: organizational commitment and organizational citizenship behavior.

Organizational Commitment

A diversity of definitions exists in the literature on the term organizational commitment. Mowday, Porter, &

Steers (1982) write there is disagreement in the literature on the construct definition of commitment. The issue is the classification of commitment either as attitude or behavior. Staw (1977) and Porter et al. (1974), as cited by Mowday et al. (1982), suggest the following differentiation of the term: attitudinal commitment is the employees' identification with the goals and values of the organization and desire for organizational membership. Whereas, behavioral commitment is the process by which employees become linked or bound to the organization due to past actions.

For this research effort, the focus is on employees' attitude towards the organization. Specifically, this study measures employees' attitudinal commitment to the organization as defined by Mowday et al. (1982), versus the organization's commitment to the employee or "perceived organizational support" (Wayne, Shore, & Liden, 1997).

Strong positive feelings towards and attachment to the organization characterizes employees' organizational commitment. This is in contrast with the behavioral definition of "taking certain action(s)." In their 1982 book, Employee-Organization Linkages, Mowday et al. suggest the following integrated definition of organizational commitment:

The relative strength of an individual's identification with and involvement in a particular

organization. Conceptually, it can be characterized by at least three factors: (a) a strong belief in and acceptance of the organization's goals and values; (b) a willingness to exert considerable effort on behalf of the organization; and (c) a strong desire to maintain membership in the organization (p. 27).

Mowday *et al.* (1982) believe commitment is the linkage between the employee and the organization. As such, they identify the following outcomes (consequences) of organizational commitment: absenteeism, job performance, tenure, tardiness, and turnover. These are the "hard" realities confronting business leaders, for these variables affect productivity and quality of output. Thus, in the highly competitive world of corporate America, it would seem important for management to understand the organizational commitment of their employees.

An early study by Porter *et al.* (1974) on the relationships between organizational commitment, job satisfaction and turnover, highlights the importance of commitment as a discriminant. In the longitudinal study among psychiatric technicians, organizational commitment is better in predicting turnover intentions than satisfaction in the job.

In reviewing the literature, there are consistent findings about the positive association between Leader-Member Exchange and organizational commitment (Duchon, *et al.*, 1986; Kinicki and Vecchio, 1994; Liden *et al.*, 1997;

Major *et al.*, 1995; Nystrom, 1990; Schriesheim *et al.*, 1992; Settoon *et al.*, 1996; Wayne *et al.*, 1997).

Kinicki and Vecchio (1994) find support for their hypothesis that the quality of supervisor-subordinate relations (Leader-Member Exchange) correlate positively with employee organizational commitment ($r=0.31$, $p \leq 0.01$). Their study of 138 bank employees and 24 branch managers used the seven-item version of the Leader-Member Exchange (LMX-7) Scale (Scandura and Graen, 1984), and Mowday, Porter, & Steers (1982) Organizational Commitment Questionnaire (OCQ). The following statements are examples of the OCQ: "I am proud to tell others that I am part of this organization; I really care about the fate of this organization; This organization really inspires the very best in me in the way of job performance."

Meanwhile, Schriesheim *et al.* (1992) develop and validate a new short form of Leader-Member Exchange 6-item Scale (LMX-6). The proposed scale shows a convergent and discriminant validity as a multidimensional Leader-Member Exchange construct. Their results indicate a correlation between Leader-Member Exchange, leadership, organizational commitment and satisfaction, with organizational commitment as a perceived contribution in the quality of the exchange.

Also, Green *et al.* (1996) find that a greater amount of satisfaction with working relationships (with supervisors

and coworkers) correlates with greater organizational commitment among 358 employees from 42 public libraries in a Midwestern regional library network. However, only partial support exists between Leader-Member Exchange and organizational commitment.

In addition, Dansereau, Graen, & Haga (1975) and Graen (1976) discover in-group members show commitment to the organization's missions and objectives, and go beyond what is normally expected in the formal job description in exchange for corresponding "positional" resources (*i.e.*, challenging projects, greater access to information). Thus, a member exhibits a greater sense of involvement in the organization's goals because of a personal vested interest in the organization's success (Dansereau, Graen, & Haga, 1975; Graen, 1976; Liden and Graen, 1980).

Organizational Citizenship Behavior

Smith, Organ, & Near (1983) report a two-dimensional model of organizational citizenship behavior: altruism and general compliance (also known as conscientiousness). Altruism is an individual's personal behavior, *e.g.*, being cooperative, helpful, and other instances of extra-role behavior (Smith, Organ, & Near, 1983). It is a behavior performed in helping a specific coworker, a customer or a supervisor, not normally expected of the employee since it

is not part of the employment contract. Examples are being accommodating to new employees, sitting-in for a sick coworker, or assisting supervisors and others. On the other hand, compliance is a behavior employees are expected to perform (e.g., arriving to work on time, not taking too many coffee breaks, taking only the required lunch time, or not leaving early). Studies by Farh, Podsakoff, & Organ (1990), Shore and Wayne (1993), and Wayne and Green (1993), support the two-factor structure of altruism and compliance.

Organ (1988) believes citizenship behaviors, although discretionary, are necessary because they promote effective functioning of the organization. Schnake (1991) and Smith et al. (1983) share this assumption. In addition, Podsakoff's et al. (1997) empirical research lend credence to Organ's (1988) assertion. In a study of 218 people working in a Northeast paper mill, Podsakoff et al. (1997) find a positive correlation between citizenship behavior and the organization's output. Citizenship behavior improves the effectiveness of the organization by the high degree of work group performance in terms of quantity and quality of work. Settoon et al. (1996) and Wayne et al. (1997) also provide empirical evidence of the relationship between Leader-Member Exchange and citizenship behavior. They postulate in-group members receive formal and informal rewards from their subordinates. In exchange, the members

seek out extra-role situations in the form of providing citizenship behavior to the supervisors who, in turn, give more reciprocal support and opportunities to the members. This cycle of "helping" behaviors for mutual attainment of goals helps further intensify the quality of the supervisor-subordinate exchange (Dansereau, Graen, & Haga, 1975; Scandura and Graen, 1984).

Likewise, a field study by Wayne and Green (1993) supports the relationship between Leader-Member Exchange and employee citizenship behavior, specifically as it relates to altruism. However, citizenship behavior of compliance is not linked.

Additionally, Deluga (1994) reports a positive relationship between employee organizational citizenship behavior and the quality of Leader-Member Exchange in a study of 86 subordinate-supervisor dyads from a highly diversified organizational sample (finance, medicine, law, retail, manufacturing, education).

Thus, Leader-Member Exchange is associated with organizational citizenship behavior (Deluga, 1994, 1998; Settoon, Bennett, & Liden, 1996; Wayne and Green, 1993; Wayne, Shore, & Liden, 1997). These studies examine the construct of citizenship behavior based on leader's reports.

However, Wayne and Green (1993) investigate the variable from the standpoint of the member rather than the

leader. This research will extend and build on Wayne and Green's (1993) work by examining the relationship between Leader-Member Exchange and the consequence of organizational citizenship behavior, with the member as the source.

Summary

This chapter examines the theoretical framework and empirical support of Leader-Member Exchange, namely role and social exchange theories. The literature reflects an interesting collection of the various antecedents and consequences of the Leader-Member Exchange Theory of leadership. Analytical review points out the characteristics of member, leader, and interactional variables. Similarly, attitudes and perceptions, behaviors, and organizational outcomes are closely studied. The body of literature supports Leader-Member Exchange Theory is positively related to organizational commitment and organizational citizenship behavior.

CHAPTER III

METHODOLOGY

Overview

The purpose of this chapter is to present the design of the study and the methodology used to assess the relationship between supervisors and their subordinates (a dyadic exchange), and subordinates' organizational commitment and organizational citizenship behavior. This chapter examines the variables utilized in the research design, re-states the research questions presented in Chapter I, and defines the null and alternate hypotheses. Also, this chapter explores the survey instruments' validity and reliability, describes the sample and the sampling method, reviews the procedures, and explains the data collection of the research. Likewise, this chapter also reports the pilot test results. Additionally, this chapter reviews the statistical techniques utilized in this study, and presents a preliminary data summary using appropriate statistical treatments to answer the research questions,

test the hypotheses, as well as establish the relationships of the hypotheses with the dependent variables (organizational commitment and citizenship behavior) and independent variable (Leader-Member Exchange).

Research Design

This study examines the relationship between the supervisor (Leader) and his or her subordinate (Member), and organizational commitment and organizational citizenship behavior in a highly specialized information technology solutions company in a Midwest state. Using survey data, this study investigates the research questions and extends the research of Wayne and Green (1993) by evaluating organizational citizenship behavior from the perception of the subordinate. The independent variable is the quality of Leader-Member Exchange. The two dependent variables are organizational commitment and organizational citizenship behavior. The instruments used are quantifiable. Three established instruments, namely the Leader-Member Exchange (LMX-7) Scale for Leader and Member, Organizational Commitment Questionnaire (OCQ), and the Organizational Citizenship Behavior (OCB) Scale, are used to collect data relevant to the research questions for use in testing for the hypothesized relationships.

Research Questions

This study answers the following research questions:

1. Is there a positive relationship between the quality of Leader-Member Exchange and organizational commitment?

2. Is there a positive relationship between the quality of Leader-Member Exchange and organizational citizenship behavior?

Hypotheses

This study answers the research questions by testing the following null and alternate hypotheses:

HO₁: There is no significant positive relationship between high-quality Leader-Member Exchange and high organizational commitment.

Ha₁: There is a significant positive relationship between high-quality Leader-Member Exchange and high organizational commitment.

HO₂: There is no significant positive relationship between high-quality Leader-Member Exchange and high organizational citizenship behavior.

Ha₂: There is a significant positive relationship between high-quality Leader-Member Exchange and high organizational citizenship behavior.

HO₃: There is no significant positive relationship between low-quality Leader-Member Exchange and low organizational commitment.

Ha₃: There is a significant positive relationship between low-quality Leader-Member Exchange and low organizational commitment.

HO₄: There is no significant positive relationship between low-quality Leader-Member Exchange and low organizational citizenship behavior.

Ha₄: There is a significant positive relationship between low-quality Leader-Member Exchange and low organizational citizenship behavior.

Hypotheses 1, 2, 3, and 4 are developed to investigate whether high-quality or low-quality Leader-Member Exchange subordinates report high or low organizational commitment and organizational citizenship behavior respectively.

Hypotheses 2 and 4 are based on the assumption presently articulated in Wayne and Green's (1993) research suggesting Leader-Member Exchange is positively related to organizational citizenship behavior. Wayne and Green (1993) report a significant relationship between Leader-Member Exchange and subordinates' organizational citizenship behavior, specifically, the altruism factor, where subordinates self-report their acts of citizenship behavior.

This is in contrast with other studies where supervisors themselves rate the organizational citizenship behaviors. These particular hypotheses have not been widely explored from the perspective of the subordinates since the majority of research to date has studied subordinates' citizenship behavior from the perceptions of the supervisors. In previous research, supervisors identify and report subordinates' instances or acts of helpful behavior (Deluga, 1994; Settoon, Bennett & Liden, 1996; Wayne, Shore & Liden, 1997).

Instruments

Three extensively pre-tested research instruments are used in the present study: the Leader-Member Exchange (LMX-7) Scale for Leaders and Members, Organizational Commitment Questionnaire (OCQ), and the Organizational Citizenship Behavior (OCB) Scale. Table 1 (page 48) is a summary of the instruments used in this study, listing the name of the instrument, a brief description of the measure, variable examined, and the source of data for this research.

Leader-Member Exchange (LMX-7) Scale

The LMX-7 Scale is designed to assess the quality of exchange relationship between a supervisor and his or her subordinates. The LMX-7 Scale is a standardized and

validated instrument by Scandura and Graen (1984). In their field experiment using controlled groups in pre- and post-leadership intervention treatments, the internal consistency reliability (Cronbach Alpha) for pre-intervention is .86 and for post-treatment is .84. The stability estimate of the scale (test/retest correlation) is .67. The LMX-7 Scale comes in two formats. The LMX-7 Leader Scale is designed to be filled out by the supervisor. The Leader Scale consists of seven questions (regarding the supervisor's relationship with his/her subordinates) on a 5-point multiple-choice response range tailored to each question. Likewise, the LMX-7 Member Scale consists of the same basic set of questions with the corresponding referent change to fit the subordinates as the respondents (subordinate rates his/her relationship with the supervisor) on a 4-point Likert response scale. Each of the responses are summed up to obtain an overall Leader-Member Exchange score with a possible range of scores from 7 (low) to 35 (high) for leader scores. For members, a score of 7 (low) to 28 (high), with high scores indicating high-quality Leader-Member Exchange relationships between the supervisors and the subordinates. In the Liden *et al.* (1997) meta-analysis review of 48 studies, 18 of the studies cited LMX-7 Scale as the instrument of choice to measure Leader-Member Exchange.

Permission to use the instrument for this study is granted by the first author (see Appendix A).

Organizational Commitment Questionnaire (OCQ)

The questionnaire, developed by Mowday, Porter, and Steers (1982), is designed to measure employees' commitment towards the organization. The OCQ is a 15-item measure with nine of the items positively worded and six of the items negatively phrased and reversed-scored. This study utilizes only the nine positively phrased and positively scored items from the Questionnaire. Settoon conducted a confirmatory factor analysis and arrived at the same conclusion that "several researchers have suggested that the six negatively keyed items measure an intent-to-quit factor (Carsten and Spector, 1987; Farkas and Tetrick, 1989; Michaels and Spector, 1982; Williams and Hazer, 1986)." Hence, this is the justification for using only the nine positively worded items rather than the full 15-item scale. The nine items used in this study are followed by a 7-point Likert-type scale with the following anchors: 1 = Strongly Disagree; 2 = Moderately disagree; 3 = Slightly Disagree; 4 = Neither Disagree nor agree; 5 = Slightly Agree; 6 = Moderately Agree; 7 = Strongly Agree. Responses are assigned a score ranging from 9 (indicates a member's low commitment to the organization) to 63 (indicates a member's high commitment).

The following six negatively worded items are not utilized in this study: "I feel very little loyalty to this organization; I could just as well be working for a different organization as long as the type of work was similar; It would take very little change in my present circumstances to cause me to leave this organization; There's not too much to be gained by sticking with this organization indefinitely; Often, I find it difficult to agree with this organization's policies on important matters relating to its employees; Deciding to work for this organization was a definite mistake on my part."

Based on the review of literature (Kinicki and Vecchio, 1994; Nystrom, 1990; Settoon, Bennett, & Liden, 1996), the OCQ is a widely used instrument for the measurement of employees' commitment (feelings of loyalty, attachment, and identification to the values and goals) towards the organization. Included in Appendix A is a letter of permission from one of the authors of the study to use the instrument for this research.

Organizational Citizenship Behavior (OCB) Scale

The instrument used in this study to measure organizational citizenship behavior is the OCB Scale. The 16-item scale, of which three items are negatively phrased and reversed-scored, was developed and validated by Smith,

Organ, and Near (1983). The three negatively phrased items are: "Takes undeserved breaks; Coasts towards the end of the day; Great deal of time spent with personal phone conversations." For this study, all 16-items will be used. Respondents indicate their agreement on each item using a 5-point Likert-type response range of 1 = Never; 2 = Seldom; 3 = Occasionally; 4 = Often; 5 = Almost Always. A high total score indicates a subordinate's high level of positive citizenship behaviors. Smith *et al.* (1983) report that the scale is a two-dimensional construct that measures the organizational citizenship behavior dimensions of altruism and generalized compliance or conscientiousness. Smith *et al.* (1983) define Altruistic behavior as "spontaneous charitable acts to specific others," *i.e.*, when an employee helps a co-worker with work-related tasks (Helps others who have been absent; Volunteers for things that are not required; Orients new people even though it is not required; Helps others who have heavy work loads; Assists supervisor with his or her work; Makes innovative suggestions to improve department), while general compliance or conscientiousness is defined as "impersonal prosocial conduct" (Punctuality; Attendance at work is above the norm; Gives advance notice if unable to come to work; Does not take unnecessary time off work; Does not take extra breaks; Does not spend time in idle conversations). According to

Smith *et al.* (1983), both dimensions "are either not required by law or are essentially unenforceable by the usual incentives or sanctions." The coefficient alpha reliability estimate for altruism is .88 and the coefficient alpha reliability estimate for generalized compliance citizenship behavior is .85. This instrument has been used in research by Schappe (1998); Wayne and Green (1993); and Wayne, Shore, & Liden (1997). The instrument is in public domain. One of the authors has given permission to use the instrument for this study (see Appendix A).

Table 1

Summary of Study Instruments

Name of Instrument	Description	Variable Examined	Source of Data
LMX-7 Scale for Supervisor (MLMX) (Scandura and Graen, 1984)	7 questions, designed for supervisors on a 5-point multiple choice range	Leader-Member Exchange	Supervisor evaluates relationship with his/her Subordinate (dyadic exchange)
LMX-7 Scale for Subordinate (ELMX) (Scandura and Graen, 1984)	7 questions, with subordinate as referent, on a 4-point scale	Leader-Member Exchange	Subordinate evaluates relationship with his/her Supervisor (dyadic exchange)
Organizational Commitment Questionnaire (OCQ) (Mowday <i>et al.</i> , 1982)	9 positively worded items, on a 7-point Likert-type scale	Organizational Commitment	Subordinate (self-reports)

Organizational Citizenship Behavior (OCB) Scale (Smith et al., 1983)	16 items - 3 negatively worded on a 5-point range with subscales: altruism (6-item) and Compliance (8-item)	Organizational Citizenship Behavior and the subscales of altruism and general compliance	Subordinate (self- reports)
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Pilot Test

A pre-test of the research questionnaire is administered to 10 randomly selected supervisors and their respective subordinates (dyads). The employees work in a Systems Program Office specializing in strategic planning in a government agency in the Midwest. The dyads are asked to meet with the researcher in the Department's Conference Room. The researcher administers the questionnaire to the sample on five different occasions due to schedule conflicts of the participants. The supervisors are given the LMX-7 Scale (Leader Form) to assess their relationship with their subordinates. Similarly, an LMX-7 Scale (Member Form), the Organizational Commitment Questionnaire, and the Organizational Citizenship Behavior Scale are given to the subordinates. The researcher times the respondents as they answered the questionnaire. The supervisor takes approximately one to two minutes and the subordinates six to ten minutes. At the end of each meeting with the dyads, the researcher asks the employees for feedback and to evaluate

the questionnaires for readability, accuracy, and ease of understanding the questionnaire's directions.

A majority of the dyads expressed concern to the researcher that the code list appears intrusive; that the information is an "identification." The subordinates express being uncomfortable in their self-reporting of organizational commitment and citizenship behaviors. As a result, the researcher decides to eliminate the demographic question of tenure in the company in the actual research sample. Also, some suggested changes, mainly in the format of the directions from the pre-test subjects, are incorporated into the actual survey. There are no modifications made to any of the survey instruments other than the elimination of the six negatively phrased questions on the Organizational Commitment Questionnaire. Results of the pilot test indicate statistically significant relationships between high-quality Leader-Member Exchange and high organizational commitment (H_{a1}), and high citizenship behavior (H_{a2}). Likewise, there is a statistically significant relationship between low-quality Leader-Member Exchange and low organizational commitment (H_{a3}), and low citizenship behaviors (H_{a4}). These significant relationships support the rejection of all the null hypotheses (H_{o1} , H_{o2} , H_{o3} , H_{o4}) and accept the alternative hypotheses (H_{a1} , H_{a2} , H_{a3} , H_{a4}). To test the

hypotheses, Pearson product moment correlation, regression analysis, F-Test, and two-tailed t tests are used. The results of the analysis are shown in Appendix H.

Sample

The sample for this study consists of 204 full-time employees in a highly specialized, information technology solutions company in a Midwest state. The company specializes in providing engineering, design, technical assistance, and systems and software information to various government agencies, private businesses, international companies, and the Department of Defense. The Personnel Department of the company approves the study and provides to the researcher a complete listing of all full-time, permanent employees. In addition, the survey site establishes a restriction to limit the supervisor's rating to a maximum of four of their subordinates. Supervisors who have only one to three subordinates are all selected. For the supervisors with more than four subordinates, a simple random sampling method is used to select the sample. The sample subjects in this study are 59 supervisors and their respective 162 subordinates. Of the 59 supervisors, 17 of them are randomly selected to also fill out the questionnaire as subordinates.

Procedures

One-week prior to the actual mailing of the questionnaires, an advance notice (Appendix B) on the nature and purpose of the study is mailed to all the prospective participants via the company's internal mail system. The letter to the sample states that participation in the study is completely voluntary and the study is for research purposes only. The letter also assures the sample that individual responses will be kept strictly confidential.

After one week, a separate cover letter for supervisors (Appendix C) and subordinates (Appendix D), which outlines the purpose and instructions of the survey and includes the actual questionnaires for supervisors (Appendix E) and subordinates (Appendix F), is distributed through the company's internal mail system. The cover letter asks the sample to return the questionnaires within two weeks after receipt of the materials. The cover letter also states that responses will not be reported, and only general group statistics will be presented. Moreover, the letter explains the code number on the survey is only to pair the responses between the supervisor and subordinate (dyad); however, anonymity is maintained because the researcher is the only one who will see the survey responses. A pre-addressed return envelope provided by and addressed to the researcher

is included in the questionnaire package for both supervisors and subordinates.

One week after mailing the questionnaire, a follow-up letter (Appendix G) is sent via the company's mail to thank the respondents for their participation and to remind those who have not participated to do so.

Data Collection

Survey questionnaires are collected from the identified sample (supervisors and subordinates). For the supervisors, a cover letter accompanies their LMX-7 Scale. Enclosed with the supervisor's survey is a code list with the corresponding name(s) of the employee(s), not to exceed four subordinates. The supervisors are asked to fill out the LMX-7 Scale to rate the quality of their relationships with the particular subordinate identified by the code number. The questionnaires are coded so that supervisor and subordinate responses are matched (paired dyads) for statistical analyses. The supervisor's questionnaire is two pages in length. The estimated completion time is approximately less than two minutes for each subordinate being rated.

The subordinates are also mailed a package, which consists of a similar cover letter. Attached to the subordinates' cover letter is a three-page questionnaire

that combines the Leader-Member Exchange (LMX-7) Scale, Organizational Commitment Questionnaire (OCQ), and Organizational Citizenship Behavior (OCB) Scale. Similarly, the subordinates are also asked to assess the quality of their relationships with their immediate supervisor using the LMX-7 Scale. In addition, subordinates are asked to indicate the frequency with which they demonstrate organizational commitment by answering the items of the Organizational Commitment Questionnaire (OCQ), and perform acts of organizational citizenship behaviors using the Organizational Citizenship Behavior (OCB) Scale. Each subordinate's survey is identified with a code number corresponding to the supervisor's code number. The estimated completion time of each subordinate's questionnaire is approximately less than ten minutes.

Table 2

Summary of Data Collection

Administered to Supervisor	Administered to Subordinate
Advance Notice (one week prior to administration of Questionnaire)	Advance Notice (one week prior to administration of Questionnaire)
Cover Letter	Cover Letter
LMX-7 Scale (fill out for each Subordinate - up to 4)	LMX-7 Scale
	Organizational Commitment Questionnaire
	Organizational Citizenship Behavior Scale
Follow-up Letter (one week after the administration of Questionnaire)	Follow-up Letter (one week after the administration of Questionnaire)

Data Analyses

This study is analyzed with the aid of Excel for Windows 98 software package and SAS for Windows, version 6.12. Prior to data analyses, raw data are screened to match supervisor and respective employee questionnaire (dyad). A survey distribution (questionnaires distributed, returned, unusable, total usable) is tallied and is discussed in Chapter IV.

The frequency, frequency percentages, mean, and standard deviation for each item of the instruments (LMX-7 Scale for Supervisors, LMX-7 Scale for Subordinates, Organizational Commitment Questionnaire, Organizational Citizenship Behavior Scale, and the subscales of altruism and general compliance) are calculated and reported. A total score (the sum of the items) for each of the instruments is also computed and shown in Chapter IV. Means, standard deviations, ranges (minimum and maximum), and distribution information are also calculated for these variables.

In addition, the internal consistency reliability estimates (Cronbach coefficient alpha) for each of the three instruments, the subscales of Organizational Citizenship Behavior Scale (altruism and general compliance factors), and the intercorrelations between the instruments are also computed and established for this study.

For research question number 1, a correlation analysis and simple Analysis of Variance (ANOVA) are used to determine whether significant relationships exist between the independent variable, Leader-Member Exchange, and the dependent variable organizational commitment. Likewise, to answer research question number 2, ANOVA is used to determine whether significant relationships exist between the independent variable, Leader-Member Exchange, and the dependent variable organizational citizenship behavior and its subscales: altruism and generalized compliance. The *F* test is used to test the hypothesized relationships for statistical significance. In addition, Pearson correlation coefficients are also computed to determine the strength of the relationships between Leader-Member Exchange, and organizational commitment, and citizenship behavior. A two-tailed test of significance is also computed to test whether the correlation coefficients are significantly different from zero. A criterion set for rejection of the null hypotheses is set at $\alpha < 0.05$ significance level.

Table 3 below is a summary of the data analyses showing the instruments used and the appropriate statistical methods to answer the research questions and test the null hypotheses in this study.

Table 3

Summary of Data Analyses

Research Questions	Null Hypotheses	Instruments	Statistical Treatments	Test Statistics	Variables (Indep/Dep)
Relationship between LMX and organizational commitment?	Ho ₁ and Ho ₃	LMX-7 Scale (ELMX) and (MLMX) and OCQ	Correlation Analysis and Analysis of Variance (ANOVA)	F test	LMX/ OC (QSCORE)
Relationship between LMX and organizational citizenship behavior?	Ho ₂ and Ho ₄	LMX-7 Scale (ELMX) and (MLMX) and OCB Scale	Analysis of Variance (ANOVA)	F test	LMX/ OCB (BTOTAL) and subscales: ALTRUISM COMPLNC

Summary

The purpose of the study is to examine the relationship between supervisors and their subordinates, and to measure subordinates' organizational commitment and organizational citizenship behavior. This chapter outlines the study's research design, reviews the research questions, and presents the supporting null and alternative hypotheses. It also discusses the variables of interest and explains the sample and the sampling method. The research sample is 59 supervisors and their respective 162 subordinates of a high technology company in the Midwest. The dyads are administered three widely used and established instruments, namely the Leader-Member Exchange (LMX-7) Scale, Organizational Commitment Questionnaire (OCQ), and Organizational Citizenship Behavior (OCB) Scale. In

addition, this chapter presents the results of the pilot study. It also reviews the procedures, and examines the data collection of the study. Moreover, this chapter discusses the appropriate statistical techniques and corresponding method of analyses, and describes the preliminary data processing. The research findings and statistical results of the study are presented in Chapter IV.

CHAPTER IV

ANALYSIS AND PRESENTATION OF FINDINGS

Response Rate

For supervisors who supervise one to three subordinates, all the subordinates are selected in the study. For supervisors who supervise more than four subordinates, a simple random sampling is used to determine a maximum of four subordinates per supervisor. Consequently, the researcher identified 162 subordinates to participate in the survey. There are 59 supervisors responsible for the 162 subordinates. All 59 supervisors are selected to participate in rating their respective subordinates ranging from one to a maximum of four subordinates. Of the 59 supervisors, 17 of them are randomly selected to also fill out a survey questionnaire as subordinates. A response rate of 57 percent is obtained from the subordinates. A response rate of 61 percent is obtained from the supervisors. The completed questionnaires are then paired between the subordinate's questionnaire and the correct supervisor's questionnaire to form a dyad. Of

the completed returned questionnaires, there are 126 usable matches or 63 dyads, yielding a response rate of 78 percent. In addition, there are 4 returned questionnaires (2 dyads) that matched but are unusable: a subordinate returned the survey but the supervisor returned a blank questionnaire; and two returned blank questionnaires, one with a note stating subordinate is no longer being supervised. There are 27 questionnaires returned by the subordinates with no supervisor matches, thus unusable. There are 30 questionnaires returned by the supervisors with no subordinate matches, thus unusable.

Descriptive Statistics

The frequency, frequency percentages, means, and standard deviations are calculated for the following scales and subscales used in this study:

Leader-Member Exchange (LMX-7) Scale

The Manager Leader-Member Exchange (MLMX) Scale for supervisors contains seven questions with 5-point Likert Scale multiple choice response range. The instrument is scored by summing up the responses for all questions. The range of the total score (MTOTAL) is 7 to 35. A higher score represents a more positive relationship with the subordinate, as perceived by the employee's manager.

A frequency and percentage distribution for MLMX Scale questions are presented below. The manager questions are labeled M1 through M7.

Table 4

Frequency and Frequency Percentages for MLMX Scale

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
<u>ML1</u>				
3	6	9.5	6	9.5
4	43	68.3	49	77.8
5	14	22.2	63	100.0
<u>ML2</u>				
1	1	1.6	1	1.6
2	4	6.3	5	7.9
3	23	36.5	28	44.4
4	27	42.9	55	87.3
5	8	12.7	63	100.0
<u>ML3</u>				
3	8	12.7	8	12.7
4	32	50.8	40	63.5
5	23	36.5	63	100.0
<u>ML4</u>				
2	2	3.2	2	3.2
3	7	11.1	9	14.3
4	19	30.2	28	44.4
5	35	55.6	63	100.0
<u>ML5</u>				
1	2	3.2	2	3.2
2	1	1.6	3	4.8
3	4	6.3	7	11.1
4	32	50.8	39	61.9
5	24	38.1	63	100.0
<u>ML6</u>				
3	7	11.1	7	11.1
4	32	50.8	39	61.9
5	24	38.1	63	100.0
<u>ML7</u>				
2	2	3.2	2	3.2
3	14	22.2	16	25.4
4	34	54.0	50	79.4
5	13	20.6	63	100.0

The Employee Leader-Member Exchange (ELMX) Scale for subordinates contains seven questions with 4-point Likert response format tailored to each question. The instrument is scored by summing up the responses for all questions.

The range of the total score (ETOTAL) is 7 to 28. A higher score represents a more positive relationship with the supervisor, as perceived by the employee.

Frequency and percentage distribution for ELMX Scale questions are presented below. The employee questions are labeled E1 through E7.

Table 5

Frequency and Frequency Percentages for ELMX Scale

	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Frequency</u>	<u>Cumulative Percent</u>
<u>EL1</u>				
1	1	1.6	1	1.6
2	6	9.5	7	11.1
3	40	63.5	47	74.6
4	16	25.4	63	100.0
<u>EL2</u>				
1	3	4.8	3	4.8
2	10	15.9	13	20.6
3	39	61.9	52	82.5
4	11	17.5	63	100.0
<u>EL3</u>				
2	8	12.7	8	12.7
3	23	36.5	31	49.2
4	32	50.8	63	100.0
<u>EL4</u>				
1	3	4.8	3	4.8
2	9	14.3	12	19.0
3	19	30.2	31	49.2
4	32	50.8	63	100.0
<u>EL5</u>				
1	4	6.3	4	6.3
2	16	25.4	20	31.7
3	25	39.7	45	71.4
4	18	28.6	63	100.0
<u>EL6</u>				
1	3	4.8	3	4.8
2	6	9.5	9	14.3
3	21	33.3	30	47.6
4	33	52.4	63	100.0
<u>EL7</u>				
1	2	3.2	2	3.2
2	13	20.6	15	23.8
3	28	44.4	43	68.3
4	20	31.7	63	100.0

The table below shows additional descriptive statistics, n, means, and standard deviations for LMX Scale questions.

Table 6

Summary Statistics for LMX Scale Questions and Totals

Variable	N	Mean	Std Dev
ML1	63	4.127	0.553
ML2	63	3.587	0.854
ML3	63	4.238	0.665
ML4	63	4.381	0.812
ML5	63	4.190	0.877
ML6	63	4.270	0.653
ML7	63	3.921	0.747
MTOTAL	63	28.714	3.289
EL1	63	3.127	0.635
EL2	63	2.921	0.725
EL3	63	3.381	0.705
EL4	63	3.270	0.884
EL5	63	2.905	0.893
EL6	63	3.333	0.842
EL7	63	3.048	0.812
ETOTAL	63	21.984	4.195

The range of the mean responses for the manager questions is 3.58 to 4.38. The average MTOTAL is 28.7.

The range of the mean responses for the employee questions is 2.9 to 3.3. The average ETOTAL is approximately 22, which is not within the range conventionally described as "high" (24 to 28).

Organizational Commitment Questionnaire (OCQ)

The OCQ contains nine questions with 7-point Likert Scale responses (strongly disagree (1), moderately disagree (2), slightly disagree (3), neither disagree nor agree

(4), slightly agree (5), moderately agree (6), strongly agree (7)). The instrument is scored by summing up responses for all questions (QTOTAL) and then dividing the number of questions (QSCORE) by 9 to derive a summary indicator of commitment. The possible range of QTOTAL is 9 to 63, and the possible range of QSCORE is 1 to 7. A higher score represents a higher degree of organizational commitment.

The frequency and percentage distribution for OCQ questions are presented in the table below.

Table 7

Frequency and Frequency Percentages for OCQ

	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Frequency</u>	<u>Cumulative Percent</u>
<u>OCQ1</u>				
1	1	1.6	1	1.6
2	1	1.6	2	3.2
3	1	1.6	3	4.8
4	3	4.8	6	9.5
5	7	11.1	13	20.6
6	28	44.4	41	65.1
7	22	34.9	63	100.0
<u>OCQ2</u>				
2	1	1.6	1	1.6
3	3	4.8	4	6.3
4	8	12.7	12	19.0
5	15	23.8	27	42.9
6	21	33.3	48	76.2
7	15	23.8	63	100.0
<u>OCQ3</u>				
1	13	20.6	13	20.6
2	3	4.8	16	25.4
3	13	20.6	29	46.0
4	8	12.7	37	58.7
5	14	22.2	51	81.0
6	7	11.1	58	92.1
7	5	7.9	63	100.0
<u>OCQ4</u>				
1	3	4.8	3	4.8
2	2	3.2	5	7.9
3	4	6.3	9	14.3

4	12	19.0	21	33.3
5	17	27.0	38	60.3
6	14	22.2	52	82.5
7	11	17.5	63	100.0
<u>OCQ5</u>				
2	2	3.2	2	3.2
3	1	1.6	3	4.8
4	4	6.3	7	11.1
5	15	23.8	22	34.9
6	23	36.5	45	71.4
7	18	28.6	63	100.0
<u>OCQ6</u>				
1	4	6.3	4	6.3
2	4	6.3	8	12.7
3	4	6.3	12	19.0
4	11	17.5	23	36.5
5	18	28.6	41	65.1
6	13	20.6	54	85.7
7	9	14.3	63	100.0
<u>OCQ7</u>				
2	1	1.6	1	1.6
4	15	23.8	16	25.4
5	8	12.7	24	38.1
6	19	30.2	43	68.3
7	20	31.7	63	100.0
<u>OCQ8</u>				
1	1	1.6	1	1.6
2	2	3.2	3	4.8
4	4	6.3	7	11.1
5	9	14.3	16	25.4
6	21	33.3	37	58.7
7	26	41.3	63	100.0
<u>OCQ9</u>				
1	4	6.3	4	6.3
3	4	6.3	8	12.7
4	14	22.2	22	34.9
5	17	27.0	39	61.9
6	16	25.4	55	87.3
7	8	12.7	63	100.0

The table below presents additional descriptive statistics, n, means, and standard deviations for OCQ questions.

Table 8

Summary Statistics for OCQ Questions and Total

Variable	N	Mean	Std Dev
OCQ1	63	5.952	1.211
OCQ2	63	5.540	1.216
OCQ3	63	3.762	1.907
OCQ4	63	4.968	1.565
OCQ5	63	5.746	1.177
OCQ6	63	4.746	1.665
OCQ7	63	5.651	1.246

OCQ8	63	5.937	1.318
OCQ9	63	4.905	1.510
QTOTAL	63	47.206	9.366
QSCORE	63	5.245	1.041

The range of mean responses for the OCQ is 3.76 to 5.95. The mean total and averaged score are 47.2 for QTOTAL and 5.2 for QSCORE.

Organizational Citizenship Behavior (OCB) Scale

The OCB Scale contains 16 questions with 5-point Likert Scale with the following anchors: never (1), seldom (2), occasionally (3), often (4), almost always (5). Responses for questions 4, 8 and 10 are reversed and the instrument is scored by summing up responses for all questions (BTOTAL). The possible range of BTOTAL is 16 to 80. A higher score represents a higher degree of organizational citizenship behavior.

The OCB Scale contains two subscales which describe unique attributes of organizational citizenship behavior: altruism and compliance. The altruism (ALTRUISM) subscale is calculated by summing up responses to questions 1, 3, 5, 7, 12 and 13 (range is 6 to 30). The compliance (COMPLNC) subscale is calculated by summing up responses to questions 2, 4 (reversed), 6, 9, 10 (reversed), 11, 14 and 16 (range is 8 to 40).

The frequency and percentage distribution for OCB Scale questions are presented below.

Table 9

Frequency and Frequency Percentages for OCB Scale

	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Frequency</u>	<u>Cumulative Percent</u>
<u>OCB1</u>				
1	1	1.6	1	1.6
3	14	22.2	15	23.8
4	20	31.7	35	55.6
5	28	44.4	63	100.0
<u>OCB2</u>				
2	3	4.8	3	4.8
3	9	14.3	12	19.0
4	14	22.2	26	41.3
5	37	58.7	63	100.0
<u>OCB3</u>				
1	1	1.6	1	1.6
2	2	3.2	3	4.8
3	19	30.2	22	34.9
4	21	33.3	43	68.3
5	20	31.7	63	100.0
<u>OCB4</u>				
1	23	36.5	23	36.5
2	26	41.3	49	77.8
3	12	19.0	61	96.8
4	1	1.6	62	98.4
5	1	1.6	63	100.0
<u>OCB5</u>				
2	5	7.9	5	7.9
3	21	33.3	26	41.3
4	22	34.9	48	76.2
5	15	23.8	63	100.0
<u>OCB6</u>				
1	1	1.6	1	1.6
3	9	14.3	10	15.9
4	17	27.0	27	42.9
5	36	57.1	63	100.0
<u>OCB7</u>				
3	19	30.2	19	30.2
4	28	44.4	47	74.6
5	16	25.4	63	100.0
<u>OCB8</u>				
1	11	17.5	11	17.5
2	39	61.9	50	79.4
3	12	19.0	62	98.4
4	1	1.6	63	100.0
<u>OCB9</u>				
1	1	1.6	1	1.6
2	1	1.6	2	3.2
4	15	23.8	17	27.0
5	46	73.0	63	100.0
<u>OCB10</u>				
1	17	27.0	17	27.0
2	44	69.8	61	96.8
3	2	3.2	63	100.0

<u>OCB11</u>				
1	13	20.6	13	20.6
2	18	28.6	31	49.2
3	4	6.3	35	55.6
4	10	15.9	45	71.4
5	18	28.6	63	100.0
<u>OCB12</u>				
1	1	1.6	1	1.6
2	8	12.7	9	14.3
3	25	39.7	34	54.0
4	16	25.4	50	79.4
5	13	20.6	63	100.0
<u>OCB13</u>				
1	1	1.6	1	1.6
2	4	6.3	5	7.9
3	25	39.7	30	47.6
4	21	33.3	51	81.0
5	12	19.0	63	100.0
<u>OCB14</u>				
1	15	23.8	15	23.8
2	13	20.6	28	44.4
3	9	14.3	37	58.7
4	11	17.5	48	76.2
5	15	23.8	63	100.0
<u>OCB15</u>				
1	6	9.7	6	9.7
2	11	17.7	17	27.4
3	26	41.9	43	69.4
4	8	12.9	51	82.3
5	11	17.7	62	100.0
Frequency Missing = 1				
<u>OCB16</u>				
2	19	30.6	19	30.6
3	25	40.3	44	71.0
4	12	19.4	56	90.3
5	6	9.7	62	100.0
Frequency Missing = 1				
<u>OCB4R</u>				
1	1	1.6	1	1.6
2	1	1.6	2	3.2
3	12	19.0	14	22.2
4	26	41.3	40	63.5
5	23	36.5	63	100.0
<u>OCB8R</u>				
2	1	1.6	1	1.6
3	12	19.0	13	20.6
4	39	61.9	52	82.5
5	11	17.5	63	100.0
<u>OCB10R</u>				
3	2	3.2	2	3.2
4	44	69.8	46	73.0
5	17	27.0	63	100.0

Additional descriptive statistics, n, means, and standard deviations for OCB Scale questions are presented in the table below.

Table 10

Summary Statistics for OCB Scale Questions and Totals

Variable	N	Mean	Std Dev
OCB1	63	4.175	0.890
OCB2	63	4.349	0.901
OCB3	63	3.905	0.946
OCB4R	63	4.095	0.875
OCB5	63	3.746	0.915
OCB6	63	4.381	0.851
OCB7	63	3.952	0.750
OCB8R	63	3.952	0.658
OCB9	63	4.651	0.722
OCB10R	63	4.238	0.499
OCB11	63	3.032	1.565
OCB12	63	3.508	1.014
OCB13	63	3.619	0.923
OCB14	63	2.968	1.524
OCB15	62	3.113	1.189
OCB16	62	3.081	0.946
ALTRUISM	63	22.905	3.622
COMPLNC	63	30.746	4.337
BTOTAL	63	60.667	7.007

The range of mean responses for the OCB is 2.9 to 4.6. The mean total is 60.6. The mean for the altruism subscale is 22.9 and the mean for the compliance subscale is 30.75.

Additional detailed distribution information is provided for all calculated variables in Appendix I. Also presented in Appendix I are the means, standard deviations, quartile and interquartile range, min, max, median, mode, and tests for normality for total variables.

Internal Consistency

Cronbach's Coefficient Alpha measures internal consistency and reliability. This identifies the correlation between items and assesses the degree to which the items on a questionnaire are all measuring the same underlying concept. In this study, the statistic of interest is the coefficient alpha for raw variables. The interpretation is that a coefficient alpha of greater than or equal to 0.70 indicates the questionnaire items demonstrate a high degree of internal consistency.

As shown in the following tables below, the coefficient alphas for the MLMX (alpha = 0.747), ELMX (alpha = 0.877), OCQ (alpha = 0.884), OCB (alpha = 0.718) and ALTRUISM (alpha = 0.746) all demonstrate a high level of internal consistency and reliability, with the exception of the OCB subscale, COMPLNC (alpha = 0.560).

Table 11

Test of Internal Consistency and Reliability for MLMX Total

Correlation Analysis Cronbach Coefficient Alpha				
		for RAW variables	:	0.747082
		for STANDARDIZED variables:		0.758514
		Raw Variables		Std. Variables
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
ML1	0.459883	0.721340	0.468492	0.730612
ML2	0.482201	0.713027	0.490483	0.725882
ML3	0.527482	0.704341	0.533083	0.716590
ML4	0.407928	0.730283	0.386929	0.747769
ML5	0.356557	0.746101	0.346170	0.756117
ML6	0.476366	0.714955	0.486958	0.726643
ML7	0.595782	0.685816	0.626809	0.695543

Table 12

Test of Internal Consistency and Reliability for
ELMX Total

Correlation Analysis Cronbach Coefficient Alpha				
		for RAW variables		: 0.876714
		for STANDARDIZED variables:		0.878970
Raw Variables			Std. Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
EL1	0.532767	0.873859	0.544336	0.876419
EL2	0.695040	0.855018	0.707204	0.855790
EL3	0.715149	0.853050	0.716726	0.854547
EL4	0.667029	0.858589	0.651280	0.863009
EL5	0.634736	0.863476	0.618665	0.867153
EL6	0.663397	0.858568	0.656068	0.862396
EL7	0.731266	0.849198	0.747961	0.850438

Table 13

Test of Internal Consistency and Reliability for OCQ Total

Correlation Analysis Cronbach Coefficient Alpha				
		for RAW variables		: 0.884366
		for STANDARDIZED variables:		0.891942
Raw Variables			Std. Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
OCQ1	0.523362	0.880192	0.528360	0.889560
OCQ2	0.710654	0.867030	0.721597	0.874153
OCQ3	0.487574	0.891121	0.480486	0.893244
OCQ4	0.655048	0.869975	0.663249	0.878896
OCQ5	0.694464	0.868626	0.704440	0.875556
OCQ6	0.794676	0.856453	0.790529	0.868445
OCQ7	0.591989	0.875315	0.600072	0.883943
OCQ8	0.725580	0.864812	0.725548	0.873829
OCQ9	0.645419	0.870727	0.638237	0.880905

Table 14

Test of Internal Consistency and Reliability for OCB Total

Correlation Analysis Cronbach Coefficient Alpha				
		for RAW variables		: 0.717651
		for STANDARDIZED variables:		0.735603
Raw Variables			Std. Variables	

Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
OCB1	0.385082	0.697191	0.416031	0.714057
OCB2	0.408011	0.695508	0.449883	0.710644
OCB3	0.498206	0.684683	0.527225	0.702728
OCB4R	0.193010	0.714956	0.250571	0.730291
OCB5	0.460175	0.689241	0.467625	0.708842
OCB6	0.449422	0.694211	0.489031	0.706658
OCB7	0.351778	0.702083	0.392219	0.716439
OCB8R	0.332891	0.704778	0.355774	0.720054
OCB9	0.238379	0.711191	0.235101	0.731772
OCB10R	-0.042019	0.726453	-0.029758	0.756154
OCB11	0.212669	0.728586	0.171970	0.737748
OCB12	0.305738	0.704957	0.327600	0.722825
OCB13	0.473736	0.687627	0.483357	0.707238
OCB14	0.282507	0.715797	0.246549	0.730677
OCB15	0.358460	0.699103	0.342541	0.721358
OCB16	0.258298	0.709766	0.159022	0.738961

Table 15

Test of Internal Consistency and Reliability for OCB - Altruism Subscale

Correlation Analysis				
Cronbach Coefficient Alpha				
		for RAW variables		: 0.745767
		for STANDARDIZED variables:		0.745820
		Raw Variables	Std. Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
OCB1	0.412431	0.728522	0.411594	0.729211
OCB3	0.616194	0.669862	0.615734	0.671555
OCB5	0.411676	0.729242	0.415748	0.728094
OCB7	0.431258	0.723984	0.432070	0.723681
OCB12	0.468042	0.715576	0.464880	0.714704
OCB13	0.573135	0.683587	0.566860	0.685876

Table 16

Test of Internal Consistency and Reliability for OCB - Compliance Subscale

Correlation Analysis				
Cronbach Coefficient Alpha				
		for RAW variables		: 0.560479
		for STANDARDIZED variables:		0.539946
		Raw Variables	Std. Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
OCB2	0.391897	0.494182	0.486659	0.420479
OCB4R	0.078582	0.576481	0.119985	0.552155
OCB6	0.282392	0.528403	0.363443	0.467482

OCB9	0.192014	0.549446	0.198630	0.525954
OCB10R	-0.009363	0.581498	-0.003728	0.591249
OCB11	0.381043	0.488001	0.301671	0.489975
OCB14	0.391874	0.480201	0.344140	0.474586
OCB16	0.432631	0.475711	0.271185	0.500818

Hypotheses Testing

Correlation Analysis, Analysis of Variance (ANOVA) and F test for correlated means at the $p < .05$ significance level are performed to answer the research questions and test the hypotheses in this study.

Research Question 1

Is there a positive relationship between the quality of Leader-Member Exchange and organizational commitment?

The null hypotheses being tested to examine this relationship are:

Ho₁: There is no significant positive relationship between high-quality Leader-Member Exchange and high organizational commitment.

Ho₃: There is no significant positive relationship between low-quality Leader-Member Exchange and low organizational commitment.

The quality of LMX is defined as "high" when the total (sum) score for MLMX (MTOTAL) and the ELMX (ETOTAL) are both greater than or equal to 24. Otherwise, the quality of the LMX is defined as "low." Since MTOTAL (range 7 to 35) and

ETOTAL (range 7 to 28) have dissimilar scales, this analysis takes into account the disparate ranges of the scale and the correlation between QSCORE (organizational commitment questions) and ETOTAL. A new variable, LMX1, is the mean of MTOTAL and ETOTAL.

Table 17

Correlation between QScore and LMX, MTOTAL and ETOTAL

High-quality defined as MTOTAL ge 24 and ETOTAL ge 24						
Correlation Analysis						
			3 'WITH' Variables:	LMX	MTOTAL	ETOTAL
			1 'VAR' Variables:	QSCORE		
Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
LMX	63	0.36508	0.48532	23.00000	0	1.00000
MTOTAL	63	28.71429	3.28942	1809.00000	21.00000	35.00000
ETOTAL	63	21.98413	4.19482	1385.00000	9.00000	28.00000
QSCORE	63	5.24515	1.04062	330.44444	2.55556	7.00000
Pearson Correlation Coefficients / Prob > R under Ho: Rho=0 / N = 63						
				QSCORE		
				LMX	0.07187	0.5756
				MTOTAL	-0.11323	0.3769
				ETOTAL	0.35233	0.0046

Thus, high-quality LMX is defined as LMX1 greater than or equal to 24, low-quality is defined as LMX1 less than or equal to 23.

Table 18

LMX1: Mean of MTOTAL and ETOTAL

Variable=LMX1		Moments		Quantiles (Def=5)			
N	63	Sum Wgts	63	100% Max	31	99%	31
Mean	25.34921	Sum	1597	75% Q3	27.5	95%	29.5
Std Dev	2.896932	Variance	8.392217	50% Med	25.5	90%	29
Skewness	-0.6321	Kurtosis	0.891626	25% Q1	23.5	10%	21.5
USS	41003	CSS	520.3175	0% Min	15.5	5%	20.5
CV	11.4281	Std Mean	0.364979			1%	15.5
T:Mean=0	69.45384	Pr> T	0.0001	Range			15.5
Num ^= 0	63	Num > 0	63	Q3-Q1			4
M(Sign)	31.5	Pr>= M	0.0001	Mode			24.5
Sgn Rank	1008	Pr>= S	0.0001				
<u>Extremes</u>							
		Lowest	Obs	Highest	Obs		
		15.5	(12)	29	(59)		
		19.5	(2)	29.5	(14)		
		20.5	(58)	29.5	(45)		
		20.5	(46)	29.5	(48)		
		21	(28)	31	(15)		

This has the advantage of putting the weight of disparate ranges on the significantly correlated variable and uses a conventional cutoff rather than a data driven cutoff. The ANOVA table (results) for this analysis is below.

Table 19

Analysis of Variance for Leader-Member Exchange and Organizational Commitment

General Linear Models Procedure					
Dependent Variable: QSCORE					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	4.39942304	4.39942304	4.28	0.0429
Error	61	62.74029870	1.02852949		
CorrtdTotl	62	67.13972173			
R-Square		C.V.	Root MSE	QSCORE Mean	
0.065526		19.33528	1.01416443	5.24514941	
Source	DF	Type I SSS	Mean Square	F Value	Pr > F
LMX	1	4.39942304	4.39942304	4.28	0.0429
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LMX	1	4.39942304	4.39942304	4.28	0.0429

The p value (0.0429) shows there is sufficient evidence in this study to indicate a significant relationship between quality of LMX and organizational commitment. The result of this research is consistent with the findings of some past studies (Duchon et al., 1986; Kinicki and Vecchio, 1994; Nystrom, 1990).

Table 20

Test for Variable: QSCORE

General Linear Models Procedure Least Squares Means					
	LMX	QSCORE LSMEAN	Pr > T	H0: LSMEAN1=LSMEAN2	
	0	4.81045752	0.0429		
	1	5.40579710			
Tukey's Studentized Range (HSD) Test for variable: QSCORE					
NOTE: This test controls the type I experimentwise error rate.					
Alpha= 0.05 Confidence= 0.95 df= 61 MSE= 1.028529					
Critical Value of Studentized Range= 2.828					
Comparisons significant at the 0.05 level are indicated by '***'.					
	LMX Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit	
1	- 0	0.0197	0.5953	1.1710	***
0	- 1	-1.1710	-0.5953	-0.0197	***

The mean QSCORE for low-quality LMX is 4.81; the mean for the high-quality LMX is 5.41. The difference between these means, 0.59 (95 percent confidence interval [0.02, 1.17]), indicates with 95 percent confidence that, on average, those individuals with high level of LMX scored between 0.2 and 1.17 points higher on the QSCORE than those with low LMX.

Table 20 shows the results of the hypothesis testing the relationship between LMX and commitment. The criterion set for rejection of the null hypotheses is $p < 0.05$. Since the p value is 0.0429, therefore, null hypotheses H_{01} and H_{03} are rejected.

Research Question 2

Is there a positive relationship between the quality of Leader-Member Exchange and organizational citizenship behavior?

The null hypotheses being tested to examine this relationship are:

H_{02} : There is no significant positive relationship between high-quality Leader-Member Exchange and high organizational citizenship behavior.

H_{04} : There is no significant positive relationship between low-quality Leader-Member Exchange and low organizational citizenship behavior.

To answer research question number 2, high-quality LMX is defined as LMX1 greater than or equal to 24, the mean of MTOTAL and ETOTAL, and low-quality is defined as LMX1 less than or equal to 23.

The ANOVA results for these univariate analyses are presented below.

Table 21

Analysis of Variance for Leader-Member Exchange and
Organizational Citizenship Behavior

General Linear Models Procedure					
Dependent Variable: BTOTAL					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	246.66496164	246.66496164	5.38	0.0237
Error	61	2797.33503836	45.85795145		
CorrtdTotl	62	3044.00000000			
R-Square		C.V.	Root MSE	BTOTAL Mean	
0.081033		11.16239	6.77184993	60.66666667	
Source	DF	Type I SS	Mean Square	F Value	Pr > F
LMX	1	246.66496164	246.66496164	5.38	0.0237
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LMX	1	246.66496164	246.66496164	5.38	0.0237

The p value (0.0237) for the dependent variable BTOTAL shows there is sufficient evidence in this study to indicate a significant relationship between quality of LMX and overall organizational citizenship behavior.

Table 22

Test for Variable: BTOTAL

General Linear Models Procedure				
Least Squares Means				
LMX	BTOTAL LSMEAN	Pr > T HO: LSMEAN1=LSMEAN2		
0	57.4117647	0.0237		
1	61.8695652			
Tukey's Studentized Range (HSD) Test for variable: BTOTAL				
NOTE: This test controls the type I experimentwise error rate.				
Alpha= 0.05 Confidence= 0.95 df= 61 MSE= 45.85795				
Critical Value of Studentized Range= 2.828				
Comparisons significant at the 0.05 level are indicated by '***'.				
LMX Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit	
1 - 0	0.614	4.458	8.301	***
0 - 1	-8.301	-4.458	-0.614	***

The mean BTOTAL for low-quality LMX is 57.41; the mean for the high-quality LMX is 61.87. The difference between these means, 4.46 (95 percent confidence interval [0.61, 8.30]), indicates with 95 percent confidence that, on average, those individuals with high-quality LMX scored between 0.6 and 8.3 points higher on the OCB than those with low-quality LMX.

Table 23

Analysis of Variance for LMX and OCB (ALTRUISM)

General Linear Models Procedure					
Dependent Variable: ALTRUISM					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	100.84928754	100.84928754	8.63	0.0047
Error	61	712.57928389	11.68162760		
CorrtdTotl	62	813.42857143			
R-Square		C.V.	Root MSE	ALTRUISM Mean	
0.123981		14.92196	3.41783961	22.90476190	
Source	DF	Type I SS	Mean Square	F Value	Pr > F
LMX	1	100.84928754	100.84928754	8.63	0.0047
Source	DF	Type III SS	Mean Square	F Value	Pr > F
LMX	1	100.84928754	100.84928754	8.63	0.0047

The p value (0.0047) for the dependent variable ALTRUISM shows there is sufficient evidence in this study to indicate a significant relationship between quality of LMX and altruistic citizenship behavior.

Table 24

Test for Variable: ALTRUISM

General Linear Models Procedure					
Least Squares Means					
LMX	ALTRUISM LSMEAN	Pr > T H0: LSMEAN1=LSMEAN2			
0	20.8235294	0.0047			
1	23.6739130				
Tukey's Studentized Range (HSD) Test for variable: ALTRUISM					
NOTE: This test controls the type I experimentwise error rate.					
Alpha= 0.05 Confidence= 0.95 df= 61 MSE= 11.68163					
Critical Value of Studentized Range= 2.828					
Comparisons significant at the 0.05 level are indicated by '***'.					
LMX Comparison		Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit	
1 - 0		0.9105	2.8504	4.7903	***
0 - 1		-4.7903	-2.8504	-0.9105	***

The mean ALTRUISM score for low-quality LMX is 20.82; the mean for the high-quality LMX is 23.67. The difference between these means, 2.85 (95 percent confidence interval [0.91, 4.79]), indicates with 95 percent confidence that, on average, those individuals with high-quality LMX scored between 0.9 and 4.8 points higher on the altruism subscale of the OCB than those with low-quality LMX.

Table 25

Analysis of Variance for LMX and OCB (COMPLNC)

General Linear Models Procedure					
Dependent Variable: COMPLNC					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	22.42116267	22.42116267	1.20	0.2784
Error	61	1143.51534527	18.74615320		
CorrtdTotl	62	1165.93650794			
R-Square		C.V.	Root MSE	COMPLNC Mean	
0.019230		14.08209	4.32968281	30.74603175	

Source	DF	Type I SS	Mean Square	F Value	Pr > F
LMX	1	22.42116267	22.42116267	1.20	0.2784

Source	DF	Type III SS	Mean Square	F Value	Pr > F
LMX	1	22.42116267	22.42116267	1.20	0.2784

The p value (0.2784) for the dependent variable COMPLNC shows there is no sufficient evidence in this study to indicate significant relationship between quality of LMX and compliant organizational citizenship behavior.

Table 26

Test for Variable: COMPLNC

General Linear Models Procedure		
Least Squares Means		
LMX	COMPLNC LSMEAN	Pr > /T/ HO: LSMEAN1=LSMEAN2
0	29.7647059	0.2784
1	31.1086957	

Tukey's Studentized Range (HSD) Test for variable: COMPLNC
NOTE: This test controls the type I experimentwise error rate.
Alpha= 0.05 Confidence= 0.95 df= 61 MSE= 18.74615
Critical Value of Studentized Range= 2.828
Comparisons significant at the 0.05 level are indicated by '****'.

LMX Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
1 - 0	-1.1135	1.3440	3.8014
0 - 1	-3.8014	-1.3440	1.1135

The criterion set for rejection of the null hypothesis is $p < 0.05$. Since the p value is 0.0237 for the dependent variable BTOTAL (organizational citizenship behavior), therefore, null hypotheses Ho2 and Ho4 are rejected. Since the p value for the dependent variable ALTRUISM is 0.0047, the results lend partial support for the altruism subscale.

However, since the p value for the dependent variable COMPLNC is 0.2784, the findings fail to support the compliance subscale, thus providing corroborative evidence to the results of Wayne and Green (1993) study.

Alternative Hypotheses

The probability value of the study meets the criterion for statistical significance. Therefore, the null hypotheses are rejected in support of the following research hypotheses:

Ha₁: There is a significant positive relationship between high-quality Leader-Member Exchange and high organizational commitment.

Ha₂: There is a significant positive relationship between high-quality Leader-Member Exchange and high organizational citizenship behavior.

Ha₃: There is a significant positive relationship between low-quality Leader-Member Exchange and low organizational commitment.

Ha₄: There is a significant positive relationship between low-quality Leader-Member Exchange and low organizational citizenship behavior.

Summary

Descriptive statistics of the measures, internal consistency and reliability of the scales and subscales, hypotheses testing, and statistical analyses findings are presented in this chapter. The study rejects the null hypotheses and supports the alternative hypotheses. Correlation analysis and Analysis of Variance indicate a statistically significant relationship between the quality of Leader-Member Exchange and commitment, as other research has concluded same (Duchon et al., 1986; Kinicki and Vecchio, 1994; Nystrom, 1990; Settoon, Bennett, & Liden, 1996). The study also finds a statistically significant relationship between the level of quality of Leader-Member Exchange (LMX) and citizenship behavior (Wayne and Green, 1993; and Wayne, Shore, & Liden, 1997). One subscale of citizenship behavior, altruism, is significantly related to LMX, while the other subscale, compliance, is not significantly related (Wayne and Green, 1993). Chapter V presents the overview of significant findings, implications of the results, limitations, suggestions for future research, and conclusions from the data analyses.

CHAPTER V

SUMMARY AND CONCLUSIONS

Overview of Significant Findings

Research is conducted with 204 employees of an information systems provider based in the Midwest to determine whether relationships exist between Leader-Member Exchange (LMX) and organizational commitment. In addition, the study examines the relationships between Leader-Member Exchange and citizenship behavior. The sample is administered with three survey instruments: Leader-Member Exchange (LMX-7) Scale, Organizational Commitment Questionnaire, and Organizational Citizenship Behavior Scale. The questionnaires are paired between a supervisor and subordinate to form a dyad (an exchange relationship). There are 126 usable questionnaires of matched supervisors and subordinates or 63 dyads for a response rate of 78 percent. Data are analyzed to answer the two research questions and test the four hypotheses by using correlation analysis, Analysis of Variance, and *F* test for correlated

means at the $p < .05$ significance level. The findings support the hypothesis that a relationship exists between Leader-Member Exchange and organizational commitment (Kinicki and Vecchio, 1994; Major *et al.*, 1995; Nystrom, 1990; Settoon, Bennett, & Liden, 1996). The study also finds a statistically significant relationship between Leader-Member Exchange and citizenship behavior (Deluga, 1994; Wayne and Green, 1993; and Wayne, Shore, & Liden, 1997). The findings also support a statistically significant correlation between Leader-Member Exchange and citizenship behavior subscale of altruism, but not compliance, which is consistent with the Wayne and Green (1993) study.

Implications

This study adds a theoretical contribution and provides empirical evidence to the leadership and organizational behavior literature on Leader-Member Exchange, commitment, and citizenship behavior.

As noted by Mowday *et al.* (1982), commitment is the "relative strength of an individual's identification with and involvement in the organization" in terms of values and goals. This is important because past research has shown committed employees are less likely to leave voluntarily (Allen and Meyer, 1990; Hom and Griffeth, 1995; Mowday *et al.*, 1982). In addition, Ostroff (1992), reports

employees who have high commitment to the organization are less likely to leave voluntarily, have low turnover rate and have low absenteeism. Therefore, it is essential that supervisors understand the significance of building a positive relationship with their respective subordinates. The supervisor should clearly state the goals, mission, and vision of the organization and, most importantly, the role each of the subordinates contributes to the business operations. An organizational culture that provides such awareness instills a sense of belonging and a positive feeling of identification with the organization, thus enhancing the subordinate's commitment to the organization. There is evidence that committed employees are associated with better organizational performance (Ostroff, 1992).

The study also implies supervisors are in an enabling position to positively influence employees' goodwill to engage in citizenship behavior. Supervisors should be aware of the importance of their positive role-image and the type of formal and social interactions they form with their subordinates. In addition, supervisors should be aware of the way they treat their subordinates because when employees perceive they are being treated fairly, they tend to engage voluntarily in citizenship behavior (Farh et al., 1990; Organ, 1988) as a form of social exchange (Konovsky and Pugh, 1994). The acts of helping-behaviors, which are

in-role behaviors, are perceived by subordinates as a fair exchange for supervisors' sense of fairness in granting reciprocal action not necessarily as part of contractual requirements. Supervisors' access to positional and financial resources (e.g., task assignment, job autonomy, personal attention and support, mentoring, sharing of inside information) may influence subordinates to perform in-role behaviors of being an organizational citizen in exchange for these benefits. Studies (Konovsky and Pugh, 1994; Podsakoff et al., 1990) also indicate supervisory trust appears to mediate the relationship between exchange relations and organizational citizenship. Podsakoff and MacKenzie (1994) find a relationship between citizenship behavior and level of performance.

Business organizations are always faced with the increasing threat of domestic and global competition in this fast-changing technological world. Since Leader-Member Exchange is positively correlated with turnover (Danserau et al., 1975; Ferris, 1985), support for innovation (Scott and Bruce, 1994), performance (Wayne, Shore, and Liden, 1997), and productivity (Graen et al., 1982), it is important for organizations to initiate sound developmental programs in order to attain business success. The following recommendations are offered for practical applications:

1. Human resource managers and developmental specialists should conduct leadership training for all their employees. For the supervisors, leadership training emphasizing the importance of mentoring, human relations skills, joint development of goals, and effective interpersonal communications would be helpful. For subordinates, career planning and development seminars and workshops would be beneficial.
2. The area of group interaction is also a practical area to encourage a high-quality exchange relationship. Organizations should initiate team-building programs (e.g., employee of the month, branch or division of the year, three-day weekend pass) which are designed to reward employee performance, increase group morale, and improve office effectiveness.
3. Organizations should initiate a corporate culture where open two-way communication at all levels is highly encouraged.
4. Research literature states that organizational commitment is defined as a subordinate's identification with the mission, goals, and vision of the organization. As such, supervisors have the responsibility to emphasize to their

subordinates their link and contribution to the success of the organization. Team meetings create a team environment where all the players are working toward jointly developed common goals.

5. Supervisors are models for change and act as role models and positive influences on their subordinates. As such, supervisors should pay particular attention to personal judgment not based on merit or performance, which is harmful to any success of business operations. Supervisors should provide equal training and career development plans to all subordinates, and recognize each employee's potential and capabilities to encourage an organizational culture of growth and innovation. Subordinates should be afforded self-development training to increase their knowledge, skills, professional growth, and self-confidence on the job.
6. In addition, supervisors should provide their employees with either intangible rewards (e.g., verbal praises) or tangible rewards like nominating them for employee of the month or granting a day-off for a well-done project.

7. Supervisors should actively encourage subordinates to provide feedback and vice-versa. A plan of action, follow-up, and progress report should also be established during feedback sessions. Open communication is necessary to establish a sense of trust in the exchange relationship.

Organizations might dismiss the findings and implications of this study as "touchy-feely" and not appropriate in the harsh realities of the business world. Nevertheless, the quantitative results of this study and other similar previous studies abound suggesting the potential relevance of positive dyadic exchange relationships. One would hope organizations would address these areas objectively.

Limitations of the Study

When drawing conclusions about the findings of this study, the following issues need to be considered:

Generalizability of the results

A limitation of the study is the nature of the sample. The participants are from a high-technology solutions company, which is a rather specialized company. Therefore, one cannot generalize to the entire population of other

similar business operations. The results are specific to this particular company.

Causality

Researchers (Pedhazur and Schmelkin, 1991) conclude that variable manipulation is the reliable way to study causation. Laboratory research and longitudinal studies wherein there is a pre- and post-treatment can be used to study the cause and effect of the relationships between variables. This study employs correlational nonexperimental design. The variables of theoretical interest are measured rather than manipulated. In addition, raw data is collected at one time rather than over a length of time, using correlational questionnaire methodology. Hence, it is not possible to conclude a direct causal relationship between the variables. It is also not possible to predict the direction of the relationship, *i.e.*, if the quality of the Leader-Member Exchange predicts a subordinate's commitment attitude or if the commitment attitude predicts the quality of the Leader-Member Exchange. This study can only infer causal relationships based on theoretical results and past scientific research in the field, which supports a strong positive relationship exists between the study variables.

Common Method Variance

In this study, the Organizational Commitment Questionnaire and the Organizational Citizenship Behavior Scale are administered only to subordinates to self-report their attitudes of commitment about the organization and to recount their acts of citizenship, which is consistent with Wayne and Green's (1993) study. Thus, data is derived solely from one source (subordinates), which could have influenced, in part, the results of the study. A possibility exists that common method bias could be responsible for the relationship. Podsakoff and Organ (1986) suggest that common method variance can be attenuated by administering the survey to more than one source, thereby reducing common method bias.

Recommendations for Future Research

Although this study has provided empirical evidence on the positive relationships between Leader-Member Exchange (LMX), commitment, and citizenship behavior, this researcher is offering possible suggestions in the conduct and direction of future research. These recommendations will further add to the knowledge of leadership (LMX) and organizational literature. Moreover, there is also the assumption that the recommendations will broaden our

understanding of attitudinal (commitment) and behavioral (citizenship) variables.

Future studies should be conducted in a public organizational setting, *i.e.*, a nonprofit organization, to compare the findings of the results. Likewise, similar research should be conducted in a federal agency with civil service employees.

An interesting area for exploration for future research on the variables of commitment and citizenship behavior would be to examine if a difference exists between genders in reporting Leader-Member Exchange.

We are becoming increasingly dependent on global economic ties that require dealing with other nations and their nationals as laborers. Thus, it would be beneficial to replicate this study in another industrialized country to examine if the findings of this research also apply to other countries and cultures as well as learn from the implications of the results.

In addition, other variables that might add depth to the descriptive statistics are the demographic data of length of employment and age, which could be important factors in determining a subordinate's sense of commitment and display of citizenship behavior.

Future research should be conducted incorporating quasi-experimental design to examine the relationships

between the controlled variables. By doing so, a direct causal relationship can be assessed on the effects of commitment and citizenship behavior variables on Leader-Member Exchange.

As noted earlier, this study is one of the first to examine commitment and citizenship behavior as reported solely by the subordinates. Thus, future research could administer the Organizational Commitment Questionnaire and the Organizational Citizenship Behavior Scale to both supervisors and subordinates, and collect data from two sources rather than relying only on subordinates' self-report judgment, which may or may not necessarily agree with the supervisors' assessments. This will solve the limitation of common method variance and the accompanying bias.

Conclusions

The research questions and null hypotheses presented in this study answer and test the relationships between Leader-Member Exchange and commitment and citizenship behavior. The LMX-7 Scale (Scandura and Graen, 1984) measures the dyadic (supervisor and subordinate) exchange relationship.

Research question number 1 and null hypotheses 1 and 3 examine the relationships between Leader-Member Exchange and commitment to the organization. In the study, the

subordinates self-report their level of commitment by answering the Organizational Commitment Questionnaire (OCQ) developed by Mowday, Steers, and Porter (1979). The results of the study show a significant positive association between the quality of the exchange relationships and level of organizational commitment. The findings sustain and advance previous research (Duchon, Green, and Taber, 1986; Kinicki and Vecchio, 1994; Nystrom, 1990) suggesting a correlation between Leader-Member Exchange and subordinates' commitment.

Research question number 2 and null hypotheses 2 and 4 explore the relationships between LMX and organizational citizenship. The Organizational Citizenship Behavior Scale developed by Smith, Organ, and Near (1983) is the survey instrument used to test the subordinates' display of citizenship. The finding of this study shows an association exists between the quality of the dyad exchange relationship and display of organizational citizenship by the subordinates. Likewise, previous research findings also suggest a correlation between the quality of Leader-Member Exchange and organizational citizenship behavior (Deluga, 1994, 1998; Settoon *et al.*, 1996).

Management at all levels should strive to provide an environment wherein high-quality exchange relationships can thrive. This is beneficial because previous literature on Leader-Member Exchange has shown a correlation with turnover

(Danserau *et al.*, 1975; Ferris, 1985), support for innovation (Scott and Bruce, 1994), performance (Wayne, Shore, and Liden, 1997), and productivity (Graen *et al.*, 1982). The study suggests that improving the quality of Leader-Member Exchange will increase subordinates' sense of commitment and citizenship behavior. This study implies that the development and maintenance of a mature dyadic relationship will benefit not only the supervisors and the subordinates, but also the organization as a whole in the achievement of organizational growth and success.

APPENDIX A

PERMISSIONS TO USE SURVEY INSTRUMENTS



Terri A. Scandura, Ph.D.
Professor

May 20, 1999

Dear Ms. Truckenbrodt:

I am writing in response to your request for permission to use the Leader-member exchange (LMX-7) scale printed in an article by myself and George Graen, in the *Journal of Applied Psychology* (1984) for your dissertation research. This version of the Leader-member exchange scale has been used in many dissertations and research studies and, to my knowledge, there is no restriction on the use of this version of the Leader-member exchange scale for non-profit educational purposes.

I wish you the best of luck in your dissertation research. Thank you for your interest in our research.

Sincerely,

A handwritten signature in black ink that reads "Terri A. Scandura". The signature is fluid and cursive, with the first name being the most prominent.

Terri A. Scandura
Professor of Management and Psychology

Department of Management
School of Business Administration
414 Jenkins Building
Coral Gables, Florida 33124-9145
305-284-3746
Fax 305-284-3655
scandura@miami.edu

UNIVERSITY OF OREGON

RICHARD M. STEERS
ASSISTANT TO THE PRESIDENT
FOR INTERNATIONAL AFFAIRS

OFFICE OF INTERNATIONAL AFFAIRS
221 JOHNSON HALL
1271 UNIVERSITY OF OREGON
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OFFICE TELEPHONE (541) 346-3318
OFFICE FAX (541) 346-2023
HOME FAX (541) 485-8450
E-MAIL: rsteers@oregon.uoregon.edu

May 4, 1999

Dr. Richard M. Steers
Kazumitsu Shiomi Professor of Management
Lundquist College of Business
University of Oregon
Eugene, OR 97403-1208

Dear Dr. Steers:

This letter is a follow-up on your April 23, 1999, e-mail. Thank you for your gracious approval to use the Organizational Commitment Questionnaire survey instrument.

As I mentioned before, I am presently pursuing a Doctorate in Public Administration at Nova Southeastern University, in Ft Lauderdale FL. I have read your books, *Employee-Organization Linkages* (1982), and *Organizational Behavior* (1988); and the journal articles of Mowday *et al.*, (1979), Porter *et al.*, (1974), and Steers, (1977), with considerable interest.

Dr. Steers, I would like to formally request your permission to use the Organizational Commitment Questionnaire (1979, 1982), developed by Mowday, Steers, and Porter, as part of my research study. My dissertation title is *The Relationship Between Leader-Member Exchange and Organizational Commitment Attitude and Organizational Citizenship Behavior Outcomes*.


Again, I appreciate your time and consideration. I am looking forward to your reply.

Sincerely,

Yolanda B. Truckenbrodt

Yolanda B. Truckenbrodt

*Of course you have my permission to use
the O.C.Q. Best of luck with your project.*


10 May 1999

October 27, 1999



Dear Ms. Truckenbrodt:

This letter is written confirmation that you have my authorization to use the Organizational Citizenship Behavior Questionnaire found in "Organizational Citizenship Behavior: Its Nature and Antecedents" by Smith, Organ, and Near in the *Journal of Applied Psychology* (1983). I do understand that this survey instrument will be used for research purposes only.

Janet P. Near
Coleman Professor
of Management

E-mail:
Near@indiana.edu

Phone:
(812) 855-3368

Fax:
(812) 855-8679

Sincerely,

A handwritten signature in black ink, appearing to read "Janet Near", written over a horizontal line.

Janet Near
Coleman Professor
of Management

cc: Dennis Organ

1309 East Tenth Street
Bloomington, Indiana
47405-1701

APPENDIX B

ADVANCE NOTICE TO PROSPECTIVE SAMPLE

November 22, 1999

Dear XXXXXX Employee:

I am conducting a doctoral study as part of a degree requirement that is strictly for research and academic purposes. I am interested in examining supervisor-employee relationship, organizational commitment, and citizenship behavior. These variables are important in business management's understanding of job satisfaction, performance, turnover, and morale.

Next week you will receive a standardized survey that has been widely tested and used extensively in organizational studies. This tool will help me gather the information I need to conduct my research.

Your voluntary participation is important to me, and your response will be completely anonymous and confidential.

I hope you will participate. I think you will find the survey interesting.

Sincerely,

Yolanda B. Truckenbrodt
Candidate for Doctorate in Public Administration

APPENDIX C

COVER LETTER OF THE QUESTIONNAIRE TO SUPERVISORS

November 30, 1999

Dear XXXXX Supervisor:

Last week I mailed you a notification about my doctoral study in Public Administration. Your help in completing the enclosed standardized surveys is important because the results will advance the study of organizational research.

Remember, the survey is completely voluntary. Your answers will be held in strictest confidence. Please trust my concern for your privacy and be assured that no one else will see your responses except me. They will be combined with the rest of the responses and analyzed collectively, **not** individually. Only group statistics will be reported as part of my dissertation.

Enclosed you will find a survey to rate a particular employee. Each survey, identified with a code number, will take less than 2 minutes to complete. Also attached is a code list with the corresponding name(s) of your employee(s). Since the employee is also asked to fill out a survey regarding working relationships with you, the code number is used for matching purposes only so I can establish a two-way correlation for statistical analyses.

Your voluntary participation is important because the survey is designed to be paired (supervisor-subordinate). The outcomes of the research will be used only as part of my degree requirement that is strictly for research and academic purposes.

Upon completion, please return the survey in the SASE provided no later than December 15, 1999. I would be happy to answer any questions you might have. My E-mail is YTrucken@aol.com or call (937) 252-2140.

Thank you for your participation!

Sincerely,

Yolanda B. Truckenbrodt
Candidate for Doctorate in Public Administration

APPENDIX D

COVER LETTER OF THE QUESTIONNAIRE TO SUBORDINATES

November 30, 1999

Dear XXXXX Employee:

Last week I mailed you a notification about my doctoral study in Public Administration. Your help in completing the enclosed standardized survey, which will take less than 8 minutes of your time, is important to me because the results will advance the study of organizational research.

Remember, the survey is completely voluntary. Your answers will be held in strictest confidence. Please trust my concern for your privacy and be assured that no one else will see your responses except me. They will be combined with the rest of the responses and analyzed collectively, **not** individually. Only group statistics will be reported as part of my dissertation.

The survey has three parts: (1) relationship with supervisor, (2) organizational commitment, and (3) citizenship behavior. It has a code number, which will be used for matching purposes only because your supervisor is also asked to fill out Part (1) that pertains to his/her working relationship with you. This is to establish a two-way correlation for statistical analyses.

Your voluntary participation is important because the survey is designed to be paired (subordinates-supervisors). The outcomes of the research will be used only as part of my degree requirement that is strictly for research and academic purposes.

Upon completion, please return the survey in the SASE provided no later than December 15, 1999. I would be happy to answer any questions you might have. My E-mail is *YTrucken@aol.com* or call (937) 252-2140.

Thank you for your participation!

Sincerely,

Yolanda B. Truckenbrodt
Candidate for Doctorate in Public Administration

November 30, 1999

Dear XXXXX Employee:

Last week I mailed you a notification about my doctoral study in Public Administration. Your help in completing the enclosed standardized survey, which will take less than 8 minutes of your time, is important to me because the results will advance the study of organizational research.

Remember, the survey is completely voluntary. Your answers will be held in strictest confidence. Please trust my concern for your privacy and be assured that no one else will see your responses except me. They will be combined with the rest of the responses and analyzed collectively, **not** individually. Only group statistics will be reported as part of my dissertation.

The survey has three parts: (1) relationship with supervisor, (2) organizational commitment, and (3) citizenship behavior. It has a code number, which will be used for matching purposes only because your supervisor is also asked to fill out Part (1) that pertains to his/her working relationship with you. This is to establish a two-way correlation for statistical analyses.

Your voluntary participation is important because the survey is designed to be paired (subordinates-supervisors).* The outcomes of the research will be used only as part of my degree requirement that is strictly for research and academic purposes.

Upon completion, please return the survey in the SASE provided no later than December 15, 1999. I would be happy to answer any questions you might have. My E-mail is *YTrucken@aol.com* or call (937) 252-2140.

Thank you for your participation!

Sincerely,

Yolanda B. Truckenbrodt
Candidate for Doctorate in Public Administration

** You have been randomly selected as a "supervisor" and "subordinate" to complete a survey*

APPENDIX E

QUESTIONNAIRE ADMINISTERED TO SUPERVISORS

Responses are strictly confidential

PART 1. LEADER-MEMBER EXCHANGE QUESTIONS

NOTE TO SUPERVISOR: Please refer to the attached employee code list. Thank you.

Employee Code # :

Directions: The following are descriptive items about leadership. Please circle the response that best fits your belief about your relationship with this particular employee (identified by the code list). Make only one mark for each question. Please answer all items.

1. Does this employee usually feel that he/she knows where you stand? . . . Does he/she usually know how satisfied you are with what he/she does?
 (1)------(2)------(3)------(4)------(5)
 Rarely Seldom Sometimes Usually Always

2. How well do you know this employee's problems?
 (1)------(2)------(3)------(4)------(5)
 Not at all A little A fair amount Quite a bit A great deal

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

4. Regardless of how much formal authority you have built into your position, what are the chances that you would be personally inclined to use power to help this employee to solve problems in his/her work?
 (1)------(2)------(3)------(4)------(5)
 Definitely Probably Might or Probably Certainly
 would not would not might not would

5. Again, regardless of the amount of formal authority you have, to what extent can this employee count on you to "bail him/her out" at your expense, when he/she really needs it?
 (1)------(2)------(3)------(4)------(5)
 Not at all A little Moderately Mostly Completely

6. I have enough confidence in this employee that I would defend and justify his/her decisions if he/she were not present to do so.
 (1)------(2)------(3)------(4)------(5)
 Strongly Disagree Neither Agree Strongly agree
 disagree

7. How would you characterize your working relationship with this employee?
 (1)------(2)------(3)------(4)------(5)
 Extremely Less than About average Better than Extremely
 ineffective average average effective

END OF SURVEY

THANK YOU FOR YOUR PARTICIPATION

APPENDIX F

QUESTIONNAIRE ADMINISTERED TO SUBORDINATES

Responses are strictly confidential.

Code # : _____

PART 1. LEADER-MEMBER EXCHANGE QUESTIONS

Directions: The following are descriptive items about leadership. Please circle the most appropriate response that best fits your belief about your relationship with your immediate supervisor. Make only one mark for each question. Please answer all the items.

1. Do you usually feel that you know where you stand? . . . Do you usually know how satisfied your immediate supervisor is with what you do?
 (1)------(2)------(3)------(4)
 Never know Seldom know Usually know Always know

2. How well do you feel that your immediate supervisor understands your problems and needs?
 (1)------(2)------(3)------(4)
 Not at all Some but not enough Well Enough Completely

3. How well do you feel that your immediate supervisor recognizes your potential?
 (1)------(2)------(3)------(4)
 Not at all Some but not enough As much as the next person Fully

4. Regardless of how much formal authority your immediate supervisor has built into his or her position, what are the chances that he or she would be personally inclined to use power to help you solve problems in your work?
 (1)------(2)------(3)------(4)
 No chance Might or might not Probably would Certainly would

5. Again, regardless of the amount of formal authority your immediate supervisor has, to what extent can you count on him or her to "bail you out" at his or her expense when you really need it?
 (1)------(2)------(3)------(4)
 No chance Might or might not Probably would Certainly would

6. I have enough confidence in my immediate supervisor that I would defend and justify his or her decisions if he or she were not present to do so.
 (1)------(2)------(3)------(4)
 Probably not Maybe Probably would Certainly would

7. How would you characterize your working relationship with your immediate supervisor?
 (1)------(2)------(3)------(4)
 Less than average About average Better than average Extremely effective

PLEASE TURN TO NEXT PAGE AND CONTINUE

PART 2. ORGANIZATIONAL COMMITMENT QUESTIONNAIRE

Directions: The following are attitudes that individuals might have about their company or organization. Please indicate your agreement or disagreement for each as they apply to your feelings. Make only one mark. Please answer all the items.

(1)-----	(2)-----	(3)-----	(4)-----	(5)-----	(6)-----	(7)
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Disagree nor agree	Agree	Agree	Agree

- 8. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.....1 2 3 4 5 6 7
- 9. I talk up this organization to my friends as a great organization to work for.....1 2 3 4 5 6 7
- 10. I would accept almost any type of job assignment in order to keep working for this organization.....1 2 3 4 5 6 7
- 11. I find that my values and the organization's values are very similar.....1 2 3 4 5 6 7
- 12. I am proud to tell others that I am part of this organization.....1 2 3 4 5 6 7
- 13. This organization really inspires the very best in me in the way of job performance.1 2 3 4 5 6 7
- 14. I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.....1 2 3 4 5 6 7
- 15. I really care about the fate of this organization.....1 2 3 4 5 6 7
- 16. For me this is the best of all possible organizations for which to work.....1 2 3 4 5 6 7

PLEASE CONTINUE ON NEXT PAGE

PART 3. ORGANIZATIONAL CITIZENSHIP BEHAVIOR SCALE

Directions: The following descriptive items are an attempt to assess employee work-related behaviors toward the organization. On each item, please circle the most appropriate response as it applies to you. Make only one mark for each item using the scale below. Please answer all the items.

(1)------(2)------(3)------(4)------(5)
 Never Seldom Occasionally Often Almost Always

- | | | | | | |
|---|---|---|---|---|---|
| 17. Help others who have been absent..... | 1 | 2 | 3 | 4 | 5 |
| 18. Punctuality..... | 1 | 2 | 3 | 4 | 5 |
| 19. Volunteer for things that are not required..... | 1 | 2 | 3 | 4 | 5 |
| 20. Take undeserved breaks..... | 1 | 2 | 3 | 4 | 5 |
| 21. Orient new people even though it is not required..... | 1 | 2 | 3 | 4 | 5 |
| 22. Attendance at work is above the norm..... | 1 | 2 | 3 | 4 | 5 |
| 23. Help others who have heavy work loads..... | 1 | 2 | 3 | 4 | 5 |
| 24. Coast towards the end of the day..... | 1 | 2 | 3 | 4 | 5 |
| 25. Give advance notice if unable to come to work..... | 1 | 2 | 3 | 4 | 5 |
| 26. Great deal of time spent with personal phone conversations..... | 1 | 2 | 3 | 4 | 5 |
| 27. Do not take unnecessary time off work..... | 1 | 2 | 3 | 4 | 5 |
| 28. Assist supervisor with his or her work..... | 1 | 2 | 3 | 4 | 5 |
| 29. Make innovative suggestions to improve department..... | 1 | 2 | 3 | 4 | 5 |
| 30. Do not take extra breaks..... | 1 | 2 | 3 | 4 | 5 |
| 31. Attend functions not required but that helps company image..... | 1 | 2 | 3 | 4 | 5 |
| 32. Do not spend time in idle conversation..... | 1 | 2 | 3 | 4 | 5 |

END OF SURVEY
THANK YOU VERY MUCH FOR YOUR PARTICIPATION

APPENDIX G

FOLLOW-UP LETTER TO SAMPLE

December 6, 1999

Dear XXXXX Employee:

Last week you received a survey asking for your participation in my doctoral research study.

I am sending this letter as a follow-up. If you have already returned your survey, please accept my sincere thanks for your time and effort.

If you have not responded, your voluntary participation would be greatly appreciated. Your response will advance the study of organizational research. Be assured it is completely confidential.

I would be happy to answer any questions you might have. If you require another survey, please do not hesitate to call (937) 252-2140 or E-mail *YTrucken@aol.com*.

Again, thank you very much for your participation.

Sincerely,

Yolanda B. Truckenbrodt
Candidate for Doctorate in Public Administration

APPENDIX H

PILOT TEST RESULTS

Count	Code	Sup LMX	Sub LMX	OCQ	OCB	Sup Tenure	Sub Tenure	Bins	Sup LMX	Sub LMX	OCQ	OCB
1	Code 210	33	23	57	55	4.1	6.8		24.0	18.0	44.0	48.0
2	Code 211	32	25	56	58	4.1	11.8	0.2	26	19.8	47.8	51
3	Code 101	33	27	63	63	4.1	12.9	0.4	28	21.6	51.6	54
4	Code 102	32	27	57	60	4.1	8.5	0.6	30	23.4	55.4	57
5	Code 601	34	25	59	63	3.1	12.3	0.8	32	25.2	59.2	60
6	Code 551	34	27	60	62	3.1	6.7	1	34	27	63	63
7	Code 027	27	27	60	61	10.2	1.6					
8	Code 073	24	18	44	53	23.2	18.11					
9	Code 074	26	20	45	48	23.2	20.9					
10	Code 305	28	22	53	54	25.8	30.2					
		Sup LMX	Sub LMX	OCQ	OCB	Sup Tenure	Sub Tenure					
	Min	24.0	18.0	44.0	48.0	3.1	1.6					
	Max	34.0	27.0	63.0	63.0	25.8	30.2					
	Average	30.3	24.1	55.4	57.7	10.5	12.981					
	St Dev	3.68	3.25	6.35	5.03	9.60	8.26					
	Correlation Matrix											
		Sup LMX	Sub LMX	OCQ	OCB	Sup Tenure	Sub Tenure					
	Sup LMX	1.00	0.71	0.79	0.69	-0.88	-0.44					
	Sub LMX	0.71	1.00	0.93	0.87	-0.81	-0.66					
	OCQ	0.79	0.93	1.00	0.89	-0.82	-0.60					
	OCB	0.69	0.87	0.89	1.00	-0.79	-0.61					
	Sup Tenure	-0.88	-0.81	-0.82	-0.79	1.00	0.78					
	Sub Tenure	-0.44	-0.66	-0.60	-0.61	0.78	1.00					
Count	Code	OCQ	OCB	Sup LMX	Sub LMX	Sup Tenure	Sub Tenure					
1	Code 210	57	55	33	23	4.1	6.8					
2	Code 211	56	58	32	25	4.1	11.8					
3	Code 101	63	63	33	27	4.1	12.9					
4	Code 102	57	60	32	27	4.1	8.5					
5	Code 601	59	63	34	25	3.1	12.3					
6	Code 551	60	62	34	27	3.1	6.7					
7	Code 027	60	61	27	27	10.2	1.6					
8	Code 073	44	53	24	18	23.2	18.11					
9	Code 074	45	48	26	20	23.2	20.9					
10	Code 305	53	54	28	22	25.8	30.2					

Mean, Standard Deviations, and Ranges for the Pilot Study

Variables	Mean	Std Dev	Min	Max
Supervisor LMX	30.3	3.68	24.0	34.0
Subordinate LMX	24.1	3.25	18.0	27.0
Org Commitment	55.4	6.35	44.0	63.0
Citizenship Behavior	57.7	5.03	48.0	63.0
Supervisor Tenure	10.5	9.60	3.1	25.8
Subordinate Tenure	12.981	8.26	1.6	30.2

Note: $N = 10$

Correlation Matrix for Research Variables in the Pilot Study

	Sup LMX	Subv LMX	OCQ	OCB	Superv Tenure	Subord Tenure
Superv LMX	1.00	0.71	0.79	0.69	-0.88	-0.44
Subord LMX	0.71	1.00	0.93	0.87	-0.81	-0.66
OCQ	0.79	0.93	1.00	0.89	-0.82	-0.60
OCB	0.69	0.87	0.89	1.00	-0.79	-0.61
Superv Tenure	-0.88	-0.81	-0.82	-0.79	1.00	0.78
Subord Tenure	-0.44	-0.66	-0.60	-0.61	0.78	1.00

Note: $N = 10$

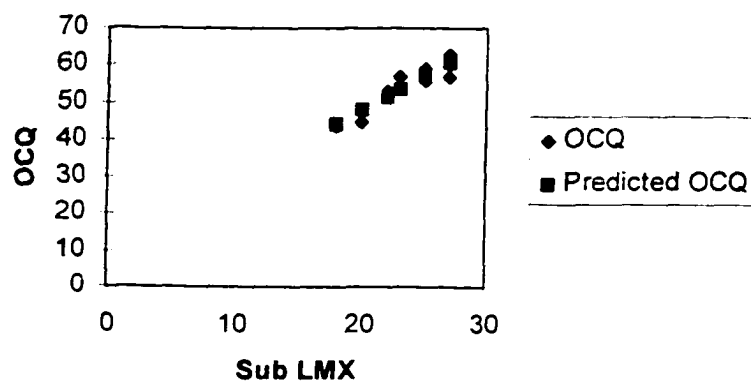
Regression Analysis Showing the Relationships Between
Subordinate LMX and Organizational Commitment

<i>Regression Statistics</i>						
Multiple R	0.931					
R Square	0.866					
Adjusted R Square	0.849					
Standard Error	2.462					
Observations	10					
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	313.92	313.92	51.80	0.00	
Residual	8	48.48	6.06			
Total	9	362.40				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	11.57	6.14	1.88	0.10	-2.59	25.73
Sub LMX	1.82	0.25	7.20	0.00	1.24	2.40

The significance level of the *F* Test supports rejection of the null hypotheses (H_{01} , H_{03}), and accepts the alternative hypotheses (H_{a1} , H_{a3}). The plot of the data and predictions, shown below, shows a fit of the regression analysis.

Relationship Between Subordinate Leader-Member Exchange and
Organizational Commitment

Sub LMX Line Fit Plot



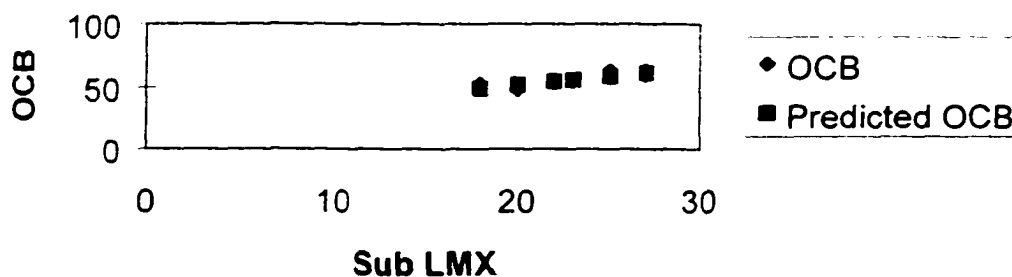
Regression Analysis Showing the Relationships Between
Subordinate Leader-Member Exchange and
Organizational Citizenship Behavior

Regression Statistics						
Multiple R	0.872					
R Square	0.760					
Adjusted R Square	0.730					
Standard Error	2.614					
Observations	10					
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	173.46	173.46	25.39	0.00	
Residual	8	54.64	6.83			
Total	9	228.10				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	25.12	6.52	3.85	0.00	10.09	40.15
Sub LMX	1.35	0.27	5.04	0.00	0.73	1.97

The data supports rejection of the null hypotheses (H_{02} , H_{04}), and accepts the alternative hypotheses (H_{a2} , H_{a4}) based on the F Test. The graph below shows a fit between the actual and predicted organizational citizenship behavior data based on the regression analysis with subordinate Leader-Member Exchange.

Relationship Between Subordinate Leader-Member Exchange and
Organizational Citizenship Behavior

Sub LMX Line Fit Plot



APPENDIX I

STUDY RESULTS: DATA FOR TOTAL VARIABLES

Distribution Information for MTOTAL Variable

Variable=MTOTAL							
Moments				Quantiles (Def=5)			
N	63	Sum Wgts	63	100% Max	35	99%	35
Mean	28.71429	Sum	1809	75% Q3	31	95%	35
Std Dev	3.289419	Variance	10.82028	50% Med	29	90%	33
Skewness	-0.09805	Kurtosis	-0.08585	25% Q1	27	10%	25
USS	52615	CSS	670.8571	0% Min	21	5%	22
CV	11.45569	Std Mean	0.414428			1%	21
T:Mean=0	69.28658	Pr> T	0.0001			Range	14
Num ^= 0	63	Num > 0	63			Q3-Q1	4
M(Sign)	31.5	Pr>= M	0.0001			Mode	31
Sgn Rank	1008	Pr>= S	0.0001				
<u>Extremes</u>							
		Lowest	Obs	Highest		Obs	
		21	(11)	34		(44)	
		22	(61)	35		(5)	
		22	(12)	35		(14)	
		22	(3)	35		(15)	
		24	(32)	35		(55)	

Distribution Information for ETOTAL Variable

Variable=ETOTAL							
Moments				Quantiles (Def=5)			
N	63	Sum Wgts	63	100% Max	28	99%	28
Mean	21.98413	Sum	385	75% Q3	25	95%	27
Std Dev	4.19482	Variance	17.59652	50% Med	23	90%	27
Skewness	-0.95935	Kurtosis	0.94043	25% Q1	20	10%	17
USS	31539	CSS	1090.984	0% Min	9	5%	14
CV	19.08113	Std Mean	0.528498			1%	9
T:Mean=0	41.59739	Pr> T	0.0001			Range	19
Num ^= 0	63	Num > 0	63			Q3-Q1	5
M(Sign)	31.5	Pr>= M	0.0001			Mode	22
Sgn Rank	1008	Pr>= S	0.0001				
<u>Extremes</u>							
		Lowest	Obs	Highest		Obs	
		9	(12)	27		(23)	
		11	(2)	27		(41)	
		12	(17)	28		(20)	
		14	(46)	28		(45)	
		16	(58)	28		(61)	

Distribution Information for QTOTAL Variable

Variable=QTOTAL							
Moments				Quantiles (Def=5)			
N	63	Sum Wgts	63	100% Max	63	99%	63
Mean	47.20635	Sum	2974	75% Q3	53	95%	60
Std Dev	9.365618	Variance	87.7148	50% Med	50	90%	59
Skewness	-0.45989	Kurtosis	-0.30196	25% Q1	41	10%	34
USS	145830	CSS	5438.317	0% Min	23	5%	32
CV	19.83974	Std Mean	1.179957			1%	23
T:Mean=0	40.00684	Pr> T	0.0001	Range			40
Num ^= 0	63	Num > 0	63	Q3-Q1			12
M(Sign)	31.5	Pr>= M	0.0001	Mode			53
Sgn Rank	1008	Pr>= S	0.0001				
<u>Extremes</u>							
	Lowest	Obs	Highest	Obs			
	23	(2)	60	(47)			
	25	(1)	60	(61)			
	32	(60)	62	(8)			
	32	(22)	63	(3)			
	33	(33)	63	(45)			

Distribution Information for QSCORE Variable

Variable=QSCORE							
Moments				Quantiles (Def=5)			
N	63	Sum Wgts	63	100%Max	7	99%	7
Mean	5.24515	Sum	330.4444	75% Q3	5.888889	95%	6.666667
Std Devl.	0.40624	Variance	1.082899	50% Med	5.555556	90%	6.555556
Skewness	-0.45989	Kurtosis	-0.30196	25% Q1	4.555556	10%	3.777778
USS	1800.37	CSS	67.13972	0% Min	2.555556	5%	3.555556
CV	19.83974	Std Mean	0.131106			1%	2.555556
T:Mean=0	40.00684	Pr> T	0.0001	Range			4.444444
Num ^= 0	63	Num > 0	63	Q3-Q1			1.333333
M(Sign)	31.5	Pr>= M	0.0001	Mode			5.888889
Sgn Rank	1008	Pr>= S	0.0001				
<u>Extremes</u>							
	Lowest	Obs	Highest	Obs			
	2.555556	(2)	6.666667	(47)			
	2.777778	(1)	6.666667	(61)			
	3.555556	(60)	6.888889	(8)			
	3.555556	(22)	7	(3)			
	3.666667	(33)	7	(45)			

Distribution Information for ALTRUISM Variable

Variable=ALTRUISM							
Moments				Quantiles (Def=5)			
N	63	Sum Wgts	63	100% Max	30	99%	30
Mean	22.90476	Sum	1443	75% Q3	25	95%	29
Std Dev	3.622129	Variance	13.11982	50% Med	23	90%	28
Skewness	0.043628	Kurtosis	-0.73396	25% Q1	20	10%	18
USS	33865	CSS	813.4286	0% Min	16	5%	17
CV	15.81387	Std Mean	0.456345			1%	16
T:Mean=0	50.19173	Pr> T	0.0001		Range		14
Num ^= 0	63	Num > 0	63		Q3-Q1		5
M(Sign)	31.5	Pr>= M	0.0001		Mode		22
Sgn Rank	1008	Pr>= S	0.0001				
				<u>Extremes</u>			
		Lowest	Obs	Highest		Obs	
		16	(46)	29		(11)	
		16	(35)	29		(26)	
		16	(12)	29		(47)	
		17	(37)	29		(48)	
		18	(49)	30		(15)	

Distribution Information for COMPLNC Variable

Variable=COMPLNC							
Moments				Quantiles (Def=5)			
N	63	Sum Wgts	63	100% Max	40	99%	40
Mean	30.74603	Sum	1937	75% Q3	33	95%	38
Std Dev	4.336523	Variance	18.80543	50% Med	30	90%	37
Skewness	0.106088	Kurtosis	0.214005	25% Q1	27	10%	26
USS	60721	CSS	1165.937	0% Min	18	5%	25
CV	14.10433	Std Mean	0.54635			1%	18
T:Mean=0	56.27529	Pr> T	0.0001		Range		22
Num ^= 0	63	Num > 0	63		Q3-Q1		6
M(Sign)	31.5	Pr>= M	0.0001		Mode		33
Sgn Rank	1008	Pr>= S	0.0001				
				<u>Extremes</u>			
		Lowest	Obs	Highest		Obs	
		18	(22)	38		(50)	
		24	(49)	38		(55)	
		25	(21)	39		(8)	
		25	(12)	40		(33)	
		26	(63)	40		(61)	

Distribution Information for BTOTAL Variable

Variable=BTOTAL							
Moments		Quantiles (Def=5)					
N	63	Sum Wgts	63	100% Max	76	99%	76
Mean	60.66667	Sum	3822	75% Q3	65	95%	73
Std Dev	7.006909	Variance	49.09677	50% Med	61	90%	71
Skewness	0.129641	Kurtosis	-0.3448	25% Q1	55	10%	52
USS	234912	CSS	3044	0% Min	46	5%	51
CV	11.54985	Std Mean	0.882788			1%	46
T:Mean=0	68.72171	Pr> T	0.0001		Range		30
Num ^= 0	63	Num > 0	63		Q3-Q1		10
M(Sign)	31.5	Pr>= M	0.0001		Mode		61
Sgn Rank	1008	Pr>= S	0.0001				
				<u>Extremes</u>			
		Lowest	Obs		Highest		Obs
		46	(22)		72		(61)
		46	(12)		73		(33)
		49	(49)		73		(57)
		51	(37)		76		(8)
		51	(34)		76		(15)

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