

REMOTE MANAGEMENT: TRADITIONAL LEADERSHIP BEHAVIORS IN A
CONTEMPORARY WORK ENVIRONMENT

by

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B.A., Baylor University, 1996

M.S., Kansas State University, 2000

AN ABSTRACT OF A DISSERTATION

Submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Psychology

College of Arts and Sciences

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Manhattan, Kansas

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Abstract

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Correlational data results did not support the hypotheses that face to face interaction scores were positively correlated with affective commitment, or satisfaction with supervision. Face to face interaction was not negatively correlated with continuance commitment. Non-remote employees reported significantly higher levels of satisfaction with supervision than remote employees. There was a significant difference between remote and non remote employees with non remote employees reporting higher levels of career advancement than remote employees. There was a stronger relationship between initiating structure and satisfaction with supervision when spatial distance was high. It appears that spatial distance acted as an enhancer. Two scales, company support for remote management and remote management specific behaviors, were analyzed to obtain preliminary data for future research.

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Dedication

This dissertation is dedicated to my special friend, Cheryl Signore, who left us early in her life. She was a wonderful person, full of wit and wisdom, and I learned much from her during our short time in graduate school. Thank you Cheryl for challenging my thinking and teaching me a different way of looking at ideas, actions, and people. Our friendship made me a better person, and I miss you. Although you will not physically be with me on graduation day, you will be with me in spirit. This one's for you "Pal".

CHAPTER 1-Introduction

Distributed Workplace *Current State*

Today the geographic distance between workers is increasing. Complex work arrangements involving managers in one location while their employees are dispersed around the globe is becoming commonplace in multiple industries. In September 2004, the Economist Intelligence Unit partnered with AT&T to conduct a follow up study to investigate changes in remote working habits over the previous year, and administered an online worldwide survey of 254 executives. The top five industry sectors represented by the survey respondents were financial services, professional services, manufacturing, transportation and energy. Two-thirds of executives surveyed said that at least some of their staff work from home regularly, a substantial increase from 2003. The survey also found that remote working was on executives' minds when considering their technology strategies: 81 percent of them said that providing remote workers full access to the corporate network is a "critical" or "important" objective. Broadband access and voice over internet protocol (VoIP) are two enablers of remote working. In the case of 46 percent of companies, broadband access is now installed in the homes of half or more of the workforce, up from just 27 percent in 2003. This proportion is on track to increase to 70 percent by 2007 (AT&T, 2004).

There is a definite belief among companies that remote/distributed work is a success factor resulting in reduced costs and increased employee productivity. Joseph Roitz, AT&T's director of teleworking, stated in a related news release:

AT&T itself has successfully embraced remote working, and the most recent figures show the company benefits from \$180 million per year in operational savings from the policy. Most of this is due to increased productivity (\$148 million), and savings in real-estate costs (\$34 million). The percentage of AT&T managers who telework full-time in a "Virtual Office" increased to 22 percent during 2003, more than doubling since 2001(AT&T, 2004, ¶ 9).

AT&T is by far not the only company to partake in distributed work. In 2005, it was reported that 4.5 million Americans telecommute most work days, while 20 million telecommute

at least once per month (Balaker, 2005). These employees, often referred to as remote, distributed, and virtual workers, make up the fastest growing segment of the workforce (Erskine, 2006). Distributed work has received attention over the last few years in both the academic and popular press, but it is far from novel. Two millennia ago the Roman Empire struggled with the challenges of a distributed organization as they expanded across the globe (Brytting, 1996).

Geographically distributed work can prove challenging to both managers and their teams. Organizational leaders say that there are significant supervisory and security challenges to remote working. Some managers report feeling uncomfortable with lack of visibility into the day to day activities of employees and find it challenging to build relationships necessary for effective leadership. Despite the increase in the number of virtual and distributed teams over the last decade, little empirical research exists. Theories on remote management are often based on traditional face-to-face team research findings. The literature is primarily descriptive and focuses on benefits of working virtually. Bell & Kozlowski (2002) note, "It is difficult to ascertain how the unique characteristics of virtual teams affect critical leadership functions, including performance management and team development. There is little current theory to guide research on the leadership and management of virtual teams" (p.15).

The purpose of this study is to investigate the distributed work environment by specifically focusing on leader behavior and its impact on subordinate outcomes. Manager personality will not be examined, nor will team dynamics, team characteristics, and communication media/type. These facets are critical in future research studies in order to gain visibility into the overall dynamics of the distributed working world. Exploring the area of remote management is important due to the lack of research in the behavioral arena. Previous studies have examined distributed teams in the context of trust formation, communication, and other group-dynamic related variables, but very little attention has been given to the empirical study of remote management behaviors within formal, static, established distributed teams. Teams used in previous research were primarily dynamic teams brought together for a particular task. They differed from teams in this investigation in that there was no formal established relationship between employee and manager, trust formation had to take place first, and usually the project team lead was not responsible for an annual final performance assessment. Researchers need to investigate distributed teams that are as similar to face-to-face teams as

possible in the areas of organizational dynamics and environmental factors in order to control for these differences and isolate true leader behavior variations in managing employees at a distance.

By conducting an empirical investigation in this way, this study will determine if the traditional core set of leadership behaviors is effective in distributed work environments, and how those behaviors impact employee outcomes such as commitment and satisfaction with supervision. Once organizations gain greater understanding in the area of remote management, they can begin to train managers on how to increase satisfaction and retention of productive employees. Several fundamental and previously explored questions have gained new relevance due to their lack of study in organizations that now operate in a dispersed environment (Avolio, et al., 2001). These questions include: Do essential management behaviors such as consideration and initiating structure materialize differently in face-to-face versus remote situations, what type of leadership will have the most positive impact on employee's perceptions of satisfaction with supervision and organizational commitment, and does this differ according to the amount of face time between the manager and employee? These questions will be addressed in the current study.

This paper, will first discuss the definitions and current research on distributed teams and leadership in those teams. Second, leadership theory will be reviewed with emphasis on behavioral, situational, and substitutes theories. Third, spatial distance and communication constructs will be examined. Spatial distance, a validated substitute for leadership, will serve as the focus of this study and a potential moderator between leadership behaviors and subordinate outcomes. Fourth, empirical evidence for the outcome variables organizational commitment and satisfaction with supervision will be reviewed and relationships to variables noted.

Geographically Distributed, Collocated Teams, and Remote Management

Collocation implies close proximity, face-to-face communication, timely feedback, and informal social interaction (Hinds & Kiesler, 2002). Proximity refers to “the physical distance between people measured in units such as inches, meters, or miles”(Kiesler & Cummings, 2002, p.57). Over the last few decades, the operationalization of constructs such as collocation, proximity, and dispersion have varied greatly. Within the same arena of study, researchers are investigating distributed teams, virtual teams, telework, remote management, e-leadership etc. There is quite a bit of overlap in these constructs when it comes to their psychological and

organizational effects. For the purposes of this study, the focus will be on individuals who are geographically remote from their manager, and those who are collocated with their manager. These types of teams will now be defined for clarity purposes and to promote understanding.

A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable (Katzenbach and Smith, 1993). A dispersed team is defined as a traditional team with a few additional characteristics. Below are two of the characteristics associated with virtual teams highlighted by Avolio et al. (2001):

- 1) Its members are in dispersed locations. The type of location may be within the same building or in different: buildings, cities, organizations and countries.
- 2) Interactions among team members primarily take place electronically and can be synchronous and/or asynchronous. Synchronous interaction is defined as members communicating simultaneously as in chat sessions or video conferencing. Asynchronous interaction implies members communicating at different times. An example of this type of interaction is email and bulletin boards.

There are 4 dimensions of dispersion that characterize virtual teams: spatial, temporal, cultural, and organizational dispersion (Shin, 2005). Spatial dispersion refers to the extent to which team members work in various locations. Temporal dispersion addresses team members operating at different times. Cultural dispersion refers to the extent to which a team is made up of individuals from different countries and/or cultures. Organizational dispersion notes the degree to which members work across organizational boundaries. The degree of virtuality is measured on how many of these characteristics a team possesses (Shin, 2005). Distributed teams are employees from an organization who work in various locations (Shin, 2005). Telecommuters are workers with company offices who occasionally work at home. Hoteling consists of having a reservable cubicle at the office so employees can drop in and work from the office when necessary. These employees do not have a permanent office. Home workers spend the majority of their time working from home. Fully mobile workers do not have an office at home or at the company site. They work from the road or at clients' offices. Hoteling, home workers, and fully mobile workers have very little face time with managers. Managers must work to instill a sense of belonging and commitment in these employees. (Helms & Raiszadeh, 2002). Collocated teams

work in the same location and have more opportunity to interact face-to-face with their manager. Together, these types of teams make up the distributed workforce.

Implications of Distributed Work Settings

Organizations are becoming increasingly dispersed due to cost-cutting measures, acquisition of global talent, and a general belief that this type of organizational structure may result in heightened productivity surpassing that of face-to-face teams (Townsend et al., 1998). The International Telework Association and Council (ITAC) reports that on a given day, 50% to 70% of all office space is unoccupied during business hours at a cost of approximately \$10,000 annually per space (AT&T, 2003). Organizations also distribute work in order to establish a presence in multiple locations and increase the global appeal of their products. They can also cut down on time to market and improve customer responsiveness with faster turnaround time by employing distributed teams (Hinds & Kiesler, 2002). Recently, the SARS outbreak in Asia reinforced interest in business continuity and contingency planning, another impetus for moving to a distributed work environment (AT&T, 2003). However, even though the migration to distributed work is expanding rapidly, neither the experience of distributed work nor its effects on the individual and the organization are fully understood.

Virtual teams share many of the challenges of face-to-face teams: building norms of conduct, a common mission, cohesion, alignment, developing trust, and how leadership will guide the team's interactions. The virtual team environment may be more challenging due to the lack of face-to-face interaction (Avolio et al., 2001). Team members in multiple locations lacking social and nonverbal cues can experience difficulty in the formation of interpersonal relations (Weisband & Atwater, 1999). A common issue with virtual teams is that their conversations focus more on logistical issues and task requirements than on relationship building. This can lead to less effective interactions and exchanges of information (Warkentin, Sayeed, & Hightower, 1997).

Bell and Kozlowski (2002) presented a theoretical framework to focus research on understanding virtual teams and effective leadership. They state, "It is difficult to ascertain how the unique characteristics of virtual teams affect critical leadership functions, including performance management and team development. There is little current theory to guide research on the leadership and management of virtual teams" (p.15). The distinguishing characteristics of

virtual teams are spatial distance and information, data, and personal communication. Virtual teams span boundaries of space and are void of proximal, face-to-face interaction (Bell and Kozlowski, 2002). Group dynamics center around experienced proximity in dispersed teams. Experienced proximity has been found to consist of many variables such as degree of identification with group membership, degree of motivation towards shared goals, amount of shared trust, and frequency of communication among members (Armstrong & Cole 2002). The interactions that lead to greater understanding and affinity between individuals also contribute to cohesion in distributed groups. It is difficult for dispersed employees to learn through observation in a remote arrangement due to the inability to engage in direct modeling of the leader's behavior. Furthermore, employees are often left out of discussions and sometimes ignored during teleconference meetings. Many managers admit to responding more to people they see on a regular basis. On the other hand, Armstrong and Cole (2002) assert that short and long distances have the same effect on the managers and teams' behavior, and believe that the dynamics of distributed and collocated workgroups are basically the same. They state:

Many of the integrating practices are the same for both, such as gaining commitment to shared goals and articulating and monitoring norms. In distributed groups, these common factors were essential for even basic group formation. Other practices are more uniquely crucial to groups operating across distances, such as structured communication practices, informal networks of relations, face-to face contacts, and a reliance on layered communication technology (p.184).

Managers with traditional co-located employees have the opportunity to interact with them much more frequently than their distributed employees. They have more opportunity to conduct informal discussions wherein managers may clarify expectations, check for task understanding, and make themselves appear approachable to employees. Managers' primary means of communication with their distributed employees are telephone and email, leading to less informal interaction. Consequently, the frequency of communication between manager and employee is significantly reduced in distributed work settings (Armstrong & Cole, 1995; Wiesenfeld et al., 1999). Also, lack of face-to-face interaction takes away the access to nonverbal cues, which impacts one's ability to adequately interpret the verbal message. Sproull (1996) and Trevino, Lengel, and Daft (1987) found that employees who interact with their managers face-to-

face garner more cues regarding their manager's performance expectations than employees who interact through phone and email. A recent study at AT&T revealed that 56% of their executives believe that the difficulty in monitoring worker's output is the primary obstacle to effective remote management (AT&T, 2003). They also cited perceived threat to company culture as an obstacle to the implementation of remote work at their company.

Leadership can facilitate establishment of norms and expectations to guide subsequent interactions. Leadership can help clarify acceptable behavior in the team, clarify goals (Avolio, 1999), support progress towards goals by offering positive reinforcement and encouragement, and help build a cohesive team by sharing knowledge about each other and creating a base for members to build trust. Mayer, Davis, & Schoorman (1995) define trust as, "the willingness of a team member to be vulnerable to the actions of other team members based on expectations that the others will perform a particular action important to the employee, irrespective of the ability to monitor or control other team members" (p. 712). Without sufficient levels of trust, members will expend time and energy protecting, checking and inspecting one another instead of collaborating to provide value (Cooper & Sawaf, 1996).

Distance creates a challenge to leaders in building trust with subordinates. Jarvenpaa et. al. (1998) found that trust developed quickly in the virtual teams under study. However, the trust formed was not unconditional in nature and required constant reinforcement through task related communications. Maznevski and Chudoba (2000) reported that teams with stronger and more consistent shared expectations required less interaction and information to make decisions over time. Leadership in virtual teams is a core process in that it builds shared expectations upon which team members can then build trust in each other (Avolio, 1999). Leadership style contributes to development of trust, type of interactions observed, and ultimately team performance. The few studies conducted on virtual teams point to the importance of leadership in building synergy and trust, and the importance of collaborative technologies (Jarvenpaa et. al., 1998).

The research is somewhat mixed in the area of remote management and distributed teams. The current study proposes that underlying intent and target message may be the same for distributed and face-to-face team members, but the behaviors used to elicit desired outcomes may materialize very differently in the two environments.

Leadership Theory

Behavioral Leadership

Over five decades, leadership researchers have investigated personal characteristics, situational factors, or some combination thereof, as potential determinants of leadership (Yammarino & Bass, 1991). First, person-centered views of leadership argued that personal characteristics, resulting from nature and/or nurture, explain attitudes, behaviors, and perceptions of leadership. Situational views of leadership posit that context factors account for attitudes, behaviors and perceptions regarding leadership, while personal attributes are less important. A third approach, the person-situation view of leadership, states that leadership is determined by a combination of personal and situational elements. Thus, personal factors and situational factors alone are insufficient for explaining leadership (Yammarino & Bass, 1991).

Research has shown that traits, behaviors, and situations all contribute to leader emergence and leader success (Ferentinos, 1996). Researchers attempting to identify important leader behaviors at Ohio State University and later at the University of Michigan sought to identify relevant effective leader behaviors by utilizing subordinate questionnaires. Analysis of the surveys resulted in the emergence of two central leadership constructs: consideration and initiating structure (Fleishman, 1967).

Several leadership measures were developed from the Ohio State studies. The Leader Behavior Description Questionnaire (LBDQ) utilizes subordinates and asks them to rate items according to how they feel their leader behaves. The dimensions, consideration, or “the extent to which an individual is likely to have job relationships characterized by mutual trust, respect for subordinates’ ideas, and consideration of their feelings” (Kerr, Schriesheim, Murphy, Stogdill, 1974) and initiating structure, “the extent to which an individual is likely to initiate activity in the group, organize it, and define the way work is to be done” (Bass, 1990) , have received ample support as the two primary categories of leader behavior (Stogdill, 1963; Blake & Mouton, 1985; Blake & McCause, 1991).

Consideration and Initiating Structure.

Consideration and Initiating Structure have been shown to be two of the most robust leadership constructs. The considerate leader expresses appreciation for good work, stresses the importance of job satisfaction, maintains and strengthens self-esteem of subordinates, is easy to approach, and takes subordinates' suggestions seriously (Bass, 1990). Inconsiderate leaders subject subordinates to public criticism, ignore their feelings, and refuse to consider their suggestions.

Initiation of structure includes behaviors such as insisting on the maintenance of standards, requesting deadlines be met, and determining tasks and how these tasks should be executed. Unlike the leader high in consideration, the leader high in initiating structure acts directly without consulting the subordinates. Communication is clear and orientation is toward the task. Leaders with low initiating structure scores do not take action within the group. They give input only when requested by subordinates and give little direction on how to complete the task (Bass, 1990).

Both consideration and initiating structure are related to a variety of organizational variables. Consideration has been found to be positively correlated with productivity (Butterfield & Powell, 1981), satisfaction, and low turnover (Michaels & Spector, 1982). Fleishman & Harris (1962) found that higher levels of supervisory structure were associated with higher grievances and turnover, except where consideration was also high. Initiation of structure has been found to be positively related to satisfaction (House & Filley, 1971), feelings of burnout (Seltzer & Numerof, 1988), and group performance (Fleishman, 1957). In a review of numerous validation studies, Fleishman (1989) discovered that supervisors high in both consideration and initiating structure were more likely to receive high performance ratings, have highly satisfied subordinates, and experience low subordinate burnout. Also, experience has been found to be related to leadership styles. For example, Latta and Emener (1983) reported that in their sample of managers of state rehabilitation agencies, initiation of structure scores increased directly with experience.

O'Reilly & Roberts (1978) found interaction effects suggesting that the influence on subordinates of initiating structure and consideration is situationally dependent. High initiating structure was positively associated with attitudes and behavior when subordinates desire to get ahead in the organization, when the superior is perceived to have high influence, or when high

consideration is also present. Initiating structure was associated with decreased outcomes when subordinates have low mobility, when supervisors have low influence, or when high initiating structure is not accompanied by high consideration. Greene (1975) in studying the nature of influence between leader and subordinate, found that consideration was related to subordinate satisfaction, subordinate performance was related to changes in leader emphasis on both consideration and structure, and consideration moderated the initiating structure-performance relationship such that with highly considerate leaders, emphasis on structure caused higher subordinate performance. Sheridan and Vredenburg (1978) found leader consideration to be inversely associated with tension and voluntary terminations, while initiating structure had a positive relationship with voluntary terminations.

Schriesheim & Murphy (1976) reported that supervisors who exerted more structure had significantly lower performing subordinates when they were also low in consideration. When they were high in consideration, structure had a positive effect on performance. Structure reduced subordinate performance under conditions of low stress and slightly increased performance under high stress. Consideration resulted in increased satisfaction and performance under low stress but reduced both in high stress situations.

Investigations concerning the relationship between sex and leadership styles have produced mixed results. A study conducted by Serafini and Pearson (1984), revealed that among university nonadministrative supervisors, females were found to be higher in consideration while males were higher in initiation of structure. Other studies have found little difference in leadership style between men and women. Research suggests that although men and women differ on many attributes, once they become leaders, there is little difference in leadership behavior. Most often, analyses concluded that there was little or no effect of sex on leadership style, whether leaders were describing themselves or were described by their subordinates (Bartol, 1974; Chapman, 1975; Remland, Jacobson, & Jones, 1983). Osborn and Vicars (1976) found no sex differences in initiation of structure or the amount of consideration according to subordinates.

Due to the sometimes disjointed nature of the distributed environment, one would assume initiating structure behaviors exhibited by the leader would be related to positive outcomes. In a development environment, teams require assignment of tasks, role clarity, and etc. to meet

deadlines on time with quality. Keller (2006) found initiating structure to be a strong predictor of speed to market, equal to the predictive power of transformational leadership. The correlation between initiating structure and transformational leadership was .19 indicating little overlap between the 2 constructs and unique value add to the prediction of performance outcomes. In dispersed environments, team members have fewer opportunities to clarify their tasks and roles than do face-to-face team members. Therefore, dispersed employees are more likely to experience task and role ambiguity (Shin, 2005). The more leaders exhibit initiating structure behaviors, the more clarity these team members will have over their goals and the means by which to achieve them. Consideration behaviors will likely be crucial to subordinates' satisfaction with supervision and organizational commitment. The lack of face-to-face contact and visibility into the organization has the potential to erode trust and organizational identity (Avolio & Kahai, 2003). Leaders may have to take a different approach with their subordinates to display the types of consideration behaviors that lead to higher satisfaction and commitment levels.

Whereas consideration behaviors have been studied in various forms, there has been little research published on initiating structure in the last decade. Judge, Piccolo, and Ilies (2004) labeled initiating structure "the forgotten one" of empirical leadership research and have called for additional studies in the area due to their recent meta-analysis findings. The study yielded significant relationships between initiating structure and subordinate/ group/ organization level performance. Both consideration and initiating structure will be investigated in the current study. Tolerance of freedom, integration, production emphasis, consideration, and initiating structure are all part of the LBDQ XII, developed by Stogdill (1963). Historically, consideration and initiating structure are by far the most widely used leader behavior dimensions, however the above other LBDQ-XII dimensions are worthy of study in the context of remote management.

Tolerance of Freedom, Leader Integration, and Production Emphasis

There is limited research on these categories of leadership behavior, so individual item content contributed to the empirical evidence collection. Tolerance of freedom consists of the following items: allows the members complete freedom in their work; permits members to use their own judgment in solving problems; encourages initiative in the group members; lets the members do their work the way they think best; assigns a task, then lets the members handle it;

turns members loose on a job and lets them go to it; allows the members any freedom of action; allows the group a high degree of initiative; trusts members to exercise good judgment; and permits the group to set its own pace.

Empowerment seemed to encompass many of the tolerance of freedom items in the literature. Douglas (1995) tested the empowerment construct by examining the relationships among power sharing, work group empowerment and work group effectiveness. The sample consisted of 150 work groups and their managers in a large manufacturing company. The empowerment process was positively correlated with work group performance, customer satisfaction, organizational commitment, satisfaction with supervision and satisfaction with work. Franz (2004) collected survey data from employees of a multi-national company with participating locations in Australia, Belgium, Brazil, Canada, France, Germany, Mexico, Spain, Taiwan, Thailand, United Kingdom, and United States. The focus was to test the predictive power of organizational and personal empowerment on affective commitment, job satisfaction, turnover intent and stress. Other than in Taiwan, significant direct effects were found between organizational empowerment and affective commitment, organizational empowerment and job satisfaction, and personal empowerment and affective commitment.

Psychological empowerment was found to be positively related to job satisfaction, affective and normative commitment, and organization citizenship behavior (OCBs). The relationship between psychological empowerment and OCB was also found to be partially mediated by job satisfaction, and normative and affective commitment, as hypothesized. A negative relationship was found between psychological empowerment and continuance commitment (Chan, 2004). Due to the above findings, a positive relationship is expected between tolerance of freedom and satisfaction with supervision in dispersed environments.

The following items were considered in discussing leader integration : keeps the group working together as a team; settles conflicts when they occur in the group; sees to it that the work of the group is coordinated; helps group members settle their differences; and maintains a closely knit group. These items tend to fall under similar headings such as cohesion and conflict management.

Group cohesiveness is defined as “members’ attraction to the group and its task” (Shin, 2005, p.334). Virtual teams have reported lower levels of cohesiveness than face-to-face teams

and researchers believe this could be due to the reduced number of informal relationships and physical interactions.

Armstrong & Cole (2002) found that conflicts were “expressed, recognized, and addressed more quickly if group members worked in close proximity” (p.172). In dispersed groups, conflicts were overlooked and unresolved leading to increased aggravation among members. Several managerial activities have been identified as bolsters of cohesion in collocated work groups: enforcing equality, creating superordinate goals, and supporting frequent face-to-face contact and mutual knowledge (Armstrong & Cole 2002).

Managers seem to struggle with analyzing performance problems, coaching dispersed team members, and transferring group subculture subtleties. The leader’s ability to conduct certain tasks such as monitoring performance, mentoring, and developing is restricted by the lack of face-to face interaction with team members. Virtual team leaders need to encourage team members to commit to the overall team purpose and facilitate team coherence. Team coherence is characterized by seamless group process and is facilitated by linking individual goals, creating team task strategies, and communicating individual role expectations across the team (Bell & Kozlowski, 2002).

As with tolerance for freedom and leader integration, limited documented studies exist on the production emphasis construct. Items within this dimension include: encourages overtime work, stresses being ahead of competing groups, needles members for greater effort, keeps the work moving at a rapid pace, pushes for increased production, asks the members to work harder, doesn’t permit the members to take it easy in their work, drives hard when there is a job to be done, keeps the group working up to capacity, and urges the group to beat its previous record. Production emphasis is related to goal setting, accountability, productivity, and operational effectiveness. Operational effectiveness depends on the task demands and available communication technology. If the task is complex and requires ongoing group decision making, email may not be sufficient (Bell and Kozlowski, 2002).

Research on increased productivity in dispersed teams is somewhat mixed. Nieder (1975) attempted to clarify the relationships between leader behavior, productivity, and worker satisfaction, based on the examination of empirical research. Results of these studies showed no consistent correlation between leader behavior and productivity. Findings did show that the more

the workers' expectations of their supervisor are fulfilled, and the more responsibility and freedom of action is given them, the more positive is their attitude toward the supervisor and the greater the satisfaction of subordinates

Olson, Teasley, Covi, and Olson (2002) found that collocated teams were twice as productive as those separated by distance. The collocated teams displayed more interactive and continuous communication patterns, which contributed to coordination and learning.

Regarding accountability, Kim (2003) found managers can increase employees' perceived accountability for contextual performance (CP) behaviors particularly by developing and supporting behavioral norms corresponding to the CP behaviors, designing jobs in a way that employees can exercise their own discretion in carrying out tasks, and providing subordinates with more feedback on their performance. In turn, people are likely to display more CP behaviors, as they experience a higher level of perceived accountability for CP behaviors.

Situational Leadership

According to situational theories of leadership, effective leaders are those with the ability to identify the necessary behaviors for success in each situation. One of the first well known situational theories, least preferred coworker (LPC), was developed by Fiedler (1964). According to LPC theory, leader effectiveness is dependent on the leader's ability to influence subordinates. This is referred to as situational favorability (Fiedler, 1967). When leaders struggle with this action, organizations may choose to impose training, eliminate the leader, or change the situation so that fit between the leader and context is improved. The assumption underlying all situational interventions is that in every situation there is a corresponding effective leadership style. The situation dictates the behavior that leaders employ to be effective. The substitutes literature has countered this belief posing that "certain circumstances often counteract the potential power of leadership, making it virtually impossible in some situations for leaders to have much impact regardless of their style or how good the fit is between leader and situation" (Howell, Bowen, Dorfman, Kerr, & Podsakoff, 1990).

Substitutes for Leadership

Substitutes for leadership theory remains a controversial topic among researchers today. Dionne, Yammarino, Atwater and James (2002) have stated that substitutes for leadership findings may be "merely a statistical artifact, resulting from common source bias" (p.454).

Others maintain that substitutes offer their own explanations of subordinate performance apart from leadership (Jermier & Kerr, 1997; Podsakoff, MacKenzie, & Boomer, 1996).

Kerr and Jermier's (1978) model laid the substitutes for leadership groundwork by identifying characteristics that can substitute for the leader's behavior or neutralize the effects of leadership. The substitutes they identified were: subordinate-ability, experience, training, knowledge; need for independence; professional orientation; indifference toward organizational rewards; task-unambiguous and routine; methodologically invariant; provides its own feedback concerning accomplishment; intrinsically satisfying; organization-formalization; inflexibility; highly specified and active advisory and staff functions; closely knit, cohesive work groups; organizational rewards not within the leader's control; and spatial distance between superior and subordinates (Kerr & Jermier, 1978, p.378). They found that although several substitutes contributed to the variance in satisfaction and commitment, only organization formalization completely negated the effects of leader behavior on commitment. Podsakoff et al (1996) evaluated 22 empirical studies and concluded leadership behaviors and substitutes accounted for unique variance in subordinate attitudes and performance.

Within the substitutes for leadership theory, Kerr & Jermier (1978) highlight several variants on the substitute moderator idea. They defined neutralizers as well. Howell, Dorfman, and Kerr (1986) expanded the concept further to include enhancers. Enhancers are "attributes of employees, tasks, and organizations that amplify a leader's impact on employees"(Howell et.al., 1990). Enhancers can solve management problems when management skill is present but neutralizers prevent the manager from being effective. Enhancers show a positive moderating effect (stronger enhancer equates to stronger predictor-criterion relationships) (Howell, Dorfman, and Kerr,1986). Substitutes for leadership replace or act in place of a specific leader behavior. They may be correlated with predictors and criteria, but tend to increase validity when included in the predictor set. They have an impact on both the predictor and criterion variables (Kerr & Jermier, 1978).

Leadership neutralizers are "attributes of subordinates, tasks, and organizations that also interfere with a leader's attempt to influence subordinates"(Howell, et.al, 1990). Unlike leadership substitutes, neutralizers do not replace the leader's influence. Instead they create an "influence vacuum" that may lead to negative consequences. Neutralizers make it impossible for

leader behaviors to impact outcome variables. They are moderator variables that are uncorrelated with predictors and the criterion and act as suppressors when correlated with predictors but not with criteria (Kerr & Jermier, 1978). Spatial distance is thought to be a neutralizer (Kerr & Jermier, 1978).

When investigating the substitutes theory, Kerr and Jermier (1978) and Miles and Petty (1977) found few substitutes, possibly due to the methodology employed. The exclusive use of simple moderated bivariate correlations is inadequate evidence for the existence of a true substitute. Howell and Dorfman (1981) examined the impact of leader substitutes on subordinate job satisfaction and commitment with mixed support. They employed the Organizational Commitment Questionnaire (Porter & Smith, 1970) and the Minnesota Satisfaction Questionnaire general job satisfaction scale (Weiss, et. al, 1967). Leader behavior was measured by scales developed specifically for testing path-goal theory. Spatial distance was not chosen as a substitute/moderator for study. Only organizational formalization was found to be a substitute.

Williams, et. al, (1988) investigated the construct validity of the substitutes for leadership scales. Previous studies provided mixed support for the substitutes theory and Williams et. al (1998) believed it was due to lack of construct validity of the scales. In their analysis they found “one factor that loaded consistently across all five samples was Spatial Distance between Superior and Subordinate. These results, along with higher reliabilities obtained for this subscale (all above .70), indicate that the psychometric properties of this scale are adequate for continued use in research” (p.314). The study indicated that 10 of the 13 scales (all but organizational formalization, closely knit workgroups, and spatial distance) did not exhibit high enough reliability for future research use ($\leq .70$) (Williams, et. al, 1988).

Podsakoff, Niehoff, MacKenzie, and Williams (1993) examined the psychometric problems of a revised 74 item substitutes measure and its relationship to outcome variables. These changes significantly improved the subscale reliabilities, and many of the 13 characteristics contributed significantly to the variance accounted for in performance, attitudes, and role perception. The question was raised as to how many significant relationships were needed to confirm the model. Research had not advanced to where a complete set of theoretical interactions had been noted at that time, however, the authors concluded that substitutes were important determinates of employee attitudes and should be explored further in future research.

Jermier (2000) commented that substitutes for leadership was not meant to be strictly a moderator. Substitutes were discussed in generic terms allowing them to be studied as moderators, mediators, or main effects. In Kerr and Jermier's (1978) concluding remarks, they noted that "In most organizations....substitutes exist for some leader activities but not for others" (p.400). Thus, substitutes for leadership can exist for certain leadership behaviors without eliminating the necessity for all leader behaviors.

Today organizations rely on computers to compensate for leadership functions. Goal setting takes place via interactive systems and employees depend on the network to assist them in clarifying questions with their co-workers instead of depending on their immediate manager. Substitutes are helpful when the leader has a large span of control or is tasked with managing geographically dispersed employees. In these situations, computerized information technology may provide a substitute for certain types of managerial leadership (Howell, et.al, 1990).

In line with previous studies, the present investigation focuses on substitutes that have the best chance to predict outcomes in the environment of interest (Dionne et al, 2002)-a distributed work environment. Therefore, spatial distance is the sole substitute of interest in this study. Howell and Villa (2005) state that two things have inhibited progress on advancing the substitutes theory: trying to reach agreement among researchers that situational and follower characteristics have the ability to enhance, neutralize, or substitute for leader behaviors and whether their existence is common enough for researchers to pay attention to them. As organizations continue to move to a remote way of working, distributed work will become the norm and identifying neutralizer variables will be increasingly visible and important in the academic and applied world. The research conducted here will contribute and assist in laying additional groundwork for substitute studies in a distributed work environment.

Spatial Distance

The most defining aspect of distributed teams is spatial distance. Whereas traditional collocated teams work in close physical proximity to one another, distributed team members are often dispersed over thousands of miles. This spatial separation affects how team members interact with one another. Very little face-to face interaction exists, as team members use mediating technologies such as phone and email to communicate. In collocated teams, technology is often used to supplement face-to-face communication whereas in distributed teams

it is the primary means of communication. Thus, the absence of proximal face-to-face interaction between team members defines distributed teams and distinguishes them from traditional teams (Bell & Kozlowski, 2002).

The interplay between a leader's behavior and followers' reactions when spanning physical distances has not been sufficiently explored. Physical proximity between leaders and followers may enable them more opportunity to exhibit key behaviors such as consideration and initiating structure and serve as role models to subordinates than in dispersed environments (Howell, et al., 2005). Antonakis and Atwater (2002) proposed a leader-distance theory and placed a call to action in which they asserted the dynamics of the leader subordinate influencing process differed based on distance, and that researchers need to investigate the evaluation of leader behaviors by followers, taking into account distance from the leader. Howell, Neufeld, and Avolio (2005) accepted this challenge and examined how physical distance moderated the effects of transformational and contingent reward leadership on unit performance. They found that physical distance between leaders and followers negatively moderated the relationship between transformational leadership and unit performance. Physical distance positively moderated the relationship between contingent reward leadership and performance (Howell, et al., 2005).

"Leadership at a distance" was initially identified as an important construct by Bogardus (1927). There was little to no mention of it again in the empirical literature until the late 1970s (Katz & Kahn, 1978; Kerr & Jermier, 1978). Kerr and Jermier (1978) introduce it in the context of leadership substitutes, wherein they describe it as "spatial distance", the amount of direct contact between the leader and subordinate (p.391), a proposed neutralizer of leadership that reduces the effect that leader behavior has on others. However, they did not find any relationship between spatial distance and organizational rewards not within the leader's control. This can be interpreted as the leader's reward power was viewed independent of the amount of direct contact between him/her and the subordinate. There was speculation about spatial distance's neutralizing effects, but no evidence of it through their investigation.

Leader distance has been theoretically defined in various reviews, but little empirical evidence exists as to its effects on follower outcomes (Antonakis & Atwater, 2002; Napier & Ferris, 1993). Within the last five years several attempts have been made to define it as a multidimensional construct.. Antonakis & Atwater (2002) define leader distance as 3 constructs:

physical distance (physical distance from followers), perceived social distance (differences in status, rank, authority, social standing, and power), and perceived interaction frequency (degree to which leaders interact with followers). They build on a conceptual model of distance described by Napier and Ferris (1993) that describes distance between a leader and follower as dyadic distance, “a multidimensional construct that describes the psychological, structural, and functional separation, disparity, or discord between a supervisor and a subordinate” (p. 326). They proposed that functional distance mediates psychological and structural distance in determining subordinate performance and satisfaction.

The dimensions of distance Napier and Ferris (1993) identified are psychological distance, structural distance, and functional distance. Psychological distance is the “psychological effects of actual and perceived differences between the supervisor and subordinate” (pp.328-329). The definition of psychological distance is similar to that of social distance. This includes demographic distance (age, race, sex), power distance (follower acceptance of power differentials between follower and leader), perceived similarity (how alike are leader and follower), and values similarity (similarity of beliefs, values, and attitudes). Structural distance refers to aspects of distance resulting from physical distance, organization structure (span of control, etc), and supervision structure (frequency of leader-follower interaction). These three variables are connected by the amount of interaction between leader and follower (Napier & Ferris 1993, p.333) Functional distance refers to the “degree of closeness and quality of the functional working relationship between supervisor and subordinate; whether the subordinate is a member of the in or out group” (Napier and Ferris 1993, p.337), affect, and the degree of follower empowerment.

Napier and Ferris suggest that functional distance is a negative predictor of subordinate outcomes such as performance evaluations and satisfaction. Antonakis and Atwater (2002) disagree stating that “intimacy is not a necessary condition for the emergence of successful charismatic leadership” (p. 682) and that while affect for, identification with, and trust in the leader depends on several factors, they do not require a leader to be intimate with followers. Because of this, Antonakis and Atwater do not include this dimension in their model of leader distance.

Erskine (2006) proposed distance as a two dimensional construct that may affect

individual outcomes such as performance and leader satisfaction. Structural distance is made up of physical distance, channel of communication, and frequency of interaction, while emotional distance is composed of demographic distance, social distance, and psychological distance.

The moderating effects of physical distance on the relationship between different leadership behaviors and follower performance has been minimally documented in the leadership literature. Podsakoff et al., (1984) reported that physical distance negatively moderated the relationship between contingent reward leadership and performance. They found that the leader's ability to establish contingent contracts between performance expectations and rewards, to observe follower performance, and to provide timely rewards were diluted with increased physical distance. Shamir (1995) investigated the influence processes used by transformational leaders who are socially close versus those who are socially distant from their followers. Close charismatic leaders were viewed as showing more consideration and openness with others, setting high performance standards, and having a greater impact on followers' task-related motivation and behavior. Although Shamir's theoretical arguments and empirical evidence apply to social distance, similar arguments can also be applied to physical distance as both variables contribute to interaction potential (Howell & Hall-Merenda, 1999).

Howell & Hall-Merenda (1999) found the relationship between LMX and follower performance was not moderated by physical distance. LMX positively affected follower performance, regardless of physical distance, implying that a positive leader–follower relationship will make leading from a distance effective. The results also showed that transformational leaders produce higher follower performance in close versus distant situations. These findings imply that transformational leaders require physical proximity to followers in order to address their development needs, encourage novel problem solving, and to communicate a sense of mission and enthusiasm. Yagil (1998) has shown that physically distant leaders are attributed charisma, as are their collocated counterparts, and that physical proximity has been found to improve the communication process and quality of exchange between leaders and followers (Bass, 1990). Podsakoff, MacKenzie, & Bommer (1996) found that spatial distance served as an enhancer of the positive relationship between high performance expectations and perception of role conflict.

While some studies have shown spatial distance to act in a neutralizing capacity, the

LMX study by Howell and Hall-Merenda (1999) showing LMX relationship to leader outcomes regardless of distance calls into question the longevity and robustness of the concept.

Furthermore, now that so many organizations are moving to a “remote environment” using recent technological advances, researchers may want to watch and revisit the concept of spatial distance as a neutralizer as distance working becomes the norm and employees find new ways of bridging space and time. This study will serve as a test of previous assumptions about leadership and distance.

Many definitions, dimensions, and predictions of leader distance effects were proposed in the literature but few have been tested and validated. For this reason, the current study will take a conservative approach by defining distance as spatial/physical distance and will validate the construct by collecting data on interaction frequency. The target population, an IT company on the West Coast, has mandated increases in span of control across the company, so there are few differences across business units and leaders. This definition of spatial distance can be classified as structural distance in Napier & Ferris (1993) model, structural distance in Erskine’s (2006) model, and both physical distance and perceived interaction frequency in Antonakis and Atwater’s (2002) model.

Communication

Distributed workers do not often have the opportunity to interact face-to-face with their managers and coworkers. They employ other means of communication such as email, phone, videoconference, and instant messaging. Early research on organizational communication effects was centered on information richness theory (Daft, et.al, 1987), which assumes that different types of communication have differing characteristics that either enhance or inhibit their effectiveness. Face-to-face communication has been found to convey social cues strongly and to be effective at establishing social presence and identification among team members (Zack, 1993). Email and phone communication are viewed as less rich and may be ineffective at maintaining organizational identity, which may lead to less organizational commitment.

Social presence theory has also influenced the area of organizational communication. It is defined as “the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationship” (Short, Williams, & Christie, 1976). Social presence is similar to the construct closeness in that it measures the extent to which the communication

medium creates awareness during the exchange (Fulk, Schmitz, & Steinfield, 1990). Initial studies in the area of social presence yielded findings that text-based communications were lower in social presence than audio, visual, and face-to-face channels (Fulk, Schmitz, & Steinfield, 1990), but with the increased use of email in today's organization, questions have surfaced as to whether this finding is still valid to employees' ability to adapt and adjust perception over time.

Physical distance has been found to have various effects on organization members. Monge and Contractor (2003) documented that having two people located in close proximity increased the likelihood of communication. Kraut, Egido, and Galegher (1990) conducted a study in which they predicted the probability of successful collaboration among scientists and engineers in the telecommunications industry, and found that communication frequency between people significantly decreases as distance increases, and an asymptote is reached at 30 meters. At this point, the individual may as well be located in a different country, for communication is no longer a frequent activity. The data were reexamined years later in the context of collaboration, highlighting that pairs of researchers were unlikely to complete a technical report unless their offices were in close proximity. Researchers were four times more likely to publish together if their offices were on the same hallway as they were if their offices were on different floors of the same building (Kraut, Fussell, Brennan, & Siegel 2002). When people are collocated there is a higher probability that chance encounters will lead to conversations and that they will engage in repeated conversation. This activity leads to relationship building that benefits both individuals in future work related situations.

Physical distance has been shown to decrease influence and social interaction (Antonakis & Atwater, 2002). Perceptions of leader activity can also occur because leaders do not have as many opportunities to deliver individual feedback, are not able to serve as role models, and are unable to influence subordinate efficacy (Yagil, 1998). It is difficult for leaders to monitor employees' work and provide sufficient and timely rewards, which can result in missed motivational opportunities and reduced productivity.

Communication has been shown to affect employee attitudes that are related to organizational identification (Wiesenfeld, Raghuram, & Garud, 1999). Communication enables organization members to share their experiences and perceptions of the organization. Through this process, social context clues create a shared interpretive context (Zack, 1993). This shared

context gives members a sense of the organization's identity and strengthens member identification through the process (Wiesenfeld, Raghuram, & Garud, 1999). Frequency of communication between individuals in an organization has been found to increase organizational commitment because individuals then feel they are active participants in the organization (Huff, et. al 1989). Tschan, Semmer, and Inversin (2004) found that more interactions and higher satisfaction with interactions at work predicted affective commitment and overall job satisfaction.

Straus (1997) documented that communication media had a direct effect on team members' satisfaction during a judgment task. Those individuals using computer mediated communication (CMC) were less satisfied than those individuals using face-to-face communication. Studies also show that CMC groups with equal performance quality as face-to-face communication groups were less satisfied with the process and outcomes than their face-to-face counterparts (Thatcher & De la Cour, 2003).

When distributed and face-to-face teams are equal in communication effectiveness, face-to-face teams have shown higher levels of satisfaction and lower levels of conflict (Cummings, Wilson, & Pearce, 2003). Team members have more synchronous and frequent interactions with, and are more likely to identify with, team members working locally than their distributed team members (Espinosa, Cummings, Wilson, & Pearce, 2003). These findings indicate that distance has affected leaders and their followers in various ways. Questions exist as to how stable these team's reporting relationships were and how long they had been in operation as a unified group. This study will revisit key outcome variables such as satisfaction with supervision and organizational commitment to see how they are affected in established, tenured, distributed teams.

Outcome Variables

Satisfaction with Supervision

Researchers have focused on the supervisory relationship and various models of supervision in the literature (Holloway, 1995; Watkins, 1995). In addition to the predictive findings represented in the leadership behavior sections of this paper, other satisfaction related studies are worthy of mention. Ellis (1991) reported that the supervisory relationship was identified by the subordinate as the most important factor in supervision. Ramos-Sanchez, et.al

(2002) found that respondents reporting negative experiences were found to have significantly lower levels of satisfaction with their current supervisor than were respondents who did not report negative experiences.

Weed, Mitchell and Moffitt (1976) found that subordinates, regardless of their personality, were significantly more satisfied with leadership behavior that was high in human relations orientation. The leader high in both human relations and task orientation received the highest satisfaction with supervision ratings while the leader high in task orientation but low in human relations orientation received the lowest satisfaction with supervision ratings. Gatmon, Jackson, Koshkarian, Martos-Perry, Molina, Patel, and Rodolfa (2001) reported that supervisees who discussed gender and sexual orientation similarity and differences with their supervisor reported higher levels of overall satisfaction with supervision and viewed their supervisors as being more competent at providing good supervision. In a study of school psychologists, Solly and Hohenshil (1986) employed the MSQ and found co-workers, social service, and activity to be major sources of satisfaction, while advancement opportunities, working conditions, and supervision were found to be sources of job dissatisfaction.

Phillips, Douthitt, and Hyland (2001) investigated the role of justice on team member satisfaction with their leader and found that the effect of leaders' consideration on satisfaction with the leader was completely mediated by justice perceptions. The results show that team members perceive greater fairness and have a higher level of satisfaction with leaders who demonstrate consideration behaviors regardless of the team's performance.

In a study regarding the comparison of the LBDQ-XII and SBDQ, Szilagyi and Keller (1976) found that the LBDQ-XII initiating structure dimension was positively related to satisfaction with supervision and overall satisfaction. Robinson (1995) observed several leadership behaviors to be related to teacher satisfaction with supervision. Of the 12 LBDQ XII subscales, all but production emphasis had a significant relationship to satisfaction with supervision. The strongest positive relationship was with consideration. Putti and Chin Tong (1992) examined impact of leadership behaviors on the level of satisfaction of subordinates in face-to-face teams within the Asian Civil Service Administration. They found consideration and integration provided higher satisfaction with supervision and production emphasis decreased subordinate satisfaction with supervision.

There is limited research on satisfaction with supervision in distributed environments. If studies do exist, they focus on a general satisfaction measure, not satisfaction with supervision. One study was located in which researchers investigated spatial distance and job satisfaction. Burrows, Munday, and Tunnell (1996) found that spatial distance was a significant negative predictor of teacher job satisfaction. The findings of the current study will provide preliminary data regarding the effects on satisfaction with supervision in a distributed context.

Commitment

Two views of organizational commitment (OC) have been researched extensively in the literature: attitudinal (or affective) commitment and behavioral (or continuance) commitment (Meyer, Allen & Smith, 1993). Affective commitment is defined as an emotional attachment to an organization characterized by strong links (Mowday, Steers & Porter, 1982). Other studies have described affective commitment similarly (Buchanan, 1974).

Continuance commitment and the Side-Bet Theory of Commitment were popularized by Becker (1960). According to this theory, employees make certain investments or side-bets in their organizations, for example, tenure toward pensions, promotions, and work relationships. These investments are costs which reduce the attractiveness of other employment opportunities.

Both types of commitment reflect connections between an organization and an employee, and the presence of either reduces the probability that an employee will leave. However, the potential effect or outcome differs depending on the type of commitment present. Employees with strong affective relationships may not only remain in an organization, but also exert considerable effort on behalf of the organization. Employees with continuance commitment, those who feel compelled to stay in an organization due to less attractive alternatives, are more likely to put in minimum effort.

Mowday, Steers, & Porter (1979) present the most popular definition of OC as consisting of a strong belief in and acceptance of the organization's goals and values; a willingness to exert considerable effort on behalf of the organization; and a strong desire to maintain membership in the organization. Steers, Mowday, and Porter (1982) represent OC as both an attitude and a set of intentions, since they define OC as connoting an acceptance of organizational goals and values along with the intent to remain in the organization and a "willingness to exert considerable effort on behalf of the organization".

Meyer & Allen (1984) have referred to attitudinal and calculative commitment as *affective* and *continuance* commitment, respectively. Attitudinal and affective types of commitment seem to be associated with employees' feelings toward an organization and their identification with the organization. Attitudinal commitment includes identification with, emotional attachment to, and involvement in the organization. This type of commitment can be increased by examining the nature of the work experience such as job challenge, role clarity and confirmed expectations. Attitudinal commitment is the conceptualization that is accepted by many researchers as the standard definition of OC (Phelps, Rogg, Downey, & Knight, 1994). Calculative and continuance commitment are associated with the objective rewards of being committed to the organization or the perceived costs (rapid promotion, nonvested pension plans, organization-specific skills training). An employee with continuance commitment is committed because the alternatives to employment at that company are seen as less beneficial.

Meyer, et al. (1989) found a positive association between affective commitment and performance, and a negative relationship between continuance commitment and performance. Those employees who intrinsically value their association with the organization are more likely to remain with the company and work towards its success. Those employees working for the company because they do not have other options are less satisfied, have lower productivity, and have increased absences. Evidence of the multidimensionality of commitment has been provided by Meyer & Allen (1990), as well as by a meta-analysis that found that the type of commitment (i.e., attitudinal vs behavioral, or calculative) moderated the relationship between commitment and other variables (Mathieu & Zajac, 1990). Age, length of time on the same job, and job satisfaction all had stronger positive relationships with attitudinal commitment; education and the intention to leave the job had more positive relationships with calculative commitment.

Meyer and Allen (1991, 1997) created a commitment three-component-model scale measuring three types of employee commitment: desire-based (affective commitment), obligation-based (normative commitment), and cost-based commitment (continuance commitment). "Commitment implies an intention to persist in a course of action." Organizations are interested in this construct due to the potential impact leading to reduction in costly turnover. Research has consistently shown that commitment and turnover are related. Employees who want to stay (high affective commitment) tend to perform better than those who do not want to stay

(low affective commitment). Employees who stay in order not to lose something of value (ie. Benefits) (high continuance commitment) only do what is necessary to maintain employment, no more (Meyer and Allen, 2003). Employees that remain with the organization out of obligation (high normative commitment) tend to outperform those that feel no such obligation (low normative commitment), but the effect on performance is not as strong as it is for affective commitment (Meyer and Allen, 2003). Also, employment contracts have changed how many people think about organizations today. People do not envision staying with one company for their entire lives and are aware that if the company needed to tighten its operational budget, their jobs could be in jeopardy. For these reasons and due to limited space on the survey, only affective and continuance commitment will be examined in the current study.

Understanding the nature of commitment is extremely important for organizations to be successful in monitoring and retaining key talent. An important concept at the root of any organizational commitment discussion involves the inducements-contributions balance (Becker, 1960, cited in Cherrington, 1989). Mowday, Porter, and Steers (1982) refer to it as the exchange concept. Members join organizations because they have needs that can not be met on their own. The organization offers various inducements (i.e., wages, benefits, and social interaction). In turn, the organization, to survive, must have the collective input of its members. The members make contributions to the organization's continued operations (i.e., day to day performance of a task or group of tasks). There is an expectation for met needs by both parties (i.e., a balance must exist). Commitment evolves to the extent that this balance is maintained. This exchange concept is an active process or relationship. On the surface, it is behavioral in nature or what has since been referred to as continuance (Meyer & Allen, 1984; 1989) or calculative commitment (Mathieu & Zajac, 1990).

Randall (1987) discussed the consequences of low, moderate, and high levels of commitment. There are both positive and negative consequences for all three levels. Randall says moderate levels of commitment are optimal for both employees and organizations. The workforce is more stable and satisfied without being consumed by the organization. Individuals are able to adjust to their environment by varying their degrees of commitment according to the perceived attractiveness and the requirements of the settings. Under these conditions the individual's needs and the organization's needs may be balanced.

Virtually all of the definitions of organizational commitment share the notion that commitment reflects the strength of an individual's identification with, and involvement in, a particular organization. It differs from job satisfaction in that OC is an attitude toward the organization for which the person works, while job satisfaction is an attitude toward the specific job that person holds.

Podsakoff, Niehoff, MacKenzie, and Williams (1993), in a study on leadership substitutes, found that employees who are spatially distant from their leaders are less committed than employees that are in close proximity to the leader. They also discovered that supportive leader behavior had a positive impact on employee commitment, and that clarification of procedures had a negative impact on commitment. This study will examine the effects of leadership behaviors on two types of commitment: affective and continuance.

CHAPTER 2-Hypotheses Development

Contribution to Literature

Relationships between distributed and traditional management behaviors and their impact on employee's satisfaction and commitment are important. The purpose of the current investigation is to examine the degree to which spatial distance moderates the relationship between subordinates' perception of leader behavior and their attitudes. It is extremely important to understand the nature of spatial distance as a potential leadership neutralizer because organizations will continue to move into emerging markets abroad, and continued focus on service orientation will require employees to work from client sites or sites other than their manager's. Thus, distributed teams and remote leadership will continue to expand, ultimately becoming the status quo.

The current study contributes to the literature in several ways. The few studies examining distance employ virtual teams. These teams are temporary, management relationships are not established, relationships and trust are not always developed, experiences working in virtual environments vary drastically, accountability varies, and cultural and temporal effects are present when dealing with global teams. This study controls for all of the above by employing teams that are in an established hierarchy, have been working with their cohorts for an ample amount of time, have been adequately trained on how to work at a distance due to aggressive corporate initiatives to move the company into this type of work environment years earlier, have been

working for their manager for a sufficient amount of time, and are held accountable by that person via performance reviews. The data collection will be focused in the US only to control for cultural and temporal variation. The studies in existence look at the moderating effects of spatial distance on performance but very few if any explored satisfaction with supervision and commitment in a dispersed environment. LMX and transformational leadership theories have been examined in virtual environments in various ways, but there is a gap in the investigation of traditional leadership behaviors in this context. Many studies are qualitative in nature and attempt to uncover KSAs for managing dispersed teams without having a theoretical and behavioral foundation. The LBDQ XII provides an opportunity to return to basic behavior theory and explore transfer of these behaviors to a dispersed environment. It also provides an opportunity to reengage the construct of initiating structure in leadership research as Judge, Piccolo, and Ilies (2004) urged researchers to do. This study will yield a plethora of information on how validated leadership constructs such as initiating structure and consideration impact key outcome variables in a distributed work environment and what differences, if any, exist between a distributed and collocated organization.

Hypotheses

The hypotheses of the study are as follows:

1. Employees' face-to-face interaction with their leader will be predictive of employee attitudes such that:
 - (a) Face-to-face interaction will be correlated positively with affective commitment.
 - (b) Face-to-face interaction will be correlated positively with satisfaction with supervision.
 - (c) Face-to-face interaction will be correlated negatively with continuance commitment.
2. Spatial distance between leader and employee will moderate the relationship between leader behavior and employee satisfaction with supervision such that:
 - (a) the greater the spatial distance, the more positive will be the relationship between leader initiating structure and employee satisfaction with supervision.
 - (b) the greater the spatial distance, the more positive will be the relationship between leader tolerance of freedom and employee satisfaction with supervision.
 - (c) the greater the spatial distance, the more positive will be the relationship between

leader integration and employee satisfaction with supervision.

(d) the greater the spatial distance, the more negative will be the relationship between leader production emphasis and employee satisfaction with supervision.

3. Spatial distance between leader and employee will moderate the relationship between leader behavior and employee affective commitment such that:

(a) the greater the spatial distance, the more positive will be the relationship between leader consideration and employee affective commitment.

(b) the greater the spatial distance, the more positive will be the relationship between leader integration and employee affective commitment.

CHAPTER 3-Method

Definitions

Remote Management-The term “remote management” refers to managing at a distance where employees spend at least some portion of their time working in a different location than their manager, which can include customer/partner locations, home, other company buildings and/or different areas within the same company building

Initiating Structure- manager clearly defines own role and lets employees know what is expected

Consideration-manager regards the comfort, well being, status, and contributions of employees

Tolerance of Freedom- manager allows employees scope for initiative, decision, and action

Production Emphasis- manager presses for productive output

Integration-manager maintains a closely knit organization: resolves employee conflicts

Remote Management Specific- management actions specific to the remote work environment at target company

Spatial Distance-working distance between supervisor and subordinates

Satisfaction with Supervision- employees' satisfaction with the way in which the manager handles his/her employees

Affective Commitment-employees' identification with, emotional attachment to, and involvement in the organization

Continuance Commitment-associated with the objective rewards of being committed to the organization or the perceived costs (rapid promotion, nonvested pension plans, organization-specific skills training). An employee with a continuance commitment is committed because the alternatives to employment at that company are seen as less beneficial.

Company support for remote management-the company's role in providing remote management resources, training, developing reward systems for remote management effectiveness, and removing culture barriers to engaging in remote management.

Because of the space limitations in the questionnaire imposed by the participating organization and time constraints on the participants, only certain leadership behaviors and outcome variables were assessed.

Sample and Procedure

The target company for this study is a West Coast based IT organization that focuses on systems, software, storage and services to provide customers with an end-to-end IT infrastructure. They have approximately 40, 000 employees worldwide, and have been in business for over 20 years. In 2001, the company focused on establishing virtual teams that are permanent in nature instead of those formed for a specific project. Executive management views it as a way to expand talent pools and shrink real estate costs simultaneously. They are not blind to the fact that managers will need to shift their behavior in this new environment. The Chief Executive Officer of this company made the following endorsement on the company radio show:

The chances that your boss is going to be in the same hall, down the hall, or even in the same time zone continues to shrink as the company goes global...Employees love the fact that they don't necessarily have to move to be a part of the community, but it's going to require a new model, a new structure, a new understanding of how to manage in a remote and virtual manner, and there are different skills [required] (undisclosed website 2003).

The program has a mixture of assigned employees, work from home, and drop in/reservable employees. Drop in centers are developed for hotelling, wherein employees reserve

an office space for a period of time. Employees and managers are not always collocated and many of them are separated by significant distances. Often, those employees that are collocated with their managers in the same geographical area go for weeks at a time without seeing their manager face- to-face. Training was delivered to all employees participating in the remote program. The training consisted of high level tips and guidelines for working remotely (communication, technology, processes, etc). At the time of the data collection, no employee selection mechanism was in place for selecting employees who would fit or work well in a distributed environment. Also, managers were struggling with the lack of direct control and visibility over their employees daily work. The change management group was actively working to assist managers and employees with the transition.

A sample consisting of 1,233 employees was obtained for the current investigation, and was generally representative of the target company's population. It included more employees in engineering and support functions than in sales related positions. U.S. employees were asked to participate in the study by answering an online questionnaire. The questionnaire measured the following: leader behavior, physical work arrangement, satisfaction with supervision, organizational commitment, Company support for remote management, two open-ended questions regarding remote management effectiveness, and self-identification demographic questions. All measures are included in Appendix A.

Measures

Demographic Information

The survey asked the participants to report demographic information. Data pertaining to the individual's manager status, workplace status (assigned, home based, hotelling), length of time in current workplace status, previous experience working remotely from manager, length of time reporting to current manager, job level, job type, age, and sex were collected. Managers were also asked to report the following: how many direct reports they manage, how many employees work remotely from them, and how many years of experience they have managing remotely.

Leader Behavior

The Leader Behavior Description Questionnaire Form XII (LBDQ XII) was used to obtain descriptions of individuals' leadership behavior from the employees they supervise. The

LBDQ was developed by the staff of the Ohio State Leadership Studies (Fleishman, 1953; Halpin & Winer, 1957; Hemphill and Coons, 1957) and the first version was introduced in 1957 (Hemphill and Coons, 1957). Stogdill (1963), in subsequent research with the LBDQ, revised the instrument and added in another ten dimensions. Hence, the instrument is named LBDQ-XII.

The LBDQ-XII consists of items that describe the behavior of a leader. Respondents are asked to think how frequently the leader engages in the behavior described by the item, then they are required to decide whether the leader (A) always (B) often (C) occasionally (D) seldom or (E) never acts as described. Bass (1990) reported that the reliability for the LBDQ-XII is .86 to .90 for the consideration (people-oriented) subscale and 0.78 to .86 for the initiation subscale (task-oriented).

Schriesheim, Kinicki, and Schriesheim (1979) found that subordinate reports of initiating structure were not susceptible to leniency effects. Consideration, on the other hand, reflected an underlying leniency factor when applied in the field. Consideration still explained substantial variance in the criterion variables. The Ohio State leader dimensions are examined because of their extensive use in leadership research. The following scales were used in this study: Initiating structure, Tolerance of Freedom, Consideration, Production Emphasis, and Integration. Stogdill (1963) reported the reliability of the 12 subscales as .38 to .91 including tolerance for freedom (.75 to .86), production emphasis (.71 to .79), and integration (.73 to .79).

Physical Work Arrangement/Spatial Distance

The 3 item Spatial Distance subscale of the substitutes for Leadership measure (Kerr and Jermier, 1978) was used to assess working distance between supervisor and subordinates. Substitutes are job features that potentially moderate the success of particular leadership styles. An additional item was created in order to control for the amount of communication between the manager and employee and type of communication medium. The item reads, "On average, how many hours per week do you interact with your manager?" Respondents answer based on the amount of interaction one on one, in a group setting using both face-to-face and phone media. Spatial distance was measured using 3 questions on a 5-point response format ranging from 1 (strongly disagree) to 5 (strongly agree). Spatial distance reported reliabilities range from .71 to .85, one of the highest reliabilities reported for a substitutes dimension.

Satisfaction with Supervision

The construct of satisfaction with supervision was measured using the supervision (HR) dimension of the Minnesota Satisfaction Questionnaire (MSQ). This five item scale, developed by Weiss, Dawis, England, & Lofquist (1967), measures the subordinates' satisfaction with the way in which the boss handles his/her employees. The scale is constructed in a Likert format with higher scores indicating higher levels of satisfaction. This measure of satisfaction with supervision has a reported reliability of .84.

Organizational Commitment

Meyer, Allen, & Smith's (1993) revised Three Component Model (TCM) Employee Commitment Survey (revised version) was used to measure two forms of employee commitment to the organization: desire-based (affective commitment) and cost-based commitment (continuance commitment). Employees responded to a group of 12 questions pertaining to their relationship with the organization and their reason for staying. Responses to these scales were made on five point scales (1= strongly disagree and 5= strongly agree). The Affective Commitment Scale (ACS) and the Continuance Commitment Scale (CCS) will be scored separately and analyzed according to the hypotheses. Meyer, Allen, and Smith (1993) reported reliabilities of .85 to .87 for affective commitment and .79 to .83 for continuance commitment.

The organization wanted to know if managers felt they were supported by the company in managing remotely. A validated company support for remote management measure could not be found, so a scale was developed internally to tap this construct. The measure consists of items that assess the company's role in providing remote management resources, training, developing reward systems for remote management effectiveness, and culture/climate barriers to engaging in remote management. Only managers were asked to complete this portion of the questionnaire. Preliminary findings may be provided in this study to begin the exploratory process.

Open-Ended Questions

Two open-ended questions were included to gather qualitative information from participants: "Please choose the 3 skill areas that you believe are most important for effective remote management and provide comments and/or suggestions below", and "Please add any other comments you may have about addressing remote management at [company]". The data from this section may provide additional insight into the current investigation findings.

Individual level of analysis will be used in the current study. Confidentiality was also considered and will be maintained by keeping the responses separate and not linking back to an individual leader.

Proposed Analyses

The sample was divided into two data sets, one to test hypothesized effects and the other to cross validate those results (approximately n=500 for each). Hierarchical multiple regression was used to analyze the majority of the hypotheses. In using this type of regression procedure, the researcher determined the importance of the independent variables before their predictive value was assessed (Tabachnick & Fidell, 1996). Spatial distance was thought to be the most powerful predictor of the outcome variables and therefore was entered first. Next, the contribution of leader behavior and the interaction term was assessed to determine if it provided additional information.

The Pearson product-moment correlation coefficient, r , was used to show the relationship between modes of interaction with the leader, spatial distance, leader behaviors, and outcome variables. Two preliminary scales, support for remote management and remote leader behavior, were examined as a first step towards establishing them as robust measures in future research.

CHAPTER 4-Results

Sample

Six organizations within the company participated in the survey. Four engineering organizations and two services groups provided responses. The survey was only administered in the United States to control for cultural variation. Data was collected over a 5 week period. Both individual contributors and managers were surveyed, resulting in 1,233 total responses (25% overall response rate, in line with other surveys administered at this company). The total number of survey responses for managers was much smaller than individual contributor employees (n=150 vs. n=1083, respectively). Analyses were conducted separately on the individual contributor and manager samples. The individual contributor data set was further divided to produce a validation data set leaving approximately 500 cases for the data sample and 500 cases for the validation sample.

The majority of respondents had reported to their current manager for over a year. A

normal distribution was found for level in the organization with the peak containing mostly middle and senior level individual contributors. Seventy percent of the individual contributor sample was male, while 80% in the manager data set were male. The majority of the respondents were between 31 and 50 years of age (61%).

Some survey analyses focused on looking at potential differences in remote versus non remote employee responses. To examine these differences, it was critical to clearly differentiate these groups. Responses to questions about the employees' spatial distance from their manager were used to identify employees. Remote employees (n=556) were those employees scoring spatial distance greater than three on a five point scale and non remote employees (n=270) were those employees scoring spatial distance less than three on a five point scale. There were 407 employees that were sometimes remote and non-remote and did not classify into either group. These employees were included in overall analyses (regression, factor analysis, etc.) but not in analyses that required a distinct classification.

Interaction time was analyzed to determine the amount and nature of employee manager interactions. All of the interaction scores had statistically significant average score differences between remote and non-remote employees. Non-remote employees reported over five times more in-person "face time" (individual and group) with managers than remote employees. Remote employees reported more phone time with managers than non-remote employees. Overall, non-remote employees reported more than double the total manager interaction time than remote employees.

Data Screening

Prior to analysis, all variables were entered into SPSS and tested for accuracy of data entry, missing values and normalcy of distributions. Frequencies were run to search for out-of-range values, plausible means and standard deviations, coefficients of variation, and univariate outliers. Descriptive statistics were also examined (see Table 4.1).

Table 4.1 Descriptive Statistics

	N	Mean	Standard Deviation	Variance	Range	Min	Max
Career Advancement	549	3.32	1.13	1.28	4.00	1.00	5.00
Initiating Structure	460	37.46	6.42	41.26	35.00	15.00	50.00
Consideration	467	38.49	6.88	47.36	40.00	10.00	50.00
Tolerance of Freedom	493	40.30	6.61	43.73	40.00	10.00	50.00
Production Emphasis	297	35.10	6.31	39.78	34.00	16.00	50.00
Integration	423	18.54	4.60	21.19	19.00	6.00	25.00
Remote Specific	281	40.50	7.21	51.94	33.00	17.00	50.00
Spatial Distance	532	10.29	4.10	16.84	12.00	3.00	15.00
Satisfaction with Supervision	481	19.87	4.67	21.78	20.00	5.00	25.00
Affective Commitment	541	20.10	5.10	25.98	24.00	6.00	30.00
Continuance Commitment	518	18.70	3.99	15.91	23.00	6.00	29.00

All cases appeared to fall within expected ranges, and means and standard deviations were suitable. Missing data appeared to be randomly distributed and was scarce leaving 532 individual contributor cases for further analysis and 428 individual cases for validation. Manager data was separated out and analyzed as part of the support for remote management scale properties investigation.

An analysis of the histograms, skewness and kurtosis revealed no significant deviations from normality or the presence of univariate outliers. Additionally, the examination of residual scatterplots showed there were no heteroscedasticity among the variables and no violations of linearity or multivariate normality. A casewise analysis of Mahalanobis' and Cook's Distances, leverage scores, and standardized residuals showed no multivariate outliers in the data set. Finally, zero-order correlations and tolerance levels did not reveal problems of multicollinearity or singularity.

Reliability of Scales

Results from reliability analysis yielded acceptable reliabilities for the majority of scales (initiating structure $\alpha = .86$; consideration $\alpha = .89$; tolerance of freedom $\alpha = .91$; production emphasis $\alpha = .82$; integration $\alpha = .90$; remote specific behaviors $\alpha = .91$; spatial distance $\alpha = .85$; satisfaction with supervision $\alpha = .93$; support for remote management $\alpha = .73$; affective commitment $\alpha = .86$; continuance commitment $\alpha = .65$). Due to a low alpha, results involving continuance commitment are not reliable and should be interpreted with caution. Looking at Cronbach's Alpha if item deleted, there was not much gain by dropping any item and item total numbers were all under .55. Low reliability prevents researchers from detecting relationships in the data due to type two issues. If a relationship is found despite low reliability, then it must be strong.

Correlational Analysis

As can be seen in Table 4.2, the results do not support the hypotheses that face to face interaction scores were positively correlated with affective commitment, or satisfaction with supervision. Face to face interaction is not negatively correlated with continuance commitment. Therefore hypotheses 1a, 1b, and 1c are not supported. The validation sample was reviewed in the event significance was present. Once again, hypotheses 1a, 1b, and 1c were not supported.

Table 4.2 Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Career Advancement	N/A													
2. Initiating Structure	.48**	.86												
3. Consideration	.51**	.65**	.89											
4. Tolerance of Freedom	.39**	.39**	.74**	.91										
5. Production Emphasis	.11	.42**	.00	-.10	.82									
6. Integration	.52**	.80**	.83**	.61**	.22**	.90								
7. Remote Specific	.52**	.70**	.82**	.68**	.15*	.80**	.91							
8. Spatial Distance	-.12**	-.17**	-.10*	.08	-.06	-.19**	-.03	.85						
9. Satisfaction with Supervision	.56**	.63**	.84**	.70**	.08	.78**	.77**	-.08	.93					
10. Affective Commitment	.51**	.43**	.52**	.40**	.15**	.57**	.56*	-.04	.51**	.86				
11. Continuance Commitment	-.12**	-.01	-.12*	-.12*	.07	-.14**	-.08	-.01	-.07	-.16**	.65			
12. Hours Face to Face	.12*	.15*	.11	-.02	.12	.08	.12	-.19**	.04	-.00	-.03	NA		
13. Hours Phone	.14	.05	.09	-.03	.02	.11	.10	-.14	.08	.06	-.07	.85**	NA	
14. Hours Total	.14**	.13*	.10	-.03	.10	.11	.11	-.18**	.07	.05	-.06	.91**	.92**	NA

* $p < .05$ ** $p < .01$; Reliabilities on Diagonal

In order to add support to the spatial distance scale's ability to measure the amount of interaction between managers and employees, the number of hours per week employees and managers engaged in various forms of communication was calculated. Spatial distance was found to be negatively correlated with 1 on 1 face to face communication $r(299) = -.17, p < 0.01$,

and group face to face communication $r(326) = -.17, p \leq 0.01$. This is what one would expect to see given that spatial distance is measuring interaction amount. The greater the spatial distance, the less amount of face to face time is experienced by employees and managers.

Spatial distance was also correlated with several variables of interest. A correlation of $r(518) = -.12, p < 0.01$ was found between spatial distance and career advancement. Spatial distance was found to be positively correlated with intent to stay $r(507) = .12, p < 0.01$. Significant negative correlations were found between spatial distance and initiating structure $r(440) = -.17, p < 0.01$, spatial distance and consideration $r(450) = -.10, p < 0.05$, and spatial distance and integration $r(400) = -.19, p < 0.01$.

There was no significant correlation between spatial distance and the outcome variables affective and continuance commitment. There was no significant correlation between spatial distance and satisfaction with supervision in the data sample. There was a significant negative correlation between spatial distance and satisfaction with supervision in the validation sample ($-.12$). The relationship was low but significant. All other correlations mapped across data sets. Spatial distance correlated with other variables in a similar way across samples and spatial distance was negatively correlated with face to face hours across both samples.

These findings lend support to previous studies in the literature. Initiating structure was highly correlated with consideration, tolerance of freedom, and production emphasis. Consideration was highly correlated to tolerance of freedom and integration. These intercorrelations between LBDQ scales have been a point of criticism in the past. They were not entered into the same regression equations to avoid multicollinearity issues.

The outcome variables were found to be significantly related to certain leadership behaviors. Satisfaction with supervision was highly correlated with several leadership behaviors (initiating structure $r(414) = .63, p < 0.01$; consideration $r(424) = .84, p < 0.01$; tolerance of freedom $r(437) = .70, p < 0.01$; integration $r(386) = .78, p < 0.01$). Affective commitment was positively related to tolerance of freedom $r(478) = .40, p < 0.01$ and integration $r(406) = .57, p < 0.01$. Affective commitment was also positively related to satisfaction with supervision $r(466) = .51, p < 0.01$ which was expected due to findings in the literature.

Remote management specific behaviors was a scale mixed of various items specific to

the remote environment at the target company. This scale was included for exploratory purposes. Correlations of $r(255)=.70$ and $r(263)=.82$ and $r(250)=.80$, $p < 0.01$ were obtained between remote management specific behaviors and initiating structure, consideration, and integration respectively. Due to these relationships and the high positive relationship between remote management specific behaviors and satisfaction with supervision $r(266)=.77$, $p < 0.01$ and affective commitment $r(275)=.56$, $p < 0.01$, the remote management specific behavior scale was factor analyzed. Support for remote management was measured on the manager data separately and will be discussed later.

Group Differences

Remote employees report equally high levels of tolerance of freedom as non-remote employees, but report lower levels of the other behavior dimensions than non-remote employees report observing. Regarding outcome differences between the two groups, based on t-test statistics, non-remote employees reported significantly higher levels of satisfaction with supervision than remote employees. A single item measure, career advancement was also investigated as an outcome variable and there was a significant difference with non-remote employees reporting higher levels of career advancement than remote employees. Regression analysis will aid in determining what behaviors may be driving these differences.

Regression Analyses

These correlational data suggested the appropriateness of a regression procedure to further investigate the variables' predictability of leadership attitudes. The unique contribution of the variables to satisfaction with supervision and affective commitment was explored using hierarchical multiple regression.

Regarding hypotheses 2a, 2b, 2c, and 2d, tables 4.3 and 4.4 display the correlations between the variables, the unstandardized regression coefficients (B) and intercept, and the standardized regression coefficients (β). Also, in the table one can see the semipartial correlations (ΔR^2), R^2 , and adjusted R^2 after the entry of the independent variables.

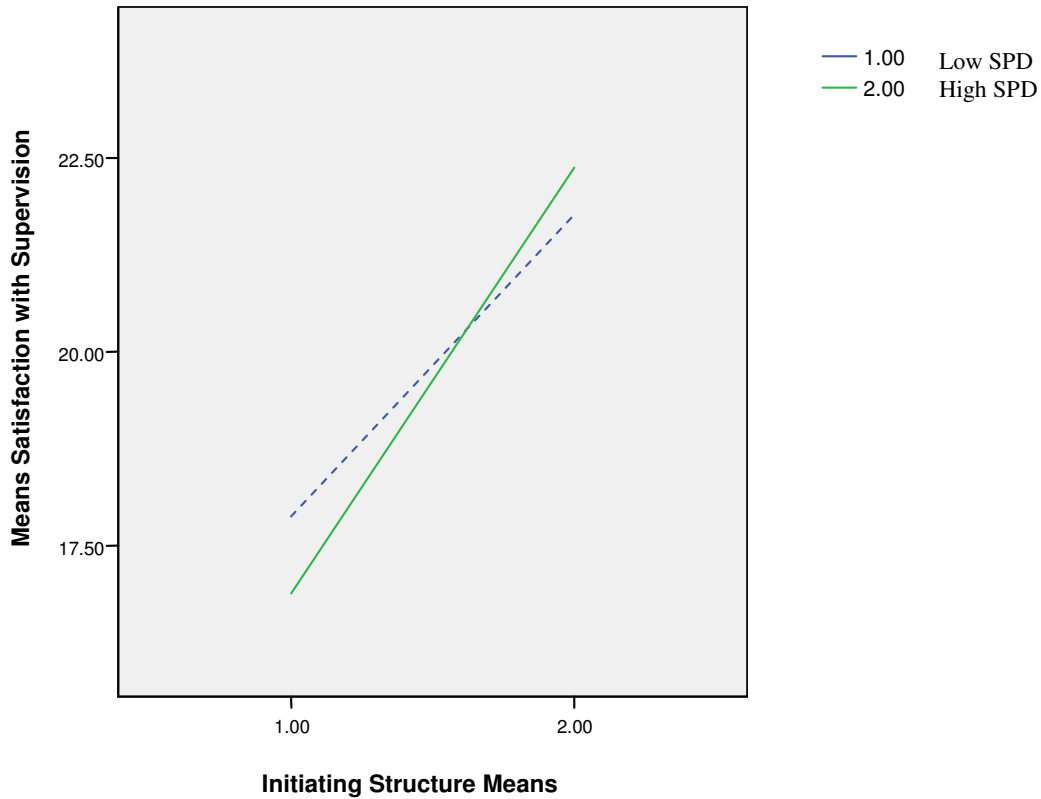
Table 4.3 Hierarchical Regression Spatial Distance and Initiating Structure Predicting Satisfaction with Supervision (N=397)

Variable	<u>B</u>	<u>SE B</u>	B	ΔR^2
Step 1				
Spatial Distance	-.082	.057	-.073	
Step 2				.417
Spatial Distance	.060	.044	.053	
Initiating Structure	.463	.027	.658**	
Step 3				.006
Spatial Distance	-.472	.268	-.418	
Initiating Structure	.315	.079	.447**	
SD x InitStr	.014	.007	.484*	

Note. $R^2 = .003$ for Step 1; ($p < .01$); * $p < .05$ ** $p < .01$

For hypothesis 2a, a hierarchical multiple regression was performed to investigate the prediction of satisfaction with supervision from initiating structure including spatial distance as a moderator variable. Spatial distance was added first and was not significant. Initiating structure was added resulting in an $R^2 = .42$, $p < .01$. Next the interaction term spatial distance X initiating structure was added and was significantly different from zero resulting in an $\Delta R^2 = .006$, $p < .05$. The effect is weak but significant, and warranted further investigation. In total the model accounted for 42% of the variance in satisfaction with supervision. The interaction was examined through graphical methods by plotting means (see Figure 4.1).

Figure 4.1 Interaction of Spatial Distance and Initiating Structure in the Prediction of Satisfaction with Supervision



In evaluating interaction effects, the least significant difference (LSD) pairwise multiple comparison test was employed. All comparisons were significant at the .05 level. Spatial distance appeared to be a moderator acting as an enhancer. Enhancers increase the impact of a leadership behavior on criteria but they have no influence on the criterion itself. Enhancers represent a positive moderating influence, the stronger the moderator, the stronger the predictor-criterion relationship (Howell et.al., 1986). When initiating structure was low, employees experienced higher satisfaction when spatial distance was low. When initiating structure was high, employees experienced higher satisfaction with supervision when spatial distance was high. Another way to interpret this is that there was a stronger relationship between initiating structure and satisfaction with supervision when spatial distance was high. Hypothesis 2a was supported.

It was hypothesized that the greater the spatial distance, the more positive will be the

relationship between tolerance of freedom and satisfaction with supervision. Spatial distance contributed nothing to the prediction of satisfaction with supervision when entered first. Tolerance of freedom predicted 49% of the variance in satisfaction with supervision. The cross product was entered third and was not significant. Hypothesis 2b was not supported.

Table 4.4 Hierarchical Regression Spatial Distance and Tolerance of Freedom Predicting Satisfaction with Supervision (N=421)

Variable	<u>B</u>	<u>SE B</u>	B	ΔR^2
Step 1				
Spatial Distance	-.074	.056	-.065	
Step 2				.488
Spatial Distance	-.138	.040	-.120**	
Tolerance of Freedom	.505	.025	.701**	
Step 3				.002
Spatial Distance	-.476	.265	-.414	
Tolerance of Freedom	.417	.073	.578**	
SD x Tolerance of Freedom	.008	.006	.330	

Note. $R^2 = .002$ for Step 1; ($p < .01$); * $p < .05$ ** $p < .01$

Hypothesis 2c led to a different result. When looking at the regression results, it was revealed that after entering spatial distance, $R^2 = .013$, $p < .05$. Next, integration contributed an additional 59% of the variance. The interaction term was entered, and was not significant. Therefore spatial distance was not acting as a moderator and hypothesis 2c was not supported (see Table 4.5). Hypothesis 2d was not supported as spatial distance, production emphasis, and the interaction were not significant in predicting satisfaction with supervision (see Table 4.6).

Table 4.5 Hierarchical Regression Spatial Distance and Integration Predicting Satisfaction with Supervision (N=366)

Variable	<u>B</u>	<u>SE B</u>	β	ΔR^2
Step1				
Spatial Distance	-.143	.060	-.124*	
Step 2				.588
Spatial Distance	.027	.039	.023	
Integration	.810	.035	.781**	
Step 3				.003
Spatial Distance	-.252	.170	-.218	
Integration	.651	.101	.627**	
SD x Integration	.015	.009	.266	

Note. $R^2 = .013$ for Step 1; ($p < .01$); * $p < .05$ ** $p < .01$

Table 4.6 Hierarchical Regression Spatial Distance and Production Emphasis Predicting Satisfaction with Supervision (N= 266)

Variable	<u>B</u>	<u>SE B</u>	B	ΔR^2
Step1				
Spatial Distance	-.077	.072	-.066	
Step 2				.005
Spatial Distance	-.069	.072	-.059	
Production Emphasis	.053	.046	.071	
Step 3				.001
Spatial Distance	-.234	.418	-.200	
Production Emphasis	.006	.126	.008	
SD x Production Emphasis	.005	.012	.150	

Note. $R^2 = .001$ for Step 1; ($p < .01$); * $p < .05$ ** $p < .01$

A strange finding was spatial distance's significant main effect on satisfaction with supervision in the integration regression model while having no main effect when regressed on satisfaction with supervision in the other regression models. This may be due to having different effective samples. There were unknown differences between samples in the analyses, and in the integration sample the effect was stronger while it was weaker in the other analyses. This may have been random chance.

Hypotheses 3a and 3b looked at the predictability of spatial distance, consideration and integration on affective commitment. Spatial distance's contribution was not significant in either model. Consideration explained 27% of the variance in affective commitment. The interaction spatial distance X consideration was not significant. Hypothesis 3a was not supported (see Table 4.7). Integration explained 31% of the variance $R^2 = .31$, $p < .01$. Spatial distance and the interaction effects were not significant. Therefore hypothesis 3b was not supported (see Table 4.8).

Table 4.7 Hierarchical Regression Spatial Distance and Consideration Predicting Affective Commitment (N=437)

Variable	<u>B</u>	<u>SE B</u>	B	ΔR^2
Step 1				
Spatial Distance	-.039	.060	-.031	
Step 2				.274
Spatial Distance	.025	.051	.020	
Consideration	.411	.032	.526**	
Step 3				.000
Spatial Distance	.045	.323	.036	
Consideration	.417	.096	.533**	
SD x Consideration	-.001	.008	-.017	

Note. $R^2 = .001$ for Step 1; ($p < .01$); * $p < .05$ ** $p < .01$

Table 4.8 Hierarchical Regression Spatial Distance and Integration Predicting Affective Commitment (N=385)

Variable	<u>B</u>	<u>SE B</u>	B	ΔR^2
Step 1				
Spatial Distance	-.090	.066	-.070	
Step 2				.307
Spatial Distance	.038	.056	.030	
Integration	.659	.050	.563**	
Step 3				.002
Spatial Distance	.285	.242	.221	
Integration	.802	.145	.685**	
SD x Integration	-.013	.012	-.213	

Note. $R^2 = .002$ for Step 1; ($p < .01$); * $p < .05$ ** $p < .01$

Researchers in the field have encountered problems in finding hypothesized moderated relationships (Villa et. al., 2003). Many times this is due to factors that decrease statistical power. In moderated multiple regression, statistical power is the probability of detecting a moderator effect in a sample when a moderator effect exists in the overall population. Some of the factors that have been found to reduce power are small sample size, unequal group size, range restriction, measurement error in the predictor variables that create the interaction term, and predictor correlation. Due to the small significant interaction effect found in the current study, it appears that power was sufficient. All findings were cross validated, and they produced the same results as those discussed above.

Exploratory Principal Components Analysis

An exploratory principal component analysis (PCA) was conducted on remote management specific behaviors and support for remote management scales in order to interpret the constructs' factors. This was ultimately done to aid in future studies involving remote management. PCA was chosen over factor analysis because the primary goal was to reduce a number of variables down to a smaller number of components and no theoretical solution was sought (Tabachnick & Fidell, 1996). A principal components analysis was performed on 8 items

from the support for remote management measure and 10 items from the remote management specific behavior measure to determine if underlying structures existed.

First, the remote management specific behaviors measure was investigated. Prior to performing the PCA, the factorability of the variables was assessed. Both Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity indicated that the data were factorable (KMO=.928; Bartlett's=1482.874, $p < .001$). As such, the PCA was performed and components were extracted after examining the scree plot and the eigenvalues. An oblique rotation was performed to assess the independence of the resulting factors. The component correlation matrix indicated that the factors were independent of one another due to small correlations, so an orthogonal rotation was chosen for analysis. Loadings, communalities, and percents of variance and covariance are displayed in Table 4.9.

Table 4.9 Remote Management Specific Behaviors Factor Loadings, Percent of Variance and Communalities (h^2) for Principal Components Extraction and Varimax Rotation

Item	Component 1	Component2	h^2
	Accessibility/ Inclusion	Support of Remote Work	
Equal opportunities	.62	.43	.57
Keeps lines of communication open	.74	0	.61
Supports me working anywhere	0	.62	.44
Hires talent regardless of location	0	.86	.76
Equal participation in meetings	.56	.49	.56
Believes in & capitalizes on remote work	.46	.66	.65
Easily accessible	.83	0	.70
Monitors performance well at distance	.70	.47	.71
Maintains high productivity	.69	.51	.74
Resolves urgent problems quickly	.78	0	.67
% Variance	55.38%	8.64%	

Loadings under .35 are replaced by zeros. As is seen in the table, a varimax rotation of the solution resulted in more easily interpretable components. Two components emerged. Component 1 (accessibility/inclusion) was found to account for the most variance (55.38%). Component 2 (support of remote work) accounted for 8.64% for a sum equaling 64.02% of the total variance explained. Component 1 contained items such as provides equal opportunity for

recognition, uses email/phone to keep lines of communication open, allows all employees to participate equally in meetings, and resolves urgent problems quickly. Component 2 was constructed of items such as supports me working wherever I choose, hires talented employees regardless of where they live, believes in advantages of distributed work and finds ways to capitalize on them.

The next analysis involved the investigation of Support for Remote Management. Once again, prior to performing the PCA, the factorability of the variables was assessed. Both Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett’s Test of Sphericity indicated that the data were factorable (KMO=.774 Bartlett’s=247.111, $p < .001$). As such, the PCA was performed and components were extracted after examining the scree plot and the eigenvalues. An oblique rotation was also performed to assess the independence of the resulting factors. The component correlation matrix indicated that the components were independent of one another due to small correlations, so an orthogonal rotation was again chosen for analysis. Loadings, communalities, and percents of variance and covariance are displayed in Table 4.10.

Table 4.10 Company Support for Remote Management Factor Loadings, Percent of Variance and Communalities (h^2) for Principal Components Extraction and Varimax Rotation

Item	Component 1	Component2	h^2
	Organizational Climate	Tactical Support	
Professional skill building	.41	.52	.44
Tools and Technology	0	.82	.70
Rewards and recognition	0	.61	.49
Treats remote management as a skill	.75	0	.67
Supports learning remote skills	.81	0	.69
Remote management seen as credential	.60	0	.40
Remote management does not require different skills	0	.52	.29
Encourages management to accept remote management	.71	0	.51
% Variance	36.74%	15.55%	

Loadings under .35 are replaced by zeros. Once again, two components emerged. Component 1 (organizational climate) was found to account for the most variance (36.74%). Component 2 (tactical support) accounted for 15.54% of the variance for a sum equaling 52.29% of the total variance explained. Organizational climate was interpreted as the company's ability to create a climate wherein remote management was considered desirable and necessary. The company would support managers in building remote management skills, would encourage managers to accept remote work arrangements, and would regard remote management as a good credential to have on one's resume. Tactical support included items such as the company providing remote managers with the appropriate tools and technology to be successful at managing remotely and rewarding managers for performing well at remote management tasks. More research is required for both of these scales in order to apply them to remote environments. These analyses are simply a first step in refining remote management scales.

Qualitative Analysis

In order to understand the remote best practices and the things leadership is doing to compensate for distance, a qualitative analysis was conducted. Remote employees with high levels of satisfaction with supervision and high affective commitment were spliced out of the data set to understand the actions of their leaders using a median split approach. Management behavior items that these employees observed most often were analyzed to provide best practices. Items endorsed by greater than 90% of participants high in satisfaction with supervision and affective commitment are viewed in Table 4.11.

Table 4.11 Management Behavior Survey Items Endorsed by Greater than 90 Percent Across Remote Employees with High Satisfaction with Supervision and High Affective Commitment.

Survey Dimension	Item
Tolerance of Freedom	Trusts members to exercise good judgment.
Consideration	Is friendly and approachable.
Tolerance of Freedom	Permits members to use their own judgment in solving problems.
Tolerance of Freedom	Allows the members complete freedom in their work.
Tolerance of Freedom	Lets the members do their work the way they think best.
Remote Management	When face to face meetings are not possible, uses other means to help keep communication open.
Remote Management	Places everyone on equal footing in remote meetings; same opportunity to participate.
Tolerance of Freedom	Allows the group a high degree of initiative.
Consideration	Explains his or her actions.
Remote Management	Resolves urgent problems quickly.
Remote Management	Supports me working wherever I choose to work, provided my work is accomplished.
Tolerance of Freedom	Assigns a task then lets the members handle it.
Remote Management	Is easily accessible to me when I need him/her.

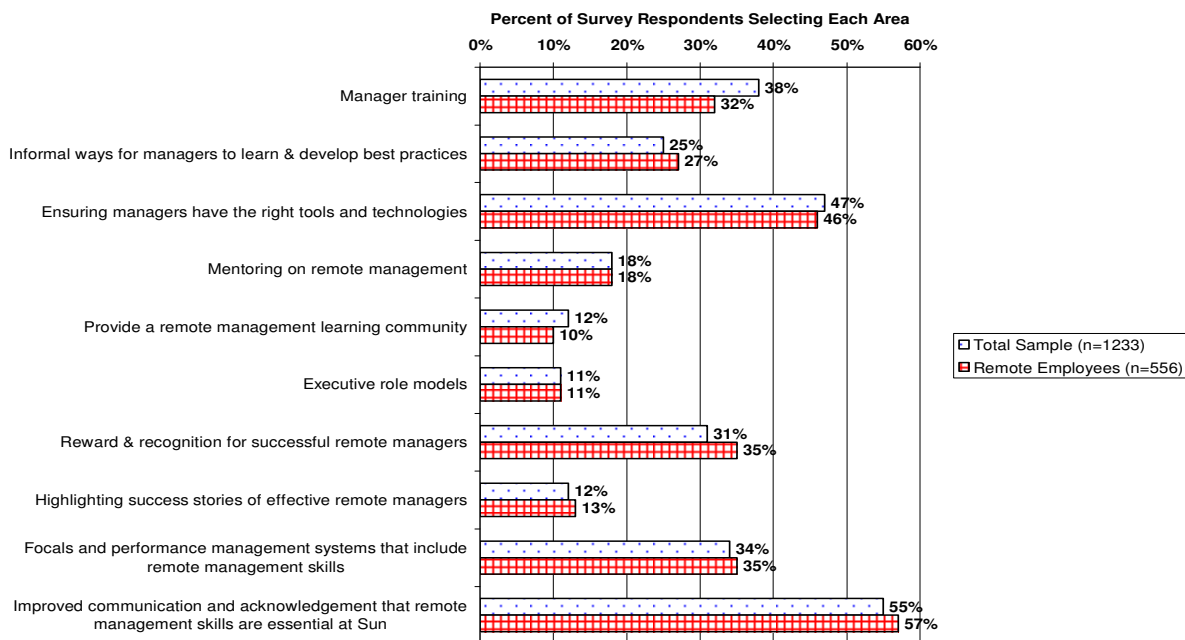
Ninety percent or more indicated their manager frequently exhibited these behaviors. Overall the best practices fell into 3 management behavior areas: Tolerance of Freedom, Remote Management Specific, and Consideration. Tolerance of freedom appeared to be mentioned the most, with the majority of the items falling into this dimension. Some of the items identified were: [manager] trusts members to exercise good judgment, is friendly and approachable, permits members to use their own judgment in solving problems, allows members complete freedom in their work, lets members do their work in the way they think best, when face to face meetings are

not possible uses other means to keep communication open, and places everyone on equal footing in remote meetings-same opportunity to participate.

The data were analyzed to determine which management skill categories were the greatest improvement priorities. Both the overall sample and remote employees sample were analyzed to provide data on agreement between remote and non remote employees. The top improvement priorities for both samples were the same. These were: Communication/acknowledgement that remote management skills are essential, manager tools and technologies, manager training, remote management included in performance appraisals, remote management rewards and recognition. See figure 4.2 for more information.

Figure 4.2

Top 3 Topics Most Important To Address in Improving Remote Management Effectiveness



Also, an analysis was conducted on the employee subsamples with low satisfaction with supervision and low affective commitment. A majority of the employees (more than 50%) reported that they infrequently observed the following management behaviors and may be considered as improvement priorities for the organization. The five behaviors observed least frequently by remote employees with low satisfaction with supervision and low affective commitment were: (Consideration) does little things to make it pleasant to be a part of the group,

(Integration) maintains a closely knit group, (Initiating Structure) schedules the work to be done, (Consideration) looks out for the personal welfare of group members, and (Production Emphasis) stresses being ahead of competing groups. Quantitative research is needed to draw additional conclusions regarding relationships between these items.

Remote manager data was analyzed separately to determine what areas they believe are most important for the company to address in improving remote management effectiveness. The topics managers believed were most important to address were: remote management rewards and recognition, manager tools and technology, communication/acknowledgement that remote management skills are essential, informal ways for managers to learn and develop best practices, manager training, and mentoring for managers with less experience managing remotely.

CHAPTER 5-Discussion

Main Findings

There were several findings in the current study that provide insight into the nature of spatial distance and leadership in the remote management environment. Correlational data results did not support the hypotheses that face to face interaction scores were positively correlated with affective commitment, or satisfaction with supervision. Face to face interaction was not negatively correlated with continuance commitment. Therefore hypotheses 1a, 1b, and 1c were not supported. Perhaps one can conclude that impact does not result from the amount of hours a manager spends with his/her subordinates but instead comes from the behaviors and actions exhibited within the exchange.

Spatial distance was also correlated with several variables of interest. A correlation of $r(518) = -.12, p < 0.01$ was found between spatial distance and career advancement. This confirms what was verbally and anecdotally stated within the target company. It appears that the more one is distant from one's manager and office, the less satisfied the person is about having opportunities for career advancement. This finding lends support to the old adage "out of sight, out of mind" and is a very frustrating reality of remote worklife. Politics enter the equation and many times employees find it difficult to advance without being physically present.

Significant negative correlations were found between spatial distance and initiating structure $r(440) = -.17, p < 0.01$, spatial distance and consideration $r(450) = -.10, p < 0.05$, spatial distance and integration $r(400) = -.19, p < 0.01$. The greater the spatial distance, the fewer

behaviors were exhibited in the area of initiating structure, consideration, and integration. What about spatial distance explains these negative relationships? Followers may place greater weight on a leader's behavior when working at a distance, in that they observe the leader less frequently but attribute more meaning to the observed behaviors (Howell et al., 2005). Also, leaders may have fewer opportunities to build relationships, drive vision, and influence at a distance. There was no significant correlation between spatial distance and the outcome variables affective and continuance commitment. There was no significant correlation between spatial distance and satisfaction with supervision in sample.

Correlations of $r(255) = .70$ and $r(263) = .82$ and $r(250) = .80, p < 0.01$ were obtained between remote management specific behaviors and initiating structure, consideration, and integration respectively. There was a high positive relationship between remote management specific behaviors and satisfaction with supervision $r(266) = .77, p < 0.01$ and affective commitment $r(275) = .56, p < 0.01$. These findings provide us with an opportunity to translate validated leadership behaviors to the remote environment. The behavior may look different but it is classified under the original LBDQ dimensions, proven to be core to leadership efficacy.

Regarding outcome differences between the two groups, based on t-test statistics, non-remote employees reported significantly higher levels of satisfaction with supervision than remote employees. A single item measure, career advancement, was also investigated as an outcome variable and there was a significant difference with non-remote employees reporting higher levels of career advancement than remote employees. This again supports the correlational finding above, that remote employees are less satisfied with career advancement opportunities.

Regression analysis revealed an interesting finding which supported hypothesis 2a. When initiating structure was low, employees experienced higher satisfaction when spatial distance was low. When initiating structure was high, employees experienced higher satisfaction with supervision when spatial distance was high. Another way to interpret this was that there was a stronger relationship between initiating structure and satisfaction with supervision when spatial distance was high. It appears that spatial distance is acting as an enhancer.

Moderators are classified as neutralizers/enhancers, substitutes/supplements, or mediators depending how they impact behavior-criterion relationships (Howell, Dorfman, & Kerr, 1986). Researchers have used different means to identify moderators in leadership studies. Anova

designs, median split samples with simple correlation coefficients and hierarchical multiple regression are the main methods found in the literature. Research indicated that these approaches yield different information. Arnold (1982) stated that the median split method using simple correlations yields information regarding the degree of relationship between the variables, while regression analysis provided information regarding the form or pattern of the relationship. Form type moderators help managers identify situations where an increase in leader behavior is likely to yield an increase in employees' satisfaction or performance. Stone and Hollenbeck (1984) argue that hierarchical regression is the only appropriate method for moderator identification. Howell et al. (1986) defined an enhancer as a moderator which augments the relationship between leader behaviors and criteria. Enhancers and neutralizers are two varieties of the same type of moderator by influencing the predictor-criterion relationship but not the criterion itself. Enhancers are a positive moderating influence while neutralizers are a negative moderating influence.

Hypotheses 2b, 2c were not supported however tolerance of freedom and integration produced significant main effects when regressed on satisfaction with supervision. It appears that managers expressing high tolerance of freedom behaviors steer employees away from perceptions of micromanagement which is detrimental to overall satisfaction. Integration efforts were also positively correlated with satisfaction with supervision. Perhaps in an environment such as the target company wherein people are physically scattered, it is critical for the manager to play the role of integrator for both remote and non remote employees. Maintaining a closely knit group and keeping the group working together as a team is increasingly difficult when people are working in different locations. Hypotheses 3a and 3b were not supported but did show main effects for consideration and integration when regressed on affective commitment. Once again, consideration and integration behaviors are critical in the remote work environment in order to treat both remote and non remote employees with respect and encourage teamwork.

An Exploratory Principal Components Analysis was conducted for both remote management specific behaviors and support for remote management scales. In the analysis of remote management specific behaviors, two components emerged. Component 1 (accessibility/inclusion) was found to account for the most variance (55.38%). Component 2 (support of remote work) accounted for 8.64% for a sum equaling 64.02% of the total variance

explained. The next analysis involved the investigation of Support for Remote Management. Once again, two components emerged. Component 1 (organizational climate) was found to account for the most variance (36.74%). Component 2 (tactical support) accounted for 15.54% for a sum equaling 52.29% of the total variance explained. Organizational climate was interpreted as the company's ability to create a climate wherein remote management was considered desirable and necessary. Tactical support was described as the company providing remote managers with the appropriate tools and technology to be successful at managing remotely. More research is required for both of these scales in order to apply them to remote environments. These analyses are simply a first step in refining remote management scales.

Qualitative analysis was conducted to understand management behavior survey items common across remote employees with high satisfaction with supervision and high affective commitment. Overall the best practices fell into 3 management behavior areas: Tolerance of Freedom, Remote Management Specific, and Consideration. Tolerance of freedom appeared to be mentioned the most, with the majority of the items falling into this dimension.

The data were analyzed to determine which management skill categories were the greatest improvement priorities. Both the overall sample and remote employees sample were analyzed to provide data on agreement between remote and non remote employees. The top improvement priorities for both samples were the same. These were: Communication/acknowledgement that remote management skills are essential, manager tools and technologies, manager training, remote management included in performance appraisals, remote management rewards and recognition.

Also, an analysis was conducted on the employee subsamples with low satisfaction with supervision and low affective commitment. The five behaviors observed least frequently by remote employees with low satisfaction with supervision and low affective commitment were: (Consideration) does little things to make it pleasant to be a part of the group, (Integration) maintains a closely knit group, (Initiating Structure) Schedules the work to be done, (Consideration) looks out for the personal welfare of group members, (Production Emphasis) stresses being ahead of competing groups.

Remote manager data was analyzed separately to determine what areas they believe are most important for the company to address in improving remote management effectiveness. The

topics managers believed were most important to address were: remote management rewards and recognition, manager tools and technology, communication/acknowledgement that remote management skills are essential, informal ways for managers to learn and develop best practices, manager training, and mentoring for managers with less experience managing remotely.

Support and tools emerged in several different ways as key components for successful remote management. If the value of remote management is not expressed and technology and tools are not provided to bolster the work effort, it is likely to cause frustration and mixed messaging throughout the organization. Once again as HR professionals have witnessed in many improvement efforts, executive support and resourcing are key to this work effort. If the remote management environment is resourced appropriately and managed effectively it can revolutionize the way businesses operate and achieve results in the global marketplace.

Practical Implications

Businesses moving to distributed environment with worldwide operations can use these results for training purposes. Development opportunities for managers on how to excel in a remote environment would also be helpful. Managers managing remote employees need to pay closer attention to the frequency of performing essential management behaviors. New ways of exhibiting these behaviors may be necessary in a remote environment. Including key remote management behaviors in performance appraisals and 360s will help drive accountability in performing these behaviors and will promote manager self awareness.

Selection of employees and managers for this type of work environment using the findings in this study could be applied in the future once validation data is collected, replication of the study is present, and researchers know more about the individual characteristics necessary for successful remote work arrangements. Cognitive and personality selection measures would aid in determining which employees are better equipped to be successful in a remote environment.

The organizational support for remote management scale is a starting point to understand how to adequately encourage and support remote work, minimize downtime, and heighten productivity. The importance of remote management could be conveyed by having a consistent senior management message across the organization to avoid receiving conflicting messages about the importance and ability to participate in remote management. Companies can use these

findings to enrich HR services and products, pilot interventions and drive improvement for targeted workgroups. An organized site on the internal web for access to tools, information, training, best practices, and success stories would be helpful. Mentoring may prove useful in upskilling employees and managers. Career development opportunities should be monitored carefully to ensure remote employees are not at a disadvantage concerning promotions and new opportunities.

Substitutes can be used to provide consistency for subordinates across situations and stability over time. Creating them may be desirable in situations where leaders are being transferred in and out of jobs in order to support leader influence when leaders are unable to consistently exert it.

Study Limitations

There were several limitations in the current investigation worthy of mention. First, the sample was composed of US employees in the high tech industry. Thus, the results could have been affected by the restriction of range in the sample's demographic characteristics. It is important to understand that the measures employed in the current study were self-report in nature. Because of this, social desirability is of concern. Ideally, observing the behavior transactions between managers and employees would have been the most accurate method but was impossible due to the logistics involved. It would have also been beneficial to look at individual relationships and within group dynamics.

The amount of email interaction between manager and employee was excluded from this study. On reflection, this measure would have been beneficial to include. The target company in the current study used email constantly in both remote and collocated environments. It was quite common to have 2 people sitting in offices next to each other emailing back and forth instead of talking face to face. Due to this, email was considered a communication tool that would not vary in different environments. If included, the research could have investigated communication patterns more accurately.

Continuance commitment's reliability was low, causing interpretation issues for correlations among continuance commitment and other variables. Level of analysis was also an area of concern. Leader-subordinate relations have previously been explained in two ways. The first assumes that leaders interact with all subordinates in a similar fashion, and variation in

subordinate perception is due to measurement error, not differences in treatment (Yammarino, 1990). The second explanation states that leaders have unique interactions with subordinates and do treat them differently at times, depending on the situation. (Graen & Cashman, 1975). The methodological approach to research is different depending on which explanation the researcher supports. Researchers supporting the similar treatment theory would employ group level analysis, averaging subordinate perceptions of the leader, whereas those supporting the latter approach would treat each perception individually using raw scores. Previous leadership studies have not consistently shown whether leadership behaviors should be operationalized at the individual or group level (Podsakoff & MacKenzie, 1998).

Biases can occur in subordinate questionnaires where the respondent is asked to recall leader behaviors over the previous year. Behavioral descriptions provided by subordinates may be biased by response tendencies, stereotypes, implicit theories, and attributions while leader self-reports are vulnerable to social desirability and implicit theories (Rush, Thomas, & Lord, 1977; Podsakoff & Organ, 1986). Previous research has found that subordinates provide more accurate descriptions of leader behavior than leaders. Bass and Yammarino (1991) found that ratings of Navy officer performance were correlated significantly with subordinate descriptions of behavior, but not with self-reported behavior from the officers.

Level of analysis has also been questioned in leadership research. Kim and Yukl (1998) suggest that level of analysis depends on the source of the behavior descriptions and the nature of the criteria. When investigating subordinate reports of leader behavior and criterion data for individual subordinates such as subordinate satisfaction, leader effectiveness, and subordinate commitment (as in the current study), an individual level of analysis is appropriate. The way in which behaviors are described in the questionnaire may also drive the decision to analyze the data at a certain level. Behavior may be described as dyadic (toward the individual) or group-directed. Averaging group directed behavior descriptions may improve measurement accuracy, while doing the same for behavior that may differ across subordinates may reduce accuracy (Kim & Yukl, 1998).

In their investigation on the multiple linkage model's relationship to leadership effectiveness and advancement, Kim and Yukl (1998) examined whether the criteria were predicted better by behavior descriptions from subordinates than by leader self-reports. They

found that independent ratings of leadership effectiveness were predicted better by subordinate descriptions than by leader self-report. They also found considerable convergence in results for different levels of analysis.

The use of perceptual assessments from subordinates may present a problem due to potential response bias. Many times, individual assessments of situations act to moderate other perceptions and, because of this, perceptual rather than objective assessments are necessary for investigating spatial distance in this study. Consideration, although confounded with leniency, is an important dimension of interpersonal behavior and should not be ignored simply because it is difficult to measure. Also, one may question the use of perceptual measures in place of more concrete, objective measures of performance. Schriesheim et.al (1979) pointed out that the use of nonperceptual measures such as trained observers does not eliminate leniency due to social desirability. They state that subordinates' responses to leadership (i.e, levels of satisfaction and performance) are more closely related to their perceptions of leader behavior than to objective measures or measures of someone else's perceptions.

Regarding the work environment in which the sample was obtained, several factors may have impacted results. We do not know if leaders and subordinates working in proximal vs. at a distance were more or less capable at performing their duties. This issue could have confounded results. If the majority of strong managers were in the collocated data cut or if the top employees were in the remote cut, then personal characteristics may have played a role. Perhaps these top employees have a stronger relationship with their manager which in turn creates a more pleasant work environment leading to higher satisfaction. Some of these employees were forced into the remote environment while others chose to enter. There could have been some bad feelings about how people were or were not selected to move environments. This may have influenced employees responses about their manager. Finally, the business environment at the time of data collection was extremely volatile. The tech industry was undergoing a correction in the market resulting in layoffs, operations cuts, and limited resources. These factors may have impacted employees perceptions about the work environment in general, including their manager.

Future Research

Support was given to the remote management specific behavior and support for remote management scales. In the future, these scales need to be investigated further and refined to

provide more information on the nature of these constructs. Once reliable valid measures are created, research can be extended to construct validity.

Researchers should continue to examine leader behaviors in the context of spatial distance and distributed work environments. Investigating the relationship between performance and the remote management specific behavior scale may prove fruitful in multiple applied settings. Researchers may also want to explore impacts of support for remote management such as OCB and various justice measures. An organization's values and culture may conflict with the remote management setting so researchers should dig deeper to understand how certain values can drive results in a remote management environment and how these values materialize. The political environment should also be explored to determine political impacts and benefits when working in a remote setting.

Type of substitutes vary by organization (Villa et. al, 2003) (Dionne, Yammerino, Atwater, & James, 2002) so it would be prudent to examine spatial distance in multiple companies, multiple organizations, and across industries before drawing definite conclusions about spatial distance as a moderator. The time lapse since companies transitioned to a remote work environment may be a contributing factor to obtaining certain outcomes. Could a company in early stages of transition to remote environment have more variance in ability to work, translating leader behaviors into perceptions, and dealing with the challenges of remote work? The target company was already trained and equipped at interpreting leader behavior at a distance.

Communication researchers may have the answer of how leader behavior is actually demonstrated and interpreted at a distance. There is a need for follow up regarding the cognitive process and interpretation of messages from leader to subordinates at a distance. How can the same message face to face be misunderstood at a distance? This question touches branding as well and perhaps marketing researchers have a valuable piece of the puzzle and would be valuable collaboration partners.

Personality implications and leader characteristics are in need of exploration. What type of leadership style is most effective in specific remote environments? What are the personality traits of leaders that are most successful operating in a remote workplace? The same questions apply to individual contributors. Understanding personality implications is a huge gap in the

current remote management literature. This information is critical in the selection arena as well. The more we understand critical factors to success in a remote environment, the better we can select employees who are most likely to succeed.

Social & psychological distance should also be investigated to determine how they differ from spatial distance's relationships to variables in the current study. A dissertation was recently completed by Erskine (2006) in which she looked at these distance types. She proposed distance as a two dimensional construct that may affect individual outcomes such as performance and leader satisfaction. Structural distance was made up of physical distance, channel of communication, and frequency of interaction, while emotional distance was composed of demographic distance, social distance, and psychological distance. More of this type of research in conjunction with leadership behaviors is needed to obtain a full picture of this important distance construct.

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Appendix A Measures

REMOTE MANAGEMENT SURVEY

INTRODUCTION

Please respond to the following questions based on your work experiences and interactions with your current immediate manager.

Data provided to (target company) will be stripped of any identifiers tied to a specific individual and will be reported at the employee aggregate level. (Target company) will not provide data from this survey to anyone internally to identify you individually, or link you to the specific answers you provide. Thank you for your participation.

DEFINITIONS

The term “remote management” refers to managing at a distance where employees spend at least some portion of their time working in a different location than their manager, which can include customer/partner locations, home, other company buildings and/or different areas within the same building.

*****BREAK SCREEN*****

MANAGER ACTIONS

Instructions: Below is a list of items that may be used to describe your immediate manager. Each item requires you to answer how frequently your manager engages in the particular behavior described. Please report your direct manager's behavior as accurately as possible using the corresponding drop down response menu.

0=Not Applicable, 1=Never, 2=Seldom, 3=Occasionally, 4=Often, 5=Always

Dimensions (items numbered as presented in survey; **=reverse scored):

Initiating Structure-1, 5, 10, 15, 21, 25, 29, 34, 40, 44

Consideration-3, 7, 13, 18, 23, 27, 31, 36, 42**, 46****

Tolerance of Freedom-2, 6, 11, 16, 22, 26, 30, 35, 41, 45**

Production Emphasis-4, 8, 14, 19, 24, 28, 32, 38, 47, 50**

Integration-9, 20, 33, 39, 48

Remote Management Specific-12, 17, 37, 43, 49, 51, 52, 53, 54, 55

1. Lets group members know what is expected of them.
2. Allows the members complete freedom in their work.
3. Is friendly and approachable.
4. Encourages overtime work.
5. Encourages the use of uniform procedures.
6. Permits the members to use their own judgment in solving problems.
7. Does little things to make it pleasant to be a member of the group.
8. Stresses being ahead of competing groups.
9. Keeps the group working together as a team.
10. Tries out his or her ideas in the group.
11. Encourages initiative in the group members.
12. Ensures that all employees have equal opportunities for recognition, new work assignments, and career development.
13. Puts suggestions made by the group into operation.
14. Needles members for greater effort.
15. Makes his or her attitudes clear to the group.
16. Lets the members do their work the way they think best
17. When face-to-face meetings are not possible, uses other means such as email and phone to keep the lines of communication open.
18. Treats all group members as his or her equals.
19. Keeps the work moving at a rapid pace.

20. Settles conflicts when they occur in the group.
21. Decides what shall be done and how it will be done.
22. Assigns a task, then lets the members handle it.
23. Gives advance notice of changes.
24. Pushes for increased production.
25. Assigns group members to particular tasks.

*****BREAK SCREEN, INSERT SCALE*****

26. Turns the members loose on a job, and lets them go to it.
27. Keeps to himself or herself.
28. Asks the members to work harder.
29. Makes sure that his or her part in the group is understood by the group members.
30. Is reluctant to allow the members any freedom of action.
31. Looks out for the personal welfare of group members.
32. Permits the members to take it easy in their work.
33. Sees to it that the work of the group is coordinated.
34. Schedules the work to be done.
35. Allows the group a high degree of initiative.
36. Is willing to make changes.
37. Supports me working wherever I choose to work, provided that my work is accomplished.
38. Drives hard when there is a job to be done.
39. Helps group members settle their differences.
40. Maintains definite standards of performance.
41. Trusts members to exercise good judgment.
42. Refuses to explain his or her action.
43. Takes advantage of the ability to hire talented employees regardless of where they live.
44. Asks that group members follow standard rules and regulations.
45. Permits the group to set its own pace.
46. Acts without consulting the group.
47. Keeps the group working up to capacity.
48. Maintains a closely knit group.
49. Places everyone on equal footing in remote meetings, so all have the same opportunity to participate.
50. Urges the group to beat its previous record.
51. Believes in the advantages of a distributed workforce and finds ways to capitalize on these advantages.
52. Is easily accessible to me when I need him/her.
53. Is good at monitoring progress and performance from a distance.
54. Knows how to maintain high productivity even among employees who are not physically co-located.
55. Resolves urgent problems quickly.

Alternate view (for committee):
LBDQ-XII Subscales & Items:

Initiating Structure

1. Lets group members know what is expected of them.
5. Encourages the use of uniform procedures.
10. Tries out his or her ideas in the group.
15. Makes his or her attitudes clear to the group.
21. Decides what shall be done and how it will be done.
25. Assigns group members to particular tasks.
29. Makes sure that his or her part in the group is understood by the group members.
34. Schedules the work to be done.
40. Maintains definite standards of performance.
44. Asks that group members follow standard rules and regulations.

Consideration

3. Is friendly and approachable.
7. Does little things to make it pleasant to be a member of the group.
13. Puts suggestions made by the group into operation.
18. Treats all group members as his or her equals.
23. Gives advance notice of changes.
27. Keeps to himself or herself (R).
31. Looks out for the personal welfare of group members.
36. Is willing to make changes.
42. Refuses to explain his or her action (R).
46. Acts without consulting the group (R).

Tolerance of Freedom

2. Allows the members complete freedom in their work.
6. Permits the members to use their own judgment in solving problems.
11. Encourages initiative in the group members.
16. Lets the members do their work the way they think best
22. Assigns a task, then lets the members handle it.
26. Turns the members loose on a job, and lets them go to it.
30. Is reluctant to allow the members any freedom of action (R).
35. Allows the group a high degree of initiative.
41. Trusts members to exercise good judgment.
45. Permits the group to set its own pace.

Production Emphasis

4. Encourages overtime work.
8. Stresses being ahead of competing groups.
14. Needles members for greater effort.
19. Keeps the work moving at a rapid pace.

- 24. Pushes for increased production.
- 28. Asks the members to work harder.
- 32. Permits the members to take it easy in their work (R).
- 38. Drives hard when there is a job to be done.
- 47. Keeps the group working up to capacity.
- 50. Urges the group to beat its previous record.

Integration

- 9. Keeps the group working together as a team.
- 20. Settles conflicts when they occur in the group.
- 33. Sees to it that the work of the group is coordinated.
- 39. Helps group members settle their differences.
- 48. Maintains a closely knit group.

Remote Management Specific (Target Company Specific)

- 56. Ensures that all employees have equal opportunities for recognition, new work assignments, and career development.
- 57. When face-to-face meetings are not possible, uses other means such as email and phone to keep the lines of communication open.
- 58. Supports me working wherever I choose to work, provided that my work is accomplished.
- 59. Takes advantage of the ability to hire talented employees regardless of where they live.
- 60. Places everyone on equal footing in remote meetings, so all have the same opportunity to participate.
- 61. Believes in the advantages of a distributed workforce and finds ways to capitalize on these advantages.
- 62. Is easily accessible to me when I need him/her.
- 63. Is good at monitoring progress and performance from a distance.
- 64. Knows how to maintain high productivity even among employees who are not physically co-located.
- 65. Resolves urgent problems quickly.

*****BREAK SCREEN*****

Please choose the 3 management skill areas that you believe are most important for effective remote management and provide comments and/or suggestions below.

(Caroline-the respondent checks 3 boxes here, no numbers entered)

- Communication
- Skill Building, Training, & Development
- Networking
- Decision Making & Participation
- Reward and Recognition
- Delegation/ Distribution of work assignments

- Career Development
- Performance Feedback/ Reviews
- Setting Expectations/Monitoring progress
- Managing change
- Motivating Employees
- Providing Resources & Support
- Enabling Productivity
- Hiring & Orienting New Employees
- Maintaining Affiliation & Group Cohesion
- Other_____

Comments

*****BREAK SCREEN*****

WORK ARRANGEMENT

Please rate each of the following items by selecting the option that best describes your work situation.

Scale : 0=Not Applicable, 1= Almost Always Untrue, 2=Usually Untrue, 3=Sometimes True, 4 =Usually true, 5=Almost Always True

Items 1, 2, 3 =spatial distance dimension; high score=high spatial distance

Item 4 separate

1. The nature of my job is such that my immediate supervisor is seldom around me when I'm working.
2. On my job my most important tasks take place away from where my immediate superior is located.
3. My immediate superior and I are seldom in actual contact or direct sight of one another.
4. On average, how many hours per week do you interact with your manager (insert hours, enter 0 if none)
 - ___ One on one, face-to-face with manager
 - ___ One on one, by phone with manager
 - ___ Group meeting, face-to-face with manager
 - ___ Group meeting, by phone with manager

SATISFACTION

Use the rating scale below to rate your satisfaction in the following areas.

Scale: 0=Not Applicable, Very Dissatisfied=1, Dissatisfied=2, I can't decide if I am satisfied or not=3, Satisfied=4, Very Satisfied=5

Items 1-5 =Minnesota Sat Questionnaire (Sat with Supervision subscale)

Items 6, 7, 8=Separate items (8 may cluster with commitment 13 & 15 below)

On my present job, this is how I feel about:

1. The way my supervisor and I understand each other.
2. The way my supervisor handles his/her employees.
3. The way my supervisor backs his/her employees up (with top management).
4. The way my supervisor takes care of complaints brought to him/her by employees.
5. The personal relationship between my supervisor and his/her employees.
6. The opportunities for career advancement .
7. The amount of cooperation among my co-workers.
8. Considering everything, how satisfied are you with your job?

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*****BREAK SCREEN*****

ATTITUDES TOWARD Target Company

The following set of statements is about your work and relationship with (target company). Please indicate the extent to which you agree with each one of the following statements.

Scale: 0=Not Applicable, Strongly Disagree=1, Disagree=2, Neither agree nor Disagree=3, Agree=4, Strongly Agree=5

Commitment Subscales: (=reverse scored)**

Affective Commitment= 2, 4, 6, 8**, 9**, 11**

Continuance Commitment= 1, 3, 5, 7, 10, 12

Items 13-15 Separate Target Company Measures-Intent to stay (Sat 8 above may join)

1. It would be very hard for me to leave my organization right now, even if I wanted to.
2. I would be very happy to spend the rest of my career with this organization.
3. One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.
4. I really feel as if this organization's problems are my own.
5. Right now, staying with my organization is a matter of necessity as much as desire.
6. I do not feel a strong sense of belonging to my organization.

7. I feel that I have too few options to consider leaving this organization.
8. I do not feel emotionally attached to this organization.
9. I do not feel like part of the family at my organization.
10. If I had not already put so much of myself into this organization, I might consider working elsewhere.
11. This department has a great deal of personal meaning for me.
12. Too much of my life would be disrupted if I decided I wanted to leave my organization now.
13. If I were offered a comparable position with similar pay and benefits at another company, I would not leave Target Company.
14. I had an opportunity to participate in the decision about my work arrangement (e.g., assigned, flexible, work-from-home) at Target Company.
15. I intend to work for Target Company for: (Less than 1 more year, $\geq 1 < 2$ more years, $\geq 2 < 3$ more years, $\geq 3 < 4$ more years, 4 or more years, Not Applicable)

Alternate View for Committee-

Affective Commitment

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

Continuance Commitment

1. It would be very hard for me to leave my organization right now, even if I wanted to.
3. One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.
5. Right now, staying with my organization is a matter of necessity as much as desire.
7. I feel that I have too few options to consider leaving this organization.
10. If I had not already put so much of myself into this organization, I might consider working elsewhere.
12. Too much of my life would be disrupted if I decided I wanted to leave my organization now.

Intent to Stay (Target Company Measures)

13. If I were offered a comparable position with similar pay and benefits at another company, I would not leave Target Company.
14. I had an opportunity to participate in the decision about my work arrangement (e.g., assigned, flexible, work-from-home) at Target Company. (choice item)
15. I intend to work for Target Company for: (Less than 1 more year, $\geq 1 < 2$ more years, $\geq 2 < 3$ more years, $\geq 3 < 4$ more years, 4 or more years, Not Applicable)

*****BREAK SCREEN*****

BACKGROUND INFORMATION

Please answer the following questions about you.

1. Are you a people manager or Individual contributor?
___People Manager ___Individual Contributor

***People Managers Branch, Ics continue to #2 Workplace Status. Pms will branch back to #2 Workplace Status after completing this section.**

People Managers:

1. How many direct reports do you currently manage? ____
2. How many of your employees work remotely from you? (Consider different aspects of remoteness: one of you work from home, in different cities, in different locations) ____
3. How many years of experience do you have managing remote employees (include Target Company and previous companies)?
< 1 year
>=1 < 3 years
>=3 <5 years
>=5 <7 years
>7 years

ORGANIZATIONAL SUPPORT

Please indicate the extent to which you agree with the following statements.

Scale: 0=Not Applicable, Strongly Disagree=1, Disagree=2, Neither agree nor Disagree=3, Agree=4, Strongly Agree=5

***Need to factor analyze these behaviors, not sure how 8 will fall out**

1. Target Company offers effective professional training and skill building for remote management.
2. Target Company provides adequate tools and technology support for remote work.
3. Target Company provides reward and recognition for managers working effectively in a remote/distributed manner.
4. Target Company is committed to developing remote management competency as a required skill for managers.
5. Managers at Target Company are encouraged to learn effective remote management skills.
6. Having remote management experience is a good credential to have at Target Company.
7. Management of remote employees does not require fundamentally different skills from face-to-face management.

8. Target Company encourages managers to accept remote work arrangements for their employees.

*******People Managers BRANCH BACK to answer remainder*******

2. Which of the following best describes your workplace status at Target Company:

- ASSIGNED: I have a workspace/office/cubicle that is ASSIGNED to me.
- FLEXIBLE: I do not have an assigned workspace/office/cubicle at Target Company, and use shared workspaces on a reservation or as-needed basis.
- HOME BASED: I work from home 3-5 days per week, and do not have an assigned office at Target Company.

3. How many years have you had this workplace status at Target Company?

- < 1 year
- >=1 < 2 years
- >=2 <3 years
- >=3 <5 years
- >5 years

4. How long have you reported to your current manager?

- < 1 year
- >=1 < 2 years
- >=2 <3 years
- >=3 <5 years
- >5 years

5. Considering your work history, how much experience do you have working remotely from your manager (include Target Company and previous companies)?

- Very Little
- Little
- Some
- Quite a Bit
- A Great Deal

6. Which ONE of the following do you consider to be your primary work location? (If you primarily work from home, please indicate which Target Company office you most closely associate with.)

- Acton, MA
- Alpharetta, GA
- Austin, TX
- Bloomington, MN
- Broomfield, CO
- Burlington, MA
- Cary, NC

Columbia, MD
Dallas, TX
Hackensack, NJ
Eagan, MN
King of Prussia, PA
Houston, TX
McLean, VA
Marlborough, MA
Nashua, NH
Menlo Park, CA
New York City, NY
Newark, CA
Pittsburgh, PA
Orlando, FL
Reston, VA
Phoenix, AZ
San Diego, CA
Portland/Beaverton, OR
Somerset, NJ
Rocky Hill, CT
Wichita, KS
Santa Clara, CA
Sunnyvale, CA
Other

7. Job Classification

VP
Director
Principal
Staff Member
Staff Associate
Associate
Clerical

8. Job Group

Administrative
Consulting/Professional Services (PS)
Customer Support Services
Engineering/ Development
Finance
HR
IT
Legal
Marketing
Operations / Manufacturing

Program Manager
Quality Engineer
Sales
SE (Pre-Sales Eng)
SSE/FSE/FE (Post-Sales Eng)
Target Company Sigma (Master Black Belt, Black Belt, etc.)
Workplace Resources
Other. Please describe: _____

9. Please indicate your gender.
___ Male ___ Female ___ Decline to Respond

10. Please indicate your age.
20 years or less
21-30 years
31-40 years
41-50 years
51-60 years
61 + years
Decline to Respond

*****BREAK SCREEN*****

Please choose the top 3 topics that you believe are most important for Target Company to address in improving remote management effectiveness:

- Manager training
- Informal ways for managers to learn and develop best practices
- Ensuring managers have the right tools and technologies
- Mentoring on remote management
- Provide a remote management learning community
- Executive role models
- Reward & recognition for successful remote managers
- Highlighting success stories of effective remote managers
- Focals and performance management systems that include remote management skills
- Improved communication and acknowledgment that remote management skills are essential at Target Company

Please add any other comments you may have about addressing remote management at Target Company.

End of Survey-Thank you for your input.