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Transformational Leadership for Virtual Teams in an Information Technology Organization

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Walden University
2015

Abstract

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MBA, University of Phoenix, 2003

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Organizational Psychology

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Abstract

Research has shown that transformational leadership behavior impacts team performance in a traditional work environment; however, no research has evaluated the relationship between transformational leadership and team performance in a virtual setting. Building on the theoretical foundation of Bass' 1990 work, this study examined the relationship between transformational leadership behavior and 3 measures linked to team success: work effort, perceived leader effectiveness, and job satisfaction for virtual teams. The present research focused on the transformational leadership behaviors of 41 senior executives in an information technology (IT) organization and over 300 direct report employees. Employees used the Multifactor Leadership Questionnaire 5x to rate their direct report supervisors' leadership characteristics. Regression analyses were used to evaluate the relationship between transformational leadership and the preceding indicators for successful performance. The findings supported the applicability of Bass' leadership model beyond the traditional workforce. The results of this study will positively impact social change by clarifying how executive leadership behavior directs virtual IT team success, enabling IT organizations to better identify future leaders, and allowing organizations to institute training opportunities to develop internal candidates to become better leaders.

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Dedication

This work is dedicated to my father and my grandfather, Gary Killion and Clyde Goodman. My father, Gary Killion passed away just before the completion of this project. For the past 20 years he has been a foundation for our family, a reliable voice of reason and a person I looked up to with admiration and love.

My grandfather, Clyde Goodman, was a World War II veteran, a father figure, a grandfather, and a friend. He inspired me to do more and to be more, and above all else he demonstrated how to be a loving father and husband. I was inspired to pursue a doctoral degree by his belief in me.

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Chapter 1: Introduction to the Study

Introduction

Many information technology (IT) organizations have considered virtual teams as an option to reduce costs while increasing productivity (Meyer, 2011). According to "Best-Paying Work-At-Home Jobs," 2011, businesses are planning to hire remote workers to create a more flexible work environment because of the challenging economic conditions consequent to the recession of the 2000s. This is especially true for IT teams that are able to work in different geographic locations, and many organizations are starting to shift to globalized virtual teams (Nunamaker, Reinig, & Briggs, 2009). Because virtual teams are becoming more commonplace, there is a need to better understand the leadership characteristics that contribute to virtual team success (Meyer, 2011). The present research investigated transformational leadership behavior (TLB) and three characteristics linked to team success: (a) an employee's willingness to exert extra effort, (b) an employee's perception of his or her leader's effectiveness, and (c) an employee's job satisfaction.

Background of the Study

Although there has been an abundance of leadership research on the traditional workplace, the pending shift to a virtual workforce has called much of the existing body of knowledge into question, or at the very least has necessitated confirmation that findings in a traditional work environment are still applicable to the virtual workforce (Hooijberg, Hunt, & Dodge, 1997). Leaders of a virtual workforce face different team dynamics than leaders in a traditional work environment. Without daily face-to-face

interaction, certain aspects of leading a team, such as building team trust and cohesiveness, motivating employees, and accomplishing goals, may prove more difficult (Hooijberg et al., 1997). In fact, Bennis (1985) suggested that traditional forms of leadership simply do not work in a virtual team environment.

In a virtual environment, leaders have to lead differently, build trust differently, and reach decisions differently (Meyer, 2011). For example, International Business Machines Corporation (IBM) has used virtual teams internally for several years and has been a leader in virtualization technologies (Bruner, 1996). IBM is developing and enhancing new tools, including virtual conference rooms, technology to share pictures and videos, and virtual team-building games to improve team interaction, so workers in different geographic locations can share a somewhat traditional work experience (Bruner, 1996). Technology may make the virtual experience similar to a traditional work environment; however, at this time, the differences between the work environment for an onsite worker and a virtual worker are significant (Meyer, 2011). For example, the "boredom" of plain text messaging and other asynchronous communication is simply not on par with face-to-face interaction (Yukl, 2002).

Problem Statement

According to the existing body of business research, selecting the right personnel is important for all businesses and for leaders (Bass, 1998). Equally important is retaining high-caliber employees, which is a critical factor that leads to team success. In a traditional workplace, TLB has demonstrated clear ties to employee work effort. Furthermore, researchers have linked it to employee job satisfaction, and it leads to a

belief in the manager's effectiveness (Bass, 1999; Fjermestad & Hiltz, 1998). The shift from a traditional workplace to a virtual work environment, however, fundamentally changes the way leaders and workers interact, and such a significant change in workplace dynamics cannot be taken for granted (Yukl, 2002).

The strategy of forming virtual teams for IT organizations is becoming commonplace because of the challenging economic conditions whereby virtual teaming is a means to save money on travel and reduced office space (Meyer, 2011). Virtual teaming is supported by various newer technologies that have made virtual teaming more palatable for workers (Bruner, 1996). Because the number of virtual teams is growing so quickly, understanding the relationship between leadership styles and successful virtual teams may have a real and significant social impact (Meyer, 2011).

The rapid rate of change in the IT industry requires the emergence of new leaders (Alon & Higgins, 2005). Building new leaders in a new, virtualized workplace can be a significant challenge. In addition to a changing work environment, IT executives will face a number of other challenges, including global competition, economic constraints, and increased demands for service and quality (Boyatzis, 2008). A leader needs to have the right skills and abilities to lead through turbulent times. IT executives are expected to use innovative and creative techniques to implement new technologies; diminish costs; and improve strategic alignment of human capital, culture, behavior, and values within an organization (Barbuto & Burbach, 2006). Though virtual teams are expected to save money and provide a faster, more flexible workforce, how to identify and employ successful leadership to manage virtual teams still needs more research (Meyer, 2011).

Purpose of the Study

Prior research has shown that transformational leaders demonstrate leadership behaviors that facilitate both individual and team success (Bass, 1985). Research in the traditional workplace has suggested that leaders may exhibit multiple different leadership characteristics. Collectively, these leadership behaviors are classified as transformational, transactional, or laissez-faire; however, TLBs are directly correlated with improved team performance (Bass, 1999). Chapter 2 details the existing body of knowledge about leadership and traditional teams along with the gaps in research as pertaining to virtual teams. The intent of the present study was to research the relationship between transformational leadership of IT executive leaders and the work effort, perceived effectiveness, and job satisfaction of direct report employees working in a virtual team environment. The results of this study will help recruiters, human resource managers, industrial–organizational psychologists, executive IT leaders, and employees to understand the relationship between TLB and team success. With this knowledge, organizations can make better decisions with regard to hiring, promoting, and training leaders.

Nature of the Study

The study is quantitative in design and leveraged a correlational design through the use of an online survey. The target population was obtained through a large IT organization in the central United States. Participants consisted of male and female employees and their direct report manager. While employees and their direct report managers were all actively participating on virtual teams, it was likely that there were

differences in the ways their teams interacted. It was a goal of the present research to include a variety of participants with different virtual team policies. Participation in the study was voluntary, and participants were required to electronically sign an informed consent form (Appendix A).

The online survey was distributed to all participants through the IT organization's online survey tool. The survey consisted of an informed consent form, demographic items, and the 45-question Multifactor Leadership Questionnaire (MLQ) 5X (Short Form) (Bass, 1998). Specific demographic items were also gathered to help describe the sample. The information included age, gender, tenure with the organization, length of time working on virtual teams, and time spent reporting to the same direct report leader.

Research Questions and Hypotheses

The research questions for the present study were focused on understanding more about the nature of the relationship between TLB and virtual teams. The following research questions and hypotheses guided this study:

RQ1: Is there a relationship between executive transformational leadership behavior and the work effort of virtual team members who report to the leader?

$H_0$1 (null): There is no correlation between executive transformational leadership behavior and work effort of virtual team members who directly report to those leaders.

H_a1 (alt): There is a relationship between executive transformational leadership behavior and the work effort of virtual team members who directly report to those leaders.

RQ2: Is there a relationship between executive transformational leadership behavior and a team member's perception of a leader's effectiveness?

$H_0$2 (null): There is no correlation between executive transformational leadership behavior and employee perceived effectiveness of the direct report manager to whom employees reports.

H_a2 (alt): There is a relationship between executive transformational leadership behavior and an employee's perceived effectiveness of the direct report manager to whom the employee reports.

RQ3: Is there a relationship between executive transformational leadership behavior and the job satisfaction of virtual team members who report to the leader?

$H_0$3 (null): There is no correlation between executive transformational leadership behavior and the job satisfaction of the virtual team members who directly report to those leaders.

H_a3 (alt): There is a relationship between executive transformational leadership behavior and job satisfaction of virtual team members who directly report to those leaders.

Theoretical Base

The theoretical base for the present research, studying leadership style and an employee's willingness to exert extra effort, an employee's perception of the effectiveness of a leader, and an employee's job satisfaction, derived from the Avolio and Bass (1985) model of leadership style findings. Bass (1985) applied theories of

transformational leadership to business environments of the time. Researchers perceive transformational leaders as raising the bar for subordinates' involvement and overall drive to achieve more (Bass, 1985). Transformational leaders accomplish this by expanding subordinates' interests to go beyond their own self-interests (Bass, 1985). This shift in an employee's mind-set should result in extra effort, an improved perception that the leader is more effective, and a willingness, on behalf of the employee, to exert extra effort (Bass, 1999).

Virtual teams are becoming much more commonplace (Meyer, 2011). Transformational leadership has a positive impact on employee job satisfaction, perceived effectiveness, and willingness to exert extra effort (Bass, 1999), and there is no reason to expect different results in a virtual team environment; however, the change in team structure may cause substantial workplace modifications such that the leadership behaviors that lead to success will be vastly different than the leadership behaviors in a traditional workplace (Meyer, 2011). When comparing a traditional workplace to the virtual team environment, the interactions between leaders and subordinates, such as the methods and modes of communication, feedback, and direction, take substantially different form (Meyer, 2011).

Definition of Terms

Information technology (IT) organization: Composed of different levels of management that deal with IT. The senior management, middle management, and highly skilled executives are all equally important in the IT organization, and all levels of

management are expected to be leaders. Highly intellectual persons are the backbone of the IT industry (Carte, 2006).

Job satisfaction: Employee's attitude of liking or not liking his or her job (Judge & Piccolo, 2004).

Laissez-faire leader: A leader who avoids making decisions, abdicates responsibility, and does not use authority (Turner & Muller, 2005).

Leadership: Influencing others to understand and agree about what needs to be done and how it can be done effectively. The process of facilitating individual and collective efforts to accomplish shared objectives (Yukl, 2002).

Perceived leader effectiveness: The direct report employee holds views regarding the ability of his or her direct line manager to influence up-line managers.

Transactional leader: A leader who takes a conventional, highly structured approach to employee motivation, tends to point out mistakes, takes action when employees make mistakes, promises incentives for performance sometimes, does not give due praise or affirm interpersonal relationships, and relies on systems and rules of organizations, thereby contrary to the use of emotional intelligence (Conger, 1999).

Transformational leader: A leader who is charismatic, visionary, inspirational, and intellectually stimulating and who develops followers by creating a direction for them to follow but allows freedom for followers to control their own behavior (Judge, 2004).

Virtual team: A collection of geographically dispersed team members with assigned tasks and shared outcomes as part of a larger team (Gibson & Gibbs, 2006).

Work effort: Described in the MLQ as the willingness to do more even beyond self-interest (Bass, 1998).

Assumptions

As the researcher, I assumed that (a) access to the organizational employees targeted for the study would be provided, (b) a sufficient number of employees would participate, and (c) participants would be truthful in completing the MLQ.

Limitations

The present study had some limitations. First, the success of virtual teams and measurement of TLB were based on a single point in time, not over an extended period. Second, although the research instruments described in this dissertation have been widely used and have demonstrated acceptable validity and reliability scores (Avolio & Bass, 2004), the study made use of the assumption that no demographic characteristics prevent understanding or responding to the items on the questionnaires.

The present study has furthered the body of knowledge regarding the relationship between the predictor, TLB, and three criterion variables: employee job satisfaction, perceived influence, and willingness to exert extra effort. The research furthers understanding related to both direction and strength of the relationship between the predictor and criterion variables. A more complete understanding of transformational leadership as it relates to virtual teams provides an opportunity to influence social change as more organizations and employees seek the virtual team structure. By performing the regression testing outlined, however, there are still limitations, and further research may be needed outside of the IT field.

Delimitations

The current study included some constraints to eliminate bias. The following delimiters were present for the study:

- Participants in the study were within IT infrastructure teams.
- Participants in the study were IT professionals.
- The population was a single IT organization; all participants had similar job goals and objectives, and the organizational structure was similar for each participant.

Significance of the Study

Tough economic times have forced organizations to use virtual teams as a way to reduce costs and establish a more flexible workforce. Some prior research has suggested that traditional teams are often more successful than virtual teams (Zakaria, Amelincks, & Duncan, 2004). A review of the literature, however, suggested that in a traditional workplace, transformational leadership is the most effective leadership style for cultivating employees and inspiring them to achieve more (Lowe, Kroek, & Sivasubramaniam, 1996). Unlike transactional and laissez-faire leadership behaviors, researchers have linked transformational leadership to organizational success (Avolio & Bass, 1988; Yukl, 2002).

Despite the mounting body of research, existing literature has demonstrated a clear gap in knowledge because very few researchers have investigated leadership styles and their implications for virtual teams. For example, Avolio (1999) investigated the relationship between life experience and leadership. Barbuto (2000) investigated the

relationship between motivation and leadership. Barbuto and Burbach (2006) even linked the self-report measure of transformational leadership with emotional intelligence. Each of these studies noted the importance of leadership.

The present study has added considerable information to the body of knowledge involving virtual teams. As a legitimate alternative to the traditional workplace, virtual teams offer flexibility to the workforce, and for businesses, virtual teams also provide an opportunity to recognize savings with the removal of traditional brick-and-mortar office locations. In part, this is why virtual teams are becoming more common. This research project has provided significant data for organizations, leaders, and team members seeking to understand more about building effective virtual teams. The study has also added to the body of work focused on transformational leadership.

The present study has considered TLB and employee effort, effectiveness, and satisfaction, which have other benefits that could promote positive social change. First, for potential leaders of virtual teams, the present study provided some insight into leadership behaviors that are more likely to result in increased or improved work by employees. Second, for employers, the present research provided more information that will allow organizations to develop programs specifically targeted toward leaders who will have responsibility for virtual teams. The present study investigated the importance of TLB in the virtual work environment; specifically, this study gathered information from IT executives and virtual team members, throughout the central United States, of a large IT consulting company.

Summary and Transition

This chapter provided an introduction and statement of the problem. Given the difficult economic times, organizations are aggressively seeking opportunities to lower costs and create a more flexible work environment; thus understanding how leadership styles affect virtual team performance has significant ramifications. The background and purpose of the study, the study's significance, key terms and definitions used in the study, and the assumptions and limitations of the study were all discussed in detail. Ultimately, the research can influence positive social change for both workers seeking employment opportunities and employers seeking to get the most out of virtual teams. Chapter 2 reviews the existing literature describing leadership challenges for a virtual workforce (i.e., transformational leadership and effective leadership for virtual teams). Chapter 3 describes the research methodology, the design of the study, and the sample population, along with the data collection process and procedure. Chapter 4 reviews the purpose of the study, and examines the selected research tools. Results are interpreted and recommendations for next steps are made in Chapter 5.

Chapter 2: Literature Review

Introduction

The purpose of this quantitative survey study was to examine the relationship between transformational leadership and the success of virtual teams in an IT organization. Research has suggested that leaders of virtual teams demonstrate a variety of leadership characteristics, based on leadership roles, to facilitate improved team performance and success of the team (Denison, Hooijbert, & Quinn, 1995). Research has also suggested that transformational leaders assume multiple leadership characteristics in an effort to lead high-performance teams (Avolio & Bass, 2004).

This chapter reviews the literature related to transformational leadership and virtual teams with a focus on literature related to the research questions and the hypotheses of the study. Online research databases EBSCO and ProQuest were used to search peer-reviewed journals, books, and websites. A Boolean search combining terms such as *virtual teams*, *transformational leadership*, and *team success* resulted in approximately 1,500 references. After a thorough review, many references were not considered relevant to the present study. Literature that was determined to be important for the present study was included in the review.

Leadership Styles

Managing successful teams often takes strong leadership (Barbuto & Burbach, 2006). Different strategies can motivate team members and drive successful team performance (Barbuto, 2000). Leaders understand the value properly managed subordinates can have in improving production (Bass & Avolio, 1993). In 1939,

according to Weber (1947) researchers considered three different leadership styles. The *autocratic leader* makes decisions without consulting others. The *democratic leader* involves subordinates in the decision-making process. The *laissez-faire leader* takes a hands-off approach and minimizes the leader's involvement in decision making, allowing subordinates to make independent decisions (Antonakis, Avolio, & Sivasubramaniam, 2003).

Weber's work in 1947 broke new ground with the idea of charismatic leadership. His work formed the basis for much of leadership theory over the next 30 years (Burns, 1978). Weber described a *charismatic leader* as someone with vision and exceptional leadership qualities, someone people want to follow.

In 1978, Burn's work on transformational and transactional leadership described *transformational leaders* who uplift morale, motivate employees, and are firmly grounded with morals. *Transactional leaders*, alternatively, focus on the exchange of work purely for purposes of self-interest. Burns introduced transformational leadership as a style of leadership that places an emphasis on followers and their personal values, connecting the vision to the follower in a personal way. Bass (1985) extended the work on transformational leadership by identifying the differences between transformational, transactional, and laissez-faire leadership within the context of personal exchanges.

The description of leadership has changed over time and has grown to include motivation and inspiration (Avolio & Bass, 2004), influence of team behavior (Barbuto & Burbach, 2006), and potentially even specific guidance to drive individual results or project success (Hoyt & Blacovich, 2003). Being a leader requires interactive behavior

and the ability to adapt to dynamic work environments to influence followers (Ilies, Judge, & Wagner, 2006). Leaders need to have the capacity to manage change, uncertainty, and increased competition within a diverse workforce, and in today's business climate, a leader also needs to be comfortable working with teams that may or may not be in a single geographic location (Panagiotis, 2006). The purpose of the present study was to evaluate leadership style and its effect on virtual team success.

With this purpose in mind, the MLQ 5X (Avolio & Bass, 2004) instrument is well suited and was selected for the present study. The MLQ 5X uses the full-range leadership model of Bass (1990) and is a comprehensive assessment, including 45 items measuring the full range of leadership styles: laissez-faire, transactional, and transformational (Avolio & Bass, 2004). The following literature review begins with a discussion of laissez-faire leadership, followed by reviews of transactional and transformational leadership styles.

Laissez-faire Leadership

Lewin (1939) described laissez-faire leadership as a style of leadership that lies between autocratic and democratic leadership styles, whereby the autocratic leader makes decisions without consulting others. In the case of an autocratic leader, only the leader's ideas matter. To ensure that goals are attained, the autocratic leader will use direct orders and sometimes manipulation. Employees are told what to do and how to do it. Communication is one way, from leader to follower (Lewin, 1939). Typically, communication with followers occurs infrequently and sometimes only when a mistake is made (Daft, 2003). As a by-product of an autocratic leader's leadership style,

absenteeism and turnover are key metrics (Hernez-Broome & Hughes, 2004; Panagiotis, 2006). Although employees often dislike autocratic leadership, there are times when it is effective, for example, when change is required or when a quick decision must be made without the luxury of time for feedback or employee input. Under high-stress conditions, sometimes followers will favor the autocratic leadership style as it can reduce stress on the followers (Haakonsson, Burton, Obel, & Lauridsen, 2008).

The democratic leadership style allows for followers to be active participants in the decision-making process; however, the leader still has the final decision-making power (Rahim, 2006). As a by-product of the democratic style of leadership, employees often exhibit higher morale and increased sense of teamwork. For higher skilled employees, the democratic leader is often more respected, and followers buy in to the team strategy (Boyatzis, 2008). Followers tend to feel more engaged and will typically participate in decision making that creates a sense of empowerment (Atwater, 1993). At the wrong time, the democratic leader may be viewed as weak; however, higher skilled employees will likely exhibit respect toward a leader who gathers input before making a decision (Antonakis et al., 2003). In some situations, the democratic leadership style has very specific benefits because usually this style of leadership generates more alternatives for consideration (Antonakis et al., 2003). The democratic leadership style is not as controlling as the autocratic leadership style but offers more guidance than the laissez-faire style of leadership (Boyatzis, 2008).

The laissez-faire leadership style gives followers the ability to make decisions independently. Laissez-faire almost implies “no leadership” because the leader provides

very little and perhaps no direction. In some regard, the laissez-faire style means the leader avoids responsibilities, is absent, or fails to make decisions (Skogstad, Einarsen, Torsheim, Aasland, & Hetland, 2007). Goal setting, decision making, or problem resolution completely falls to the individuals on the team because the leader does not participate (Northouse, 2001). This style of leadership is especially concerning in a virtual environment where communication may already be somewhat more challenging.

Laissez-faire leadership is not the same as empowering employees because a laissez-faire leader does not provide a clear mission. With laissez-faire leaders, tasks are delegated, and follow-up is the only mechanism to determine of the work was completed successfully (Lowe et al., 1996). The lack of a clear mission or goal often causes followers to exhibit higher levels of stress and frustration (Burns, 2003). When teams experience laissez-faire leadership, they become less productive, deliver fewer results, and generally become uninspired and out of control (Hartog, van Muijen, & Koopman, 1997). For a team to deliver results, it is important to maintain control so that team objectives can be met (Northouse, 2001). For virtual teams, guidance, goal alignment, and sense of mission are important for achieving organizational objectives (Reilly, Lojeski, & Reilly, 2005).

Although results, or team success, may still be achieved with a laissez-faire leader, based on individual contributor capabilities, some researchers have suggested that laissez-faire leadership causes more problems than no leadership (Skogstad, Einarsen, Torsheim, Aasland, & Hetland, 2007). Human resources and other organizational leaders need to be aware of the potential negative impact of laissez-faire leadership. Uncertainty

about roles and responsibilities leads to additional stress for workers (Judge & Piccolo, 2004). Often the leader is detached from regular, day-to-day operations, and failure to support subordinates in tough situations can cause resentment among the team (Skogstad et al., 2007). Laissez-faire leaders assume that followers are motivated to be successful without any additional guidance from the leader (Eagley, 2003).

In dealing with virtual teams, the laissez-faire leadership style is especially dangerous because team members can already feel somewhat removed from other team members, who are not located in the same geographic area. Leaders have the responsibility to provide direction and communicate goals and objectives (Carte, Chidambaram, & Becker, 2006). Even with leaders who are engaged, it is not uncommon for virtual teams to feel separated and detached from the rest of the team (Zhang, Fjermestad, & Tremaine, 2005). Laissez-faire leadership could increase team members' frustration from lack of communication.

Transactional Leadership

Transactional leaders create an exchange whereby followers receive rewards for accomplishing set objectives (Bass, 1999). Leaders understand employees and what motivates employees, so the rewards are thought to be the only tool for motivation (Bono & Judge, 2004). In some cases, leaders use money, wages, and bonuses as the primary incentives to motivate employees (El-Meligi, 2005). For transactional leaders, achieving set goals can be achieved through this simple reward system (El-Meligi, 2005). Leaders offer pay incentives to achieve goals; however, followers are rarely inspired to do more than simply achieve the goal, and they are certainly not inspired to seek creative solutions

to do more than is expected. Sometimes transactional leaders will understand that to achieve strategic goals, a change in strategy may be required; however, it is uncharacteristic for a transactional leader to place a priority on the personal development of followers (Bass, 1990). Failure to acknowledge employees' personal development requirements and the lack of meaningful incentives do nothing to grow team chemistry. If, however, incentives are set appropriately, team members may do more in an effort to achieve set goals (Jung, Chow, & Wu, 2003).

Although it is common for transactional leaders to provide positive incentives to encourage employees to achieve team goals, incentives are not the only way to practice leadership (Jung, Chow, & Wu, 2003). Conversely, leaders may seek to punish undesired behavior. For example, when performance targets are achieved, the transactional leader may provide financial incentives (Barbuto & Burbach, 2006). When performance targets are missed, negative reinforcements, such as disciplinary actions, may be taken (Barbuto & Burbach, 2006). Because transactional leadership is an exchange process with followers, the relationship requires more discussion (Wren, 1995). A considerable amount of research has focused on leaders, followers, and the relationship between them (Askarany, Smith, & Yazdifar, 2007). Leader–member exchange theories begin with the idea that leaders and followers form a distinctive relationship within an organization (Askarany, Smith, & Yazdifar, 2007). According to the leader–follower theories, it would make sense for leaders to have a strong relationship with some team members and less strong relationships with others (Askarany, Smith, & Yazdifar, 2007). The leader–

member exchange theories consider leadership as nothing more than a series of interactions between leaders and followers (Hooijberg et al., 1997).

Graen and Uhl-Bien (1995) posited that leaders behave differently toward individual followers. Graen (1976) suggested followers could be categorized as belonging to either an in-group or an out-group, depending on the quality of the relationship between leader and follower. In-group followers have a very positive relationship demonstrating trust and respect, whereas the out-group relationship has a much more formal work or job description basis (Jung et al., 2003). The leader–member exchange theory says that a leader, when talking to a follower, uses different communication avenues based on the in-group or out-group status of the follower (Jung et al., 2003). In addition to different communication tools, leader–member theory also puts forth the idea that in-group team members will have higher quality, more personal communications with the leader, thus reporting two-way communication, in contrast to the one-way communication that out-group employees describe (Chang & Lin, 2008).

According to Yukl (2002), better communication is more likely when the leader perceives the follower as capable and trustworthy (Yukl, 2002). The quality of the leader–worker relationship has a direct impact on the quality of work the follower performs (Bass, 1990). Transactional leaders motivate employees through incentives or disincentives, but often the arrangement is mutually beneficial, and both leader and follower achieve success through delivery of results (Judge & Piccolo, 2004). If the leader does not have the resources to provide the proper incentives to achieve a goal, then this type of leader is likely to have significant problems motivating employees (Avolio &

Bass, 1995). The negative reinforcement of policies results in a much different relationship between leader and follower because punishment is perceived much more negatively (Avolio & Bass, 2004). Negative reinforcement will cause employees to work just hard enough to avoid the negative response, and this approach will almost never result in the employee exerting maximum effort (Yukl, 2002). In a virtual work environment, transactional leadership poses several challenges because the lack of one-on-one attention requires workers to be more self-motivated (Solansky, 2008).

Transformational Leadership

Bass (1990) compared and contrasted transformational leaders with transactional leaders. He considered a transformational leader to be someone who could transform an organization and seek ways to further the relationship with followers beyond merely self-interest. Conversely, Bass (1990), suggested the transactional leader would focus on self-interest. In other words, the transformational leader has more than self-interest at stake: What is good for the organization will ultimately be better for both the leader and the follower (Tucker et al., 2004). This difference is significant because the transformational leader seeks to inspire employees to look beyond mere self-interest and see the bigger picture.

By comparison, transactional leaders do not seek to inspire beyond self-interests, which limits team building and creativity (Bass, 1990). The transformational leader seeks to change the organizational culture, whereas the transactional leader simply looks to operate within the existing guidelines (Avolio & Bass, 1995). Transformational leaders use more than simple rewards to motivate (Avolio & Bass, 1995). Transformational

leaders motivate through personal leadership, inspiring employee effort, intellectual stimulation, and individual consideration (Askarany et al., 2007). Both transformational and transactional leaders strive to achieve set goals; however, the transformational leader places a greater emphasis on organizational impact (Avolio & Bass, 1999, 2004). Transformational leaders are uplifting and motivational, and they drive a higher moral incentive for team members (Burns, 1978). Transactional leaders give orders to achieve success. Transformational leaders sell ideas and believe in the team's ability to achieve success (Riketta, 2008).

Burns (1978) introduced transformational leadership as a model where change leaders help motivate and incentivize followers. Transformational leadership requires perceptual changes of the follower regarding the importance of the team or organization, not just self-interest (Barbuto, 2000). Transformational leadership requires a wide range of leadership characteristics (Northouse, 2001). Bass (1995) extended the construct of transformational leadership by explaining how leaders have higher quality relationships with followers when compared to transformational leaders. According to most research, transformational leadership comprises four interrelated components: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration.

Starting with Bass's (1997) research, certain aspects of transformational leadership are clearly linked to team success, including, as posited in the present study, the success of virtual teams. First, idealized influence suggests that transformational leaders have followers who trust and respect them, and as a result, these leaders have much more influence over followers (Boyatzis, 2008). Followers develop a belief in their

leader and identify with both the leader and the stated mission. Next, inspirational motivation requires the leader to communicate a clear and precise plan of action (Boyatzis, 2008). With clear objectives, followers can help the team succeed with or without idealized influence (Turner & Muller, 2005). Intellectual stimulation provides an outlet for followers to be creative, challenge ideas, and seek out better alternatives. Individualized consideration is an outgrowth of Burns's (1978) work and suggests that a leader should understand individual worker characteristics to identify ways to make each individual contribute to team success (Avolio & Bass, 2004).

Other forms of leadership also identify that individual consideration is important (Boyatzis, 2008). Transformational leaders, however, have a vision about how things can work better. Like the earlier charismatic leadership theories, a leader can communicate to workers through exuberance and excitement to inspire followers to join in making the vision possible (Turner & Muller, 2005). Multiple researchers have verified that transformational leaders have a very positive effect on traditional face-to-face workers (Ilies et al., 2006). By promoting a vision and a belief in a mission, transformational leaders build individual and team commitment to cause, a belief in the team, and a desire to see the team or organization succeed (Chen, Beck, & Amos, 2005). A transformational leader recognizes the capacity of followers to be successful and achieves employee motivation through satisfaction of a "higher need" (Burns, 1978).

Transformational leaders understand followers' motives and leverage this understanding to achieve successful outcomes (Burns, 1978). Transformational leaders create a vision and build consensus based on ethical or moral implications often

transcending self-interest (Avolio & Yammarino, 2002; Block, 2003; Dulewicz, 2005). Ethics and morals play a central role in Burns's (1978) original theory. Bass (1990) extended Burns's (1978) work by focusing on the follower more so than the leader. Bass (1990) outlined a new possibility that leaders could be both transformational and transactional based on the situation. Transactional leadership can get the job done, but transformational leaders motivate followers to do more, to achieve more (Antonakis et al., 2003; Bass, 1997; Bass & Avolio, 1990). Transformational leaders are more likely to enable change and drive changes in a follower's belief system (Avolio & Bass, 2004; Avolio & Yammarino, 2002). Among Avolio and Bass's (2004) four components of transformational leadership (i.e., inspirational motivation, idealized influence, individualized consideration, and intellectual stimulation), the question is which management style, or, more precisely, which characteristics within the management style, are more effective in a virtual environment (Boyatzis, 2008; Crossley, Bennett, Jex, & Burnfield, 2007).

Charisma is one of the top characteristics described in the transformational leadership model. From the earliest days, people believed charismatic leaders had a gift from the gods (Atwater, 1993). Because it is considered a trait of successful leaders, many researchers have investigated charisma (Conger, 1999). Weber (1947) provided the germinal research around charisma as a characteristic of leadership. Charisma clearly delineates leaders from followers. In fact, the characteristics of a charismatic leader almost seemed divine in nature, as leaders demonstrated exceptional capabilities to lead with supreme confidence (Weber, 1947). House (1977) described leaders as moral

leaders who lead with vision, conviction, and personal belief. In later research, charismatic leaders were described by unconventional, visionary, and often risk-taking behavior (Barbuto, 2000). The ability to lead in times of change and express visionary attributes almost causes people to follow without question (Hoyt & Blacovich, 2003). Bass (1997) considered charisma, along with other personality traits, to enable a leader to inspire and motivate followers (Solansky, 2008). Charisma is an essential aspect of leadership in the transformational leadership model, and vision is perhaps the most important consideration (Barbuto & Burbach, 2006).

Conger (1999) discussed the ability of a leader to create a shared vision for followers whereby the followers completely buy in to the idea of the future goal. A leader's ability to articulate and show passion for a future goal is connected to followers' acceptance of a shared goal (Dulewicz, 2005. The leader's actions are based on the individual traits but are summarized by the dedication to a vision (Dickson & Lorenz, 2009). Conger (1999) suggested that a leader's charisma is directly related to the dedication of followers trying to achieve the shared goals. However, it should be understood that the idea of a charismatic leader is not without controversy.

Applying a Leadership Model to Performance in the Workplace

In 1985, Bass discovered that transformational leadership contributes to predicting certain outcomes with respect to individual employees and team performance. In particular, Bass recognized that leadership behavior can be used to predict employee satisfaction, willingness to exert extra effort, and perceived effectiveness (see also Bass & Avolio, 1995). According to Bass (1985), in the full range of leadership models,

positive organizational outcomes can consistently be linked to transformational leadership. Subsequent research has supported and furthered findings that associate transformational leadership with positive business results (Barling, J., Slater, F., & Kevin Kelloway, E., 2000). In fact, organizational success and success of direct report employees are not limited to a single field or type of organization; rather, performance is tied to leadership behavior where the leader articulates a vision and demonstrates that performance is about more than just individual goals and instead about the greater good (Bass, 1998; Avolio & Bass, 1998). Finally, Bass (1995 suggested that transformational leaders are highly correlated with reduced turnover, higher employee satisfaction, and increased productivity. The concept, then, is simple: Through charismatic leadership that influences followers to raise the bar, become better team contributors, and exert extra effort, team performance will improve (Bass, 1985).

Virtual Teams

In a face-to-face environment, a charismatic person has the ability to work the room, interacting with individuals and providing feedback that inspires personal investment among the participants (Hoyt & Blacovich, 2003). In a virtual environment, it is less clear whether transformational leadership will have the same effect. Some research has determined that the quality of relationships among members of a successful team is not at all clear (Carless, Wearing, & Mann, 2000). Yukl (2002) asserted that virtual teams would continue to become more important as they have the potential to generate more innovative solutions to problems and ultimately spark greater productivity and creativity. If the primary characteristics of a transformational leader are tied to his or her ability to

express a vision or demonstrate charismatic traits, there is a legitimate question whether these characteristics are applicable in the growing virtual environments of many contemporary IT organizations (Anderson, 1998; Crawford, Gould, & Scott, 2003). Although many virtual teams will adopt technology that allows team members to see one another face-to-face, most commonly, communication through e-mail, instant messaging, or telephone is the norm, and these will not provide the same visual cues that Malhotra, Majchrzak, and Benson (2007) describe. Without important queues such as body movement, facial expressions, and hand gestures, interpretation of a follower's feedback to communication becomes increasingly difficult (Gibson & Gibbs, 2006).

The global economy has changed the way corporations conduct business (Yukl, 2002). According to Sussan and Johnson (2007), emerging technologies will enable virtual teams to become much more prevalent. Many organizations, such as Microsoft, IBM, and HP, have instituted home offices for many employees, and many times these employees must work together across geographic and cultural boundaries using various computer technologies. The virtual teams enable cost reductions for travel, housing, and office space, along with other expenses typically covered in an office environment (Cromb, 2005). Malhotra et al. (2007) identified the necessity for virtual teams to work across geographical and cultural boundaries because of the potential cost savings and increase in productivity but further suggested that leadership is a critical factor in the success of these virtual teams.

The 2006 research by Gibson and Gibbs, determined a supportive environment must include the ability to communicate effectively and strengthen social connections

within a team. Creating a work environment that fosters team success and communication between leader and follower is important to the cohesiveness of virtual teams (Gibson & Gibbs, 2006).

With challenges in communication, Malhotra et al. (2007) also suggested that there may be an issue with trust. The leader–follower relationship is essential for a charismatic–transformational leader (Lockwood, 2010). Interestingly, in 2003, Elmuti conducted a study focused on virtual teams using the Internet as the primary mode of communication (Eberlin & Tatum, 2008). The teams were extensively trained on how to use the communication technologies, and they were, in fact, successful (Hoyt & Blacovich, 2003). Given advances in technology since the early 2000s, technology and communication practices such as instant messaging, text messaging, e-mail, and VoIP and video chatting are much more common. Eventually, these technological innovations may enable traditional leader–follower relationships to develop; however, today, a variety of challenges inhibit performance and the relationship between a leader and follower, thus influencing virtual team success (Gibson & Gibbs, 2006).

For virtual team success to be realized, a clear mission is critical (Gareis, 2006). Because of challenges with communication, research demonstrates that small problems may soon spin out of control (Gareis, 2006). Without face-to-face communication problems, a virtual team is likely to be successful (Sobel-Lojeski & Reilly, 2007). Leaders of virtual teams must deal with a variety of challenges, and in a virtual environment, demands on leadership become more complicated (Hooijberg et al., 1997).

Culture differences are perhaps the most critical challenges facing leaders of a virtual team. Culture differences include customs, values, and perceptions that an individual acquires through life experiences (Cromb, 2005). Because the present research does not include teams outside of the United States, this particular challenge is not addressed. For future research, however, cross-cultural differences should certainly be considered.

Measuring Leadership and Virtual Team Success

As Block (2003) described, virtual teams are different from traditional teams. However, some researchers have suggested that leadership in a virtual environment is no different from leadership in a traditional environment (Emery & Barker, 2007); conversely, still others have reported that the existing body of knowledge does not sufficiently cover the complexities of a virtual work environment (Cromb, 2005). In particular, because of the specific technical challenges with communication and team building that the virtual environment engenders, it is unclear if the charismatic or transformational leader will be as successful in a virtual environment as he or she is in a traditional environment, or if one of the other management styles, transactional or laissez-faire, might be a better match (Cohen, 1990; Galup, Klein, & Jiang, 2008). Much of the existing body of knowledge focuses on the relationship of team members within the virtual team instead of on the specific style of leadership (Zhu & Kraemer, 2005).

Competing Ideas and Instruments

Some researchers have identified that charismatic leaders tend to believe their followers are capable of achieving shared goals and that it is this belief along with

empowering actions that lead to success (Chen, 2004). By taking the focus away from the leader and instead focusing on the behavior characteristics that empower employees, some researchers reject the idea of charismatic leadership (Page & Vella-Brodrick, 2009). In fact, along with the idea that leadership style is less important than enabling employees, charismatic leadership may be viewed as quite a negative phenomenon, one responsible for various cults and other behaviors driven by a leader's own desire for power (Block, 2003).

The alternate ideas are in direct contrast with the majority of the research available, in which charismatic leaders are considered visionary, self-confident, and truly motivational (Conger, 1999). A charismatic or transformational leader will inspire followers and is genuinely interested in their success, and it is this leader's focus on followers that encourages them to be creative and achieve results (Antonakis & House, 2002; Garcie-Serrano, 2009). The leader–follower relationship is essential to team success because followers identify with the leader's vision, shared goals, and direction (Solansky, 2008). Just as there are different ideas about leadership style, there are also different tools to measure leadership.

Since Burns's (1978) creation of the notions of transactional and transformational leadership, many other researchers have developed instruments to measure leadership behaviors (Avolio & Bass, 2004). By a wide margin, the most used instrument for measuring transformational leadership is Bass's MLQ (Alon & Higgins, 2005). The MLQ has been updated several times since its initial publication, and it has demonstrated the highest levels of validity and reliability (Northouse, 2001). The MLQ has been

repeatedly demonstrated to be both valid and reliable in two forms: as a self-report measure and when taken by followers to measure a leader's behavior (Howell & Higgins, 1990).

There are alternatives to selecting the MLQ, for example, the Leadership Behavior Questionnaire (LBQ; Sashkin & Burke, 1990). The MLQ itself has other forms. The MLQ 6S is a 21-item survey, but it demonstrates a lower validity than the MLQ 5X used in this study (Northouse, 2001). The MLQ 6S has consequently not been used in nearly as many studies as its 5X counterpart. Additionally, the 6S is a self-assessment-only version of the survey.

Summary

The literature review has provided a thorough discussion of relevant literature for the present study. At points throughout the literature review, references to the present study were made to illustrate the connection between existing literature and the theoretical foundation of the current work. Understanding leadership and gaining some further knowledge about the relationship between leadership and the performance of virtual teams will provide a foundation for future research.

According to a review of existing literature, a gradual transition from the 1947 work of Weber's charismatic leadership theories, expanded by Burns exploration in 1978, culminated in groundbreaking research with Bass's (1990) work that not only formulated the theories on transformational leadership, but also provided a foundation for measuring different leadership behaviors. Using proven instruments like the MLQ, TLB is most commonly tied to higher performing teams where leaders understand the motives of

followers and leverage that understanding to achieve successful outcomes (Burns, 1978). Transformational leaders create a vision and build consensus based on ethical or moral implications often transcending self-interest (Avolio & Yammarino, 2002; Block, 2003; Dulewicz, 2005).

A review of the available literature demonstrates a clear gap in research surrounding leadership styles and virtual teams. The lack of attention to leadership behaviors and the virtual workforce is relevant because of the increasing demand for geographically dispersed workers. The current study has attempted to fill this gap in the literature through the use of the MLQ 5X, where the relationship between leadership behaviors and team performance can be evaluated.

Chapter 3 outlines the method of inquiry for the present study. The research model for the study, introduced in chapter 1, is discussed, and a methodology for testing the hypotheses is developed. In addition to laying out the methodology, the next chapter includes a discussion on data analysis, survey administration, sampling technique, and the security procedures for confidentiality. Chapter 4 reviews the purpose of the study, outlines data collection methods, and examines the selected research tools. Results are interpreted and recommendations for next steps are made in Chapter 5.

Chapter 3: Research Method

Introduction

The purpose of this study was to perform a quantitative analysis of the relationship between TLB and the effort, effectiveness, and satisfaction of direct report employees in a virtual work environment. Initially, I expected previous findings regarding the relationship between TLB and each of the measures of direct report performance in traditional work environments to hold true in a virtual team environment. The present research evaluated TLBs, and each of the measures of direct report performance as well as the strength and directionality of the relationship were assessed. Some researchers might be tempted simply to apply findings from a traditional workplace to those employees in a virtual environment, but to date, there has been no evidence that transformational leadership has the same impact in a virtual workplace (Cromb, 2005). An explanation of the study's design and methods and an examination of the population, sampling procedure, and measurement process are presented, along with the process used to select the instrumentation and a detailed discussion regarding this instrumentation. The collection and analysis of data are discussed, and finally, the ethical considerations for the present study are outlined.

Research Design and Approach

The present research explored the relationship between transformational leadership and the effort, effectiveness, and satisfaction of virtual team members in an IT organization. A multiple regression analysis evaluated leadership behavior, various demographic characteristics, and each of the outcome variables associated with strong

team performance. Because there has been substantial research in a traditional workplace, but limited research regarding transformational leadership in a virtual team environment, this approach was appropriate (Cronbach, 1951; Newman & Rudestam, 1999). Furthermore, the present research provided a foundation to understanding and improving the performance of organizations, leaders, and team members who work in a virtual environment. In the present research, understanding the relationship between leaders and followers in a virtual workplace was extremely complex. The goal was to better understand the nature of the relationship between leadership style and various performance measures linked to team success.

For the present study, transformational leadership as defined by Avolio and Bass (2004) was the predictor. The criterion, performance characteristics, was measured by evaluating self-rated measures for extra effort, leader effectiveness, and job satisfaction from the MLQ survey. The study's predictor was transformational leadership as defined and measured in the MLQ 5X. As noted earlier, the study's criterion was a measure of employee response to the leadership behavior, measured as extra effort, leadership effectiveness, and employee job satisfaction (Barbuto & Burbach, 2006).

Data were collected using the MLQ 5X. The MLQ 5X form was selected because of wide acceptance to accurately measure TLB (Block, 2003). Transformational leadership as measured by five subscales—idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration—was evaluated along with three measures for team success: effort, perceived effectiveness, and job satisfaction. The predictor, transformational leadership,

was calculated by combining the score from each of the five subscales into a single mean transformational leadership score. Using the transformational leadership mean scores, a multiple linear regression analysis was conducted on each of the criteria (extra effort, perceived effectiveness, and employee satisfaction) with transformational leadership as the predictor so that each hypothesis could be accepted or rejected based on the findings. Demographic controls for gender, age, ethnicity, education, relationship status, employment duration, length of time reporting to supervisor, and team size were entered into the first step of the regression analysis.

Setting and Sample

Individuals participating in the present study were all employees of the same IT organization with a total population of 1,200 employees. The IT executive leadership team comprised 41 individuals, and their direct report employees, the virtual team members, comprised another 396 IT professionals. The direct report employees reported to a leader with the title of senior director, area director, or vice president. The participating individuals came from a variety of teams; however, all participants operated within the IT department of the company. Each individual provided a release form allowing the use of test scores for purposes of this research. Participants were selected for reasons of (a) accessibility and (b) being of legal age to provide informed consent.

Sampling in the present study was based on employee agreement to participate. The available pool of participants was reasonably large (N = 396). Based on the criteria for participating in the study, the entire population of IT professionals was eligible to participate. To determine the sample required for the present study, I used a .05 level of

significance with a .95 level of confidence, which is common for quantitative studies in psychological research (Antonakis & House, 2002; Chang & Lin, 2008). For preliminary power analysis, I used G* Power 3.1, a free software download for power analysis, to determine the approximate sample size required to achieve the desired results for the present study. To achieve a significance level of .05 and to detect an effect size of .30 with a power of .95, the present study required a sample of at least 134 participants. Based on historical information provided by the organization, it was expected that the dropout rate would be around 20%. Dropout of some participants can be expected because of vacation, sick time, and employment termination during the course of the study.

Data Collection Methodology

The human resources department of the participating organization provided participant contact information. A total 396 prospective respondents were contacted via e-mail. An initial e-mail provided a link to the participation form (Appendix A). A second e-mail was sent to those who agreed to participate that provided a link to the Web-based demographic survey (Appendix B) and MLQ 5X survey. All participants completed a consent form, and agreement to participate was indicated to be implicit by the completion of the survey (Appendix A). The MLQ survey was available for 1 month from the date of the introductory e-mail.

To collect data and measure the variables, the 45-item MLQ 5X was used because it has been demonstrated to be both valid and reliable for measuring transformational leadership and characteristics that lead to team success (Bass & Avolio, 1995). More

specifically, the electronic version of the survey was used primarily because of logistics, cost, and ease of administration. All participants in this study were working in a virtual work environment, mostly from home. With few exceptions, exact work locations were not disclosed. The organization does not use corporate e-mail for communications. As a result, it was simpler and more cost-effective to deliver this survey through the Web. Furthermore, electronic communication was preferred for interacting with participants because all participants were keenly aware of the technology required to participate, owing to the nature of their work (Brown, Metz, Cregan, & Kulik, 2007).

Each week a reminder e-mails was sent to potential participants until the final survey closure date. After the closure date, no further responses were considered, and all valid responses were reviewed. Any duplicate, incomplete, or missing responses would have been identified and documented; however, all responses for the survey were completed in full and thus considered usable. The entire data collection cycle took 4 weeks, and 319 responses were recorded. Upon completion of the survey administration, data were transferred to an encrypted drive for analysis. If fewer than 134 participants had responded, the survey would have been reopened with the same process so that additional data could have been collected.

All participants in this study were working in a virtual work environment, most from home. The organization's policy did not allow for use of corporate e-mail for communications such as this research. As a result, it was simpler and more cost-effective to deliver this survey through the Web. Furthermore, given the focus of this research on virtual teams, electronic communication was preferred for interacting with the

participants because all participants were keenly aware of the technology required to participate (Brown et al., 2007).

Instrument

The present study attempted to investigate the relationship between TLB and the success of virtual teams in an IT organization. For this purpose, no other instrument has demonstrated the level of reliability and validity that the MLQ has. Out of 45 questions, 20 items focused on transformational leadership. The subcomponents and questions are broken down as follows: attributed idealized influence (4), behavior idealized influence (4), inspirational motivations (4), intellectual stimulation (4), and individualized consideration (4). Nine items focused on the criteria extra effort (3), effectiveness (4), and satisfaction (2).

Leadership data were gathered by administering the MLQ 5X. As outlined in the literature review, the MLQ 5X is based on a long history of leadership research, culminating with the 2002 Avolio and Bass construct. The current leadership model has been shown to be one of the most reliable instruments for measuring TLB (Antonakis et al., 2003). Participants rated their direct report leaders on all 45 items on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*frequently, if not always*). The TLB responses for each subscale were averaged to score the MLQ. The transformational leadership scale consisted of idealized attributes, idealized behaviors, inspirational motivation, intellectual stimulation, and individual consideration.

The MLQ 5X leverages three leadership behavior styles: transformational, transactional, and laissez-faire. For purposes of the present study, only the

transformational leadership style was of interest. Unfortunately, many other research projects have attempted to use the MLQ in a self-report form; however, this method of testing has caused suspicious results. The primary weakness of self-report tests remains the same: In a self-report test, perceived behavior, or, in some cases, behavior perceived to be desirable, may be reported instead of actual behavior. For instance, in a self-report test, a leader may believe that he or she provides employees with intellectual stimulation and thus answer the question affirmatively. However, the direct report employees of the leader may have a different perspective. Self-report tests cannot be said to measure actual behavior but rather the individual's perceived behavior. For that reason, the present study utilized the MLQ 5X, where the employees rate the leader's actual behavior.

There are a number of potential risks for researchers conducting quantitative data analysis (Lowe et al., 1996). Issues with reliability, for example, are concerned with whether the instrument scores accurately each time it is administered. Validity concerns whether the instrument measures the variable that needs to be measured. Avolio and Bass (2004) reported that the MLQ achieves .76 to .92 for reliability measures, and subsequent research has supported the general reliability of the instrument (Creswell, 2003). The same is true for validity, where Avolio and Bass (2004) showed Cronbach's alpha ranging from .74 to .94, once again substantiated by Creswell (2003). At the heart of the discussion, reliability and validity are essential for research projects because they allow for researchers to identify accurate conclusions from data due to some factors controlled by the study (Graen & Uhl-Bien, 1995). The researcher took special care to select an

instrument that provided adequate reliability and validity measures. The MLQ was the most widely accepted instrument for measuring TLB.

To collect data and measure the variables, the 45-item MLQ 5X was used because it has been demonstrated to be both valid and reliable for measuring transformational leadership and characteristics that lead to team success (Bass & Avolio, 2004). The transformational leadership and measures of increased effort, effectiveness, and job satisfaction were reported. The survey was distributed via the Web. The MLQ contained 45 items that served to identify and measure TLBs and three measures of leadership effectiveness (Avolio & Bass, 2004). The leadership styles measured by the MLQ included transformational, transactional, and laissez-faire. The MLQ was used to measure the predictor, leadership style, and the criterion variables, extra effort, perceived effectiveness, and employee satisfaction. The MLQ factors were rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*frequently, if not always*). For each question, participants selected one answer, and the results were calculated by averaging the scores for each item. Higher scores on a leadership style indicated the tendency to exhibit the associated leadership behaviors.

Data Analysis

Data have been protected in accordance with the Walden University IRB requirements. Data collection focused on the questions and hypotheses described in the first chapter. Both Microsoft Excel and Statistical Package for Social Sciences (SPSS) 21.0 were used to calculate and analyze the raw data. The data from the MLQ survey were analyzed to determine the type of leadership behaviors virtual team members have

observed from their IT leaders. In addition, each team member rated his or her own perception about the leader's ability to inspire extra effort, manage effectively, and improve employee job satisfaction.

Transformational leadership, as measured by five subscales—idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration—was evaluated along with three measures for team success: effort, perceived effectiveness, and job satisfaction. The predictor, transformational leadership, was described by evaluating each of the five subscales and, in this case, combining the subcomponents to estimate the total impact of TLBs. A linear regression analysis was then conducted on each of the criteria (extra effort, perceived effectiveness, and employee satisfaction) with transformational leadership as the predictor so that each hypothesis could be accepted or rejected based on the findings. Demographic controls were entered into the first step of the regression analyses.

Prior research has indicated that a relationship between TLB and team success is very strong (Tucker, 2004). The question, however, has had minimal investigation to confirm the existence of a relationship for virtual teams and their leadership. As such, the hypotheses for the present study were exploratory in nature. The present study measured transformational leadership based on actual behavior, not based on an individual's self-rated perception of leadership behavior.

The MLQ was selected as the instrument for the present research and was scored by averaging the TLB responses. Each response was rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*frequently, if not always*). The transformational

leadership scale consisted of five areas: idealized attributes, idealized behaviors, inspirational motivation, intellectual stimulation, and individual consideration. The combined mean scores for each of the five subcomponents were tallied to measure the overall mean score for TLB.

Next, the scores for the three criterion variables were considered. Based on the responses from the MLQ, participants had a score for job satisfaction, perceived influence of their direct report manager, and willingness to exert extra effort. To test the three hypotheses identified in chapter 1, the data were evaluated through multiple regression analyses to determine the variance explained by TLB. Based on the hypotheses outlined in chapter 1, the present research expected data to represent a strong positive correlation between TLB and each of the criterion measures. That is, results from regression analyses were expected to show that TLB would account for a significant portion of the variance in employee levels of job satisfaction, willingness to exert extra effort, and perceived influence of the leader.

Informed Consent and Protection of Human Participants

An informed consent form was provided for each participant via the Web-based delivery forum. The informed consent page informed participants of the voluntary nature of the study. The electronic submission of the survey was considered consent to participate in the study. All responses were anonymous. To protect participant confidentiality, no surveys were shared with the company for which the respondents worked. No personal data were requested or stored with survey responses. No anticipated risks were associated with participating in the present study.

The consent form included background information for the study, procedures for participation, confidentiality requirements, the voluntary nature of the study, and ethical considerations. A copy of the consent form is provided in Appendix A. My e-mail address and phone number were provided so participants could submit any additional questions or concerns.

Once an individual agreed to the terms of participation, the online testing began. A brief demographic form requested information such as gender, age, education, and ethnicity. A copy of the demographic questionnaire is provided in Appendix B. After submitting the demographic information, the participant moved on to take the MLQ.

The proposed research methodology has been reviewed along with the design of the study. Chapter 3 has provided needed details for the sample population and concerning the data collection process and procedure. Chapter 4 reviews the purpose of the study, outlines data collection results, and examines the data by using the selected research tools. Chapter 5 includes an interpretation of results and makes recommendations for future research.

Chapter 4: Results

Introduction

In a large IT organization, leadership characteristics and the impact on direct report employees were evaluated to examine the influence on employee satisfaction, willingness to exert extra effort, and perception of the leader's effectiveness. The leadership theories used as a theoretical framework for this study were based on Avolio and Bass's (2004) leadership model, which examines leadership styles ranging from passive, laissez-faire leadership to the charismatic leadership style classified as transformational leadership. This chapter presents an analysis of the findings. Chapter 1 introduced the study, including the purpose of the study and key terms. Chapter 2 included a review of the relevant literature for this study. Chapter 3 contained a description of the methodology that was used in the study. This chapter presents the data gathered using the methodology detailed in Chapter 3. To begin, the data collection methods are outlined. Next, the selected research tools are examined, data analysis is discussed, and findings are presented.

Data Collection

After receiving approval from Walden University's IRB, I contacted the research partner to begin the survey process. The participating organization's human resources department provided participant contact information. The criteria for participation in the present research project were as follows: First, each employee reported to a senior IT leader, and second, he or she needed to be working as a member of a virtual team. Prospective respondents were contacted via e-mail by their human resources department.

The Web-based survey was distributed to 319 company employees. All participants were in the IT organization and reported directly to a director, area director, or vice president. The participants evaluated leadership behaviors of the leader to which they reported along with the necessary demographic information required for this research. The initial e-mail provided a link to the participation form (Appendix A). Following the introductory e-mail, a second e-mail was sent to provide a link to the demographic survey (Appendix B) and the MLQ survey online. All participants acknowledged consent, and agreement to participate was implicit in the completion of the survey. The MLQ survey was available for 1 month from the date of the introductory e-mail. The Walden University IRB approved using the MLQ.

Response Rate

The MLQ 5X was distributed as a self-administered survey to a selection of employees of a large U.S.-based IT organization. The organization distributed the invitation to participate in the survey to all of its IT employees. For every leader, a unique link was provided. A total of 319 surveys were returned, corresponding with 41 different leaders. Table 1 presents a summary of the response rates. I reviewed, coded, and entered the data into a Microsoft Excel spreadsheet and SPSS 21.0 for data analysis.

Table 1

Summary of Multifactor Leadership Questionnaire 5X Response Rate

	Total
Available participants	396
Total number of surveys returned	316
Response rate (%)	80.5
Number of leader groups	41
Average group size	8

Sample Demographics

Demographic data pertaining to all participants was collected for use as possible control variables during the statistical analysis. Demographic information was collected from the participant pool using Survey Demographic Questions (see Appendix B). The participants were 81.6% male and 18.4% female. They ranged in age from 22 to 64 years. Employee ethnicity was recorded as 5.4% African American, 4.1% Asian, 86.1% Caucasian, and 4.4% Hispanic/Latino. The vast majority of participants graduated college with a bachelor's degree (88.3%). Only 2.8% of the participants attended only some college. Fewer than 9% of employees had a graduate or postgraduate degree. Participant relationship status was reported as single (13.9%), committed relationship (not married) (2.8%), married (80.1%), and living with spouse (2.8%), and one person identified him- or herself as "none of the above."

Descriptive Statistics

The descriptive evaluation of leadership style is presented in Table 2. The mean provides information related to the central tendency, whereas the standard deviation represents the deviation from the mean (Reaves, 1992). The transformational leadership

factor of idealized influence–attributed had the highest mean score (2.80). The lowest mean score was idealized influence–behavioral (2.48).

Table 2

Descriptive Statistics for Transformational Leadership

Leadership	*M*	*SD*
Idealized influence		
Attributed	2.80	0.780
Behavioral	2.48	1.001
Inspirational motivation	2.71	0.807
Intellectual stimulation	2.51	0.758
Individualized consideration	2.62	0.847
Average transformational leadership score	2.62	0.707

Note. Valid *N* (listwise) = 316.

The descriptive evaluation of the criterion variables is presented in Table 3. The mean provides information related to the central tendency, whereas the standard deviation represents the deviation from the mean (Reaves, 1992). The highest mean score was employee satisfaction (3.32), and the lowest mean score was willingness to exert extra effort (2.49).

Table 3

Descriptive Statistics for Criterion

Perceived behavior	*M*	*SD*
Extra effort	2.49	1.001
Leader effectiveness	2.98	0.660
Employee satisfaction	3.32	0.708

Note. Valid *N* (listwise) = 316.

Test of Assumptions

Before analyzing the data from a multiple linear regression, a few assumptions had to be demonstrated to be accurate; otherwise, a multiple linear regression would not be the appropriate form of analysis. First, data were analyzed for independence of errors. Second, the evaluation of a linear relationship was conducted by use of a scatterplot. Next, homoscedasticity of residuals (equal error variances) was evaluated. Fourth, confirmation that no multicollinearity existed was achieved. Fifth, evaluation of outliers was conducted. Finally, confirmation that errors were normally distributed was secured.

Validation of these assumptions was important to provide accuracy and goodness of fit for the regression model, determine variation in the criterion as it is explained by the predictor, and finally achieve acceptance or rejection of the hypotheses based on the regression equation. If these assumptions had not been met, then alternate statistical tests would have been required.

Independence of Errors

The Durbin–Watson statistic for each of the criteria was calculated as 2.3 (extra effort), 2.1 (job satisfaction), and 2.02 (leader effectiveness). Each of these results demonstrated that there was an independence of residuals, as assessed by a Durbin–Watson statistic. See Table 4 for recorded data.

Table 4

Assumptions: Independence of Errors

Model	R	R^2	Adjusted R^2	Std. error of the estimate	Durbin–Watson
Extra effort					
1	.321	.103	.079	.9604	
2	.784	.614	.603	.6311	2.3
Employee satisfaction					
1	.231	.054	.029	.6979	
2	.599	.359	.340	.5753	2.1
Leader effectiveness					
1	.380	.145	.122	.6184	
2	.729	.531	.517	.4587	2.02

Linear Relationship

First, it was assumed that the relationship between variables would be linear without significant outliers. A multiple linear regression will not be affected too greatly if there are some deviations; however, to review the data, a bivariate scatterplot was used to validate the linear relationship between transformational leadership and each of the measures for team success. Figures 1–3 demonstrate a clear linear relationship: As transformational leadership scores rise, so, too, do the scores for each criterion.

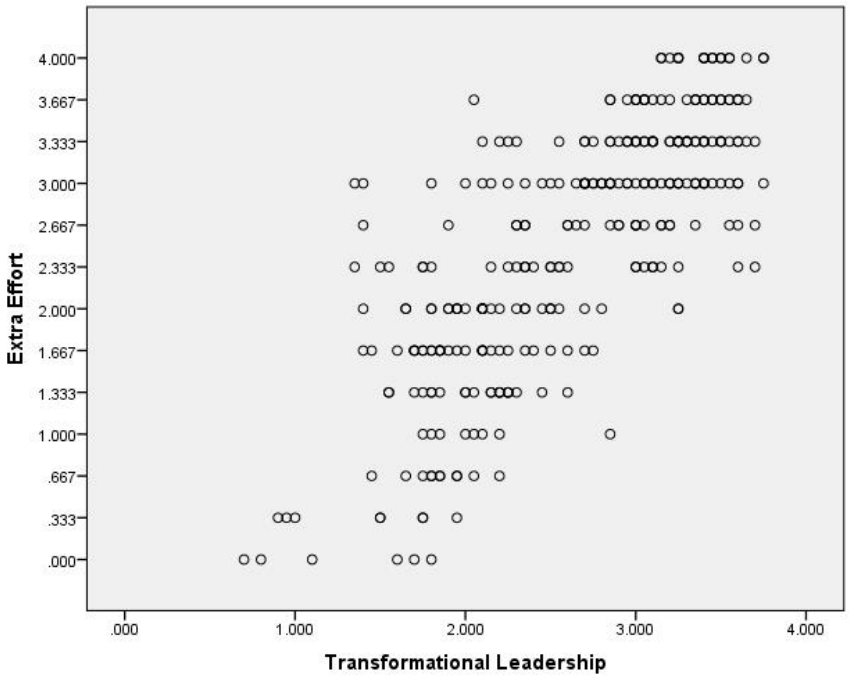

Figure 1. Scatterplot: Transformational leadership and extra effort.

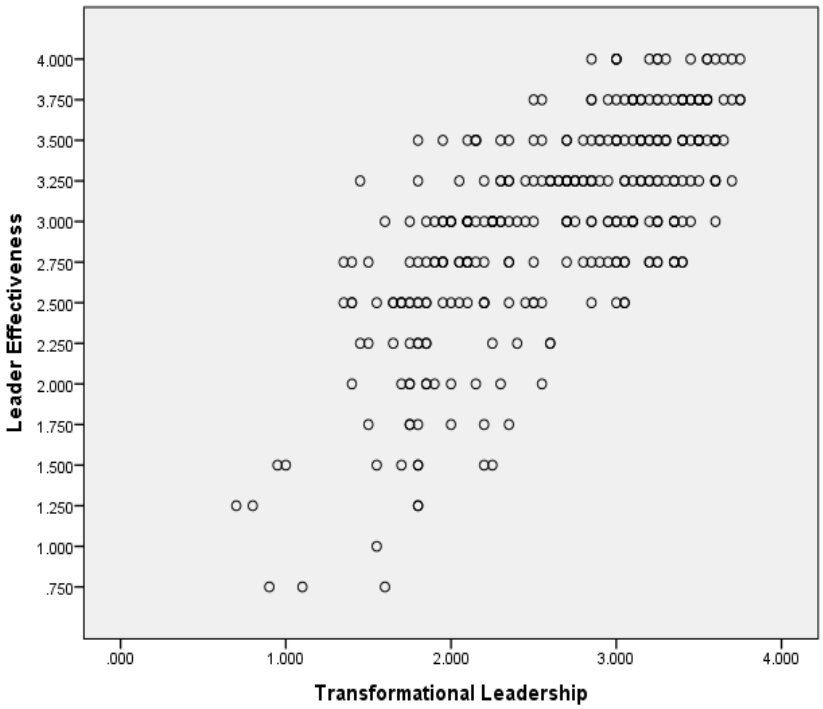

Figure 2. Scatterplot: Transformational leadership and leader effectiveness.

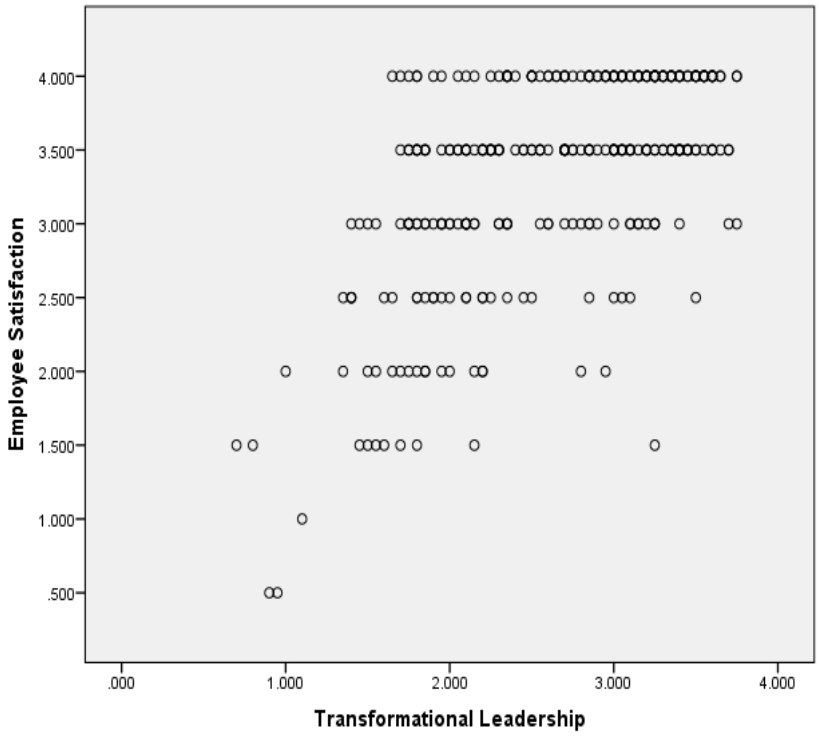

Figure 3. Scatterplot: Transformational leadership and employee satisfaction.

Homoscedasticity of Residuals

The assumption of homoscedasticity suggests that residuals are equal for all values of the predicted criterion. By plotting standardized residuals against the unstandardized predicted values, a scatterplot demonstrates that the predicted values are equally spread over the predicted values of the dependent variable. As illustrated in Figure 4, the residuals are evenly spread across the predicted values.

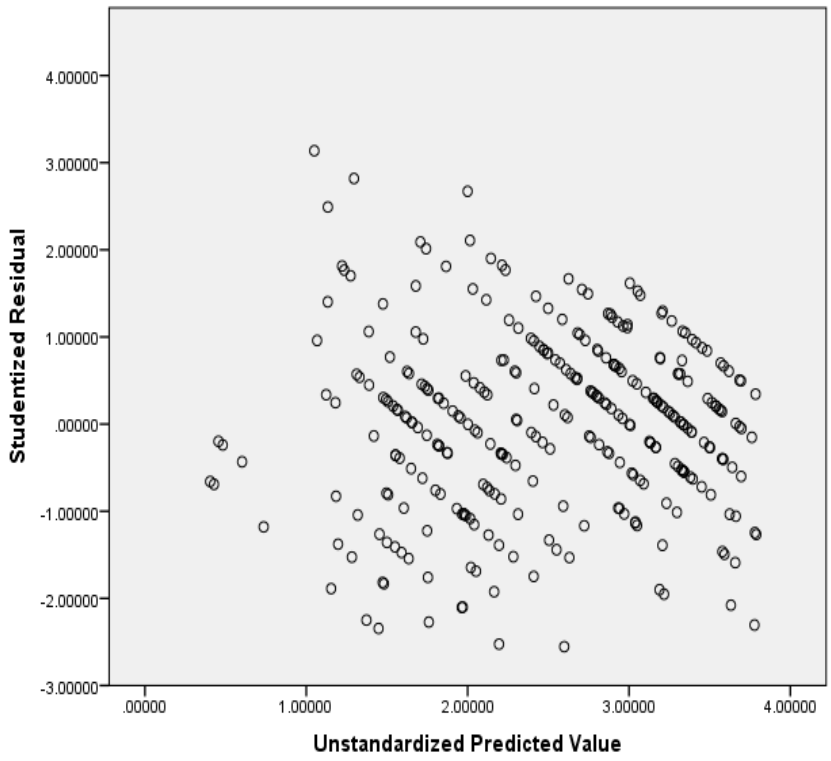

Figure 4. Assumptions: Homoscedasticity of residuals.

Multicollinearity

When independent variables are highly correlated, there is a potential problem understanding which variable contributes to variance with a multiple regression model. Because a group of variables may have a strong correlation, an evaluation of individual variables can be difficult. To ensure that this problem did not exist in the data analysis, a review of the tolerance and variance inflation factor (VIF) values was conducted, as depicted in Table 5. The VIF provides an estimate on the relationship between the predictor variables and the regression coefficient. If no factors are correlated, the VIFs will be approximately 1.000. In this case, both the tolerance and VIF data demonstrate that there is no multicollinearity problem with the proposed analysis.

Table 5

Assumptions: Correlations and Tolerance

Model	Tolerance	VIF
Employee gender	.970	1.031
Employee age	.982	1.018
Employee ethnicity	.952	1.050
Employee education	.981	1.019
Employee relationship status	.942	1.062
Employee employment duration	.984	1.016
Employee supervisor duration	.915	1.093
Employee team size	.813	1.230
Transformational leadership	.869	1.150

Normal Distribution

As part of checking the assumptions, I identified that two points fall outside three standard deviations from the normal distribution, hence they are outliers. The two outliers, both from the same participant, are listed in Table 6. No outliers were related to leader effectiveness.

Table 6

Assumptions: Normal Distribution (Outliers)

	Case no.	Std. residual	Value	Predicted value	Residual
Extra effort	41	3.091	3.000	1.049	1.950
Employee satisfaction	41	–3.100	0.750	2.168	–1.418

The two outliers create a decision point before going further with the data analysis. I determined that each case should be included in the overall data evaluation and that no cases should be removed. The single outlier in a sample size of more than 300 participants will not have a material impact on the results of a linear regression analysis. To demonstrate this point, using Cook's distance to evaluate the influence of a single case illustrates that no case had influence over 0.078 (mean = 0.0036, median = 0.0010,

range, 0.0000–0.0784; *N* = 316). Thus, no individual case has undue influence, and all results should be included in the analysis.

To run inferential statistics and determine errors in prediction, data need to be normally distributed. Figures 5–7 illustrate the normality using a histogram and normal distribution bell curve for each of the criterion variables as well as a plot of the regression standard residual compared to each criterion. Each of the following graphs demonstrates a normal distribution and represents the final step of validating the assumptions.

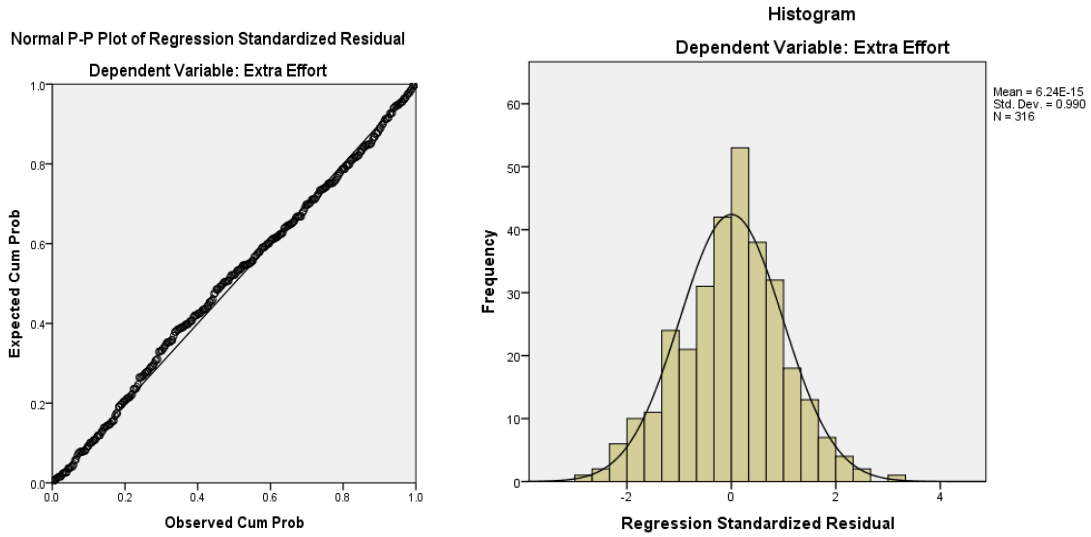

Figure 5. Normal distribution histogram for extra effort.

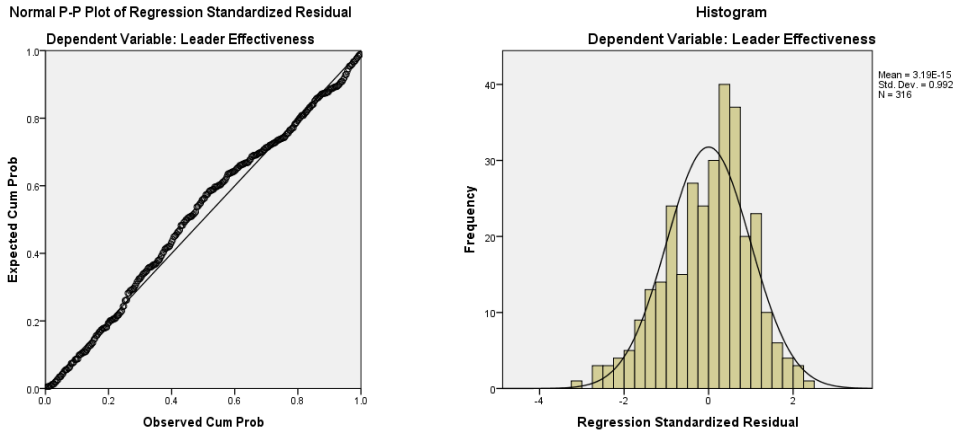

Figure 6. Normal distribution histogram for leader effectiveness.

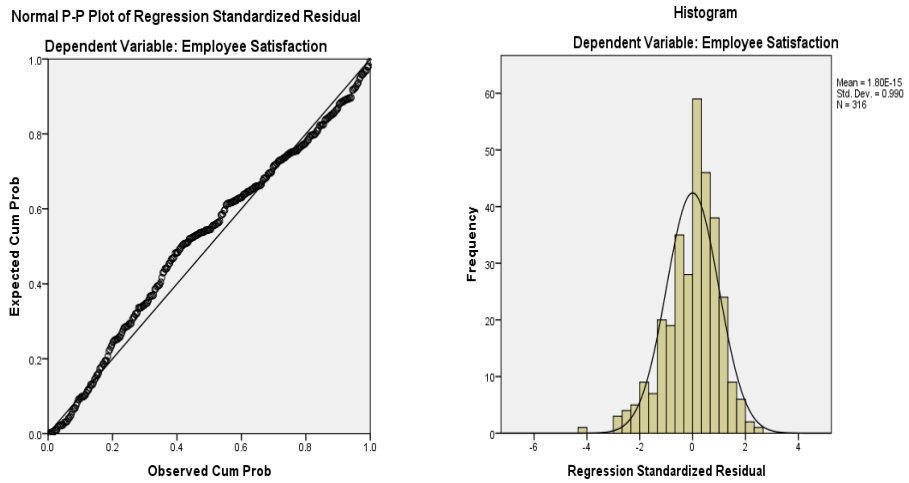

Figure 7. Normal distribution histogram for employee satisfaction.

Evaluation of the Relationship Between Predictor and Criterion Variables

After reviewing all assumptions follows evaluation of the multiple linear regression. Because the information gathered in the demographic questionnaire can be combined with the data measured from the MLQ, I performed a two-step regression analysis. In the first step, the demographic information was entered into the equation serving as control variables. The control variables included the information from the

employee demographic questionnaire reproduced as Appendix B. The control variables used in the first stage of the regression analysis were employee gender, age, ethnicity, education, employment duration, supervisor employment duration, and team size. Next, the predictor measure for transformational leadership was added to the evaluation.

Hypothesis Testing

Descriptive statistics and multiple linear regression was used to examine the relationship between the predictor, transformational leadership, and the criterion variables or outcomes: extra effort, perception of leader effectiveness, and employee satisfaction.

The data were reviewed to test each hypothesis and to answer each of the research questions. To arrive at an answer, a regression analysis was performed to evaluate the amount of variance in each outcome variable that could be attributed to the predictor relative to other demographic variables. The assumptions of independence of errors, linearity, homoscedasticity, and normality of data were met. When controlled with measures for employee gender, age, ethnicity, education, relationship status, employment duration, employee supervisor duration, and employee team size, it is found that transformational leadership has a statistically significant relationship when predicting the criterion variables extra effort, leader effectiveness, and employee satisfaction.

Research Question 1

The first research question asked: *Is there a relationship between executive transformational leadership behaviors and the work effort of virtual team members who report to the leader?* Hypothesis 1 predicted that TLB would not be associated with an

employee's willingness to expend extra effort. Thus the first criterion variable was extra effort. To test Hypothesis 1, the eight control variables mentioned previously were entered as a first step in the multiple linear regression. The inclusion variable, TLB, was entered in the second step. Results indicate that Step 1 was significant, accounting for 10.3% of the variance. The employee's willingness to exert extra effort was significantly predicted by the demographic control variables. Support for Hypothesis 1 was found in that the change in R^2 for Step 2 was significant, accounting for 61.4% of the variance (see Table 7). As it relates to extra effort, TLB accounts for 61.4% of the variance, and only 10.3% of the variance can be accounted for by combining the impact of all demographic variables. Transformational leadership significantly accounts for variation in extra effort at the $p < .05$ level.

Table 7

Multiple Linear Regression/R^2: Criterion Variables—Extra Effort

Model	*R*	R^2	Std. error of the estimate	Significance
Demographic variables	.321	.103	.9604	.000
Employee satisfaction	.784	.614	.6311	.000

The test of Hypothesis 1 resulted in the rejection of the null hypothesis. A multiple regression was run to predict the criterion variable extra effort from employee gender, age, ethnicity, education, relationship status, employment duration, employee supervisor duration, and employee team size and the measure for transformational leadership. The assumptions of independence of errors, linearity, homoscedasticity, and normalization of data were met, and these variables statistically significantly predicted

extra effort, $F(16, 95) = 37.955$, $p < .0005$, adjusted $R^2 = .61$. Employee supervisor duration and TLB were statistically significant predictors, $p < .05$ (see Table 8).

Table 8

Transformational Leadership and Extra Effort

Model	*B*	*SE*	β	Significance
(Constant)	–0.957	.659		.148
Employee gender	0.007	.093	.003	.942
Employee age	0.004	.005	.034	.338
Employee ethnicity	–0.024	.068	–.013	.724
Employee education	0.034	.102	.012	.743
Employee relationship status	–0.007	.038	–.006	.860
Employee employment duration	–0.002	.011	–.008	.833
Employee supervisor duration	0.034	.016	.079	.034
Team size	0.017	.011	.064	.106
Transformational leadership	1.111	.055	.767	.000

Research Question 2

The second research question asked: Is there a relationship between executive transformational leadership behaviors and team members' perception of a leader's effectiveness? Hypothesis 2 predicted that TLB would not be associated with employee perceptions of leadership effectiveness. Thus, the second criterion variable was perceived effectiveness. To test Hypothesis 2, the eight control variables mentioned previously were entered as a first step in the multiple linear regression. The inclusion variable, TLB, was entered in the second step. Results indicate that Step 1 was significant, accounting for 14.5% of the variance. The demographic control variables significantly predicted the perceived effectiveness of an employee's direct report leader. Support for Hypothesis 2 was found in that the change in R^2 for Step 2 was significant, accounting for 51.7% of the variance (see Table 9). As it relates to leader effectiveness, TLB accounts for 51.7% of the variance, and only 14.5% of the variance can be accounted for by combining the

impact of all demographic variables. Transformational leadership significantly accounts for variation in perceived leader effectiveness at the $p < .05$ level.

Table 9

Multiple Linear Regression/R^2: Criterion Variables—Leader Effectiveness

Model	*R*	R^2	Std. error of the estimate	Significance
Demographic variables	.380	.145	.6184	.000
Employee satisfaction	.729	.517	.4587	.000

The test of Hypothesis 2 resulted in the rejection of the null hypothesis. Multiple regression analyses were conducted to predict the criterion variable, perceived effectiveness, from demographic variables outlined previously, along with the TLB of the executive leader. The assumptions of independence of errors, linearity, homoscedasticity, and normalization of data were met, and these variables statistically significantly predicted perceived effectiveness, $F_{(5, 95)} = 69.063$, $p < .0005$, adjusted $R^2 = .52$. Only employee team size and transformational leadership added statistically significant findings to the prediction of perceived leader effectiveness, $p < .05$ (see Table 10).

Table 10

Transformational Leadership and Perceived Effectiveness

Model	*B*	*SE*	β	Significance
(Constant)	0.605	.479		.208
Employee gender	–0.520	.068	–.300	.444
Employee age	0.003	.003	.380	.334
Employee ethnicity	–0.015	.049	–.012	.759
Employee education	0.094	.074	.050	.208
Employee relationship status	–0.009	.027	–.013	.739
Employee employment duration	–0.009	.008	–.046	.240
Employee supervisor duration	0.007	.012	.024	.550
Team size	0.024	.008	.138	.002
Transformational leadership	0.637	.040	.667	.000

Research Question 3

The third research question asked: *Is there a relationship between executive transformational leadership behaviors and the job satisfaction of virtual team members who report to the leader?* Hypothesis 3 predicted that TLB would not be associated with employee satisfaction. Thus the third criterion variable was employee satisfaction. To test Hypothesis 3, the eight control variables mentioned previously were entered as a first step in the multiple linear regression. The inclusion variable, TLB, was entered in the second step. Results indicate that Step 1 was statistically significant, accounting for 5.4% of the variance. The demographic control variables significantly predicted employee satisfaction. Support for Hypothesis 3 was found in that the change in R^2 for Step 2 was significant as TLB accounted for 35.9% of the variance for employee satisfaction, compared to just 5.4% for the demographic variables (see Table 11).

Table 11

Multiple Linear Regression/R^2: Criterion Variables—Employee Satisfaction

Model	*R*	R^2	Std. error of the estimate	Significance
Demographic variables	.231	.054	.6979	.029
Employee satisfaction	.599	.359	.5753	.000

The findings for the test of Hypothesis 3 resulted in the rejection of the null hypothesis. A multiple regression was run to predict the criterion, job satisfaction, from employee age, employment duration, time reporting to the leader, team size, and the measure for transformational leadership. The assumptions of independence of errors, linearity, homoscedasticity, and normalization of data were met, and these variables statistically significantly predicted employee satisfaction, $F_{(5, 95)} = 33.055$, $p < .0005$,

adjusted R^2 = .34. Only transformational leadership added statistically significant findings to the prediction of employee job satisfaction, $p < .05$ (See Table 12).

Table 12

Transformational Leadership and Employee Satisfaction

Model	*B*	*SE*	β	Significance
(Constant)	1.567	.601		.010
Employee gender	0.106	.085	.058	.213
Employee age	–0.003	.004	–.031	.508
Employee ethnicity	–0.065	.062	–.050	.290
Employee education	0.071	.093	.035	.449
Employee relationship status	–0.051	.034	–.070	.136
Employee employment duration	0.003	.010	.015	.744
Employee supervisor duration	0.017	.015	.057	.235
Team size	0.005	.010	.026	.609
Transformational leadership	0.607	.050	.593	.000

The multiple regression analysis suggests leadership behaviors are related to subordinate outcomes in support of the applicability of Bass's (1985) theory of transformational leadership in a large IT organization.

Summary

A multiple regression analysis was conducted to predict the effects of transformational leadership on the criterion variables for the present study: extra effort, leader effectiveness, and employee job satisfaction. The assumptions required to complete a thorough data analysis were reviewed and demonstrated to be satisfactory to move forward with only two outliers, which demonstrated very small effect on data analysis. Transformational leadership added statistical significance to the predictions for each of the three criterion variables. As it relates to extra effort, transformational leadership accounts for 61.4% of the variance, and only 10.3% of the variance can be accounted for by combining the impact of all demographic variables. As it relates to

leader effectiveness, transformational leadership accounts for 51.7% of the variance, and only 14.5% of the variance can be accounted for by combining the impact of all demographic variables. TLB accounted for 35.9% of the variance in employee satisfaction, compared to just 5.4% of the variance contributed to the demographic variables. Transformational leadership statistically significantly accounts for variation in all three criterion variables at the $p < .05$ level.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Employee job satisfaction, perceived leader effectiveness, and employee willingness to exert extra effort have all been linked to employee retention, work quality, and overall productivity (Riketta, 2008). Lack of leadership, or the wrong type of leadership, can have negative implications for employee retention, work quality, and overall productivity (Riketta, 2008). The purpose of this quantitative study was to evaluate the relationship between transformational leadership and employee willingness to exert extra effort, perceived leader effectiveness, and job satisfaction.

A multiple regression analysis was conducted to predict the effects of leadership transformation on the criterion variables for the present study: extra effort, leader effectiveness, and employee job satisfaction. The assumptions required to complete a thorough data analysis were reviewed and demonstrated to be satisfactory to move forward with only two outliers, which demonstrated very small effect on data analysis. Transformational leadership added statistical significance to the predictions for each of the three criterion variables. Transformational leadership accounted for 61.4%, 51.7%, and 35.7% of the variance for extra effort, leader effectiveness, and employee satisfaction, respectively. By comparison, all of the demographic variables combined accounted for only 10.3% variance for extra effort, 14.5% variance for leader effectiveness, and 5.4% variance for employee satisfaction. Transformational leadership accounted for variation in all three criterion variables at the $p < .05$ level.

Interpretation of the Findings

This study tested the theory that TLB would lead to increased productivity for virtual team members, who do not experience the same daily interactions with their leadership as employees in a traditional workforce do. In particular, this study was interested in exploring the Bass (1985) framework as it applies to a virtual workforce. Quantitative research methods were used for this study. The predictor for the study was transformational leadership, and the criterion variables were employees' willingness to exert extra effort, perceived effectiveness, and job satisfaction. The population for this study was provided through a research partner, a large IT organization that frequently uses a virtual workforce.

The findings of the study indicated transformational leadership had a statistically significant relationship that accounted for variation in all three criterion variables at the $p < .05$ level. Furthermore, transformational leadership was more impactful to the variation than all demographic variables combined. Based on the findings presented in the present study, there is strong support to improve the current body of research and suggest that findings built from Avolio and Bass (1998) hold true beyond the traditional workplace. Consistent with the 1997 findings, transformational leaders build trust and respect with their direct report employees, and transformational leaders inspire employees to achieve more. In the present study, an employee's willingness to exert extra effort, an employee's perception of the effectiveness of a leader, and an employee's job satisfaction were viewed as measures of a successful team and were explored with each research question and each hypothesis.

The findings outlined in Chapter 4 demonstrated that transformational leadership accounted for significant variance with an employee's willingness to exert extra effort. The findings supported the applicability of Bass's (1985) theory of transformational leadership in a virtual work environment. This section includes an analysis for each research question and how the findings fit with the existing research. The present study was grounded in three research questions.

The first research question was focused on the relationship between executive TLB and the work effort of virtual team members that report to the leader. In 1997, Boehnke et al. suggested that transformational leadership was related to exceptional work performance. The measure of an employee's willingness to exert extra effort demonstrates that characteristic. Bass (1985) suggested that transformational leaders develop a vision and influence team members to believe in the vision and put forth extra effort to ensure the vision becomes a reality.

The eight control variables mentioned previously were entered as a first step in the multiple linear regression. The independent variable, TLB, was entered in the second step. Results indicated that Step 1 was significant, accounting for 10.3% of the variance. Employee willingness to exert extra effort was significantly predicted by the demographic control variables. Support for Hypothesis 1 was found in that the change in R^2 for Step 2 was significant, accounting for 61.4% of the variance (see Table 7). As it relates to extra effort, transformational leadership accounted for 61.4% of the variance, and only 10.3% of the variance could be accounted for by combining the impact of all

demographic variables. Transformational leadership statistically significantly accounted for variation in extra effort at the $p < .05$ level.

I concluded that there was a significant and strong positive correlation between extra effort and the transformational leadership style. A multiple regression was run to predict the criterion variable extra effort from employee gender, age, ethnicity, education, relationship status, employment duration, employee supervisor duration, employee team size, and the measure for transformational leadership. The assumptions of independence of errors, linearity, homoscedasticity, and normalization of data were met, and these variables statistically significantly predicted extra effort, $F(16, 95) = 37.955$, $p < .0005$, adjusted $R^2 = .61$. Two factors, employee supervisor duration and TLB, added statistically significant findings to the prediction, $p < .05$.

It is interesting to note that supervisor employment duration was significantly linked to an employee's willingness to exert extra effort. This finding has not been reproduced within the current body of research. As a result of only one study, it would not be prudent to jump to conclusions and expect this finding to hold true; however, it is worth future research in a virtual environment to determine if a leader's duration with an organization is in fact linked to employees' willingness to exert extra effort. One might conclude that a leader's longevity and track record of success within an organization are pervasive and that when a leader has a track record of success, team members are more inclined to work harder to support continued success.

The second research question evaluated the relationship between executive TLB and team members' perceptions of a leader's effectiveness. To test Hypothesis 2, the

eight control variables mentioned previously were entered as a first step in the multiple linear regression. The inclusion variable, TLB, was entered in the second step. Results indicated that Step 1 was significant, accounting for 14.5% of the variance. The demographic control variables significantly predicted the perceived effectiveness of an employee's direct report leader. Support for Hypothesis 2 was found in that the change in R^2 for Step 2 was significant, accounting for 51.7% of the variance (see Table 8). As it relates to leader effectiveness, transformational leadership accounted for 51.7% of the variance, and only 14.5% of the variance could be accounted for by combining the impact of all demographic variables. Transformational leadership statistically significantly accounted for variation in perceived leader effectiveness at the $p < .05$ level.

It was concluded that there was a significant and strong positive relationship between the employees' perceived effectiveness of their direct report managers and the transformational leadership style. Multiple regression analyses were conducted to predict the criterion variable perceived effectiveness from demographic variables outlined previously along with TLB of the executive leader. The assumptions of independence of errors, linearity, homoscedasticity, and normalization of data were met, and these variables statistically significantly predicted perceived effectiveness, $F(5, 95) = 69.063$, $p < .0005$, adjusted $R^2 = .52$. Only employee team size and transformational leadership added statistically significant findings to the prediction of perceived leader effectiveness, $p < .05$.

Again, having a demographic variable demonstrate a significant relationship with perceived leader effectiveness was not expected and not further supported within existing

research. This finding is of interest and worth future exploration. One might posit that when teams are smaller, there is a more personal relationship between the leader and each follower. In a virtual environment, the sense of a strong personal relationship might be influential. However, the cause of the relationship cannot be clearly identified in the present research.

The third research question was to evaluate the relationship between executive TLB and the job satisfaction of virtual team members who report to the leader. Results indicate that Step 1 was statistically significant, accounting for 5.4% of the variance. The demographic control variable significantly predicted employee satisfaction. Support for Hypothesis 3 was found in that the change in R^2 for Step 2 was significant as TLBs accounted for 35.9% of the variance for employee satisfaction, compared to just 5.4% of the variance that can be contributed to the demographic variables (see Table 11).

It was concluded that there is a significant and strong positive relationship between an employee's job satisfaction and the transformational leadership style. A multiple regression was run to predict the criterion job satisfaction from employee age, employment duration, time reporting to the leader, team size, and the measure for transformational leadership. The assumptions of independence of errors, linearity, homoscedasticity, and normalization of data were met, and these variables statistically significantly predicted employee satisfaction, $F(5, 95) = 33.055$, $p < .0005$, adjusted $R^2 = .34$. Only transformational leadership added statistically significant findings to the prediction of employee job satisfaction, $p < .05$. This finding supports Bass's (1985)

theory of transformational leadership in a large IT organization even when the teams are in a virtual work environment.

Limitations of the Study

The present study had some limitations. First, the success of virtual teams and measurement of TLB was based on a single point in time, not over an extended period. Second, although the research instrument described in this dissertation has been widely used and has demonstrated acceptable validity and reliability scores, the study assumed that there were no demographic characteristics that prevent understanding or responding to the items on the questionnaires.

The present study tried to further the body of knowledge regarding the relationship between the predictor, TLB, and three criterion variables: employee job satisfaction, perceived influence, and willingness to exert extra effort. The research was expected to further understanding related to both direction and strength of the relationship between the predictor and criterion variables. By more completely understanding transformational leadership as it relates to virtual teams, there is an opportunity to influence social change as more organizations and employees seek the virtual team structure. By performing the regression testing outlined, however, there are still limitations, and further research may be needed outside of the IT field.

Recommendations

There are several opportunities for further research on leadership behaviors for virtual teams. First, the present research limited the scope of leadership to a single style, transformational leadership. It might be worth exploring other leadership styles to

determine if those other leadership styles are more or less effective in a virtual team environment.

Next, the present research was limited to a single IT organization. A broader scope of businesses should be considered. There are reasons to consider different organizations, especially those where employees are less likely to be technically savvy and discern whether leadership characteristics and team performance really mirror those of a traditional workplace.

As discussed, a few demographic variables explained a significant variance in the criterion variables. In the case of willingness to exert extra effort, the duration of employment for the leader is significantly related to performance. For a leader's perceived effectiveness, team size demonstrates a significant relationship. It is worth further research to consider the implications of these findings.

Implications

This study measured the impact of transformational leadership on employees' willingness to exert extra effort, perceived leader effectiveness, and job satisfaction. Through specific scientific testing, the study has supported major findings of the existing body of research that supports that transformational leadership has a strong positive relationship accounting for much of the variation in employee performance.

This study has significant implications for businesses seeking to leverage a virtual work environment. It appears that despite different communication and interaction mechanisms, finding and developing transformational leaders is directly tied to team performance. The present research supports transformational leaders as being well suited

to lead virtual teams in an IT organization because leaders who exhibit TLBs will be directly linked to team success.

Conclusion

Prior research has shown that transformational leaders demonstrate leadership behaviors that facilitate both individual and team success (Bass, 1997). Research in the traditional workplace has demonstrated that leaders may exhibit multiple different leadership characteristics classified as transformational, transactional, or laissez-faire; however, TLBs are directly correlated with improved team performance. The present research has attempted to address gaps in research as it pertains to virtual teams. The intent of the present study was to research the relationship between transformational leadership of IT executive leaders and the work effort, perceived effectiveness, and job satisfaction of direct report employees working in a virtual team environment. The results of this study may help recruiters, human resource managers, industrial–organizational psychologists, executive IT leaders, and employees to understand the relationship between TLB and team success. With this knowledge organizations, can make better decisions for hiring, promoting, and training.

According to a review of existing literature, a gradual transition from the 1947 work of Weber's charismatic leadership theories, expanded by Burns's exploration in 1978, culminated in groundbreaking research with Bass's (1997) work that not only formulated the theories on transformational leadership but also provided a foundation for measuring different leadership behaviors. As instruments like the MLQ prove, TLB is most commonly tied to higher performing teams where leaders understand the motives of

followers and leverage their understanding to achieve successful outcomes (Burns, 1978). Transformational leaders create a vision and build consensus based on ethical or moral implications often transcending self-interest (Avolio & Yammarino, 2002; Block, 2003; Dulewicz, 2005).

A review of the available literature demonstrated a clear gap in research surrounding leadership styles and virtual teams. The lack of attention to leadership behaviors and the virtual workforce is relevant because of the increasing demand for geographically dispersed workers. The current study has attempted to fill this gap in the literature by using the MLQ 5X, through which the relationship between leadership behaviors and team performance can be evaluated.

After conducting research and gathering data from 316 different participants from a large IT organization, a multiple regression analysis was run to predict the effects of leadership transformation on the criterion variables for the present study: extra effort, leader effectiveness, and employee job satisfaction. The assumptions required to complete a thorough data analysis were reviewed and demonstrated to be satisfactory to move forward with only two outliers, which demonstrated very small effect on data analysis. Transformational leadership added statistical significance to the predictions for each of the three criterion variables. As it relates to extra effort, transformational leadership accounts for 61.4% of the variance, and only 10.3% of the variance can be accounted for by combining the impact of all demographic variables. As it relates to leader effectiveness, transformational leadership accounts for 51.7% of the variance, and only 14.5% of the variance can be accounted for by combining the impact of all

demographic variables. TLBs accounted for 35.9% of the variance in employee satisfaction compared to just 5.4% of the variance that can be contributed to the demographic variables. Transformational leadership statistically significantly accounts for variation in all three criterion variables at the $p < .05$ level.

Challenging economic times and continuously improving technology have brought with them a paradigm shift for the workforce. Employees can work from home, or work from anywhere they have access to an Internet connection. However, as employee interaction changes and face-to-face communication is no longer the norm, there is a need to better understand the implications of leadership in a virtual team environment. Virtual teams are the future, as organizations seek to lower costs and increase the available talent pool for any given position. Thus understanding leadership styles and implications of leadership behavior on virtual team performance will allow organizations to better prescribe training, hire more effectively, and perhaps even seek to better use existing employees in a more effective way. The present research has furthered the existing body of knowledge by supporting that transformational leadership has direct positive implications for successful team performance.

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Appendix A: Informed Consent Form

You are invited to take part in a research study to investigate the relationship between transformational leadership and the success of virtual teams. You were chosen for the study because you and your direct report manager are members of a virtual team. This form is part of a process called "informed consent," which will allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Russell T. Hogue, who is a doctoral student at Walden University.

Background Information

The purpose of the research is to help reveal more information about the importance of leadership in a virtual team environment. The results of this study may help recruiters, human resource managers, executive IT leaders, and employees, as the results will provide information for hiring, promoting, and training.

Procedures

If you agree to be in this study, you will be asked to:

- Complete an online survey that will take approximately 20 minutes.

Voluntary Nature of the Study

Your participation in this study is voluntary. This means that everyone will respect your decision whether to be in the study. No communication regarding your participation will be provided to your direct report manager if you decide not to be in the study. If you decide to join the study now, you can still change your mind during the study. You may skip any questions that you feel are too personal.

Risks

The risks of this study are minimal. The questions are multiple choice, and you are free to skip any questions you feel uncomfortable answering. You may decline to answer any or all questions, and you may terminate your involvement at any time if you choose.

Benefits

There will be no direct benefit to you for your participation in this study. However, this study may benefit supervisors, employees, and organizations that are interested in working in a virtual work environment.

Compensation

There will not be compensation for participation.

Confidentiality

Any information you provide will be kept anonymous. The researcher will not use your information for any purposes outside of this research project. This survey will leverage the same corporate survey tool used for other confidential surveys.

Contacts and Questions

You may ask any questions you have now, or, if you have questions later, you may contact the researcher via e-mail at [contact information removed] or by calling [contact information removed]. Walden University's approval number for this study was 09-25-13-0023801, and it expired on September 25, 2014**.**

Statement of Consent

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By clicking here, I am agreeing to the terms described above.

Printed Name of Participant _____

Date of consent _____

Participant's Written or Electronic* Signature _____

Researcher's Written or Electronic* Signature _____

* Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an "electronic signature" can be the person's typed name, their e-mail address, or any other identifying marker. An electronic signature is just as valid as a written signature, as long as both parties have agreed to conduct the transaction electronically.

Appendix B: Survey Demographic Questions

What is your gender?

1 = male, 2 = female

What is your age?

_____ years

What is your ethnicity? (Indicate all that apply)

1 = African American, 2 = Asian, 3 = Caucasian, 4 = Hispanic/Latino,

5 = Native American, 6 = Pacific Islander, 7 = Other _____

What is your highest level of education?

1 = did not graduate high school, 2 = high school graduate or equivalent,

3 = some college or vocational school, 4 = associate's degree, 5 = bachelor's degree,

6 = graduate degree, 7 = postgraduate degree

What is your relationship status?

1 = single, 2 = in a committed relationship (not married), 3 = married,

4 = living with spouse, partner, significant other, 5 = none of the above

How long have you been working for your current employer? (Tenure in the organization)

_____ years

How long have you been working for the present supervisor? (Tenure on team)

_____ years

How many employees are on your team?

_____ number of employees