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Walden University

College of Management and Technology

This is to certify that the doctoral study by

Ryan Mitchell

has been found to be complete and satisfactory in all respects,
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Walden University
2015

Abstract

The Correlation between Virtual Communication and Employee Engagement

by

Ryan Nathaniel Mitchell

MS, Faulkner University, 2005

BS, Florida Agricultural and Mechanical University, 2002

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

April 2015

Abstract

Managers' ability to engage virtual employees (those in different geographic locations) is a determining factor of employee productivity and commitment to an organization. Since 2005, the number of U.S.-based virtual employees increased; however, research regarding virtual communication and employee engagement is limited. The purpose of this quantitative study was to examine if a significant correlation exists between employee engagement (the dependent variable) and the quantity and perceived quality of virtual management communication (the independent variables). The research question assessed the correlation among the quantity of time managers spend communicating with virtual employees, quality of virtual communication, and employee engagement.

Homans's social exchange theory served as the theoretical framework. Data collection involved an online survey from 71 U.S.-based virtual employees, working primarily from home. The results of the regression analysis were statistically significant, $F(2, 67) = 7.14$, $p = .002$, $R^2 = .18$, indicating that quantity of time a manager spent communicating with virtual employees and the virtual employees' perceived quality of communication positively affected employee engagement. Findings indicated that managers who communicate more frequently and have a higher perceived quality of communication are more likely to have engaged employees. Business leaders can use this study to inform managers of the need for frequent, high-quality communication with their virtual employees. The findings will contribute to social change by providing organizational leaders with useful strategic information to increase the employee engagement of home-based virtual employees.

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Dedication

This work is dedicated to my wife, Crystal. Without your enduring strength and love, I would not have been able to complete this daunting task. Your words “if you start this program, then you must finish it” stayed with me throughout every semester and each course. Thank you, Crystal for your undying support. Most importantly, without Christ I am nothing. Every success in my life is dedicated to Him. Lord, I thank you.

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With this work, I honor my parents, R. Nathaniel and Carolyn J. Mitchell.

Without the foundation they set, I would not be where I am today. Thank you for being the strong shoulders on which I proudly stand. My wife, Crystal, deserves double honor, as my life coach and home school teacher.

My sisters (Marla and Taryn), extended family, and in-laws have also been positive factors in my life. Thank you for your kindness. Thank you for your continued love. I have also had the most supportive group of friends, and fraternity brothers for which I could ever ask. Thank you for your support, kind words, and your prayers. Thanks to the teachers, instructors, and professors that I have encountered in my educational career. Without the words of encouragement and inspiration, I may not have known that I had the will to persevere.

I would like to thank my three faculty mentors, Dr. Dorothy Hanson, Dr. Darryl Brydie, and Dr. James Goes. Thank you to all Walden faculty and staff who worked with me throughout this journey. Thank you also to the leaders of my research site for allowing me to host my study at your place of business.

I acknowledge my coworkers, managers, and employees at the various organizations of my professional career. Your friendships have been uplifted me. I have learned from many leaders in the public and private sectors. Every experience, both positive and negative makes me the man I am today. Thank you all!

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Section 1: Foundation of the Study

Business leaders transformed the work environment with the introduction of virtual organizations and offices (Kauppila, Rajala, & Jyrämä, 2011). As such, the role of the manager is evolving; the quantity of time that managers communicate with employees, along with the perceived quality of those interactions, can influence the workers' level of engagement (Mone, Eisinger, Guggenheim, Price, & Stine, 2011). Concurrently, employee engagement is a determining factor of the productivity and commitment of workers to an organization (Bakker, Demerouti, & ten Brummelhuis, 2012).

The topic of employee engagement is prominent with modern business leaders and industry researchers. Employees make a psychological link between an individual task and the effect the task has on others when management clearly communicates the significance (Grant & Berry, 2011). Through this quantitative study, I determined a significant degree of correlation exists between the quantity of time managers spend communicating with virtual employees, the perceived quality of communication (independent variables), and employee engagement (dependent variable). I added to the body of knowledge related to employee engagement with the findings that the quantity of time a manager spends communicating with virtual employees and perceived quality of communication actually predict employee engagement.

Background of the Problem

A virtual worker is an individual who works from home or otherwise outside of traditional, centralized offices. This working arrangement is a valuable and growing

phenomenon (He & Brown, 2013). The number of managers supervising teams of employees who work in different physical locations is increasing. In 2001, 14.9% of the employed Americans did some or all work from home; and in 2004, that number rose to 15.1% of wage and salary workers (U.S. Department of Labor, 2005). The U.S. Senate passed the Telework Enhancement Act of 2010 on September 30, 2010, which President Obama subsequently signed into law on December 9, 2010. This law requires governmental agencies to establish virtual work policies, designate a Telework Managing Officer to oversee virtual practices in each agency or department, and establish virtual training programs for workers and managers (H.R. 1722—111th Congress: Telework Enhancement Act, 2010).

The number of American workers working away from their managers increased dramatically. The U.S. Department of Labor found that, in 2001, 19.8 million professionals did some work from home as part of their primary job (U.S. Department of Labor, 2005). By 2013, the number of American virtual workers had increased to more than 23 million, and 23% of all U.S.-based workers performed some work at home (U.S. Department of Labor, 2014).

Advantages of virtual employment increased work productivity and decreased transportation costs. Business leaders may encourage these benefits by implementing telework initiatives. Barber, Garnar-Wortzel, and Morris (2011) stated that because of teleworking, organizational leaders realized a reduction of 247.7 million tons of emissions from fewer drivers. Permitting employees to work from home is dual-purposed. Both the public and private sectors in Great Britain seek to ensure increased

production during inclement weather and provide an increase in flexibility to employees (Wheatley, 2012). In exchange for this sense of flexibility, business leaders seek to increase work productivity and employee engagement while decreasing office-related expenses. Employee engagement describes the state in which an employee exhibits high levels of commitment and identification with the firm, a proclivity to work harder, and the level of performance that is at the peak of his or her abilities (Shahid & Azhar, 2013). An organization's commitment to work-life balance also attracts and retains highly skilled employees (Wheatley, 2012).

Recruiting talented employees provides businesses with a competitive human resource advantage (Campbell, Coff, & Kryscynski, 2012). A leader who retains the talent is equally important (Festing & Schäfer, 2014). The purpose of Robles's (2012) study was to determine the critical soft skills that employers want from their employees so that business educators can promote these skills in their curriculum to improve the employability of graduating business seniors. Through the results, Robles (2012) identified the top 10 soft skills attributes deemed critical by business executives; communication, integrity, and courtesy were among the top priorities.

According to Zeffane, Tipu, and Ryan (2011), trust, and interpersonal communication have a direct relation to employee morale and satisfaction and the quality of manager-employee communication. Christian, Garza, and Slaughter (2011) described job satisfaction and work engagement as conceptually distinct constructs with different antecedents and outcomes. Managers might be able to increase engagement by creating an atmosphere that facilitates employees' perceptions of meaningful work (Christian et

al., 2011).

Organizational studies about motivation indicate how morale and organizational commitment can have an influence on productivity (Gubman, 2004; Lindenberg & Foss, 2011). Engaged employees have an emotional attachment and a genuine commitment to their organization and are willing to increase productivity (Shahid & Azhar, 2013).

Various determining factors contribute to an employee's level of engagement; the results of the Bakker et al. (2012) study revealed task performance, contextual performance, and active learning as determining factors of employee engagement. Allowing workers to work from home can initially increase the employee's level of engagement; conversely, the potential lack of engagement could reduce the productivity of virtual workers (Sardeshmukh, Sharma, & Golden, 2012). Organizational commitment related to supervisory support and compensation (Atif, Muhammad, & Asad, 2011).

Technological developments such as information communication technologies (ICTs), a global talent pool, and a dynamic business environment enable organizations to operate across further distances; and the advent of virtual teaming caused a reorientation of business communication from the shift in communication platforms including the incorporation of computer mediated communication (Caya, Mortensen, & Pinsonneault, 2013). I investigated the quantity, quality, and method of virtual management communication. This topic of the correlation between virtual communication and employee engagement is highly relevant to virtual management because manager-employee communication has a strong bearing on worker engagement (Farndale, Van

Ruiten, Kelliher, & Hope-Hailey, 2011), and virtually managed teams are growing in popularity.

Problem Statement

Organizations with less engaged employees have lower productivity and less profitability (Harter, Schmidt, & Hayes, 2002). Engaged employees are 38% more likely than unengaged counterparts to put forth discretionary effort (Shuck, Reio, & Rocco, 2011). Managers of virtual teams need the skills to engage their employees by using varied communication mediums (Chen, 2012). The general business problem was that email is ineffective as a primary means of communication as recipients correctly interpret the tone only part of the time (Jackson & van den Hooff, 2012). The specific business problem was that managers of virtual team employees lack knowledge of the skills and information needed to implement employee engagement in U.S.-based companies.

Purpose Statement

The purpose of the quantitative study was to determine whether significant correlations exist between the quantity of time virtual managers spend communicating with employees, the employees' perceived quality of communications with managers, and employee engagement. The targeted population consisted of virtual workers from the U.S.-based small business ABC Designs (pseudonym for organization). This population was appropriate because the participants held varied job responsibilities. The population also supplied a sufficient sample for this study. The independent variables were (a) quantity of time virtual managers spend communicating with employees, and (b) the perceived quality of communications. The dependent variable was employee

engagement. The population consisted of U.S.-based managers and employees working virtually in the training and development field of human resources. The implications for positive social change include the potential to influence the way businesses prepare managers to lead home-based virtual teams.

Nature of the Study

I used the quantitative method for this study. According to Karanja, Zaveri, and Ahmed (2013), quantitative research includes an inquiry into a problem, when based on testing a theory composed of variables. Quantitative researchers measure the problem with numbers and analyze the data statistics. I considered several types of studies, including experimental, cause-effect, and causal-comparative. In experimental studies, a researcher manipulates the cause, and the measurement of subjects occurs before and after treatment. In cause-effect research, the establishment of a relationship is comparing the cause (independent variable) to the effect (dependent variable). In causal-comparative research, the establishment of a cause-effect relationship enables comparison of the relationship but not manipulation of the case (Llamas & Boza, 2011). Finally, researchers using a correlational research design examine the relationship between variables based on existing theory (Fiss, 2011). I selected the correlational design after considering the cause-effect, and causal-comparative designs because of this study had three variables.

Research Question

My goal for the research study was to gain a better understanding of virtual communication of managers. Information in this study may assist researchers in the field of management communication. Understanding the possible correlations between virtual

management, communication, and employee engagement add value to the field of management because virtual teaming continues to grow. The research question was: Are there any significant correlations between the quantity of time managers spend communicating with virtual employees, quality of virtual communication, and employee engagement?

Hypotheses

The null and alternative hypotheses associated with this research question were:

*H*₁₀: There are no statistically significant correlations between the quantity of time managers spend communicating with employees, quality of virtual communication, and employee engagement, within virtual teams.

*H*_{1A}: There are positive statistically significant correlations between the quantity of time managers spend communicating with employees, quality of virtual communication, and employee engagement, within virtual teams.

Survey Questions

I used Schaufeli and Bakker's (2003) Utrecht Work Engagement Scale (UWES-9) to measure employee engagement. Researchers used UWES to assess employee engagement in various industries (Seppälä et al., 2009). In this survey instrument, each statement is about how workers feel at work. The complete, formatted survey is in Appendix E. Participants indicated how often they agree with the survey options by using a Likert-type scale survey. Each survey question listed below had seven possible Likert-type scale responses: *never, a few times a year or fewer, once a month or less, a few times a month, once a week, a few times a week, and every day*. The respondents

completed the following survey questions to measure the dependent variable, employment engagement:

1. At my work, I feel bursting with energy.
2. At my job, I feel strong and vigorous.
3. I am enthusiastic about my job.
4. My job inspires me.
5. When I get up in the morning, I feel like going to work.
6. I feel happy when I am working intensely.
7. I am proud of the work that I do.
8. I am immersed in my work.
9. I get carried away when I'm working.

The questions measured the first independent variable, quantity of communication managers have with virtual employees, using different modes of communication.

1. I communicate with my manager.
2. Outside of team meetings, my manager and I communicate via telephone.
3. Outside of team/ group emails, my manager and I communicate via email.
4. My manager and I communicate via Instant Messenger.
5. Outside of team/ group meetings, my manager and I communicate via video conference.

Each survey question had seven possible responses: *never, a few times a year or fewer, once a month or less, a few times a month, once a week, a few times a week, and every day*. The respondents completed the Likert-type scale survey questions.

The following questions measured the second independent variable, the virtual employees' perceived quality of communication with their managers. Each survey question had seven possible responses: *never, a few times a year or fewer, once a month or less, a few times a month, once a week, a few times a week, and every day*. The respondents completed the survey questions with the Likert-type scale. The following five questions tested the independent variable, perceived quality communication:

1. I have high-quality or inspiring work-related communication with my manager.
2. Outside of team meetings, I have high-quality or inspiring work-related communication with my manager via telephone.
3. Outside of team/ group emails, I have high-quality or inspiring work-related communication with my manager via email.
4. I have high-quality or inspiring work-related communication with my manager via Instant Messenger.
5. I have high-quality or inspiring work-related communication with my manager via video conference.

Schaufeli and Bakker's (2003) Utrecht Work Engagement Scale (UWES) measures employee burnout and engagement. Schaufeli and Bakker's survey instrument also posited social relationships have an effect on both burnout and employee engagement (Schaufeli & Bakker, 2003). The integration of social interaction is congruent with the social exchange theory used in this study.

Schaufeli and Salanova (2011) noted that the UWES is a popular instrument for engagement researchers. Both a 17-question version (UWES-17) and a 9-question

version (UWES-9) of the Utrecht Work Engagement Scale exist. In their 2009 study, Seppälä et al. researched both the 17-item and 9-item versions of the UWES. Factor analysis supported the hypothesized correlated three-factor structure—vigor, dedication, absorption—of both UWES surveys. While the structure of the UWES-17 did not remain the same across the samples and time, the structure of the UWES-9 was unaffected. Seppälä et al. (2009) recommended the UWES-9 for future research because of the considerable construct validity.

Theoretical Framework

The social exchange theory (SET) was the theoretical framework of this study. This theory asserts that the trust between individuals and the expectation that other parties will fulfill their unspecified obligation is the framework for business relationships (Holmes, 1981). Deriving the SET from economics, psychology, and sociology concepts, Homans (1958) developed the SET to understand the social behavior of humans in economic activities. The central theme of SET defined social behavior as an exchange of intangible currency. Intangible rewards such as support, recognition, and prestige are examples of social exchanges (Homans, 1958). Faraj and Johnson (2011) applied SET to research online communities; Robnett and Feliciano (2011) specifically reviewed the influences of SET on building online dating relationships. The theory states that constant negotiation occurs during social exchanges between those who give social rewards, and those who seek to earn them. Similarly, social debits occur when a person gives unrequited social rewards (Homans, 1958).

Interpersonal interactions within SET are economic exchanges in which people satisfy one another when each receives a fair return on expenditures (Blau, 1964). A series of contingencies normally occur within an interaction between two individuals, wherein these individuals modify their resources to the others' expectations (Emerson, 1962). Self-interest can assist to enhance relationships and can even portray a positive trait within these exchanges (Blau, 1964). Emerson viewed *power* as the property of a relation and not an actor because it is dependent on other players.

Social exchange theory is a theoretical framework of considerable research in different fields including tourism (Ward & Berno, 2011), business loyalty rewards (Lee, Capella, Taylor, Luo, & Gabler, 2014), and online shopping (Shiau & Luo, 2012). Tourism, business loyalty rewards, and online shopping are all examples of the same central concept of actors exchanging resources via a social exchange relationship (Walumbwa, Cropanzano, & Goldman, 2011). Rooted in SET, regarding social status, members of a society have a general indebtedness to others who provide them with support (Agneessens & Wittek, 2012). SET is important to various fields. Online dating and information communication technologists use the social exchange theory to research their industries (Robnett & Feliciano, 2011).

Consistent with the social exchange theory, the Internet culture encourages collaboration, cooperation, and sharing (Chaudhuri & Ghosh, 2012; Robnett & Feliciano, 2011). People who participate in virtual communities are motivated to do so for different and individual reasons (Wheatley, 2012). In social exchanges, a receiver reciprocates a positive personal effect by providing positive outcomes to the other party, often

characterized as citizenship behavior. The SET outlines the conditions under which people are obligated to repay behavior or actions that they receive from others, such as virtual managers and their team members (Agneessens & Wittek, 2012). Virtual employee job commitment directly relates to social exchanges (Fay & Kline, 2011).

A variety of factors associated with existing manager and subordinate relationships in a virtual environment revealed the basic context of the SET. Farr-Wharton, Brunetto, and Shacklock (2011) used the SET to study the synergistic environment of empowerment. Others used SET to determine organizational commitment (Gutierrez, Candela, & Carver, 2012). I selected the SET as the theoretical framework for this study for two reasons (a) the theory is appropriate in the context of a growing virtual workforce, and (b) the theory is appropriate to assess the needs of this growing virtual workforce. SET is a worthwhile topic to propose and test hypotheses that could add to the body of knowledge related, and use this knowledge to make positive changes in the workplace.

Definition of Terms

This section includes definitions of terms used in this research study. Defined terms may have common meanings; however, the outlined definitions delineate the meanings related to the context of this study.

Employee engagement: Employee engagement is a positive, fulfilling, work-related state of mind often characterized by vigor, dedication, and absorption. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive

affective-cognitive state that is not focused on any particular object, event, individual, or behavior (Schaufeli & Bakker, 2003).

Job embeddedness: Job embeddedness is the level of attachment an individual has to his or her job. Employees who highly attach to their work tend to be inseparable from it. They find work both motivating and fulfilling (Zhang, Fried, & Griffeth, 2012).

Information communication technology: Information and Communication Technology (ICT) is the study of the technology used to handle information and aid communication. ICT encompasses areas such as telephony, broadcast media, and all types of audio and video processing and transmission (Craig & Williams, 2011; Donnellan, Sheridan, & Curry, 2011).

Organizational communities of practice: Organizational Communities of Practice (OCOPs) are groups of employees who share a concern, a set of problems, or a passion about a topic and who strengthen their knowledge and expertise by interacting on a consistent basis (Kirkman, Mathieu, Cordery, Rosen, & Kukenberger, 2011).

Social exchange theory: All business relationships correlate to individuals' trust that other parties will fulfill their obligations. Social exchanges were characterized by the ability to obtain profits in a relationship is contingent on the ability to provide others with rewards. Norms such as reciprocity, justice, and fairness regulate social exchanges (Holmes, 1981; Homans, 1958).

Telework: Also referred to as mobile work, Telework includes workers who work at home and work completed in satellite offices (Martin & MacDonnell, 2012).

Virtual team: Virtual team is a geographically dispersed team that conducts its work almost entirely through electronic technology (Chi, Chang, & Tsou, 2012).

Virtual worker: A virtual worker is an individual who works from home, or otherwise outside of traditional, centralized offices (He & Brown, 2013).

Work-life balance: A concept including the prioritizing of a person's career and lifestyle is work life balance. A common theory is that providing the delicate balance between work and lifestyle enhances employee performance by creating reduced work-life conflict (McMillan, Morris, & Atchley, 2011).

Assumptions, Limitations, and Delimitations

Assumptions

The primary assumption was that respondents were truthful and thoughtful in their responses. I also assumed the respondents were free from ulterior motives to shape their responses to the research instrument. I assessed the following assumptions: normality, linearity, multicollinearity, and homoscedasticity, disproving each.

Limitations

Each study has potential weaknesses called limitations (Mitchell & Jolley, 2010). The participants' locations, length of virtual relationships, and employment status were all limitations for this study because they had a bearing on the responses. This study is incongruent to other industries because all respondents came from one firm. This may affect the generalizability as there are several types of virtual teams, yet this study's respondents only represent one version of a virtual team. This design inherently limited potential results if some departmental leaders encouraged their teams to participate more

than other teams. Numerous unmeasured factors or variables may influence the hypothesized relationship. Another limitation would include the short span of time participants had to submit their responses. The final limitation is the consideration of external organizational factors, such as pending layoffs or changes in leadership, were not included in this study, which potentially influenced the results of the employee engagement.

Delimitations

Researchers impress boundaries, called delimitations, in an effort to focus the capacity of the study (Mitchell & Jolley, 2010). A delimitation of this study includes the geographic location of the participants. The geographic location of participants was within the United States. However, the literature review focused on both national and international virtual teaming. The literature about virtual teaming was global and contributed to the shaping of the hypotheses. The population of U.S.-based virtual workers studied, and the resulting findings, may not be generalizable to non-Western cultures. The research study boundaries included the hypotheses, social exchange theory, employee engagement, and management communication literature and research. The goal was not to introduce other potential factors affecting virtual employee-manager relationships, but to build onto the body of knowledge and to positively influence businesses employing virtual workers.

Significance of the Study

Contribution to Business Practice

The number of American employees who work on virtual teams has increased (Caillier, 2012). The ability to engage these workers provides a unique challenge not known to managers in previous work generations (Mitlacher, 2012). This study adds to the existing body of knowledge that researchers and leaders can use related to virtual management communication literature.

The results of this study could affect positive social change in management by drawing attention to the significant correlations between virtual management communication training and employee engagement. This study further included an illumination the importance of primary exchanges between virtual managers and workers that positively and negatively influenced employee engagement. The results of this study may provide leaders with useful strategic information to increase the employee engagement of home-based virtual employees. In highly competitive work environments, firms seek to gain qualified staff and to engage staff. The optimal employee engagement levels occur when a firm attracts the most qualified employees, retains those employees, and empowers them to perform consistently at the highest levels of their abilities (Campbell et al., 2012).

Several virtual workplace research studies are available, including virtual workplaces regarding network security (Caldwell, 2011), network architecture (Rosu & Dragoi, 2011), and professional and social isolation (Bartel et al., 2012). A need exists to examine the level of employee engagement of virtual workers (Jenkins & Delbridge,

2013). Golden and Fromen (2011), the authors of a study about managerial work modes and subordinate work experiences, recommended the need for further investigation of managerial work methods and worker experiences. As stated by Palanski, Kahai, and Yammarino (2011), the perception of managerial-subordinate trust affects individual performance. They found transparency positively related to team behavioral integrity, which also positively related to team trust. They also found a positive relationship between team trust and team performance (Palanski et al., 2011).

According to Sarker et al. (2011), a close conceptual affinity exists between the constructs of trust and communication in virtual teaming. Managers must be prepared to build trusting relationships with employees to accomplish organizational objectives; the stronger the communication practices, the stronger the potential relationships developed (Sarker et al., 2011). As the number of virtual workers increases, organizational leaders must address the effectiveness of managers' and employees' communication skills. Enhanced skills include verbal and written communication skills, the ability to manage tasks and empower business partners, finesse to drive performance, and skill to diffuse dissension among virtual team members (Bartel et al., 2012). Much like traditional management training, virtual management training preempts many of the challenges that virtual managers face. As noted in the Telework Enhancement Act, broad-based telework training for managers and employees will help to set proper expectations of all parties (as cited by Day & Burbach, 2011).

Implications for Social Change

The results of this study could affect positive social change through management communication by drawing attention to the significant correlations between virtual management communication and employee engagement. Sarker et al. (2011) focused on understanding the perception of communication best practices between managers and employees. In general, social change related to any form of communication involves the use of several techniques to address ineffective systems or communication processes. Different communication mediums and approaches help individuals among the targeted society to acquire new knowledge and skills (Leonardi, 2014). Effective communication may allow workplace communities to experience and guide change (Leeuwis & Aarts, 2011).

Employees are inherently in the center of the communication process. Everyday communicative exchanges and self-organization among societal agents are likely to be of critical significance in connection with the re-ordering of social relationships (Leeuwis & Aarts, 2011). In virtual relationships, technology plays an integral role to facilitate communication. Leaders of organizations can enhance virtual communication by investing time, training, and resources for members of virtual teams. This study provides a basis for such an investment.

A Review of the Professional and Academic Literature

Employees make a psychological link between their individual task and the effect the task will have on others when team managers adequately communicate the significance (Grant & Berry, 2011). With the highly competitive business environment,

characterized by intense competition and constant changes, organizations adopt strategic information systems in an effort to enhance their competitive posture (Wu, 2012).

Luftman et al. (2012) stated when managed correctly, information technology delivers value through revenue enhancement, cost reduction, and improved efficiency and productivity. The topic of virtual communication is relevant to multiple industries. As organizational leaders continue to invest in strategic information systems, the role of managers in organizations is also evolving to take advantage of the emerging technological possibilities (Dodgson, Gann, & Phillips, 2013).

The role of the manager evolves as technology enhances communication mediums. Virtual managers supervise teams without consideration of geographical proximity (Hanson, Ward, Pacific, & Chin, 2012). Virtual teaming affects communication between managers and employees, as the face-to-face component of communication is limited (Watson-Manheim, Chudoba, & Crowston, 2012). While is a considerable amount of research regarding employee engagement, changing dynamics in communication expose research gaps connected to employee engagement with virtual working relationships. The amount of time that managers communicate with employees, along with the quality of those interactions, can influence the workers' level of engagement (Mone et al., 2011). Employee engagement is the willingness to expend personal energies on behalf of an organization (Klein, Molloy, & Brinsfield, 2012). This literature review encompasses contemporary theories, as well as relevant research about employee engagement, leadership, and motivation.

Purpose of the Literature Review

The purpose of this section is to explore the research gap in virtual management communication. This literature review includes analyses and syntheses of contemporary research studies, as well as paradigms of management communication training, virtual team management, virtual team challenges and traits, and employee engagement. This literature review also contains theories that help to understand virtual teaming, and associated organizational challenges. In the literature review, I discuss the potential research areas for future study. The literature review includes peer-reviewed journals and other acceptable academic sources and involved a comparison of past research studies results. In the review of the literature section, I summarize the ideas of the past research studies and aimed at filling research gaps. The existing concepts are the background for the examination of employee engagement challenges uniquely applied to virtual workers.

The literature review includes a clarification of the rationale for selecting the study variables and building on the theoretical framework. The research studies provided a context to the communication challenges that managers face in understanding the factors that influence the employee engagement of virtual workers. I synthesized varying research studies to communicate a broad range of virtual management and communication topics.

Literature Review Search Strategy and Outline

Literature review search strategy. The primary sources for the literature review include peer-reviewed journal articles, professional websites, and federal government publications. I accessed the articles through the following Walden University search

engines: EBSCOhost and ProQuest Central. Extensive database searches using single keywords and phrases including, communication, virtual, information communication technology, management communication training, leadership, job satisfaction, virtual team management, virtual teaming challenges and traits, motivation, social exchange theory, leadership, and management effects on employee engagement. I used variations on search terms such as *telework*, *teleworking*, *telecommute*, and *telecommuting* to provide an avenue for locating articles. I found more than 200 articles; 76 sources were germane to the topic.

Literature review search outline. The literature review encompassed five main themes: (a) management communication training, (b) virtual team management, (c) virtual team challenges and traits, (d) employee engagement and motivation, and (e) leadership and management effects on employee engagement. Prior to synthesizing the literature, I organized the literature by subtopic.

Management Communication Training

Communication is an integral part of the workplace and a fundamental determinant of the success of an organization. Among the notable benefits of effective communication is the ability to create synergy, which is a unity of purpose among the employees of an organization (Chen, 2012). Over time researchers developed different theories (Drucker, 1954; Fayol, 1949; Taylor, 1914). With the transition from an industrial to the Information Age, the computer changed the manner in which business leaders meet their objectives. As society and technology evolved, so have the methods and communication patterns of management (Beranek & Martz, 2005).

Taylor (1914), using Scientific Management, streamlined the assembly line and laid the foundation for modern logistical production. Building on the premise of increased labor production, Gantt's *task and bonus system* set the precedent for modern bonus structures for employees (as cited in Wood, 2011). Under Gantt's theory, employees received their regular pay and a bonus for accomplishing the assigned task for the day (as cited in Wood, 2011). The institution of the incentivized plan resulted in production doubling. This incentivized style of leadership showed that a focus on employee morale and worker engagement should be a top priority for management (as cited in Wood, 2011).

Building upon the Gantt style, both Fayol (1949) and Drucker (1954) developed the foundation for differing modern management communication theories (as cited in Pryor, Humphreys, Taneja, & Toombs, 2011). Fayol argued that his administration theory could be applicable to a variety of industries, and even a variety of life circumstances (as cited in Pryor, et al., 2011). Whereas Gantt's modern bonus structures can assist in the understanding of employee engagement, Fayol's ideas fail to consider the people within the workplace (as cited in Pryor et al., 2011).

Drucker (1954) employed a humanist approach to workplace leadership (as cited in Brien & Smallman, 2011). From this vantage point, the knowledge worker was a company's best asset, and those leaders should view employees as assets and not liabilities. Drucker believed that decentralization and simplification were the best approaches for corporations (Drucker, 1954). According to Drucker, companies with

decentralized operations are more efficient because companies tend to produce too many markets and expand into too many markets sectors.

Twenty-first-century management communication training has its roots in humanistic theories. In Mayo's (1933) human relations approach, managers should consider the personal empowerment and employees' self-esteem when communicating, to; during research, Mayo found that higher output was the result of the employee's feeling of importance (as cited in Krishnan, 2012). Under Mayo's theory, managers should cater to these social needs to ensure the most effective team (as cited in Krishnan, 2012). Communication is a fundamental determinant of an organization's success. Managers of both face-to-face and virtual teams should adequately communicate with their employees to obtain the most output. Effective communication's benefits include the ability to create synergy, and unity of purpose among the employees of an organization (Chen, 2012). Tuffley (2012) examined the issue of effective leadership within organizations, and determined that leadership is a learned trait.

A need for management communication training. Debate continues about the effect of corporate training compared to traditional management education. A need for task-oriented training subsists. Erenli and Ortner (2011) placed a higher emphasis on corporate training over traditional education channels. Noe, Tews, and McConnell-Dachner (2010) noted that training should fill the learning gaps in a timely manner. Erenli and Ortner (2011) iterated the importance of selecting the appropriate training delivery method because knowledge and skills are paramount to the success of training

project. Both Noe et al. (2010) and Erenli and Ortner (2011), iterated the ability to meet the trainee's needs in a timely and appropriate manner, represents the future of training.

Another factor to consider when instituting communication and soft-skills is job-based training as a return on investment. Robles (2012) listed the important soft-skills to business leaders include: communication, courtesy, flexibility, integrity, interpersonal skills, a positive attitude, professionalism, responsibility, teamwork, and work ethic.

Business educators viewed the concept of training soft skills as merely a motivational seminar that inspires employees, but offered little use for job application or value to the company that pays for the training (Brungardt, 2011). No matter the training topic, the Noe et al. (2010) approach revealed a preference for practical and job focused training. Researchers, using the Mind Gym's robust measurement, track the intended learning to the organization's bottom line. Noe et al. (2010) proposed the integration of corporate training institutions, such as the Mind Gym and traditional business schools. The development of practical scientifically backed content delivered innovatively, benefits the students and the corporate workplaces (Noe et al., 2010).

Experiential Learning Approaches

Problem-based learning is an experiential learning approach. Joham and Clarke (2012) said that problem-based learning is an inverse approach of the traditional approaches taken in learning. Rather than teaching concepts and asking learners to apply the same in a class setting, Joham and Clarke (2012) proposed an approach where instructors present problems first. As the students worked toward solving these problems, they learned the applicable concepts and principles. Problem-based learning, unlike other

learning approaches, moves a step further from concentrating on theories and invoking learners' minds, and by engaging learners in the learning process (Joham & Clarke, 2012).

For experiential learning to be effective, training should result in the attainment of the intended learning objectives. Argote (2011) concentrated on the learning climate and organizational learning as influencers of learning outcomes. Argote classified organizational learning as three sub-processes: creating, retaining, and transferring knowledge. When organizations learn from experience, the organization creates new knowledge (Argote, 2011). Team members can retain the knowledge so that it exhibits sustainability, while sharing knowledge throughout the entire organization (Argote, 2011). Organizational learning relies on the appropriate partnership between stakeholders and learning leaders.

Maynard, Mathieu, Gilson, O'Boyle, and Cigularov (2013) indicated organizational learning can arise, yet group collective learning does not always yield positive results. Given the opportunity, a group's members may construct their experiences. Each learner has different past experiences and diverse perspectives. No single correct approach exists that can define organizational learning (Maynard et al., 2012). The correct definition is dependent on the required actions, leading to the effective accomplishment of such actions and resulting in deeper insights (Tuleja & Roberts, 2011).

Concept learning. In an organizational context, concepts can also enhance the learning process. Concept learning recreates real life situations where the conflict

between human implementers of learning objectives clashes (Galitsky & de la Rosa, 2011). Galitsky and de la Rosa viewed concept learning as an ideal learning approach to deal with human attitudes. An example of how concept learning is applicable is in customer relationship management learning; the understanding of human relationships is essential for the successful learning of any customer relationship management course (Galitsky & de la Rosa, 2011). Concept learning and goal setting are related; in a literature review regarding workplace learning, goal setting applied to various organizational learning approaches (Tynjälä, 2013).

A shift in traditional work approaches and the growth in technological developments enable people to work from different geographical regions, a concept defined as virtual teamwork. The need arises for the development of virtual teamwork training as part of teamwork learning. Gilson, Maynard, and Bergiel (2013) said that it is necessary for business students to learn about the virtual team's workings. The knowledge helps business students to increase their awareness of virtual teamwork (Gilson et al., 2013). A combination of electronic learning with traditional learning approaches in higher learning institutions could enhance the learning of virtual teamwork. The combination had an effect on the learning and the development of capable personnel for the present organizational environment because the scholars studied the approach taken in Greece's higher education through both electronic and traditional media (Antoniadis & Konetas, 2011).

Granda, Nuño, Suárez, and Pérez (2013) emphasized the need to blend electronic learning with traditional classroom learning in the right proportion to achieve the learning

objectives. Relying solely on electronic learning and its outcomes were not optimal. This blended approach promised better results in both the classroom and organizational environment (Granda et al., 2013). Learning in organizations should be people-centric, strategically aligned, focusing on the individual as the heart and engine of the learning process (Bednall, Sanders, & Runhaar, 2014). The people's production should also determine the learning success or failure (Wordsworth, Malinen, & Sloman, 2012)

Perhaps, no one encapsulates this better than Donate and Guadamillas (2011) in their work about competencies and innovations in organizations of learning. Donate and Guadamillas found that a shift in people's thinking was likely to influence the directional change of the business development process. Donate and Guadamillas said that human capital changes the organizational course of direction. Innovations help people to think on their feet, to be dynamic, and to be receptive toward new ideas (Donate & Guadamillas, 2011).

Benefits of Management Communication Training

U.S.-based companies, with both local and overseas operations, spend billions of dollars to train employees about learning in the workplace (Lee, 2012). Kupritz and Hillsman (2011) identified the physical work environment as a major determinant to the level of workplace communication skills transfer. Kupritz and Hillsman's research concentrated on nontraditional factors, such as the size of the working areas, lighting, the level of noise, and room temperature, as an affecting the level of communication skills transfer between the top management and other employees. According to Kupritz and Hillsman, the factors influenced the visual and hearing communication clues. Investing in

management training plays a role in communication. The benefits of management communication training are immense; not all communication media are equally suited for particular audiences (Kupritz & Cowell, 2011). Organizational leaders should consider the tangible communication tools and materials that affect communication (Kupritz & Hillsman, 2011).

Training leaders to communicate successfully with employees affects all forms of communication, listening, hearing, and effectively conveying messages. Welch (2011) considered the role of corporate communication in employee engagement. Three implications arose: the fundamental nature of engagement, its overlap with other constructs such as organizational commitment, and its communication implications. The nature of engagement is a significant issue for corporate communicators and leaders because workplace attitudes change in reaction to various messages (Welch, 2011).

Management communication training summary. Business leaders often consider training initiatives to address the needs of managers and employees. With a history steeped in innovation, communication training has roots dating back to early twentieth-century leadership theorists. Whereas training curricula may fill knowledge gaps with modern managers and employees, the return on the investment of time, man-hours, and financial commitment must be considered. Return on the investment is especially critical when implementing soft skilled initiatives, such as management communication. Management communication is a taught skill comprised of problem-based learning, group learning, individual learning, concept learning, and virtual learning. No matter the facilitation method selected, the organizational climate to learning should

also determine the level of adoption by the staff. Organizational leaders should also consider the tangible communication tools and materials that affect communication (Kupritz & Hillsman, 2011).

Virtual Team Management

Traditional business characteristics, such as robust hierarchical management structures, evolved to flatter synergistic approaches. The work environment evolved via a rapid transformation with the introduction of virtual organizations and offices (Kauppila et al., 2011). Globalization and advancements in technology caused the evolution of management structures and the introduction of the virtual workforce (Daim et al., 2012). In a highly competitive business environment, virtual offices and teams became an indispensable element by assisting organizations to achieve their goals in a cost-effective manner (Daim et al., 2012).

According to Berry (2011), virtual teams use a combination of telecommunication and information technologies to pass information from one party to another across space, time, and the boundaries of the organization. In this regard, the team members may be located across offices, countries, or even continents. A collaborative workplace enables the teams to perform optimally, and produce the required results (Kolfshoten, Niederman, Briggs, & De Vreede, 2012). Two of the main challenges affecting any working environment are isolation and confusion among the team members. The top management of any organization faces the mandate to manage the employees and engage them to prevent these problems. Failure to curb these challenges may lead to serious consequences, such as communication breakdown, decline in trust, and inability to

establish a common ground for operation. Other consequences for not addressing these problems include producing partially engaged teams (Muethel, Siebdrat, & Hoegl, 2013). Some leaders have implemented methods to deal with the problem of low employee engagement. One recommended method is the use of software during virtual management training to engage employees (Muethel et al., 2013). Day and Burbach (2011) pinpointed that a focus on technology alone is not sufficient to come up with a productive virtual teamwork. Most of the organizations failed to help team members develop the necessary skills for an innovative culture (Day & Burbach, 2011). Some organizational leaders required training programs for both managers and employees. Governmental entities needed additional use of remote collaborative communication technology to encourage some government employees to telework (Day & Burbach, 2011).

According to Resnik, Etter, Klinger, and Kambe (2011), effective leadership in every category correlates highly to the success of any virtual team. These virtual teams are similar to collocated teams in the real-life situation. Some of the drivers for face-to-face teams' effectiveness are still relevant, and may become of importance as the use of virtual management evolves (Maynard et al., 2012). The trainers of virtual teams and employees needed to allocate more time to mentoring their team members, enforcing norms, as well as recognizing and rewarding members with exceptional performance (Maynard et al., 2012).

Day and Burbach (2011) asserted that working in a virtual team is not an easy task for team members and leaders. Day and Burbach provided specific recommendations for managers to encourage and successfully implement telework. Recommendations

included: (a) Leaders should occasionally schedule face-to-face meetings and scheduling periodic conference calls with both traditional employees and teleworkers to develop trust and team unity, (b) Virtual team managers should make collaborative technology and communication media available to all team members in a training laboratory or classroom setting, (c) Virtual team managers should distribute interdependent tasks to team members, to the extent possible, during the early stages of team development, (d) Leaders should implement a fair reward system that aligns with team goals and performance but that is flexible enough to reward for outstanding individual performance.

The stakeholders need to address a number of issues in a unique and professional manner. Hanson et al. (2012) argued that prevalent challenges include the management of distance and time zones, and the shifting of memberships in case of more than one team. Other challenges included coming up with operating norms, inventing sound and well-defined work practices, and the management of different cultures, languages, and regional differences (Hanson et al., 2012). From the challenges to effectiveness that some virtual teams faced, Maynard et al. (2012) conveyed teams that give adequate attention to preparation activities position themselves to organize and implement the knowledge that resides within their teams. Teams should effectively apply technology to foster communication among team members (Darics, 2014). Team managers should implement processes to ensure that teams are adequately developing plans, prioritizing goals, and planning for alternative courses of action (Orhan, 2014).

Another possible remedy for the challenges is effectively communicating to the team members the goals of the organization and directions to follow. Schaubroeck, Lam,

and Peng (2011) commented that the members would have a sense of purpose and the drive to reach their goals if they have directives to understand organizational goals. The next remedy was accepting and acting on constructive feedback from team members. These actions ensure a harmonious coexistence among the members and assist the management during the decision-making process (Schaubroeck et al., 2011)

The perceived quality of information transmitted, the joint participation by partners in planning, and goal setting send very important signals to the communicating parties (Hsin Hsin, Shuang-Shii, & Shu Han, 2011). According to Tannenbaum, Mathieu, Salas, & Cohen (2012), empowering the team members to make independent decisions was another remedy for the challenges. The leaders may not oversee all the work completed within an organization. Delegating some of the powers enables members to help the management in its chores (Tannenbaum et al., 2012).

Methods exist in which organizational leaders can handle knowledge management (Kirkman et al., 2011). The premise is that information sharing and integrating personnel are critical to successful teams. Some business leaders are forming organizational communities of practice (OCoPs). These groups enhance organizational performance by sharing information and best practices, and identifying potential organizational risks in a timely and cost-effective manner (Kirkman et al., 2011).

Hirschy (2011) asserted that leaders needed to monitor the progress of the team by using the latest technology. Successful leaders, usually synchronous or asynchronous, scrutinize their teams and record their performance in a balanced scorecard; leaders also enhance the external visibility of the team (Hirschy, 2011). Maynard et al. (2012)

emphasized that leaders should be able to manage meetings as well as a virtual work schedule. In addition, leaders should ensure that team members benefit personally from participating in their respective virtual teams (Kauppila et al., 2011). Achievement of the goal to benefit the individual virtual workers takes place by organizing virtual reward ceremonies and recognizing individual workers. Leaders should be able to manage and maintain the trust of the team. Leaders should guard information and disseminate it to only the appropriate people (Kauppila et al., 2011).

Virtual team management summary. The work environment underwent a rapid transformation with the introduction of virtual organizations and offices (Kauppila et al., 2011). Virtual teaming does not diminish the role of effective leadership (Maynard et al., 2012). The new distance platform provides new challenges and opportunities. Managers of virtual teams should monitor the progress of organizational objectives just as on in-person teams. Several authors suggested ideas for engaging their virtual teams (Boyer O'Leary, Wilson, & Metiu, 2014; Orhan, 2014; Plump, 2013). Whether through mentorship relationship building or consistent reporting on projects, managers of virtual teams should understand the scope of the projects and their employees' capabilities. To accomplish this task, the managers will require more scheduled meetings with staff and business partners. However, the managers create a unique challenge of managing time and multiple projects. As the newness of virtual teaming becomes more mundane, more theories arise to engage and monitor virtual team members (Maynard et al., 2012).

Virtual Teaming Challenges and Traits

Traits. Virtual teaming represents an emerging work approach, whereby people in different geographical locations can collaborate on tasks through electronic media. Joe, Tsai, Lin, and Liu (2014) surveyed virtual workers from 25 large high-tech firms where the subjects used email, Usenet news, discussion boards, list serves, and management information systems (MIS) systems to communicate. Researchers found that virtual teams require communication using various electronic platforms (Joe, Tsai, Lin, & Liu, 2014).

Virtual teams use information and communication technology (ICT) to enhance communication. ICTs, involving a host of communication tools, help virtual staffs to manage communication between them collectively achieve the tasks' objectives. At the core of all virtual teams is successful communication, without which teams cannot exist (Verburg, Bosch-Sijtsema, & Vartiainen, 2013).

Another important trait for virtual teams is trust between the different participants. Virtual working ideally involves the division of labor among different individuals in different geographical regions (Cereola, Wier, & Norman, 2012). Cereola et al. contend that information technology (IT), when successfully assimilated, provides organizations with a competitive advantage through operational flexibility, enhanced relations, and enhanced innovation. These technological enhancements provide the platform for a collaborative environment. Collaboration is information sharing, resource sharing, and responsibility sharing with the intention of attaining a common goal via team working (Montoya, Massey, & Lockwood, 2011). Trust and collaborative efforts among virtual

teammates serve as an engine that keeps the virtual team functioning (Bailey, Leonardi, & Barley, 2012).

Whereas collaboration is important, there is a misalignment of the common outcome variable of ideation research and the real world goal of teams working to generate ideas (Reinig & Briggs, 2013). Urikova, Ivanochko, Kryvinska, Strauss, and Zinterhof (2013) determined that among the main drivers needed for collaboration on projects among small- and medium-sized enterprises are; high competencies; which will typically not be available in these organizations; competencies; which will typically not be available in these organizations; short delivery time demand, and rapidly changing requirements. Leaders of small and medium-sized organizations see the virtual teams as a necessity for survival because of these factors (Urikova, et al., 2013).

The addition of virtual talent increases the talent pool for organizations. The value of the virtual worker as a team contributor subsequently increases (Afsarmanesh, Camarinha-Matos, & Msanjila, 2011). To suppress the challenges, some small and medium-sized organizations will link up with other similar organizations and independent consultants (Afsarmanesh et al., 2011). Virtual teaming allows small and medium-sized organizations to locate necessary skills in-house, without the geographical restrictions (Afsarmanesh et al., 2011).

Another necessary trait for virtual teaming is leadership. Unlike other organizational functions and task requirements, virtual teams require unique leadership traits (Al-Ani, Horspool, & Bligh, 2011). These teams are typically in different and often distant geographical locations, and have different areas of expertise and functions.

Despite these complications, the tasks performed by these teams are interdependent, and may complement each other (Al-Ani et al., 2011). Leaders of such teams possess certain characteristics. Maynard et al. (2012) listed these characteristics to identify tasks expected of team leaders. The list included development of trust between leaders and staff, trust among staff, the enhancement of understanding, appreciation of diversity, and the importance of managing meetings through virtual platforms. Managing the project's timelines is also important. The team leaders must have a way of monitoring progress. The members of the team benefit collectively from the team (Maynard et al., 2012). Virtual team leaders must develop a diverse skill set to balance the task management and human component of team assignments.

Challenges. Virtual teams face both the challenge of human resource demands, and technical difficulties. A consideration of the two issues with the exclusion of the other provided an inaccurate picture of the whole situation (Kimble, 2011). Technology alone cannot solve all virtual team-working problems. When human interaction impeded team progress, a people intervention was required. Those in charge of building technological platforms for virtual teams should do so with human characteristics in mind (Kimble, 2011). Technological components are as valuable as the people components in virtual teams. Organizational leaders should take steps to ensure the integrity of the software and systems used (Olson & Olson, 2012). Critical to overcoming the first challenge was deescalating organizational risks by ensuring that highly skilled employees are working in the correct virtual roles, and guaranteeing that tested technologies aid in the communication of the virtual team members (Olson & Olson, 2012).

A second challenge for virtual teaming is the need for trust and identity. Virtual teams work from different locations on the same tasks and have to rely on trust, which is an essential component of their existence. Trust is a pivotal to tackle anxiety and uncertainty characteristic of virtual teams (Mukherjee, Lahiri, Mukherjee & Billing, 2012). Sarker et al. (2011) identified trust and communication as indispensable components of the virtual teams' development and management process. Identification with the team members is also necessary to leaders. Watson-Manheim et al. (2012) used the discontinuity theory to posit that different virtual teams will have diverse responses to management behaviors. The discontinuity theory provides insight into the various realistic issues reflected on virtual teams; identifying virtual team members' individual strengths is a challenge that team leaders face, making it more difficult to create common goals and purposes (Watson-Manheim et al., 2012). According to Zimmerman (2011), positive manager-employee relationships are likely to develop stronger communication and understanding, and better personal acquaintance through close cooperation with interdependent tasks. This will further affect trust, knowledge creation, conflicts and contribution of effort (Zimmerman, 2011). Virtual team leaders must consistently communicate with each team member to build a mutually trusting relationship.

Building social relations between workmates in virtual teams is also a challenge. Mukherjee et al. (2012) stated that the challenge of building social relationships in virtual teams arises because the interaction is primarily via technological media and is not on a one to one basis. Mukherjee et al. wrote of the necessity of leadership communication within virtual teams, by leaders promoting team members' motivation, and in-group

knowledge management. Mukherjee et al. further presented leadership efforts required include: (a) active relation-building, (b) relationship maintaining, (c) behavior monitoring, and (d) performance evaluating mainly through use of social and behavioral capabilities. Creating opportunities for virtual teammates to become acquainted with one another is a role of a virtual team leader; the goal is to construct a synergistic environment.

Virtual teaming challenges and traits summary. Virtual teaming has unique traits and challenges. Feelings of isolation can cause friction in virtual teams, resulting in a lack of communication among the team. The role of a virtual team leader includes building trust, sharing best practices among team members, and creating a culture of concern (Mukherjee et al., 2012). Virtual team managers must provide a wide array of soft skills that traditional managers may or may not require. These include the ability to balance multiple projects, the technical skills to manage meetings virtually, the communication skills to understand employees, and the ability to pull the best out of team members. Team managers that hone the necessary acumen also have team members who have a better opportunity at experiencing highly engaged employees. The articles within this section of the literature review provide primary issues for virtual team leaders to consider. Other literary works provide potential solutions for some of the stated problems. As virtual teaming is more common, there will be an even larger amount of insight into solving virtual team dilemmas.

Employee Engagement and Motivation

Employee engagement is the ability to involve the employees of an organization in the organization's activities, tasks, and objectives. Bakker et al. (2012) stated engagement in work exercises increases commitment and results in the better performance of tasks and, thus, better outputs. Leadership has a role to play in empowering the employees of any organization. Leaders of virtual teams have a heightened role in motivating employee engagement (Bakker et al., 2012). Chen, Sharma, Edinger, Shapiro, and Farh (2011) argued that team members with higher levels of psychological empowerment and commitment are likely to be more motivated to engage in behaviors that contribute positively to their team and the overall organization.

Klein et al. (2012) performed research with important implications for the future study of commitment, employee engagement, and motivation. The differentiation of bond types is critical to engage employees. Employees seek to bond with their managers at varying levels. Insufficiently managing expectations can lead to the decrease in engagement. The managers' lack of clarity could include an increase in relationship conflicts, which heighten distrust, making it more difficult for team members to work together toward the attainment of common goals and objectives (Klein et al., 2012).

Kühnel, Sonnentag, and Bledow (2012) suggested that a workers' mentality results from the perception that they possess the resources to accomplish a specific task; on days employees perceived high job control and are refreshed, they are absorbed into their work and experience higher levels of work engagement. Job engagement relates to traits such as vigor and absorption. Job embeddedness theory relates to the level of attachment an individual has to his or her job. Workers continue to serve their

organization, in part because they connected socially to the organization (Zhang et al., 2012). Highly attached employees find work both motivating and fulfilling, and tend to be inseparable from it (Jiang, Liu, McKay, Lee, & Mitchell, 2012). Contributing factors such as individuals' perception of how well they fit the job and work environment, and the sacrifices involved in quitting, influence high work embeddedness. Workplace fun may foster employee engagement and embeddedness. Understanding workplace fun is important in coming up with the right strategies for fostering employee engagement and improving relationships among and between the employees and the organization (Tews, Michel, & Bartlett, 2012). Virtual team leaders carry the responsibility of maintaining balance between fun and work, which can aid to create the optimally synergistic and engaging work environment.

Gubman (2004) suggested the engagement of an organization's staff members is the fit between their skills and the tasks they perform, provided they are in line with the organization's policies and the company culture. Despite acknowledging motivation, Gubman (2004) argued that motivation was not the highest factor that could influence the employees of an organization to be more engaged in their work. According to Gubman (2004), passion is stronger than motivation. Motivation has two Ws, representing what *work* one engages in and *where*. Passion encompasses three Ws which are *work*, *where*, and *who* one is (Gubman, 2004). Passion is a characteristic inherently ingrained in an individual's personalities. Forest, Mageau, Sarrazin, and Morin (2011) agreed with Gubman (2004) and argued that passion is higher than motivation.

Researchers studied employee engagement and the correlation to a myriad of topics. Schaufeli, Bakker, and Van Rhenen (2009) studied 201 telecom workers and found the following: (a) a positive correlation between work stress, and (b) decreased employee motivation. In the same study, a direct link subsisted between health conditions and work stress. Burnout can also result from increased work demands. Once workers burnout, teams have insufficient human resources. The researchers iterated that increased job engagement results in superior human resources (Schaufeli et al., 2009). This study serves as a potential example for other virtual team managers whose team members experience burnout.

Motivation. Some managers believe that the sole link to motivation is financial incentives; however, motivation goes beyond monetary inducements (Stewart, Courtright, & Barrick, 2012). Nonfinancial motivators are also effective in reducing the costs of the organization, and thus, increasing shareholder earnings. Job enrichment is another approach to motivating, especially for knowledge workers such as those engaged in virtual teams (Giancola, 2011). Giancola noted that the actual job and tasks associated with job enrichment could enhance motivation.

Increasing employee autonomy can also increase worker motivation (Angelis, Conti, Cooper, & Gill, 2011). Johnson, Garrison, Hernez-Broome, Fleenor, and Steed (2012) posited that managers could find difficulty in balancing staff motivation while exercising control. The assumption was such balancing thereby positively influenced staff motivation. These leadership approaches meet the motivational needs of the staff or team (Johnson et al., 2012).

Mone et al. (2011) communicated contributing causes of increased employee engagement, including group synergy among team members, impartial growth opportunities for all personnel, and support from organizational leaders. Raub and Liao (2012) stated the importance of customer-facing employees experiencing self-motivation. This motivation can correlate to the employees' level of engagement. Other factors essential in increasing employee engagement include the level of quality and the integrity of an organization to the extent in which the organization engages in innovation and the level in which the employees of the organization experience empowerment within the organizational context (Xu & Thomas, 2011).

Employee engagement and motivation summary. Theories of motivating workers span more than a century. Employee engagement takes the level of motivation to a higher level by encouraging employees to commit to adding value to the organization. Engaged employees may exceed the scope of their predefined roles, and become innovative. Engaged employees identify organizational deficiencies, and even provide potential solutions. They give more, work harder, and have a stronger commitment to motivating peers. Team managers play a pivotal role in engaging employees. Managers set clear task objectives, implement fair incentives, and provide necessary coaching, to exemplify effective communication. The long-lasting effects on employee can add to the team and organization.

The Effects of Leadership and Management on Employee Engagement

Workers' perceptions of leadership and management influences employee engagement. According to Johnson (2011), engaged employees partake in more

compliant and less defiant behaviors. When employees purposefully carry out acts that violate organizational rules, they are willfully defiant. Organizational leaders aim to increase the compliance levels of staff. One method of accomplishing this goal is to achieve a more highly engaged workforce; engaged employees are more compliant than their disengaged counterparts are. Smith and Cantrell (2011) affirmed that providing consistent employee experiences is essential for organizational leaders to increase staff engagement. This concept of engaging employees includes providing a dependable process for each employee within the organization and incorporating measurable organizational goals for employees (Smith & Cantrell, 2011).

Performance management can also affect the consistent and measurable process to increasing employee engagement. Mone et al. (2011) defined an engaged employee as any worker who is sufficiently involved, very committed, and passionate. The characteristics of engaged employees either helped or hindered organizational leaders. Providing clear performance objectives, observing job activities and providing useful feedback, and consistently keeping lines of communication open between the employees and management are activities that will help create an environment of engagement. Business environments employing performance management will more likely lead to an open and trusting environment, which calls for more synergy and less management suspicion (Mone et al., 2011).

The leadership and management of virtual teams actively involve themselves in fostering employee engagement. Gajendran and Joshi (2012) iterated the importance of building a manager-employee relationship on trust. Using an inspirational leadership

approach is one way of encouraging employees to maintain high moral character while working toward a common organizational goal (Gajendran & Joshi, 2012). Providing consistent feedback is a way for leaders to inspire employees. Feedback is also beneficial for the leaders to solicit regarding their performance, in an effort to learn from the team.

For an organization to incorporate performance management effectively, clear information systems must be part of that performance. Gruman and Saks (2011) articulated that designers of performance management systems should also consider employee engagement when blueprinting performance management systems. Information systems are necessary to document feedback throughout a reporting period. The performance goals and progress are throughout the year, within the appropriate tools. Information systems can serve in capturing engagement information from employees. Because scalability is a dynamic in the process of employee engagement, record keeping is also a factor of consideration. Saks and Gruman (2011) wrote that performance management systems function as, essentially, a mechanism for organizational leaders to communicate with the employees of an organization. The systems manage staff talent profiles and align organizational charts with job skillsets.

Another pivotal relationship for organizational leaders to consider is the relationship between the workers and their supervisors. To the workers, their individual supervisors are the face of the leadership to the organization. Supervisors should have effective relationships with their team members. Organizations can implode because supervisors undermine the organizational goals by not facilitating a team environment on the front-line-worker level. According to Reio and Sanders-Rei (2011), lack of mutual

respect can lead to reduced employee engagement. Tuckey, Bakker, and Dollard (2012) suggested that organizations that create a culture in which employees can voice their concerns to their supervisor without fear would empower both the employee and the supervisors.

Effects of leadership and management on employee engagement. Employee engagement is a two-way street. The employee engagement section of the literature review cited authors who wrote about both engaged and disengaged employees. Highly engaged employees can be a source of low morale because they can potentially stifle the team's ability to accomplish objectives. Highly engaged employees, however, encourage innovation, civility, and a boost in morale for the team. Management interaction has a bearing on levels of employee engagement. Managers should manage performance, maintain civility, and communicate clearly as outlined in this section. These tools afford higher employee engagement.

Research Design and Method

According to Hedlund-de Witt (2012), the intended audience, researcher's worldview assumptions, and the research problem are all factors to consider when determining a research design. Quantitative research considers empirical investigation of social phenomena via statistical, mathematical, or computational techniques (Miller et al., 2011); whereas qualitative research considers the exploration and discovery of a phenomenon to develop understanding and theory (Qu & Dumay, 2011). The majority of employee engagement studies included in the review of the literature used quantitative method.

A precedent exists for implementing quantitative correlational research design with surveys. Beranek and Martz (2005) used mixed methods. They created training for virtual teams, surveyed the teams prior to the implementation of the virtual cohesiveness trainings, and again afterwards. Though Beranek and Martz (2005) performed a mixed-methods study, the survey examining the engagement of virtual teams is most relevant and similar to this study. Christian et al. (201) used a quantitative design to address their research questions. Quantitative methods, with a correlational design, is appropriate for studying the quantity of virtual management interactions, the quality of those interactions, and the communication mediums of those interactions—with employee engagement. Employee engagement is consistent with the worldview assumptions (Hedlund-de Witt, 2012) and has a preexisting study related to employee engagement.

A quantitative, correlational research design tests the significance, magnitude, and direction of relationships between the quantity and quality of virtual management communication, the virtual medium used to communicate, and the employee engagement. My post-positivist worldview led to the research question for this doctoral study and the hypotheses. The quantitative, correlational research design is appropriate because of the reductionist perspective and the consistency with the researcher's worldview assumptions (Miller et al., 2011). The research design is also appropriate because it permits the use of the Utrecht Work Engagement survey (Schaufeli & Bakker, 2003). The intended audience for my doctoral research includes both the academic community and practitioners in the business world who have virtual teams.

Researchers use snowball sampling in tandem with a correlational design, such as volunteer sampling, a form of purposeful sampling. A voluntary sample includes individuals who agree to participate in research (Kennedy, Kass, Myers, Fuchs, & Flexner, 2011). Snowball sampling takes advantage of the social networks of targeted respondents. Each respondent can provide the researcher with an escalating set of potential contacts. Snowball sampling aids the researcher to meet the required number of participants. The respondents are likely to know others who share the required characteristics that make them eligible for inclusion in the study. Potential bias is a disadvantage of snowball sampling. This also can increase the potential pool of respondents (Goodman, 2011).

Social Exchange Theory

SET is the understanding that all business relationships build on trust between individuals, and the expectation that other parties will fulfill their obligations (Holmes, 1981). Virtual communication has its roots tied to SET, as the central theme of SET defines social behavior as an exchange of intangible currency. Management approval, acceptance, and organizational prestige are all examples of intangible rewards garnered in social exchanges. Homans (1958) also iterated that, when one gives social credits, they debit an imaginary reward account. According to Blau (1964) within SET, interpersonal interactions are economic exchanges in which people satisfy one another as they receive a fair return on their payments. Self-interest in interpersonal relationships can enhance relationships and is a positive trait. Interaction between two individuals results in a series of contingencies, in which these individuals modify their resources to meet others'

expectations (Blau, 1964; Emerson, 1962). Setting clear expectations is also a managerial trait used to engage employees.

Beranek and Martz (2005) applied a theory that derived from the social exchange theory – the social information processing theory (SIP). Walther's (1996) social information processing (SIP) theory suggests that the relational intimacy takes longer to develop in computer-supported groups (Kalman, Scissors, Gill, & Gergle, 2013). Walther (1996) suggested that SIP theory recognizes that individual messages lack social information because they do not include non-verbal cues. The basic argument of this model is that, given enough time, virtual teams can exchange enough social information to develop strong relational links. After testing the results, Walther suggested that virtual communication does not differ from face-to-face communication; the author related to the rate of social information exchange, not solely the amount of social information exchanged.

Consistent with social exchange theory and its derivative theories, the Internet culture encourages collaboration, cooperation, and sharing (Chaudhuri & Ghosh, 2012; Robnett & Feliciano, 2011; Shiau, & Luo, 2012). The people who participate in virtual communities are motivated to do so for distinct and individual reasons such as positive social exchanges. These exchanges embody citizenship behavior. The receiver reciprocates a positive personal effect by providing positive outcomes to the other party. Social exchange theory outlines the conditions under which people believe they are obligated to repay behavior or actions that they receive from others, such as virtual managers and their team members (Agneessens & Wittek, 2012).

Literature Review Summary

Theories of motivating workers span more than a century. Employee engagement takes the level of motivation to a higher level, by encouraging employees to commit to adding value to the organization that may exceed the scope of their predefined roles. The work environment has undergone a rapid transformation with the introduction of virtual organizations and offices (Kauppila et al., 2011). The virtual teaming; however, does not diminish the role of effective leadership. Virtual teaming has unique traits and challenges. Building trust, sharing best practices among team members, and creating a culture of concern is the role of a virtual team leader. Virtual team managers must provide a wide array of soft skills that traditional managers also possess. Business leaders often consider training initiatives to address the needs of their managers and employees.

Managers can learn management communication skills including: problem-based learning, group learning, individual learning, concept learning, and virtual learning. No matter the method selected, the organizational climate to learning is a factor. Other than incorporating communication skills, managers of any team should also monitor the progress of organizational objectives. To accomplish this task, virtual managers will require more scheduled meetings with staff and business partners.

Researchers found engaged workforce is more productive than disengaged workforce (Van Rooy, Whitman, Hart, & Caleo, 2011). According to Bakker, Albrecht, and Leiter (2011), management communication and open, effective communication strategies help to develop positive employee engagement. Researchers also note the number of virtual employees is growing (Bartel, Wrzesniewski, & Wiesenfeld, 2012).

Virtual team managers must also possess a wide array of soft skills that may or may not differ from traditional managers. These skills include the ability to balance multiple projects, the technical skills to manage meetings virtually, the communication skills to understand employees, and the ability to pull the best out of team members. When virtual team managers hone the necessary acumen, their virtual team members have a better opportunity to become highly engaged employees. Based on the social exchange theory, virtual work relationships are a series of exchanges. Positive exchanges glean a higher opportunity for employee engagement. Engaged employees identify organizational deficiencies and provide potential solutions. They give more effort, work harder, and have a stronger commitment to motivating peers. However, employee engagement is a two-way street. Highly disengaged employees can be a source of low morale for others and can potentially stifle the team's ability to accomplish objectives. The fundamental topics in this section include performance, maintaining civility, and communicating clearly. These tools afford higher employee engagement.

Transition and Summary

Section 1 included an introduction to background of the problem, the research question, the theoretical framework, and review of literature. Public and private industry organizations implement virtual teaming to accomplish their objectives. Virtual teams are comprised of individuals who work in separate locations from their team members. Because of this growing reality, the need for managers to be able to manage virtually is apparent to the firm's long-term success. The purpose of this quantitative study was to determine whether a relationship exists between the existence of training of virtual

management and their employees' engagement. Using the results of this study, researchers can add value by providing management communication training for virtual managers.

This section included the social exchange theory as the theoretical framework. The section also contained fundamental definitions and research findings. The principal of motivating workers has its roots in the beginnings of management research. The advent of virtual teaming does not diminish the role of effective leadership. Virtual teaming has unique traits and challenges. Business leaders often consider training initiatives to address the needs of their managers and employees, because management communication is a learned skill. Section 2 houses the methodology and analytical approach that I used to overcome the identified research gap. The final section of this research study (Section 3) will include an application to professional practice and implications for changes in the industry of management.

Section 2: The Project

The number of American employees who work on virtual teams is growing (Caillier, 2012). As the workforce evolves, management communication must also meet the needs of their employees in an effort to drive organizational results. Using the quantitative method and a valid survey instrument, I tested the stated hypotheses. Section 1 and the literature review contained an introduction to the body of knowledge that led me to create the research question. I also created a discussion of the theoretical framework that guides the literature review. Section 2 includes a description of the method to answer the research questions. This section also includes a discussion of the research project, the purpose of this study, and the roles of the researcher and participants' for this quantitative study.

Purpose Statement

The purpose of the quantitative study was to determine whether significant correlations exist between the independent variables, (a) quantity of time virtual managers spend communicating with employees, and (b) the perceived quality of communications- and the dependent variable, employee engagement. U.S.-based employees working virtually in the training and development field of human resources served as the targeted population. Business leaders need to understand how quality one-on-one management time, used with the appropriate medium, relates to virtual workers' engagement. Virtual management initiatives and management trainings may also influence social change arising from this study. The results of this study may also influence the way leaders train managers to lead home-based virtual teams.

Role of the Researcher

I developed the quantitative survey instrument (see Appendix A) by adapting a version of the Utrecht Work Engagement Scale (UWES-9) question instrument designed to quantify employee engagement (Schaufeli & Bakker, 2003). Using an instrument previously deemed reliable and valid helps to guard against researcher bias. Previous researchers used this instrument with both face-to-face and virtual employees; thus there was no need to host a pilot study to test the UWES-9 instrument (e.g., Bedeian, & O'Boyle, 2012; Breevaart, Bakker, Demerouti, & Hetland, 2012; Cole, Walter, Fong, & Ng, 2012; Littman-Ovadia, & Balducci, 2013). I also obtained permission to use this instrument by contacting the creators (see Appendix A).

I interfaced with a business owner whose entire staff worked virtually; however, I do not, and have never worked for, the organization or research site. I contacted the business owner of the targeted research site to obtain consent to contact potential study participants. The owner granted consent, and contacted the human resource manager. The human resource manager provided a list of all employee emails. Since the entire staff worked virtually, all staff at ABC Designs qualified as members of the targeted audience. After I received permission (see Appendix B), I sent the research announcement email to the target audience. Within the sent participation invitations was the consent information (see Appendix C), and a statement that the study was a management-approved study. I also used this email to inform the workers that management was not tracking their individual responses.

The participants provided informed consent by selecting the survey link. The introductory announcement email contained wording informing participants that their participation is confidential with no record of individual responses (see Appendix D). The email invitation contained a hyperlink to participate willingly in the SurveyMonkey.com[®] survey.

Two days after the initial email, I sent follow-up emails to the same potential participants. This second *thank you* email served a dual purpose: thanking those who participated in the survey, and welcoming others to participate. I gleaned enough responses to conduct my study, after sending the second email. The plan was to send another email on the 14th day, asking those participants to share the email addresses of others in their social network that fit the criteria of study respondents. The ideal sample size required 68 responses, and I received 71 completed surveys. After I collected the required 71 responses, I closed the survey and retrieved all raw data in electronic form from SurveyMonkey.com[®], which was 1 week after the initial announcement and invitation postings. I coded one variable using the survey instrument item responses. I also used SPSS tools to store, organize, and conduct statistical tests on the quantitative data, presented and interpreted in Section 3.

Participants

This study population consisted of virtual contract workers and virtual full-time employees from the U.S.-based small business ABC Designs (I masked the actual name of the organization). I interfaced, professionally, with the business owner, whose entire staff works virtually. This organization's staff comprises professional Project Managers,

Instructional Designers, Editors, and Graphic Developers who work from home. I contacted the business owner of the targeted research site to obtain consent to contact potential study participants (see Appendix A).

I informed the participants that their participation was confidential, and records of identifying information did not accompany individual responses. The initial email invitation contained a link to participate willingly, and consent information (see Appendix D).

The individual employees work on virtual teams throughout the continental United States. ABC Designs has 75 U.S.-based employees and contractors. This virtual workforce population spans many states and has a combination of full-time and long-term contract employees. I did not attempt to differentiate between the two classifications of respondents. The target participants had varied job responsibilities and supplied a sufficient sample for this study. The field of business may need this study to understand how the quality, quantity, and method of managerial communication affect employee engagement. The topic of virtual management and employee engagement affects numerous organizations and occupations around the world (Maynard et al., 2012).

The sampling method employed was volunteer sampling, a form of purposeful sampling. A voluntary sample consists of people who self-select into the survey. Often, these participants have a strong interest in the main topic of the survey; and involve individuals who agree to participate in research (Kennedy et al., 2011). I initially intended to use a snowball sampling if I did not secure enough responses from targeted respondents. Researchers use snowball sampling in tandem with a correlational design

(Goodman, 2011). Snowball sampling takes advantage of the social networks of targeted respondents. Potential bias is a disadvantage of snowball sampling. This also can increase the potential pool of respondents (Goodman, 2011).

Each participant received an electronic gift card to a coffee retail store, as a token of appreciation, for his or her voluntary participation. Upon the submission of the anonymous survey, the respondents had the opportunity to complete a second, one-question survey requesting their email address. Upon submission of the second survey, the respondents received an electronic gift card as a token of appreciation. I conducted a power analysis for multiple regression with two predictors in G-POWER to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and a medium effect size ($f = 0.15$; Faul et al., 2008). Based on the formulations, the desired sample size is 68.

Participants agreed to consent in the initial email, by clicking the survey link. The participants provided further consent upon submission of the survey. Proper research ethic was important when planning and executing this study. I measured the participants anonymously. The protection of participants also was important to me and to the success of this effort. Names were not used in data obtained, and were not provided to the employer. After one week of collecting survey responses, because I received the targeted number, I did not employ a modified snowball method. I intended to ask the respondents to share email addresses of others in their social network who fit the criteria of study respondents.

The participant consent form is in the Appendix D. This study posed minimal risk to the participant and the organization. I masked the organization's name to ensure it

would not endure any reputational risks arising from participating in this study. The likelihood of workplace risk anticipated from the research did not exceed the stress they endure on an ordinary workday.

Research Method and Design

The quantitative study involved examining the quality, quantity, and method of managerial communication and employee engagement. Labor statistics indicated an increase in the number of U.S.-based virtual workers (U.S. Department of Labor, 2014). Projection exists for this trend to continue. Managers and workers need to be able to function virtually, and communication patterns and practices will have a bearing on this suggestion. Researchers have shown that manager-worker communication has a direct effect on employee engagement (Chen et al., 2011). An unequivocal correlation also exists between employee engagement and work productivity. Low productivity has a direct effect on organizational effectiveness (Kehoe & Wright, 2013).

This study involved the use of quantitative research methods. The purpose of the quantitative study was to determine whether significant correlations exist between the independent variables, (a) quantity of time virtual managers spend communicating with employees, and (b) the perceived quality of communications- and the dependent variable, employee engagement. According to Champoux and Peters (2011), researchers using multiple regression analysis have the best combination of predicting multiple independent variables to one dependent variable. To produce the best combination of predictors of the dependent variable, the researchers use a sequential multiple regression by selecting independent variables, one at a time, by their ability to account for the most variance in

the dependent variable. The researcher reassesses the statistically significant correlations between the group of predictors and the dependent variables, upon selecting a variable, and entering into the group of predictors. When no more variables remain, that explain a significant amount of variance in the dependent variable the regression model is complete (Champoux & Peters, 2011).

Method

In the early conceptual formulation of this study, I considered mixed methods research approach. Based on the recommendation of Sharp et al. (2012), a triangulation of data helped to provide a more validity. By incorporating qualitative and quantitative research methods, a researcher has the unique opportunity to view the research from multiple vantage points (Sharp et al., 2012). This positive attribute also has limitations. I rejected the mixed methods approach for this doctoral study because of time and resource constraints.

Initially, I considered qualitative method. According to Thomas (2011), case study research is a qualitative approach in which the investigator explores a bounded system (case) or multiple cases over time, through detailed, in-depth data collection involving multiple sources of information, including observations, interviews, audiovisual material, and documents and reports. According to Qu and Dumay (2011), qualitative research methods have to institute measures to mitigate research bias. Another popular criticism is the research subjects may not be representative of the general or larger population. Finally, it takes time to develop a substantive relationship with the research subjects, to obtain honest feedback (Qu & Dumay, 2011). I selected quantitative

research methods for this doctoral study. Quantitative research studies tend to use a standard set of questions with a larger sample population; additionally, a gap between the researcher and the respondents is identifiable (Karanja et al., 2013). With the targeted number of potential survey respondents at 68, exceeding the 20 required for qualitative interviews, the large number of potential respondents did not permit personal interviews and longstanding observations.

Quantitative analysis methods are appropriate for testing hypothesized relationships of virtual management communication and employee engagement. In this study, I obtained the information strictly about the potential statistically significant correlations between the independent and dependent variables. I studied various quantitative methods. In causal-comparative research, a cause-effect relationship establishes and compares the relationship but does not manipulate the case, as in race or gender (Llamas & Boza, 2011). Correlational research studies examine the relationship between variables based on existing theory (Fiss, 2011). The primary goal is to determine whether the research upholds the predictive generalizations of the theory (Qu & Dumay, 2011). In multiple linear regressions, there are multiple independent variables or a test against the dependent variable takes place (Eyvazian, Noorossana, Saghaei, & Amiri, 2011).

Research Design

Using the quantitative correlational design, I tested the hypothesis of whether a relationship exists between the quantity, perceived quality, and virtual employee engagement. Multiple regression analysis is ideal to produce groupings of predictors of

the dependent variable (Nimon & Reio, 2011). Because of the existence of more than one explanatory variable in this study, I interpreted each parameter as a partial derivative or the change in the dependent variable for a change in the explanatory variable, holding all other variables constant (Melnick & Shoaf, 1977).

Because objectivity is paramount, I avoided using survey questions requiring coding or other interpretation of the responses prior to analysis and statistical testing. The qualitative, questionnaire research design is compatible with the embedded use of UWES (Schaufeli & Bakker, 2003). I eliminated the qualitative method and designs because I sought to remain objective.

While completing the literature review, I determined a quantitative study was appropriate to test the variables. Quantitative research is an appropriate method to examine this study's variables: relationships among the quality, the perceived quantity, and employee engagement. The study is about the significant correlations between the separate variables.

In snowball sampling, researchers take advantage of the social networks of targeted respondents. Each respondent can provide the researcher with an escalating set of potential contacts. Snowball sampling is a tool used to aid the researcher to meet the required number of participants. The respondents are likely to know others who share the required characteristics that make them eligible for inclusion in the study. Potential bias is a disadvantage of snowball sampling. This process also can increase the potential pool of respondents (Goodman, 2011). I did not have to employ snowballing in this study.

According to Su et al. (2012), to avoid potential research errors, or bias, researchers should test the assumptions of multiple linear regressions – linearity, independence, homoscedasticity, and normality. Independence is the assumption that all variables stand alone, and no serial correlations are in operation. Homoscedasticity means that the variance of errors is the same across all levels of the independent variables. Variables meet the standards of normal or parametric distribution (Su et al., 2012).

I considered both Spearman and Pearson correlation coefficients when determining possible correlational coefficients for this study. The Pearson correlation coefficient tends to rely on linear relationships between variables. The Pearson correlation coefficient is a measure of the linear relationship between two continuous random variables, which does not assume normality. When the variables are bivariate normal, Pearson's correlation provides a complete description of the association (Norman, 2010). Unlike Pearson's correlation, Spearman's correlation applies to ranks and provides a measure of the relationship between two continuous random variables. When the variances are equal, Pearson's r matches. If a violation of the assumptions of normality and linearity occurs, Spearman's rho (r_s) is the alternative (Norman, 2010).

I avoided type 1 and type 2 errors when performing statistical testing. Uncompromised data was important. A type 1 error, or false positive, is asserting something as true when false, and type 2 error occurs when the null hypothesis is false, but erroneously fails to be rejected (Su et al., 2012). The assumptions I assessed include normality, linearity, multicollinearity, and homoscedasticity.

Assessing for each assumption requires performing specific tasks and tests. To assess normality, the assumption that gages the symmetry of the variables on a bell curve, I ran Kolmogorov–Smirnov (K-S) test in SPSS. I looked for a p -value above .05, as a p -value below .05 is significant and is nonparametric. I tested linearity visually by running a scatter plot table. If the relationship between independent variables and the dependent variable is not linear, the results of the regression analysis will under-estimate the true relationship (Su et al., 2012). I tested for the absence of multicollinearity by testing the Variance Inflation Factor (VIF) in SSPM. The VIF is above 10.0, which indicates the presence of multicollinearity. The presence of multicollinearity signifies the independent variables are too related to each other. There is no way to assess if one variable has more of an effect on the dependent variable than another, in the presence of another variable. The only way to correct multicollinearity is to change or remove the variable. Researchers assess homoscedasticity visually using a scatter plot chart in SPSS. Normally distributed scores appear above the regression line. I looked for rectangular shapes, as funnel shapes exemplify outliers. The presence of too many outliers skews the data and shows homoscedasticity. I tested the z -score with a mean of 0, as any z -score above 3.29 or below -3.29 is an outlier (Tabachick & Fidell, 2012). I adequately assessed each assumption by performing specific tasks and tests, to avoid errors.

Population and Sampling

This study represents U.S.-based virtual workers. The targeted eligible sample for this research consisted of individuals who are U.S.-based employees of ABC Designs (the researcher masked the actual name of the organization) and work on geographically

dispersed teams. This population of 75 virtual workers was from ABC Designs (pseudonym), a U.S.-based small business. This organization's staff comprises professional Project Managers, Instructional Designers, Editors, and Graphic Developers who work from home. I contacted the business owner of the targeted research site and obtained written consent to contact potential study participants (see Appendix B).

ABC Designs has 75 employees working either full time or on long-term contracts, which serve as the study population. I conducted a power analysis for multiple regression with two predictors using G-POWER to determine a sufficient sample size using an alpha (α) of 0.05, a power of 0.80, and a medium effect size ($f = 0.15$) (Faul et al., 2008); the minimum required sample size was 68. The sampling method employed was volunteer sampling, a form of purposive sampling. Volunteer sampling involves individuals who agree to participate in research (Kennedy et al., 2011). I collected 71 responses, more than enough survey responses to avoid applying a snowball method. This research study tested a single hypothesis, and I distributed the instrument by using SurveyMonkey.com[®] link.

Ethical Research

Subsequent to receiving Walden University IRB approval number 07-03-14-0113452, the data collection occurred at a small business at which 100% of the 75 workers in the population work remotely. To participate in this study, all volunteers consented to participate. Participants agreed to consent in the initial email, by clicking the survey link. The participants spent approximately 10 minutes to complete the survey. The

research activity's burden on the participants was minimal. The primary benefit of this research study is that it may effectively address a gap in the literature.

Ethics are fundamental to this study; I measured the participants anonymously for their current level of engagement. The protection of participants was also important to the success of this effort. Names were not used in data obtained, and were not provided to the employer. Because this was a voluntary online survey, for employees that work in geographically dispersed areas, the privacy risk is minimal. Because, no translators or transcribers, or any other third parties participated in this study, or have access to data, while the study was in progress; a confidentiality agreement was not necessary.

Participant consent forms are in the Appendix D.

I collected and will store raw data securely for at least five years. Electronic files were stored on my password-protected computer and backed up on a password-protected hard drive. Further, I backed up data files to a secure online backup service. The identity of the participants is also secure because I excluded identifying participant information that links directly to respondents. The participation agreement documents are in Appendix B.

Data Collection

Instruments

SurveyMonkey[®] is the mode used to distribute the instrument. The online survey instrument consisted of three sections. To complete the electronic survey, the respondents read the consent form and select the survey link in the email invitation. By opening the survey and completing it, the participant granted consent. Participants then completed the

three-section survey. Finally, study participants submitted the survey, after reading the opt-out disclaimer. Each geographically disbursed employee works from home, so no site references are necessary. Geographic location did not constitute datum for collection because all workers are U.S. based and worked remotely. The employer was not able to deduce the participant's identity.

The first section was a reproduction of the nine-item Utrecht Work Engagement Scale instrument for measuring work engagement (Schaufeli, Salonova, Gonzalez-Roma, & Bakker, 2002), used with permission from the survey instrument authors. The permission letter from Schaufeli et al. (2002) is in Appendix A. The nine items measured the dependent variable by identifying vigor, dedication, and absorption (three items each) in the job context, which collectively constitute the work engagement survey. Cronbach's alpha (α), a measure of internal consistency reliability, ranges from .85 to .94 (Schaufeli & Bakker, 2003). I also utilized the UWES 7-point response scale, in accordance with Schaufeli and Bakker's method. The instrument had an index value ranging from zero to six for the respondent. This value represented the engagement level (ENG) dependent variable.

The second and third sections of the instrument included measured independent variables, which are quantity, and perceived quality of managers communicating virtually with employees. Each survey question had seven possible responses: never, 1-4 times a year or fewer, once a month or fewer, 2-3 times a month, once a week, a few times a week, and every day. The respondents completed the Likert-type scale survey questions. The process for completion of the online survey instrument is uncomplicated. The use of

a previously established validated and reliable survey measurement instrument mitigated validity and reliability threats. I collected and will store raw data securely for at least the five years from the publishing of my doctoral study. Interested parties may contact me to request to use the data in those 5 years.

UWES, the survey instrument, is a formerly applied instrument. Mills, Culbertson, and Fullagar (2012) established the instrument's reliability. The median Cronbach alpha (α) value of .91 was in the original study (Schaufeli et al., 2002). The employee engagement index derives from the same original UWES study. This, coupled with other researchers using the tool, further substantiates the instrument's reliability.

Nerstad, Richardsen, and Martinussen (2010) and Seppälä et al. (2009) proved the validity of the UWES instrument as the premier employee engagement tool. Multiple researchers used this instrument across a wide array of industries (Bedeian, & O'Boyle, 2012; Breevaart, et al., 2012; Cole, et al., 2012; Littman-Ovadia, & Balducci, 2013). This instrument has a high degree of external validity (Schaufeli & Bakker, 2003). Construct validity defines how well a survey measures up to its claim. Researchers should review survey instruments to determine its construct validity (Podsakoff, Podsakoff, MacKenzie, & Klinger, 2013).

As the researcher, I securely will store raw data five years from the publishing of my doctoral study, and I recorded the resulting electronic data files to optical media for storage. Further, I backed up the data files to a secure online backup service. Interested parties may request the data in the future, as I will maintain the data on a secure Internet server.

Data Collection Technique

Respondents participated voluntarily to invitations sent via their work email, with written permission from the owner of ABC Designs. The need to conduct a pilot-study did not arise because prior researchers tested the UWES-9 instrument for validity and reliability. The email invitation included the consent form and the survey instrument links. SurveyMonkey.com[®] was the selected engine to build and cascade the survey instrument. The resulting data served as the SPSS input dataset for analysis.

Advantages and disadvantages to online surveys are identifiable. Emailed surveys are a faster and less expensive alternative to mailed and in-person surveys. Potential respondents are more likely to complete electronic surveys as opposed to mail and in-person alternatives. Respondents complete the survey on their time (Chang & Vowles, 2013). The shortened timeframe also serves as a disadvantage of online surveys. The use of online survey instruments broadened the scope of the amount of potential respondents (Kayam & Hirsch, 2012). I selected an online survey to accommodate the potential respondents who use computer technology to complete their daily tasks.

Data Organization Techniques

I will maintain the data collected from the survey instrument in the Statistical Package for the Social Sciences (SPSS) for potential future use in other research questions. Based on the familiarity of the software package, SPSS was best suited for me, serving as the researcher for this doctoral study. Nonpublic, personal information pertaining to the participants was not part of the dataset. The protection of the privacy of survey participants is important. I will securely store raw data for at least five years from

the publishing of my doctoral study, and I recorded the resulting electronic data files to optical media for storage. Electronic files are stored on my password-protected computer and backed up on a password-protected hard drive. Further, I backed up the data files to a secure online backup service. Interested parties may request the data in the future. A one-page summary of the results will also be available upon request. Participants can request a summary of the research results by email after March 1, 2015 by emailing me. I will email the summary to the community partners after Walden University approves the doctoral study.

Data Analysis Technique

The goal of this research study was to attain a better understanding of virtual management communication. Because of my study, researchers in the field of management communication may better understand the existence and magnitude of correlations in theory-based factors affecting virtual management communication and employee engagement. The research question is:

1. Are there any statistically significant correlations between the quantity of time managers spend communicating with virtual employees, quality of virtual communication, and employee engagement?

Schaufeli and Bakker's (2003) Utrecht Work Engagement Scale (UWES-9) measures employee engagement. Each of the statements is about how virtual workers feel at work (Schaufeli & Bakker, 2003). The complete, formatted survey is in Appendix E. Participants indicated how often they agree with the survey options, by using this Likert-type scale survey. Each survey question listed below had seven possible responses: never,

a few times a year or fewer, once a month or less, a few times a month, once a week, a few times a week, and every day. The respondents completed the following Likert-type scale survey questions to measure the dependent variable, employment engagement:

1. At my work, I feel bursting with energy.
2. At my job, I feel strong and vigorous.
3. I am enthusiastic about my job.
4. My job inspires me.
5. When I get up in the morning, I feel like going to work.
6. I feel happy when I am working intensely.
7. I am proud of the work that I do.
8. I am immersed in my work.
9. I get carried away when I'm working.

The following questions measured the first independent variable, quantity of communication managers have with virtual employees, applying different modes of communication.

1. I communicate with my manager.
2. Outside of team meetings, my manager and I communicate via telephone.
3. Outside of team/group emails, my manager and I communicate via email.
4. My manager and I communicate via Instant Messenger.
5. Outside of team/group meetings, my manager and I communicate via video conference.

Each survey question had seven possible responses: never, 1-4 times a year or fewer, once a month or less, 2-3 times a month, once a week, a few times a week, and every day. The respondents completed the Likert-type scale survey questions.

The following questions measured the second independent variable, the virtual employees' perceived quality of communication with their managers. Each survey question had seven possible responses: never, 1-4 times a year or fewer, once a month or less, 2-3 times a month, once a week, a few times a week, and every day. The respondents completed the Likert-type scale survey questions. The questions testing the independent variable, perceived quality communication include:

1. I have high-quality or inspiring work-related communication with my manager.
2. Outside of team meetings, I have high-quality or inspiring work-related communication with my manager via telephone.
3. Outside of team/ group emails, I have high-quality or inspiring work-related communication with my manager via email.
4. I have high-quality or inspiring work-related communication with my manager via Instant Messenger.
5. I have high-quality or inspiring work-related communication with my manager via video conference.

Schaufeli and Bakker's (2003) Utrecht Work Engagement Scale (UWES-9) relates to employee burnout and engagement. Schaufeli and Bakker posited that social relationships have an effect on both burnout and employee engagement. The integration

of social interaction is congruent with the theory applied in this study, the social exchange theory.

The 9-item UWES instrument has an employee engagement index value. I analyzed the data collected from the survey instrument in the Statistical Package for the Social Sciences (SPSS). The creators of this software have a streamlined and effective way in which to collect and manage the data. Screening data for further analysis is an advantage of SPSS. SPSS segregates the output and the raw data and maintains data organization. My use of multiple regression analysis supported the presentation of the data. The use of multiple regressions is consistent with the hypothesis. The selected method is also consistent with the research question.

Reliability and Validity

Reliability

Mills, Culbertson, and Fullagar (2012) used the Utrecht Work Engagement Scale (UWES), establishing the instrument's reliability. The median Cronbach alpha (α) value of .91 was in the original study (Schaufeli et al., 2002). The employee engagement index derives from the same original UWES study. Further substantiating the reliability of the instrument, researchers proved the reliability of the UWES (Mills, Culbertson, & Fullagar, 2012). I received permission from Schaufeli to use the UWES-9 survey instrument to perform the research (see Appendix A).

Validity

Researchers should review a survey instrument to determine its construct validity (Podsakoff et al., 2013). The Utrecht Work Engagement Scale (UWES) instrument has a

high degree of external validity (Schaufeli & Bakker, 2003). Multiple researchers have proven the validity of the UWES instrument as the premier employee engagement tool. Two of those studies are Nerstad, Richardsen, and Martinussen (2010), and Seppälä et al., (2009).

In the 2009 study, Seppälä et al. researched both the 17-item and 9-item versions of the Utrecht Work Engagement Scale. The data draws from five diverse studies ($N = 9,404$), including a three-year study ($n = 2,555$), with five different work-related samples. Factor analysis supported the hypothesized correlated three-factor structure—vigor, dedication, absorption—of both UWES scales. However, while the structure of the UWES-17 did not remain the same across the samples and time, the structure of the UWES-9 was unaffected. Seppälä et al. (2009) recommended the UWES-9 for future research because the survey has considerable construct validity.

Nerstad et al. (2010) investigated the validity of the Utrecht Work Engagement Scale (UWES) with 1266 participants from ten different occupational groups using both the UWES-17 and UWES-9 instruments. The results of multigroup analyses, and analyses of each of the groups separately, indicated that with a few exceptions, the three-factor model of vigor, dedication, and absorption, provided the best fit when measuring work engagement. Results indicated that the UWES internal consistencies were acceptable. The fit of the UWES-9 was slightly better than the UWES-17.

Researchers consider internal validity measures for the validity of contributory reasoning, and the validity of the measurement procedure (Bleijenbergh, Korzilius, & Verschuren, 2011). Construct validity defines how well a scale measures up to its claim.

The targeted population includes the majority of the employees at a mid-sized business. I have no personal relationship with the business owners of ABC, which also protects internal validity. The UWES instrument is both internally and externally valid, based on previous studies.

Transition and Summary

Section 2 was a review of the description of the method to answer the research questions. This section also included the research project, the purpose of this study, and the roles of the researcher and participants' for this quantitative study. The objective of this quantitative study was to identify the possible correlation between virtual management communication practices, and the employee engagement of employees on virtual or geographically dispersed teams. In Section 2, I outlined the process of incorporating the social exchange theory as the theoretical framework to test the hypothesis. Section 2 included my role as the researcher, the emphasis on ethics, and the data collection technique and process. In the research design and methodology section, I defined the neutral data set for analysis of the research questions and testing of the hypothesis.

Section 3 includes an application to professional practice and implications for changes in the industry of management. In Section 3, I also discuss the research results and suggestions for further research.

Section 3: Application to Professional Practice and Implications for Change

This section includes an analysis, discussion, and interpretation of the data that I collected for this study, with the intent of addressing the research questions in Sections 1 and 2. The specific business problem was that managers of virtual team employees lack knowledge of the skills and information needed to implement employee engagement in U.S.-based companies. I present recommendations for practitioners, and additional research opportunities that could expand the possibilities for both practical application and positive social change.

Introduction

The purpose of the quantitative study was to determine whether a relationship exists between the quantity of time virtual managers spend communicating with employees, the employees' perceived quality of communications with managers, and employee engagement. From 2001 to 2010, the number of American workers who did some work from home increased to more than 23 million. During that time, with 21% of all U.S.-based workers performing some work at home (U.S. Department of Labor, 2012). There are projections of a continuous increase of virtual workers (Bartel et al., 2012). The topic of employee engagement is also important to both business leaders and industry researchers.

Communication affects employee engagement, as employees make a psychological link between their individual task and the effect it will have on others when management adequately communicates the significance of the work (Grant & Berry, 2011). The objective of this study was to add to the body of knowledge related to

employee engagement of virtual employees as the number of virtual workers continues to increase.

In fulfillment of the stated purpose of determine whether significant correlations exist between the quantity of time virtual managers spend communicating with employees, the employees' perceived quality of communications with managers, and employee engagement, I examined the potential existence of an association among virtual management communication and employee engagement. The empirical evidence discussed in detail in the following pages failed to accept the null hypothesis. Empirical evidence supported the alternative hypothesis $H1_A$, presented significant correlations between the quantity of time managers spend communicating with employees, quality of virtual communication, and employee engagement, within virtual teams.

Presentation of the Findings

Summary of Quantitative Data

I used quantitative methods to conduct this study. My primary goal of this study was to investigate: the variables of employee engagement, quantity of time a manager spent communicating with virtual employees; the perceived quality of communication; and whether the research upheld the predictive generalizations. The primary goal of quantitative research is to determine whether the research supports the predictive generalizations of the theory (Karanja et al., 2013). Quantitative, descriptive designs require researchers to measure subjects once to determine their status. Correlational design was appropriate to measure the relationships among variables. I examined the statistically significant correlations between the variables based on SET. I used multiple

regression analysis to explore the statistically significant correlations between the three variables.

To fulfill of the stated purpose, I examined the potential existence of significant correlations between virtual management communication and employee engagement. The central research question was: Are there any statistically significant correlations between the quantity of time managers spend communicating with virtual employees, quality of virtual communication, and employee engagement?

Derived from the Research Question 1, I tested the following null and alternative hypotheses:

*H*₁₀: There are no statistically significant correlations between the quantity of time managers spend communicating with employees, quality of virtual communication, and employee engagement, within virtual teams.

*H*_{1A}: There are positive statistically significant correlations between the quantity of time managers spend communicating with employees, quality of virtual communication, and employee engagement, within virtual teams.

The empirical evidence supported the alternative hypothesis *H*_{1A}, exemplified statistically significant correlations between the quantity of time managers spend communicating with employees, quality of virtual communication, and employee engagement, within virtual teams.

Seventy-one participants completed the survey. Data screening efforts focused on finding univariate outliers on the three variables of interest: employee engagement scores, quantity of time manager spends communicating with virtual workers' scores, and

perceived quality of communication scores. An assessment of univariate outliers occurred via examination of standardized values, or z-scores, where values above 3.29 or below -3.29 indicate outlying scores. There was one outlier on quantity of time scores, and I removed the case from the dataset. Thus, an examination of data on the remaining 70 participants transpired.

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Descriptive Statistics

Employee engagement scores ranged from 3.67 to 7.00, with a Mean (M) of 5.64. Quantity of time scores ranged from 2.60 to 6.60, with $M = 4.40$. Quality of communication scores ranged from 1.00 to 6.00, with $M = 3.75$. I conducted Cronbach's alpha (α) test of reliability for each composite score. Reliability coefficients (α) were evaluated according to the rules of thumb by George and Mallery (2010), where $\alpha > .90 =$ excellent, $> .80 =$ good, $> .70 =$ acceptable, $> .60 =$ questionable, $> .50 =$ poor, and $< .50 =$ unacceptable. All three composite scores had excellent reliability ($\alpha > .80$). The descriptive statistics on the three composite scores are in Table 1; Figure 1 visually exhibits the means.

Table 1

Descriptive Statistics on Composite Scores (N = 70)

Composite score	<i>Min.</i>	<i>Max.</i>	<i>M</i>	<i>SD</i>	Cronbach's α	No. of items
Employee engagement	3.67	7.00	5.64	0.90	.90	9
Quantity of time	2.60	6.60	4.40	0.91	.84	5
Quality of communication	1.00	6.00	3.75	1.06	.86	5

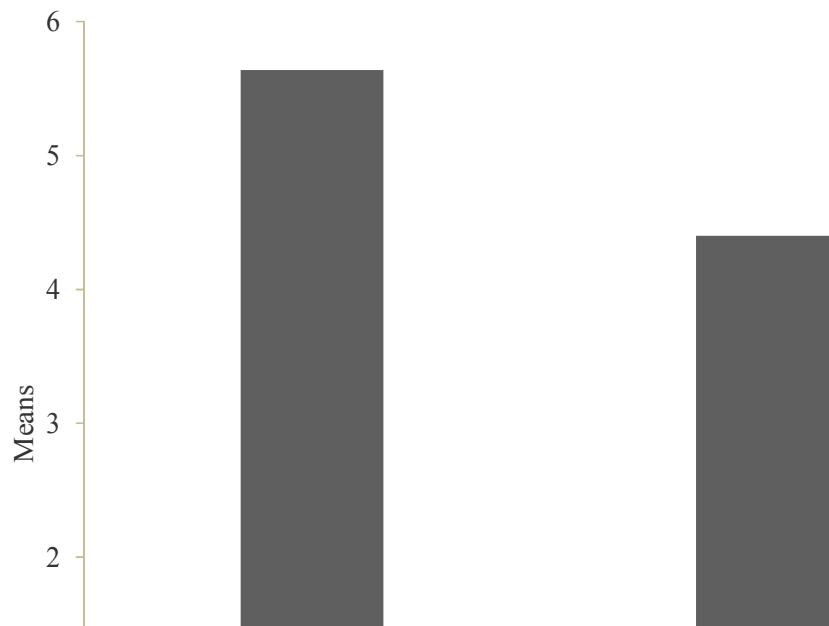


Figure 1. Means on the composite scores.

Research Question

The categorization of findings matched the research question: Are there any significant correlations between the quantity of time managers spend communicating with virtual employees, quality of virtual communication, and employee engagement?

H₁₀: There are no statistically significant correlations between the quantity of time managers spend communicating with employees, quality of virtual communication, and employee engagement, within virtual teams.

H_{1A}: There are positive statistically significant correlations between the quantity of time managers spend communicating with employees, quality of virtual communication, and employee engagement, within virtual teams.

I conducted multiple linear regression to address Research Question 1. My aim was to determine if the quantity of time a manager spends communicating with virtual employees and perceived quality of communication predict employee engagement. Statistical significance was determined using an alpha value (α) of .05. The predictor variables in the regression were quantity of time scores and quality of communication scores. The dependent variable in the regression was employee engagement scores. Prior to analysis, I assessed the assumptions of normality, linearity, homoscedasticity, and the absence of multicollinearity. Three Kolmogorov–Smirnov (KS) tests, one per score, with statistically significant ($p < .05$) results for employee engagement and quality of communication scores, tested the assumption of normality. However, with sample sizes of 30 or more, violation of this assumption was unlikely to cause any serious problems (Pallant, 2010). I charted a scatter plot to test linearity, and found little to no deviation

from a linear distribution; the data met the assumption of linearity. I assessed the presence of multicollinearity with Variance Inflation Factors (VIFs), where any VIF value above 10.0 indicates the presence of multicollinearity. There were no VIF values were above 10.0, meeting the assumption of the absence of multicollinearity standard.

Table 2 houses the KS significance values and VIF values. Normality, on the individual scores, is visually presented in Figures 2, 3, and 4.

Table 2

Assumptions Assessment of Normality (KS Significance Values) and Multicollinearity (VIF Values)

Composite score	KS significance values	VIF values
Employee engagement	<.001	—
Quantity of time	.066	2.59
Quality of communication	.018	2.59

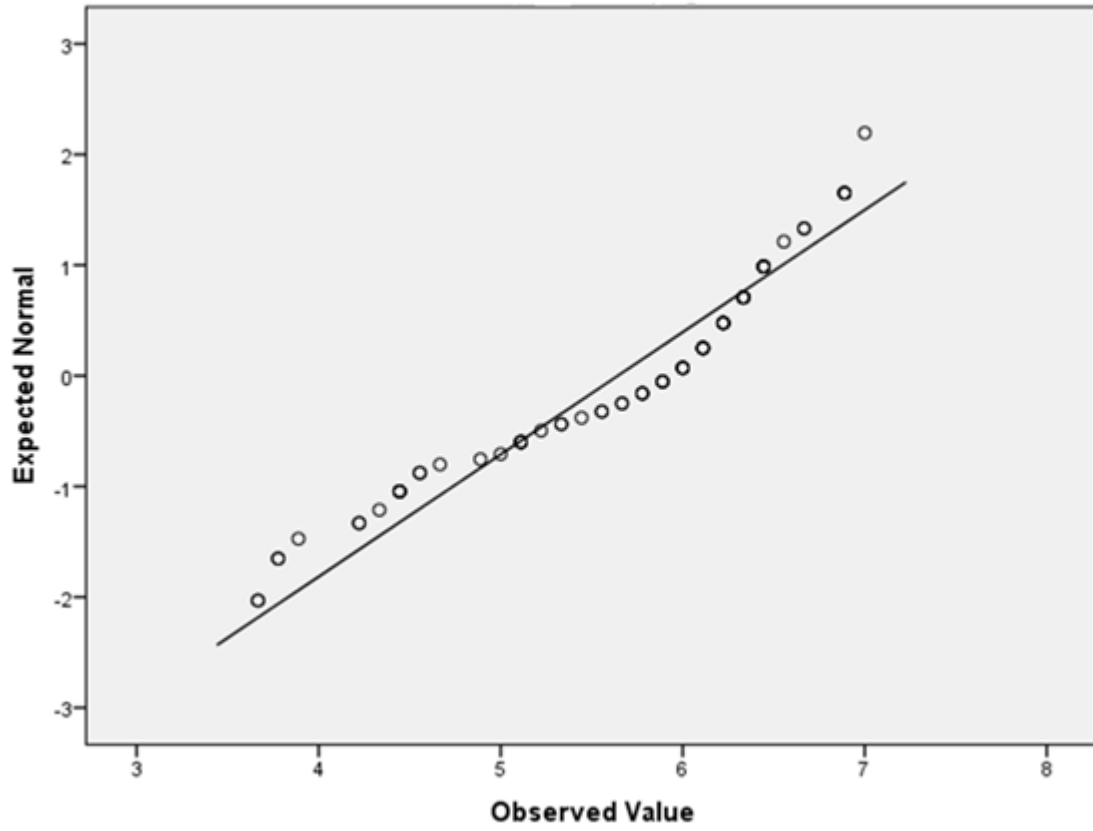


Figure 2. Normal Q-Q plot on employee engagement scores.

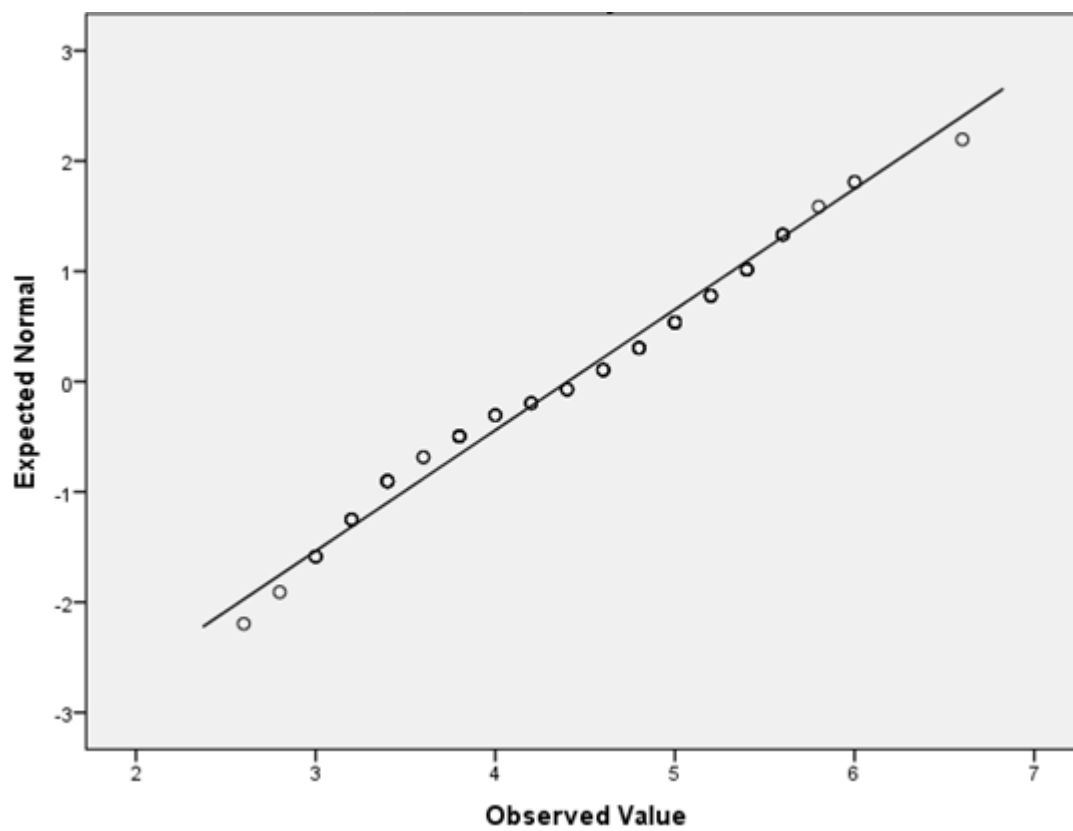


Figure 3. Normal Q-Q plot on quantity of time scores.

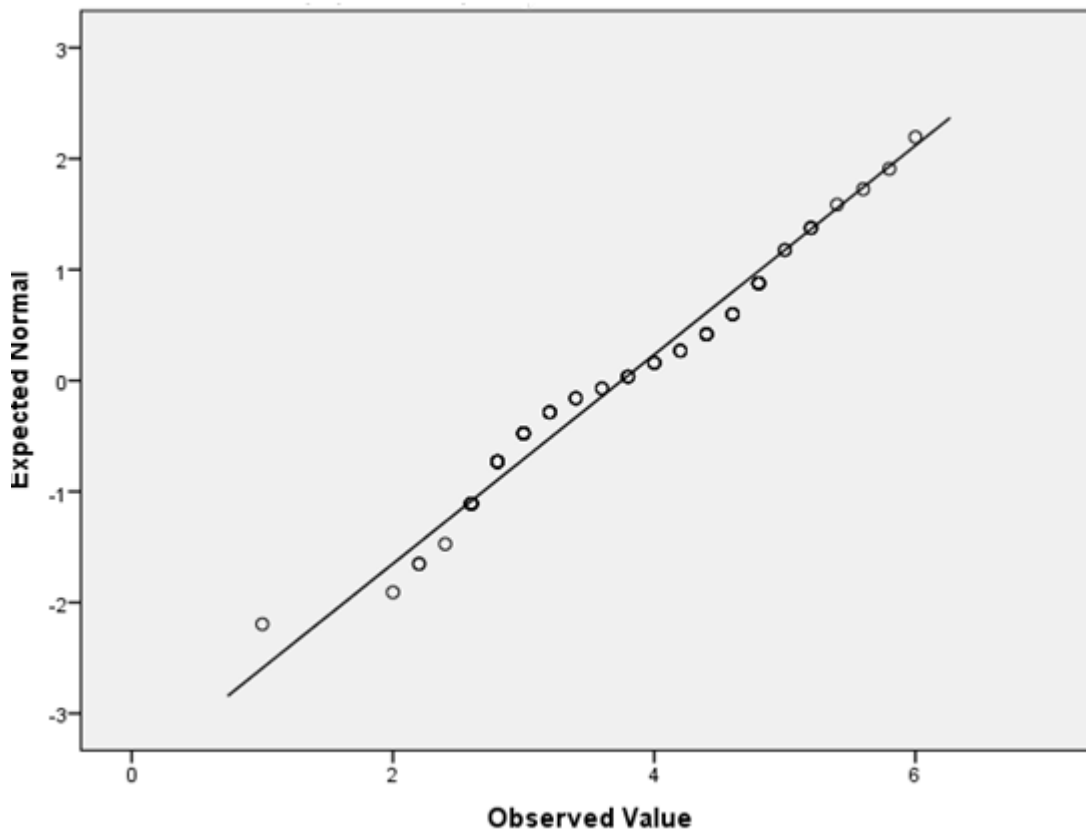


Figure 4. Normal Q-Q plot on quality of communication scores.

I assessed linearity with a scatter plot, and found little to no deviation from a linear distribution; the study met the assumption of linearity. I assessed homoscedasticity with a residuals scatter plot, and found no nonrandom pattern; the study met the assumption of homoscedasticity. Figures 5 and 6 visually present the scatter plots.

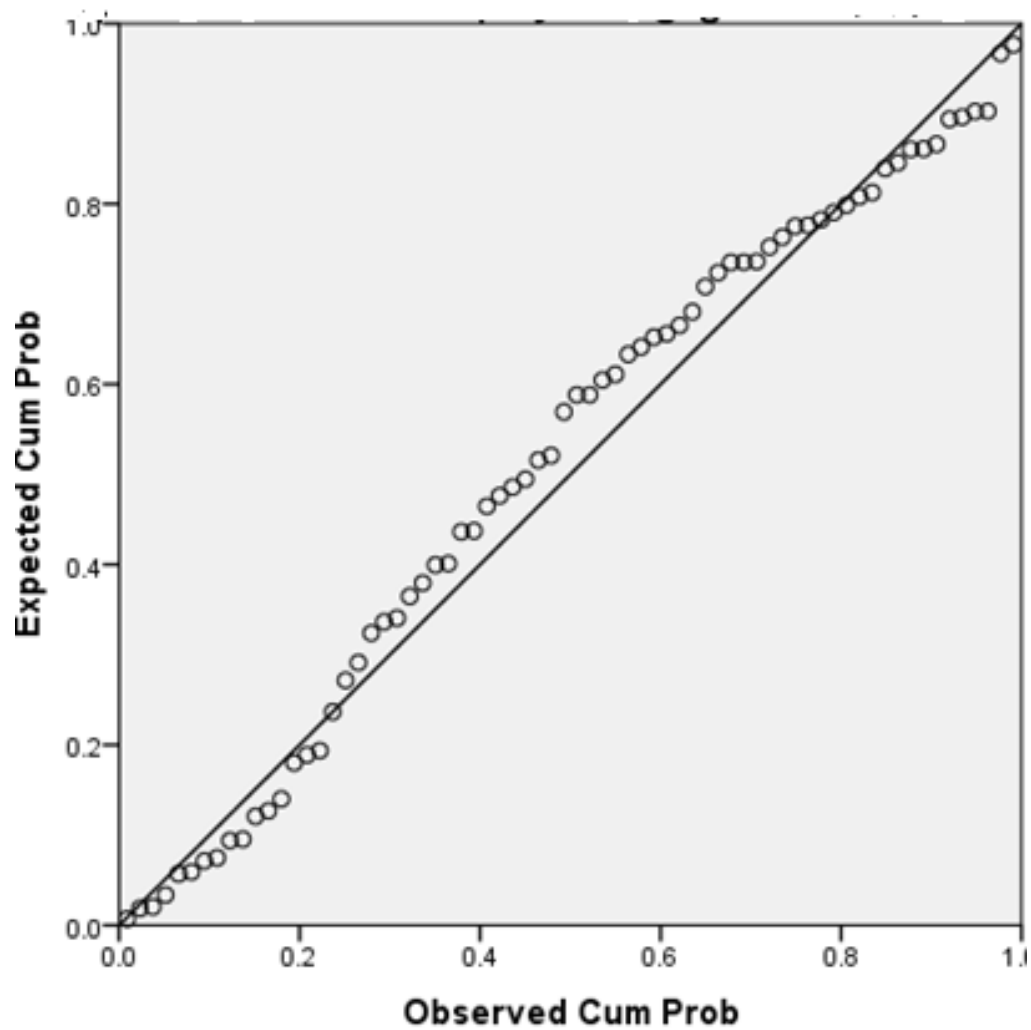


Figure 5. Linearity between the independent variables and dependent variable.

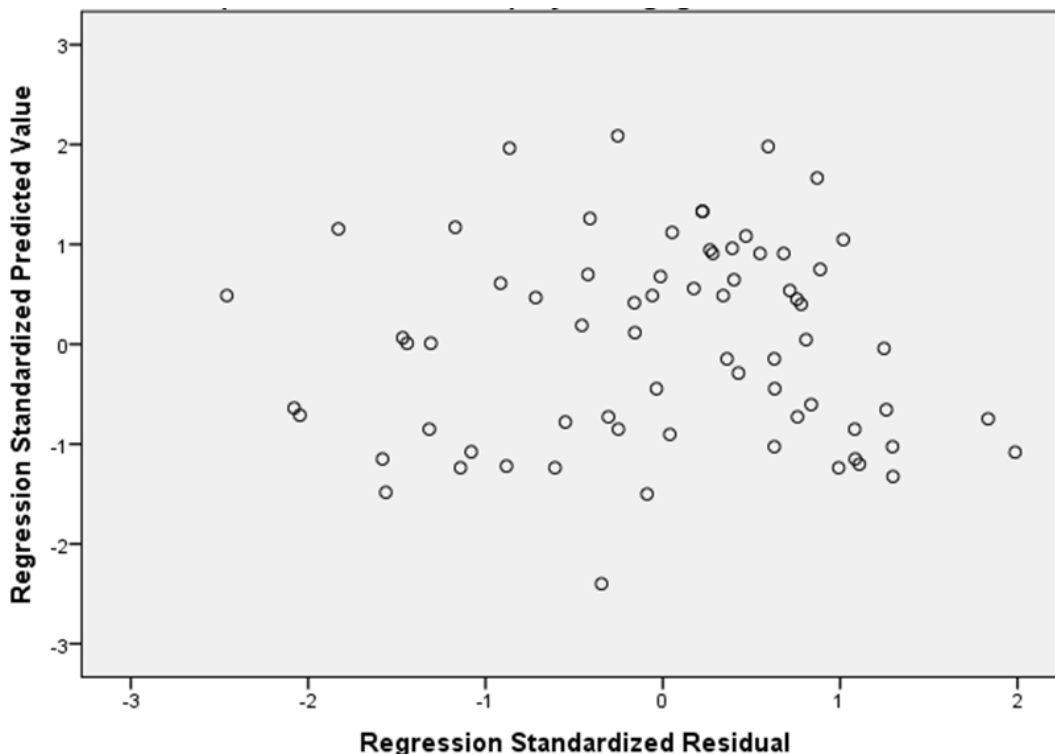


Figure 6. Homoscedasticity on residuals between the independent variables and dependent variable.

Discussion

The results of the regression analysis were statistically significant, $F(2, 67) = 7.14, p = .002, R^2 = .18$, indicating that quantity of time a manager spends communicating with virtual employees and perceived quality of communication effectively predict employee engagement. The predictors account for (R^2) 18% of the variance in employee engagement. I assessed each predictor to determine if they offered a unique, significant contribution toward predicting employee engagement. I evaluated this using the t statistic for each predictor when the other predictor held constant. Neither predictor offered a unique, statistically significant contribution to predict employee

engagement ($p > .05$). The null hypothesis –no statistically significant correlation exists between the quantity of time managers spend communicating with employees, quality of virtual communication, and employee engagement, within virtual teams – therefore, the results fail to accept the null hypothesis, in favor of the alternative. Table 3 presents the results of the regression.

Table 3

Quantity of Time and Quality of Communication predicting Employee Engagement

Source	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	95% <i>LL</i>	95% <i>UL</i>
Quantity of time	0.17	0.18	.17	0.94	.351	-0.19	0.52
Quality of communication	0.23	0.15	.27	1.54	.129	-0.07	0.54

Note. $(2, 67) = 7.14, p = .002, R^2 = .18$.

The findings from this study align with social exchange theory (SET), which asserts that trust between individuals and the expectation that other parties will fulfill their unspecified obligation is the framework for business relationships (Holmes, 1981). These findings remain consistent with the Internet culture, as discussed in the theoretical framework, which encourages collaboration, cooperation, and sharing. Reciprocation of a positive personal attitude performed during exchanges provides positive outcomes; employees feel obligated to repay positive and frequent managerial behaviors (Ko & Hur, 2014). Supervisors building high-quality social exchanges with their employees (Farr-Wharton et al., 2011) contributed to employee job satisfaction (Fay & Kline, 2011).

Within the review of literature, a variety of factors associated with existing manager and subordinate relationships in a virtual environment reveal the basic context of the SET. Walumbwa et al. (2011) used the SET to study supervisory relationships to

trust, open communication, and information sharing. Others have used it to determine organizational commitment (Gutierrez et al., 2012). The research findings of this study extend the knowledge of SET and correlations between the variables of quality of communication, quantity of communication and employee engagement.

SET is appropriate in assessing the needs of this growing virtual workforce; managers of virtual teams are likely unaware of the SET, and the effects that the principles of the theory may have on subordinates' engagement. Fan, Chen, Wang, and Chen (2014), in their study of virtual leaders' use of motivating language, found that virtual leaders' motivating language and feedback approach via e-mail instructions have different interaction effects on virtual employees' creativity and idea generation performances. Virtual employees receiving instructions with more empathetic language exhibited higher creativity performance Fan et al. (2014). Consistent with SET, increased social exchanges can lead to the feelings of engagement and participation.

In this doctoral study, the findings indicted that a positive relationship exists between the quantity of communication and employee engagement. The more engaged virtual employees communicated with their managers more frequently. Similarly, the findings showed that a positive relationship exists between the perceived quality of communication and employee engagement. The highly engaged respondents, classified on the engagement index, had more frequent and high-quality communications with their virtual managers. Davis and Cates (2013) used correlational design to determine the effects of isolation on employee engagement. Bartel et al. (2012) found that as virtual employees feel more isolated, their organizational identification decreases. Consistent

with SET, the fewer social exchanges can lead to the feelings of disengagement and isolation.

In my doctoral study, because a variety of relationship factors existed between manager and subordinate in a virtual environment, neither predictor stood alone as statistically significant. The substantiation in this study is that virtual workers are not unique concerning the need for managerial communication. This substantiation is evident in several other contexts that consistently indicate effective communication includes team synergy and unity of organizational purpose: two aspects of positive communication. Mayo (1933) posited that the human relations approach is another relationship factor, where managers should consider personal empowerment and self-esteem. Managers of virtual teams who recognize the relationship factors also can adequately communicate with their employees to achieve organizational success. Based on this study, I conclude that virtual managers experienced increased employee engagement among their virtual employees through the adoption of various communication strategies that enhance the quantity and perceived quality of their communication.

Applications to Professional Practice

This research is valuable to owners, leaders, and employees of firms with virtual teams. The dissemination of knowledge about social exchange theory in the form of strategies may increase managerial practices and employee productivity through engagement with organizational goals. The findings from this study may provide two relationship factors, frequency of communication and positive interaction, for virtual team managers and corporations to achieve organizational goals through highly

productive teams. Social exchange theory includes valuable information for employers, owners, and employees to increase their productivity and profitability.

In a highly competitive business environment, virtual offices and teams have become an indispensable element; assisting leaders to achieve organizational goals in a cost-effective manner (Daim et al., 2012). Technological developments, a global talent pool, and a dynamic business environment have created the ability for organizations to operate across distances (Caya, Mortensen, & Pinsonneault, 2013). To build stronger, more trusting relationships with employees, managers could benefit by applying the tools presented by social exchange theory. Building relationships with employees help advance business goals. A stronger relationship develops from frequent and positive communications, as seen in the findings of this study, which embraces a positive managerial relationship with employees. Presented in literature review, enhanced skills include verbal and written communication, the ability to manage tasks and empower business partners, finesse to drive performance, and skill to diffuse dissent among team members working from a distance (Bartel et al., 2012).

According to Berry (2011), virtual teams use a combination of telecommunication and information technologies to pass information from one party to another across space, time, and the boundaries of the organization. The team members may be located across offices, countries, or even continents (Kolfshoten et al., 2012). As a result, the top management of any organization faces the mandate to manage the employees, and engage them to prevent potential problems.

Klein et al. (2012) researched important implications for the future study of commitment, employee engagement, and motivation. The differentiation of bond types is critical to engage employees. Employees seek to bond with their managers. Insufficiently managing expectations may lead to a decrease in engagement. This lack of engagement could include an increase in relationship conflicts, which heighten distrust, and may make team members goal to work together to attain common goals and objectives, more difficult. Working environments with minimal relationship conflict fulfill the basic need for human relatedness, and lead to an employee's willingness to exert effort and dedicate employees' to work, in other words, to become engaged in tasks at work (Kühnel et al., 2012). Virtual team leaders have to develop a diverse skill set to balance the task management and human component of team assignments. The members of the team benefit collectively from a strong leader (Maynard et al., 2012).

According to Mone et al. (2011), contributing factors that increased employee engagement are group synergy, impartial growth opportunities, and organizational support. Providing consistency in employee experiences is essential for organizational leaders to increase staff engagement (Smith & Cantrell, 2011). Gajendran and Joshi (2012) suggested the use of inspirational leadership approaches to engage employees, and the encouragement of high moral character among team members.

Maynard et al. (2012) suggested that virtual teams should engage in mentorship-relationship building, consistent reporting on projects, and increase employee autonomy. These attributes of positive relationships enhance communication and teamwork, which engage employees more at work. Aligned with the literature review, in this study I

presented ways employers can engage with their employees through frequent and high-quality communications, such as consistent leader-employee exchanges communicating around topics important to the team and the individual virtual team member.

Findings indicated that a positive relationship exists between the quantity of communication and employee engagement. The more engaged virtual employees communicated with their manager more frequently. Similarly, the findings showed that a positive relationship exists between the perceived quality of communication and employee engagement. Those respondents deemed highly engaged on the engagement index, also had more frequent and high-quality communications with their virtual managers.

Based on this study, I conclude that virtual managers experienced increased employee engagement among their virtual employees through the adoption of communication strategies that enhance the quantity and perceived quality of their communication. Schaubroeck et al. (2011) suggested that team members would have a sense of purpose and the drive to reach their goals. Tannenbaum et al. (2012) stated the virtual managers should also accept and act on constructive feedback from team members. The practice of providing consistent feedback ensures a harmonious coexistence among the members, but also assists management during the decision-making process. Accepting and acting on constructive feedback may influence the employees' perceived quality of virtual communication.

I suggest team managers provide frequent high-quality communication to their team members, which include the goals of the organization and detailed directions. These

strategies may contribute to increased organizational commitment and engagement of virtual employees. Across a broader spectrum of employers, these findings are consistent with prior research. This examination of the virtual employee is relevant for improving business practices and performance of this growing segment of the United States workforce.

Implications for Social Change

From the findings of this study, and the body of literature gathered for review, engaged employees have an emotional attachment and a genuine commitment to their organization, and are willing to increase productivity (Lindenberg & Foss, 2011). A variety of factors helps develop heightened levels of employee engagement such as setting performance expectations, and tying tasks to the overall organization (Kühnel, 2012). The current trend of allowing workers to work from home increased the employee's level of engagement through work-life balance; however, the potential existed for lack of engagement with management (Sardeshmukh et al., 2012). I highlight the economic and social benefits within the findings of this study, which indicated that frequent and positive communications significantly affect employee engagement, and implicated the importance of positive work-life balance for modern society. Leaders seek highly motivated employees, and one employee benefit is to work from home, or from a virtual office, which may lead to a positive social change in work-life balance for employees.

The findings of this study may also provide leaders with useful strategic information to increase the employee engagement of home-based virtual employees. In

highly competitive work environments, firms pursue qualified employees, and engage their staff. The optimal employee engagement levels occur when a firm attracts the most qualified employees, retains them within the organization, and empowers them to perform consistently at the highest levels of their abilities (Campbell et al., 2012).

The ability to engage the significant growth in virtual teams provided a unique challenge not known to managers in previous generations (Caillier, 2012; Mitlacher, 2012). The results of this study contribute to the growing field of virtual management literature. Specifically, organizational leaders may use the knowledge gained through this study to determine the potential statistically significant correlations between virtual management communication and employee engagement at their firm. Educating managers with virtual management efficiencies serves as another benefit for understanding the results of this study.

This study constitutes an addition to prior virtual workplace research studies, including virtual workplaces regarding network security (Caldwell, 2011), network architecture (Rosu & Dragoi, 2011), and professional and social isolation (Bartel et al., 2012). However, few researchers have examined the level of employee engagement of virtual workers (Jenkins & Delbridge, 2013). From their study on managerial work modes and subordinate work experiences, Golden and Fromen (2011) recommended further investigation into managerial work modes and worker experiences.

From the perspective of revenue generation, optimal employee engagement levels occurred when a firm attracted the most qualified employees, retained the employee within the organization, and empowered them to perform consistently at the highest

levels of their abilities (Campbell et al., 2012). The findings of this doctoral study confirm Campbell et al.'s predictions contribute to the body of research. Organizational leaders can foster environments of positive communication through social exchange theory, which can increase their employee productivity.

Recommendations for Action

A number of potential actions arose from the findings of this study and the context of the related literature on the matter. The following recommendations may facilitate the realization of improved business results and the positive social change opportunities. Although the subjects in this study worked in the field of learning and development, the recommendations may have broad application for any virtual work setting. Such applications should undergo tests in future research.

The findings of this study and from Wheatley (2012) suggested that allowing employees to work from home could be a productive business practice when encouraged through positive communication. Implementation of communication programs that apply social exchange theory as the premise toward employee engagement serve corporations and businesses more appropriately than implementing other communication programs would. Employees felt a heightened sense of autonomy while working from home, and the participants in this study were more engaged than their counterparts who did not work from home, because of their work-life balance and managerial communications.

After analysis of the results, the findings of this study confirmed the alternate hypothesis; statistically significant correlations exist between (a) quantity of virtual management communication, (b) the perceived quality of the virtual management

communication, and (c) employee engagement. The amount of communication plays an important role; however, researchers must also measure and address the perceived quality of communication. According to Palanski et al. (2011), the perception of managerial-subordinate trust influences individual performance. With this information of communication and its influence on engagement, business leaders can assess the management communication practices of their leaders managing virtual teams.

Virtual managers and executives must be prepared to build trusting relationships with employees to accomplish organizational objectives. The stronger the communication practices, the stronger the potential managerial relationship. As the number of virtual workers increases, organizational leaders must address the effectiveness of managerial and employee communication skills.

Enhanced skills include verbal and written communication, the ability to manage tasks and empower business partners, finesse to drive performance, and skills to diffuse dissent among team members working miles away (Bartel et al., 2012). A collection of the best communication practices of virtual managers with engaged teams will provide a basis of knowledge for future study and management. This information can evolve into communities of practice material, and management training courses. Much like traditional management training, virtual management training preempts many of the challenges that virtual managers face. These types of trainings will equip virtual managers to lead teams of this growing population (Muethel et al., 2013). The training courses across the industry provide a platform for information dissemination on the topic of virtual management communication and employee engagement.

A continuous debate exists about the effect of corporate training as compared to traditional management education (Erenli & Ortner, 2011). The ability to meet a learner's needs in a timely and appropriate manner represents the future of training (Noe et al., 2010). Current and future virtual managers need the skills to engage their staff.

Membership on a virtual team may be an incentive for talented employees, who could provide a competitive advantage (Campbell et al., 2012); however, training managers with the proper communication strategies can consume time and capital. The various communication styles and attitudes toward interpersonal relationships on virtual teams have many of the same needs as face-to-face. Trust and interpersonal communication have a direct relation to employee morale and satisfaction, and the quality of manager-employee communication (Zeffane et al., 2011). Therefore, employee engagement is a reflection of job satisfaction, and the findings of this study predict that an organization's frequent and high quality communication can increase employee engagement. Because of the implications within social exchange theory, employees and employers may strengthen their relationships through investments in training and positive communications.

Recommendations for Further Study

This study serves as a foundation for more in-depth studies of management communication and virtual workers in general. The social exchange theory's relevance to virtual teaming in comparison to in-person teaming is also an interesting topic. Researchers could investigate the size of the virtual organization. Performing a similar study with demographic information collected would add to the growing body of

literature. The industry of the virtual employees may also play a role in their engagement and perception of managerial communication; continued research on this topic is important. Research can take place on the differences between the communication practices of virtual teams who work virtually on a part-time basis, as opposed to full time. Finally, delving into the perceived quality of managerial communication will be important to gauge best practices for virtual management communication. This study's foundation provides for future quantitative and qualitative studies. Future researchers should also clarify the details regarding the dynamics of the relationships in the variety of virtual work arrangements and job types (Dahlstrom, 2013).

In 2013, the number of American virtual workers increased to more than 23 million, and 21% of U.S.-based workers did some type of work from home (U.S. Department of Labor, 2014). Varying types of virtual teaming are in existence. Some employers have a combination of on-site and virtual employees. In some instances, some employees work from home on a part-time basis. Other teams have 100% of employees that work from different on-site office locations. One hundred percent of other teams have employees working on a virtual basis. Further research may begin by taking the findings of this study of full-time virtual workers and expanding the analysis to other classifications of virtual workers to ascertain how virtual workers who work away from their manager on a full-time basis may be unique. Opportunities abound to study workers who work virtually on a part time basis and in-person at times.

Another question that remains for future examination is whether social exchange theory (SET) applies to virtual workers differently than it does for in-person workers. The

central theme of SET defines social behavior as an exchange of intangible currency. Intangible rewards such as support, recognition, and prestige serve as examples of social exchanges (Homans, 1958). Theorists used SET to research virtual and computer-based relationships (Chaudhuri & Ghosh, 2012). The question that looms is the effect of the social exchanges in a virtual work relationship in comparison to an in-person work relationship.

Opportunities exist for researchers to examine virtual management communication closely through other theoretical lenses. For example, the theory of job embeddedness may be one alternate theory to consider. Job embeddedness is the level of attachment an individual has to his or her job. Employees highly attached to their work tend to be inseparable from it; they find work both motivating and fulfilling (Zhang et al., 2012). Future studies of virtual management communication might develop hypotheses based on job embeddedness theory to supplement the findings herein.

The literature review described many studies that examined small and medium sized organizations while neglecting large firms. From the findings of this study, a design and test of a series of hypotheses that distinguish varying sized organizations will be useful. This research will add to the body of knowledge pertaining to all sizes of organizations.

This doctoral study did not include the collection of demographic data. Researchers can use this information in future studies. With the current five-generation workforce, it would be interesting to study whether particular generational divides exist with virtual communication preferences. According to Houck (2011), the collection of

generational classifications would allow the future research to be organized by generation and rated on *technology and mentoring*, which would collect an organization's current internal practices, and would help bring credibility to the topic.

With the increase in access to the Internet, businesses and large corporations have adjusted their hiring practices to account for the inclusion of off-site employees, and contract staff, which presented a need for an even higher amount of insight to solve virtual team dilemmas. The perceived quality of virtual management communication may be the basis of various future studies, and would be enlightening to explore and examine the best practices of virtual managers in a qualitative study. Future researchers may also distinguish between full-time staff and contractors, as fields continue to expand the practice of hiring contract workers.

Researchers should focus on the interpersonal relationships between managers and employees in virtual teams to help businesses navigate communication issues; as trust and interpersonal communication have a direct relation to employee morale and satisfaction, and the quality of manager-employee communication (Zeffane et al., 2011). Another aspect for research to study would be the psychological implications of frequency of communications for virtual versus face-to-face interactions for employees. From the findings, managerial communications was a variable that contained a variety of factors, especially the types of communications. The lack of significance for communication as a predictor in employee engagement provides more research opportunities on the types of communications delivered to a virtual team, which could

advance the understanding of what makes a positive or negative communication.

Potential research questions could include:

1. To what extent do virtual managers' unique communication methods influence the productivity of the virtual workers?
2. To what extent does the perceived quality of communication to a virtual worker affect organizational attrition rates?
3. To what extent is the perceived quality of communication to a virtual worker, beneficial or detrimental?
4. How does the medium of managerial communication effect the motivation and employee engagement within a virtual team?
5. To what extent are the factors within the frequency of virtual communications beneficial or detrimental?

An area of particular interest for future study is the effect that the industry might have on the amount of virtual management communication, the perceived quality of communication, and employee engagement. In this study, I examined workers employed by a small learning consultation firm. It would be interesting to perform the same study using diverse industries.

Reflections

My interest in this area of research study arose from a personal and professional interest in SET as it applies to the 21st century worker. The applicability of SET for virtual workers was and remains of interest to me because of the professional realm from which most of my personal business experiences derived. I may have some personal bias

arising from my role as a scholar practitioner with a background in the virtual work arena. The possibility of my personal bias played a major role in the choice of a quantitative research design to mitigate the possibility that any personal bias might color the gathering and interpretation of qualitative data. Similarly, the possibility of personal bias motivated me to identify previously validated research instruments to measure the dependent variable of this research study. By using (with permission) elements from research instruments that have already had their validity and reliability confirmed I was able to avoid the potential for introducing personal bias in the construction of the research instrument. However, I created the questions for the independent variables. Future researchers can validate the questions for future studies.

While conducting this research study, I recalled of the challenge in obtaining voluntary participation in research surveys even when the survey instrument is brief and anonymous. Without offering any inducements (e.g., compensation, quid pro quo arrangements), which could introduce bias into the resulting dataset and add substantial monetary costs, researchers may find difficulty attracting sufficient attention and generate the necessary motivation in potential participants to take action. Each participant received a token of appreciation after participating in the research.

I also acknowledge that I used the UWES-9 instead of the UWES-17 question instrument, which was previously under consideration. The survey items from the UWES-9 instrument may have affected the results. Although the validity and reliability of the UWES-9 instrument have been tested and verified, the 17-question instrument

provides more questions to measure. I selected UWES-9 survey instrument because it was shorter and more reliable and valid than the UWES-17.

Summary and Study Conclusions

The 21st century workplace continues to evolve, and the knowledge economy increasingly supplants the industrial era in the United States. In the knowledge economy, organizations must compete to attract, engage, and retain top talent. An organization's commitment to work-life balance also attracts highly skilled employees (Wheatley, 2012). Providing opportunities for employees to work remotely also provides the organization the opportunity to remove local barriers to acquire talent resources.

The role of the corporate manager also continues to evolve with the advent of virtual teaming. I did not determine whether leaders have taken the same consideration when training virtual managers to vary communication styles to meet the influx of virtual employees. Organizational development researchers have considered trust and interpersonal communication to have a direct relation to employee morale and satisfaction, and the quality of manager-employee communication (Zeffane et al., 2011).

The findings of this quantitative study were significant to show a relationship exists between the quantity of time managers spend communicating with virtual employees, the perceived quality of communication, and employee engagement. According to Chen et al. (2011), team members with higher levels of psychological empowerment and commitment are likely to be more motivated to engage in behaviors that contribute positively to their team and the organization. Engaged employees are 38% more likely than their unengaged counterparts are to put forth discretionary effort (Shuck

et al., 2011). This claim had the support of Harter et al. (2002), who stated that businesses with less engaged employees have lower productivity and less profitability. Managers of virtual teams need the proper training through a program that embraces social exchange theory, so that they can better engage their employees.

The topic of employee engagement is prominent in modern business leaders and industry researchers. Employees make a psychological link between their individual task and the effect it will have on others when management adequately communicates the significance of the task (Grant & Berry, 2011). I sought to add to the body of knowledge related to employee engagement as the number of virtual employees continues to increase. The research question was: Are there any significant correlations between the quantity of time managers spend communicating with virtual employees, quality of virtual communication, and employee engagement? This research question was a derivative of the problem statement, and its development was in the context of social exchange theory.

Employee engagement is a determining factor of the employees' productivity and commitment to an organization. Role clarity and task significance play pivotal roles in employee engagement. I found through the performance of a quantitative study, that the quantity of time that managers communicate with their employees, along with the perceived quality of those interactions, affects the workers' level of engagement. Engagement involves more than just sending and receiving emails, video conferencing, and phone calls. Email is ineffective as a primary means of communication as recipients correctly interpret the tone only part of the time (Jackson & van den Hooff, 2012). Also

described in the findings, employees engage through positive communications that express business concerns and objectives. Trust and interpersonal communication have a direct relationship with the quality of manager-employee communication, morale, and satisfaction (Zeffane et al., 2011). I concluded that social exchange theory (SET) provides a powerful tool for organizational leaders and managers to incorporate into their daily routines.

I found empirical support for the applicability of SET for increased engagement levels among virtual workers. A statistically significant positive relationship was visible for engagement levels and the virtual employees who communicated more frequently via telephone with their manager. A statistically significant inverse relationship existed among virtual employees who frequently communicated via instant messenger with their manager.

Providing an environment that balanced work and lifestyle enhances employee performance by creating reduced work-life conflict (McMillan et al., 2011). Virtual employment is attractive to highly skilled employees because it provides a work-life balance through schedule flexibility, without commuting to work. As the number of virtual employees has increased by nearly four million over a ten year period (U.S. Department of Labor, 2012), I sought to add to the body of knowledge related to employee engagement while on virtual teams. This study achieved the goal to gain a better understanding of virtual management and the environment surrounding communications between managers and employees. Information in this study may assist

researchers in the field of management communication, as well as have a direct effect on business management if incorporated into a corporate culture.

References

- Afsarmanesh, H., Camarinha-Matos, L. M., & Msanjila, S. S. (2011). Models, methodologies, and tools supporting establishment and management of second-generation VBEs. *Systems, Man, and Cybernetics, Part C: Applications and Reviews, IEEE Transactions on*, *41*, 692-710. doi:10.1109/TSMCC.2010.2076326
- Agneessens, F., & Wittek, R. (2012). Where do intra-organizational advice relations come from? The role of informal status and social capital in social exchange. *Social Networks*, *34*, 333-345. doi:10.1016/j.socnet.2011.04.002
- Al-Ani, B., Horspool, A., & Bligh, M. C. (2011). Collaborating with 'virtual strangers': Towards developing a framework for leadership in distributed teams. *Leadership*, *7*, 219-249. doi:10.1177/1742715011407382
- Angelis, J., Conti, R., Cooper, C., & Gill, C. (2011). Building a high-commitment lean culture. *Journal of Manufacturing Technology Management*, *22*, 569-586. doi:10.1108/17410381111134446
- Antoniadis, N., & Konetas, D. (2011). Correlation between awareness of blended learning techniques and participation rate in e-learning: A case study. *International Journal of Advanced Corporate Learning*, *4*(3), 5-9. Retrieved from <http://online-journals.org/index.php/i-jac>
- Argote, L. (2011). Organizational learning research: Past, present and future. *Management Learning*, *42*, 439-446. doi:10.1177/1350507611408217

- Atif, A., Muhammad, A. K., & Asad, A. H. (2011). Impact of organizational commitment on job satisfaction and employee retention in pharmaceutical industry. *African Journal of Business Management*, 5, 7316-7324. doi:10.5897/AJBM10.1296
- Bailey, D. E., Leonardi, P. M., & Barley, S. R. (2012). The lure of the virtual. *Organization Science*, 23, 1485-1504. doi:10.1287/orsc.1110.0703
- Bakker, A. B., Albrecht, S. L., & Leiter, M. P. (2011). Key questions regarding work engagement. *European Journal of Work and Organizational Psychology*, 20(1), 4-28. doi:10.1080/1359432X.2010.485352
- Bakker, A. B., Demerouti, E., & ten Brummelhuis, L. L. (2012). Work engagement, performance, and active learning: The role of conscientiousness. *Journal of Vocational Behavior*, 80, 555-564. doi:10.1016/j.jvb.2011.08.008
- Barber, C., Garnar-Wortzel, A., & Morris, T. G. (2011). Workplace mobility: Comparing business models of early adopters in traditional businesses with consulting firms. *Corporate Real Estate Journal*, 1, 168-180.
<http://www.henrystewartpublications.com/crej/v1>
- Bartel, C. A., Wrzesniewski, A., & Wiesenfeld, B. M. (2012). Knowing where you stand: Physical isolation, perceived respect, and organizational identification among virtual employees. *Organization Science*, 23, 743-757.
doi:10.1287/orsc.1110.0661
- Bednall, T. C., Sanders, K., & Runhaar, P. (2014). Stimulating informal learning activities through perceptions of performance appraisal quality and human

- resource management system strength: A two-wave study. *Academy Of Management Learning & Education*, 13(1), 45-61. doi:10.5465/amle.2012.0162
- Beranek, P. M., & Martz, B. (2005). Making virtual teams more effective: Improving relational links. *Team Performance Management*, 11, 200-210. doi:10.1108/13527590510617774
- Berry, G. R. (2011). Enhancing effectiveness on virtual teams. *Journal of Business Communication*, 48, 186-206. doi:10.1177/0021943610397270
- Blau, P. (1964). *Exchange and power in social life*. New York, NY: Wiley Publishing.
- Bleijenbergh, I., Korzilius, H., & Verschuren, P. (2011). Methodological criteria for the internal validity and utility of practice oriented research. *Quality & Quantity*, 45, 145-156. doi:10.1007/s11135-010-9361-5
- Boyer O'Leary, M., Wilson, J. M., & Metiu, A. (2014). Beyond being there: The symbolic role of communication and identification in perceptions of proximity to geographically dispersed colleagues. *MIS Quarterly*, 38(4), 1219-A7. Retrieved from: <http://www.misq.org/>
- Breevaart, K., Bakker, A. B., Demerouti, E., & Hetland, J. (2012). The measurement of state work engagement: A multilevel factor analytic study. *European Journal of Psychological Assessment*, 28(4), 305. doi:10.1027/1015-5759/a000111
- Brien, A., & Smallman, C. (2011). The respected manager... the organisational social capital developer. *International Journal of Hospitality Management*, 30, 639-647. doi:10.1016/j.ijhm.2010.11.009

- Brungardt, C. (2011). The intersection between soft skill development and leadership education. *Journal of Leadership Education, 10*(1), 1-22.
doi:10.12806/V10/I1/RF1
- Caillier, J. G. (2012). The impact of teleworking on work motivation in a US federal government agency. *The American Review of Public Administration, 42*, 461-480.
doi:10.1177/0275074011409394
- Caldwell, T. (2011). When worlds collide: The security of converged networks. *Network Security, 2011*(6), 8-12. doi:10.1016/S1353-4858(11)70062-9
- Campbell, B. Coff, R., & Kryscynski, D. (2012). Rethinking sustained competitive advantage from human capital. *Academy of Management Review, 37*, 376-395.
doi:10.5465/amr.2010.0276
- Caya, O., Mortensen, M., & Pinsonneault, A. (2013). Virtual teams demystified: An integrative framework for understanding virtual teams. *International Journal of e-Collaboration, 9*(2), 1-33. doi:10.4018/jec.2013040101
- Cereola, S. J., Wier, B., & Norman, C. S. (2012). Impact of top management team on firm performance in small and medium-sized enterprises adopting commercial open-source enterprise resource planning. *Behaviour & Information Technology, 31*, 889–907. doi:10.1080/0144929X.2010.528029
- Champoux, J. E., & Peters, W. S. (2011). Form, effect size and power in moderated regression analysis. *Journal of Occupational Psychology, 60*, 243-255.
doi:10.1111/j.2044-8325.1987.tb00257.x

- Chang, T. Z. D., & Vowles, N. (2013). Strategies for improving data reliability for online surveys: A case study. *International Journal of Electronic Commerce*, 4(1), 131-140. doi:10.7903/ijecs.1121
- Chaudhuri, S., & Ghosh, R. (2012). Reverse mentoring a social exchange tool for keeping the boomers engaged and millennials committed. *Human resource development review*, 11(1), 55-76. doi:10.1177/1534484311417562
- Chen, C. A. (2012). Explaining the difference of work attitudes between public and nonprofit managers: The views of rule constraints and motivation styles. *The American Review of Public Administration*, 42, 437-460. doi:10.1177/0275074011402192
- Chen, G., Sharma, P. N., Edinger, S. K., Shapiro, D. L., & Farh, J. L. (2011). Motivating and demotivating forces in teams: cross-level influences of empowering leadership and relationship conflict. *Journal of Applied Psychology*, 96, 541. doi:10.1037/a0021886
- Chi, S. P., Chang, Y. Y., & Tsou, C. M. (2012). The effect of team characteristics and communication environment to the virtual team performance. *International Journal of Networking and Virtual Organisations*, 10, 137-152. doi:10.1504/IJNVO.2012.045731
- Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology*, 64(1), 89-136. doi:10.1111/j.1744-6570.2010.01203.x

- Cole, M. S., Walter, F., Bedeian, A. G., & O'Boyle, E. H. (2012). Job Burnout and Employee Engagement A Meta-Analytic Examination of Construct Proliferation. *Journal of management*, 38(5), 1550-1581. doi:10.1177/0149206311415252
- Craig, B., & Williams, J. E. (2011). Research informing practice: Toward effective engagement in community ICT in New Zealand. *The Journal of Community Informatics*, 7. Retrieved from: <http://ci-journal.net>
- Daim, T. U., Ha, A., Reutiman, S., Hughes, B., Pathak, U., Bynum, W., & Bhatla, A. (2012). Exploring the communication breakdown in global virtual teams. *International Journal of Project Management*, 30, 199-212. doi:10.1016/j.ijproman.2011.06.004
- Dahlstrom, T. R. (2013). Telecommuting and leadership style. *Public Personnel Management*, 42, 438-451. doi:10.1177/0091026013495731
- Darics, E. (2014). The blurring boundaries between synchronicity and asynchronicity: New communicative situations in work-related instant messaging. *Journal of Business Communication*, 51, 337-358. doi:10.1177/2329488414525440
- Davis, R., & Cates, S. (2013). The dark side of working in a virtual world: An investigation of the relationship between workplace isolation and engagement among teleworkers. *Journal of Human Resource and Sustainability Studies* 1(2), 9-13. doi:10.4236/jhrss.2013.12002
- Day, F. C., & Burbach, M. E. (2011). Telework considerations for public managers with strategies for increasing utilization. *Communications of the IBIMA*, 2011, 1-18. doi:10.5171/2011.880212

- Dodgson, M., Gann, D. M., & Phillips, N. (2013). Organizational learning and the technology of foolishness: The case of virtual worlds at IBM. *Organization Science*, 24, 1358-1376. doi:10.1287/orsc.1120.0807
- Donate, M. J., & Guadamillas, F. (2011). Organizational factors to support knowledge management and innovation. *Journal of Knowledge Management*, 15, 890-914. doi:10.1108/13673271111179271
- Donnellan, B., Sheridan, C., & Curry, E. (2011). A capability maturity framework for sustainable information and communication technology. *IT professional*, 13, 33-40. doi:10.1109/MITP.2011.2
- Drucker, P. F. (1954) *The practice of management*. New York, NY: Harper & Brothers
- Emerson, R. (1962). Power-dependence relations. *American Sociological Review*, 27(1), 31-41. doi:10.2307/2089716
- Erenli, K., & Ortner, G. (2011). Collaborative and social learning using virtual worlds: Preparing students for virtual anything. *International Journal of Advanced Corporate Learning*, 4(3), 23-28. doi:10.3991/ijac.v4i3.1734
- Eyvazian, M., Noorossana, R., Saghaei, A., & Amiri, A. (2011). Phase II monitoring of multivariate multiple linear regression profiles. *Quality and Reliability Engineering International*, 27, 281-296. doi:10.1002/qre.1119
- Fan, K. T., Chen, Y. H., Wang, C. W., & Chen, M. (2014). E-leadership effectiveness in virtual teams: motivating language perspective. *Industrial Management & Data Systems*, 114, 421-437. doi:10.1108/IMDS-07-2013-0294

- Faraj, S., & Johnson, S. L. (2011). Network exchange patterns in online communities. *Organization Science*, 22, 1464-1480. doi:10.1287/orsc.1100.0600
- Farndale, E., Van Ruiten, J., Kelliher, C., & Hope-Hailey, V. (2011). The influence of perceived employee voice on organizational commitment: An exchange perspective. *Human Resource Management*, 50, 113-129. doi:10.1002/hrm.20404
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2008). G*Power Version 3.1.2 [computer software]. Universität Kiel, Germany. Retrieved from <http://www.psych.uni-duesseldorf.de>
- Farr-Wharton, R., Brunetto, Y., & Shacklock, K. (2011). Professionals' supervisor-subordinate relationships, autonomy and commitment in Australia: a leader-member exchange theory perspective. *The International Journal of Human Resource Management*, 22, 3496-3512. doi:10.1080/09585192.2011.599681
- Fay, M. J., & Kline, S. L. (2011). Coworker relationships and informal communication in high-intensity telecommuting. *Journal of Applied Communication Research*, 39, 144-163. doi:10.1080/00909882.2011.556136
- Fayol, H. (1949) *General and industrial management*. London, UK: Pitman.
- Festing, M., & Schäfer, L. (2014). Generational challenges to talent management: A framework for talent retention based on the psychological-contract perspective. *Journal of World Business*, 49, 262-271. doi:10.1016/j.jwb.2013.11.010
- Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal*, 54, 393-420. doi:10.5465/AMJ.2011.60263120

- Fong, T. C. T., & Ng, S. M. (2012). Measuring engagement at work: validation of the Chinese version of the Utrecht Work Engagement Scale. *International journal of behavioral medicine, 19*(3), 391-397. doi:10.1007/s12529-011-9173-6
- Forest, J., Mageau, G. A., Sarrazin, C., & Morin, E. M. (2011). "Work is my passion": The different affective, behavioural, and cognitive consequences of harmonious and obsessive passion toward work. *Canadian Journal of Administrative Sciences, 28*, 27-40. doi:10.1002/cjas.170
- Gajendran, R. S., & Joshi, A. (2012). Innovation in globally distributed teams: The role of LMX, communication frequency, and member influence on team decisions. *Journal of Applied Psychology, 97*, 1252-1261. doi:10.1037/a0028958
- Galitsky, B., & de la Rosa, J. L. (2011). Concept-based learning of human behavior for customer relationship management. *Information Sciences, 181*, 2016-2035. doi:10.1016/j.ins.2010.08.027
- George, D. & Mallery, P. (2010). *SPSS for Windows step by step: A simple guide and reference, 18.0 update* (11th ed.). Boston, MA: Allyn and Bacon.
- Giancola, F. L. (2011). Examining the job itself as a source of employee motivation. *Compensation & Benefits Review, 43*, 23-29. doi:10.1177/0886368710390493
- Gilson, L. L., Maynard, M. T., & Bergiel, E. B. (2013). Virtual team effectiveness an experiential activity. *Small Group Research, 44*, 412-427. doi:10.1177/1046496413488216
- Golden, T. D., & Fromen, A. (2011). Does it matter where your manager works? Comparing managerial work mode (traditional, telework, virtual) across

subordinate work experiences and outcomes. *Human Relations*, 64, 1451-1475.

doi:10.1177/0018726711418387

Goodman, L. A. (2011). Comment: On respondent-driven sampling and snowball sampling in hard-to-reach populations and snowball sampling not in hard-to-reach populations. *Sociological Methodology*, 41, 347-353. 10.1111/j.1467-9531.2011.01242.x

Granda, J. C., Nuño, P., Suárez, F. J., & Pérez, M. A. (2013). E-pSyLon: A synchronous e-learning platform for staff training in large corporations. *Multimedia tools and applications*, 66, 431-463. doi:10.1007/s11042-012-1061-9

Grant, A. M., & Berry, J. W. (2011). The necessity of others is the mother of invention: Intrinsic and prosocial motivations, perspective taking, and creativity. *Academy of Management Journal*, 54, 73-96. doi:10.5465/AMJ.2011.59215085

Gruman, J. A., & Saks, A. M. (2011). Performance management and employee engagement. *Human Resource Management Review*, 21, 123-136. doi:10.1016/j.hrmr.2010.09.004

Gubman, E. (2004). From engagement to passion for work: The search for the missing person. *Human Resource Planning*, 27, 42-46. Retrieved from http://law-journals-books.vlex.com/source/human-resource-planning-3632?_ga=1.24771514.1035841804.1422114467

Gutierrez, A. P., Candela, L. L., & Carver, L. (2012). The structural relationships between organizational commitment, global job satisfaction, developmental experiences, work values, organizational support, and person-organization fit

among nursing faculty. *Journal of Advanced Nursing*, 68, 1601-1614.

doi:10.1111/j.1365-2648.2012.05990.x

Hanson, D., Ward, C., Pacific, S. A., & Chin, P. (2012). Leading virtual teams across national and cultural boundaries. *International Leadership Journal*, 4, 3-17.

Retrieved from <http://www.tesc.edu/business/leadership-journal.cfm>

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, 87, 268-279. doi:10.1037//0021-9010.87.2.268

He, H., & Brown, A. D. (2013). Organizational identity and organizational identification: A review of the literature and suggestions for future research. *Group & Organization Management*, 38(1), 3-35. doi:10.1177/1059601112473815

Hedlund-de Witt, A. (2012). Exploring worldviews and their relationships to sustainable lifestyles: Towards a new conceptual and methodological approach. *Ecological Economics*, 84, 74-83. doi:10.1016/j.ecolecon.2012.09.009

Hirschy, M. J. (2011). Virtual team leadership: A case study in Christian higher education. *Christian Higher Education*, 10, 97-111. doi:10.1080/15363751003676613

Holmes, J. G., (1981). The exchange process in close relationships: Microbehaviour and micromotives. In M. J. Learner & S. C. Lerner (Eds.), *The justice motive in social behavior* (pp. 261-284). New York, NY: Plenum.

- Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology*, 63, 597-606. doi:10.1086/222355
- Houck, C. (2011). Multigenerational and virtual: How do we build a mentoring program for today's workforce?. *Performance Improvement*, 50(2), 25-30. doi:10.1002/pfi.20197
- H.R. 1722--111th Congress: Telework Enhancement Act of 2010. (2010). In GovTrack.us (database of federal legislation). Retrieved from <http://www.govtrack.us/congress/bills/111/hr1722>
- Hsin Hsin, C., Shuang-Shii, C., & Shu Han, C. (2011). Determinants of cultural adaptation, communication quality, and trust in virtual teams' performance. *Total Quality Management & Business Excellence*, 22, 305-329. doi:10.1080/14783363.2010.532319
- Jackson, T. W., & van den Hooff, B. (2012). Understanding the factors that effect information overload and miscommunication within the workplace. *Journal of Emerging Trends in Computing and Information Sciences*, 3, 1240-1252. <http://www.cisjournal.org>
- Jenkins, S., & Delbridge, R. (2013). Context matters: examining 'soft' and 'hard' approaches to employee engagement in two workplaces. *The International Journal of Human Resource Management*, 24(14), 2670-2691. doi:10.1080/09585192.2013.770780

- Jiang, K., Liu, D., McKay, P. F., Lee, T. W., & Mitchell, T. R. (2012). When and how is job embeddedness predictive of turnover? A meta-analytic investigation. *Journal of Applied Psychology, 97*, 1077-1096. doi:10.1037/a0028610
- Joe, S. W., Tsai, Y. H., Lin, C. P., & Liu, W. T. (2014). Modeling team performance and its determinants in high-tech industries: Future trends of virtual teaming. *Technological Forecasting and Social Change, 88*, 16-25.
doi:10.1016/j.techfore.2014.06.012
- Joham, C., & Clarke, M. (2012). Teaching critical management skills: the role of problem-based learning. *Teaching in Higher Education, 17*(1), 75-88.
doi:10.1080/13562517.2011.590975
- Johnson, M. (2011). Workforce deviance and the business case for employee engagement. *Journal for Quality & Participation, 34*, 11-16. Retrieved from <http://asq.org/pub/jqp/>
- Johnson, S. K., Garrison, L. L., Hernez-Broome, G., Fleenor, J. W., & Steed, J. L. (2012). Go for the goal (s): Relationship between goal setting and transfer of training following leadership development. *Academy of Management Learning & Education, 11*, 555-569. doi:10.5465/amle.2010.0149
- Kalman, Y. M., Scissors, L. E., Gill, A. J., & Gergle, D. (2013). Online chronemics convey social information. *Computers in Human Behavior, 29*, 1260-1269.
doi:10.1016/j.chb.2012.12.036

- Karanja, E., Zaveri, J., & Ahmed, A. (2013). How do MIS researchers handle missing data in survey-based research: A content analysis approach. *International Journal of Information Management*, 33, 734-751. doi:10.1016/j.ijinfomgt.2013.05.002
- Kauppila, O. P., Rajala, R., & Jyrämä, A. (2011). Knowledge sharing through virtual teams across borders and boundaries. *Management Learning*, 42, 395-418. doi:10.1177/1350507610389685
- Kayam, O., & Hirsch, T. (2012). Using social media networks to conduct questionnaire based research in social studies case study: Family language policy. *Journal of Sociological Research*, 3(2), 57-67. doi:10.5296/jsr.v3i2.2176
- Kehoe, R. R., & Wright, P. M. (2013). The impact of high-performance human resource practices on employees' attitudes and behaviors. *Journal of Management*, 39, 366-391. doi:10.1177/0149206310365901
- Kennedy, C. E., Kass, N., Myers, R. K., Fuchs, E. J., & Flexner, C. (2011). When a serious adverse event in research occurs, how do other volunteers react? *Journal of Empirical Research on Human Research Ethics*, 6, 47-56. doi:10.1525/jer.2011.6.2.47
- Kimble, C. (2011). Building effective virtual teams: How to overcome the problems of trust and identity in virtual teams. *Global Business & Organizational Excellence*. 30(2), 6-15. doi:10.1002/joe.20364
- Kirkman, B. L., Mathieu, J. E., Cordero, J. L., Rosen, B., & Kukenberger, M. (2011). Managing a new collaborative entity in business organizations: Understanding

organizational communities of practice effectiveness. *Journal of Applied Psychology*, 96, 1235-1245. doi:10.1037/a0024198

Klein, H. J., Molloy, J. C., & Brinsfield, C. T. (2012). Reconceptualizing workplace commitment to redress a stretched construct: Revisiting assumptions and removing confounds. *Academy of Management Review*, 37(1), 130-151. doi:10.5465/amr.2010.0018

Ko, J., & Hur, S. (2014). The impacts of employee benefits, procedural justice, and managerial trustworthiness on work attitudes: Integrated understanding based on social exchange theory. *Public Administration Review*, 74, 176-187. doi:10.1111/puar.12160

Kolfschoten, G. L., Niederman, F., Briggs, R. O., & De Vreede, G. J. (2012). Facilitation roles and responsibilities for sustained collaboration support in organizations. *Journal of Management Information Systems*, 28(4), 129-162. doi:10.2753/MIS0742-1222280406

Krishnan, V. R. (2012). Transformational leadership and personal outcomes: Empowerment as mediator. *Leadership & Organization Development Journal*, 33, 550-563. doi:10.1108/01437731211253019

Kühnel, J., Sonnentag, S., & Bledow, R. (2012). Resources and time pressure as day-level antecedents of work engagement. *Journal of Occupational and Organizational Psychology*, 85(1), 181-198. doi:10.1111/j.2044-8325.2011.02022.x

- Kupritz, V. W., & Cowell, E. (2011). Productive management communication. *Journal Of Business Communication*, 48(1), 54-82. doi:10.1177/0021943610385656
- Kupritz, V. W., & Hillsman, T. (2011). The impact of the physical environment on supervisory communication skills transfer. *Journal of Business Communication*, 48, 148-185. doi:10.1177/0021943610397269
- Lee, G. J. (2012). Firm size and the effectiveness of training for customer service. *The International Journal of Human Resource Management*, 23, 2597-2613. doi:10.1080/09585192.2011.637065
- Lee, J. J., Capella, M. L., Taylor, C. R., Luo, M. M., & Gabler, C. B. (2014). The financial impact of loyalty programs in the hotel industry: A social exchange theory perspective, 67, 2139–2146. *Journal of Business Research*. doi:10.1016/j.jbusres.2014.04.023
- Leeuwis, C., & Aarts, N. (2011). Rethinking communication in innovation processes: creating space for change in complex systems. *Journal of Agricultural Education and Extension*, 17(1), 21-36. doi:10.1080/1389224X.2011.536344
- Leonardi, P. M. (2014). Social media, knowledge sharing, and innovation: Toward a theory of communication visibility. *Information Systems Research*, 25, 796-816. doi:10.1287/isre.2014.0536
- Lindenberg, S., & Foss, N. J. (2011). Managing joint production motivation: The role of goal framing and governance mechanisms. *Academy of Management Review*, 36, 500-525. doi:10.5465/amr.2011.61031808

- Littman-Ovadia, H., & Balducci, C. (2013). Psychometric properties of the Hebrew version of the Utrecht Work Engagement Scale (UWES-9). *European Journal of Psychological Assessment, 29*(1), 58-63. doi:10.1027/1015-5759/a000121
- Llamas, J. M. C., & Boza, Á. (2011). Teaching research methods for doctoral students in education: Learning to enquire in the university. *International Journal of Social Research Methodology, 14*(1), 77-90. doi:10.1080/13645579.2010.492136
- Luftman, J., Zadeh, H. S., Derksen, B., Santana, M., Rigoni, E. H., & Huang, Z. D. (2012). Key information technology and management issues 2011–2012: An international study. *Journal of Information Technology, 27*, 198-212. doi:10.1057/jit.2012.14
- Martin, B. H., & MacDonnell, R. (2012). Is telework effective for organizations?: A meta-analysis of empirical research on perceptions of telework and organizational outcomes. *Management Research Review, 35*, 602-616. doi:10.1108/01409171211238820
- Maynard, M. T., Mathieu, J. E., Gilson, L. L., O'Boyle, E. H., & Cigularov, K. P. (2013). Drivers and outcomes of team psychological empowerment: A meta-analytic review and model test. *Organizational Psychology Review, 3*, 101-137. doi:10.1177/2041386612456868
- Maynard, M. T., Mathieu, J. E., Rapp, T. L., & Gilson, L. L. (2012). Something(s) old and something(s) new: Modeling drivers of global virtual team effectiveness. *Journal of Organizational Behavior, 33*, 342-365. doi:10.1002/job.1772

- Mayo, E. (1933). *The human problems of an industrial civilization*. New York, NY: MacMillan.
- McMillan, H. S., Morris, M. L., & Atchley, E. K. (2011). Constructs of the work/life interface: A synthesis of the literature and introduction of the concept of work/life harmony. *Human Resource Development Review, 10*, 6-25.
doi:10.1177/1534484310384958
- Melnick, E. L., & Shoaf, F. R. (1977). Multiple regression equals analysis of variance. *Journal of Advertising Research, 17*(1), 27-31. Retrieved from <http://www.journalofadvertisingresearch.com>
- Miller, V. D., Poole, M. S., Seibold, D. R., Myers, K. K., Park, H. S., Monge, P., Shumate, M. (2011). Advancing research in organizational communication through quantitative methodology. *Management Communication Quarterly, 25*(1), 4-58. doi:10.1177/0893318910390193
- Mills, M. J., Culbertson, S. S., & Fullager, C. J. (2012). Conceptualizing and measuring engagement: An analysis of the Utrecht Work Engagement Scale. *Journal of Happiness Studies, 13*, 519-545. doi:10.1007/s10902-011-9277-3
- Mitchell, M. L., & Jolley, J. M. (2010). *Research design explained* (7th ed.). Boston, MA: Wadsworth.
- Mitlacher, L. W. (2012). Appraisal and rewards systems for virtual project management teams and the challenges for human resource management. *International Journal of Networking and Virtual Organisations, 10*, 153-168.
doi:10.1504/IJNVO.2012.045732

- Mone, E., Eisinger, C., Guggenheim, K., Price, B., & Stine, C. (2011). Performance management at the wheel: Driving employee engagement in organizations. *Journal of Business & Psychology, 26*, 205-212. doi:10.1007/s10869-011-9222-9
- Montoya, M. M., Massey, A. P., & Lockwood, N. S. (2011). 3D collaborative virtual environments: exploring the link between collaborative behaviors and team performance. *Decision Sciences, 42*, 451-476. doi:10.1111/j.1540-5915.2011.00318.x
- Muethel, M., Siebdrat, F., & Hoegl, M. (2012). When do we really need interpersonal trust in globally dispersed new product development teams? *R&D Management, 42*(1), 31-46. doi:10.1111/j.1467-9310.2011.00667.x
- Mukherjee, D., Lahiri, S., Mukherjee, D., & Billing, T. K. (2012). Leading virtual teams: How do social, cognitive, and behavioral capabilities matter? *Management Decision, 50*, 273-290. doi:10.1108/00251741211203560
- Nerstad, C., Richardsen, A. M., & Martinussen, M. (2010). Factorial validity of the Utrecht Work Engagement Scale (UWES) across occupational groups in Norway. *Scandinavian Journal of Psychology, 51*, 326-333. doi:10.1111/j.1467-9450.2009.00770.x
- Nimon, K., & Reio Jr., T. G. (2011). Regression commonality analysis: A technique for quantitative theory building. *Human Resource Development Review, 10*, 329-340. doi:10.1177/1534484311411077
- Noe, R. A., Tews, M. J., & McConnell Dachner, A. (2010). Learner engagement: A new perspective for enhancing our understanding of learner motivation and workplace

learning. *The Academy of Management Annals*, 4, 279-315.

doi:10.1080/19416520.2010.493286

Norman, G. (2010). Likert scales, levels of measurement and the “laws” of statistics.

Advances in Health Sciences Education, 15, 625-632.

doi:10.1007/s10459-010-9222-y

Olson, J., & Olson, L. (2012). Virtual team trust: Task, communication and sequence.

Team Performance Management, 18, 256-276. Retrieved from

<http://www.emeraldinsight.com/journal/tpm>

Orhan, M. A. (2014). Extending the individual level of virtuality: Implications of task

virtuality in virtual and traditional settings. *Administrative Sciences*, 4, 400-412.

doi:10.3390/admsci4040400

Palanski, M., Kahai, S., & Yammarino, F. (2011). Team virtues and performance: An

examination of transparency, behavioral integrity, and trust. *Journal of Business*

Ethics, 99, 201-216. doi:10.1007/s10551-010-0650-

Pallant, J. (2010). *SPSS survival manual* (4th ed.). New York, NY: McGraw-Hill.

Plump, C. M., & Ketchen Jr, D. J. (2013). Navigating the possible legal pitfalls of virtual

teams. *Journal of Organization Design*, 2, 51-55. doi:10.7146/jod.2.3.13463

Podsakoff, N. P., Podsakoff, P. M., MacKenzie, S. B., & Klinger, R. L. (2013). Are we

really measuring what we say we're measuring? Using video techniques to

supplement traditional construct validation procedures. *Journal of Applied*

Psychology, 98(1), 99-113. doi:10.1037/a0029570

- Pryor, M. G., Humphreys, J. H., Taneja, S., & Toombs, L. A. (2011). Where are the new organization theories? Evolution, development and theoretical debate. *International Journal of Management*, 28, 959-978. Retrieved from <http://www.internationaljournalofmanagement.co.uk>
- Qu, S. Q., & Dumay, J. (2011). The qualitative research interview. *Qualitative Research in Accounting & Management*, 8, 238-264. doi:10.1108/11766091111162070
- Raub, S., & Liao, H. (2012). Doing the right thing without being told: Joint effects of initiative climate and general self-efficacy on employee proactive customer service performance. *Journal of Applied Psychology*, 97, 651-667. doi:10.1037/a0026736
- Reinig, B., & Briggs, R. (2013). Putting quality first in ideation research. *Group Decision & Negotiation*, 22, 943-973. doi:10.1007/s10726-012-9338-y
- Reio, T. G., & Sanders-Rei, J. (2011). Thinking about workplace engagement: Does supervisor and coworker incivility really matter? *Advances in Developing Human Resources*, 13, 462-478. doi:10.1177/1523422311430784
- Resnik, L. P., Etter, K., Klinger, S. L., & Kambe, C. (2011). Using virtual reality environment to facilitate training with advanced upper-limb prosthesis. *Journal of Rehabilitation Research & Development*, 48, 707-7018. doi:10.1682/JRRD.2010.07.0127
- Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. *Business Communication Quarterly*, 75, 453-465. doi:10.1177/1080569912460400

- Robnett, B., & Feliciano, C. (2011). Patterns of racial-ethnic exclusion by internet daters. *Social Forces*, 89, 807-828. doi:10.1093/sf/89.3.807
- Rosu, S. M., & Dragoi, G. (2011). VPN solutions and network monitoring to support virtual teams work in virtual enterprises. *Computer Science & Information Systems*, 8(1), 1–26. doi:10.2298/CSIS100127033R
- Saks, A. M., & Gruman, J. A. (2011). Manage employee engagement to manage performance. *Industrial and Organizational Psychology*, 4, 204-207. doi:10.1111/j.1754-9434.2011.01328.x
- Sardeshmukh, S. R., Sharma, D., & Golden, T. D. (2012). Impact of telework on exhaustion and job engagement: A job demands and job resources model. *New Technology, Work and Employment*, 27, 193-207. doi:10.1111/j.1468-005X.2012.00284.x
- Sarker, S., Ahuja, M., Sarker, S., & Kirkeby, S. (2011). The role of communication and trust in global virtual teams: a social network perspective. *Journal of Management Information Systems*, 28, 273-310. doi:10.2753/MIS0742-1222280109
- Schaubroeck, J., Lam, S. S., & Peng, A. C. (2011). Cognition-based and affect-based trust as mediators of leader behavior influences on team performance. *Journal of Applied Psychology*, 96, 863-871. doi:10.1037/a0022625
- Schaufeli, W. B., & Bakker, A. B. (2003). UWES – Utrecht Work Engagement Scale: Test manual. Retrieved from <http://www.beanmanaged.com/>
- Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness

absenteeism. *Journal of Organizational Behavior*, 30, 893-917.

doi:10.1002/job.595

Schaufeli, W., & Salanova, M. (2011). Work engagement: On how to better catch a slippery concept. *European Journal of Work and Organizational Psychology*, 20(1), 39–46. doi:10.1080/1359432X.2010.515981

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92.

doi:10.1023/A:1015630930326

Seppälä, P., Mauno, S., Feldt, T., Hakanen, J., Kinnunen, U., Tolvanen, A., & Schaufeli, W. (2009). The construct validity of the Utrecht work engagement scale: multisample and longitudinal evidence. *Journal of Happiness Studies*, 10, 459-481. doi:10.1007/s10902-008-9100-y

Shahid, A., & Azhar, S. M. (2013). Gaining employee commitment: Linking to organizational effectiveness. *Journal of Management Research*, 5, 250-268.

doi:10.5296/jmr.v5i1.2319

Sharp, J. L., Mobley, C., Hammond, C., Withington, C., Drew, S., Stringfield, S., & Stipanovic, N. (2012). A mixed methods sampling methodology for a multisite case study. *Journal of Mixed Methods Research*, 6(1), 34-54.

doi:10.1177/1558689811417133

- Shiau, W. L., & Luo, M. M. (2012). Factors affecting online group buying intention and satisfaction: A social exchange theory perspective. *Computers in Human Behavior, 28*, 2431-2444. doi:10.1016/j.chb.2012.07.030
- Shuck, B., Reio, T. G., & Rocco, T. S. (2011). Employee engagement: An examination of antecedent and outcome variables. *Human Resource Development International, 14*, 427-445. doi:10.1080/13678868.2011.601587
- Smith, D., & Cantrell, S. (2011). The new rules of engagement: Treating your workforce as a workforce of one. *Strategic HR Review, 10*(3), 5-11.
doi:10.1108/14754391111121856
- Stewart, G. L., Courtright, S. H., & Barrick, M. R. (2012). Peer-based control in self-managing teams: Linking rational and normative influence with individual and group performance. *Journal of Applied Psychology, 97*, 435-437.
doi:10.1037/a0025303
- Su, X., Yan, X., & Tsai, C. L. (2012). Linear regression. *Wiley Interdisciplinary Reviews: Computational Statistics, 4*, 275-294. doi:10.1002/wics.1198
- Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson.
- Tannenbaum, S. I., Mathieu, J. E., Salas, E., & Cohen, D. (2012). Teams are changing: are research and practice evolving fast enough? *Industrial and Organizational Psychology, 5*(1), 2-24. doi:10.1111/j.1754-9434.2011.01396.x
- Taylor, F. W. (1914). *The principles of scientific management*. New York, NY: Harper.

- Tews, M. J., Michel, J. W., & Bartlett, A. (2012). The fundamental role of workplace fun in applicant attraction. *Journal of Leadership & Organizational Studies, 19*, 105-114. doi:10.1177/1548051811431828
- Thomas, G. (2011). A typology for the case study in social science following a review of definition, discourse, and structure. *Qualitative Inquiry, 17*, 511-521. doi:10.1177/1077800411409884
- Tuckey, M. R., Bakker, A. B., & Dollard, M. F. (2012). Empowering leaders optimize working conditions for engagement: A multilevel study. *Journal of Occupational Health Psychology, 17*(1), 15-27. doi:10.1037/a0025942
- Tuffley, D. (2012). Optimising virtual team leadership in global software development. *IET Software, 6*, 176-184. doi:10.1049/iet-sen.2011.0044
- Tuleja, E. A., & Roberts, E. (2011). An analysis of a communication training program for Chinese managers. *IEEE Transactions on Professional Communication, 54*, 185-200. doi:10.1109/TPC.2011.2121730
- Tynjälä, P. (2013). Toward a 3-P model of workplace learning: A literature review. *Vocations and Learning, 6*(1), 1-26. doi:10.1007/s12186-012-9091-z
- Urikova, O., Ivanochko, I., Kryvinska, N., Strauss, C., & Zinterhof, P. (2013). Consideration of aspects affecting the evolvement of collaborative e-business in service organisations. *International Journal of Services, Economics and Management, 5*(1), 72-92. doi:10.1504/IJSEM.2013.051863
- U.S. Department of Labor, Bureau of Labor Statistics. (2005). *Work at home in 2004*. (USDL Publication No. 02-107). Retrieved from <http://www.bls.gov>

- U.S. Department of Labor, Bureau of Labor Statistics. (2014). *American time use survey 2011 results*. (USDOL Publication No. 12-1246). Retrieved from <http://www.bls.gov>
- Van Rooy, D. L., Whitman, D. S., Hart, D., & Caleo, S. (2011). Measuring employee engagement during a financial downturn: Business imperative or nuisance? *Journal of Business & Psychology, 26*, 147–152. doi:10.1007/s10869-011-9225-6
- Verburg, R. M., Bosch-Sijtsema, P., & Vartiainen, M. (2013). Getting it done: Critical success factors for project managers in virtual work settings. *International Journal of Project Management, 31*(1), 68-79. doi:10.1016/j.ijproman.2012.04.005
- Walther, J. B. (1996). Computer-mediated communication impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*(1), 3-43. doi:10.1177/009365096023001001
- Walumbwa, F. O., Cropanzano, R., & Goldman, B. M. (2011). How leader–member exchange influences effective work behaviors: Social exchange and internal–external efficacy perspectives. *Personnel Psychology, 64*, 739-770. doi:10.1111/j.1744-6570.2011.01224.x
- Ward, C., & Berno, T. (2011). Beyond social exchange theory: Attitudes toward tourists. *Annals of Tourism Research, 38*, 1556-1569. doi:10.1016/j.annals.2011.02.005
- Watson-Manheim, M. B., Chudoba, K. M., & Crowston, K. (2012). Perceived discontinuities and constructed continuities in virtual work. *Information Systems Journal, 22*(1), 29–52. doi:10.1111/j.1365-2575.2011.00371.x

- Welch, M. (2011). The evolution of the employee engagement concept: Communication implications. *Corporate Communications: An International Journal*, 16(4), 328-346. doi:10.1108/13563281111186968
- Wheatley, D. (2012). Work-life balance, travel-to-work, and the dual career household. *Personnel Review*, 41, 813-831. doi:10.1108/00483481211263764
- Wood, S. (2011). Organisational rigidities and marketing theory: Examining the US department store c. 1910–1965. *The Service Industries Journal*, 31, 747-770. doi:10.1080/02642060902960784
- Wordsworth, R., Malinen, S., & Sloman, M. (2012). Time for a change: Highlighting the Partnership Model. *Development and Learning in Organizations*, 26(5), 14-17. doi:10.1108/147772812
- Wu, J. (2012). Technological collaboration in product innovation: The role of market competition and sectoral technological intensity. *Research Policy*, 41, 489-496. doi:10.1016/j.respol.2011.09.001
- Xu, J., & Thomas, H. C. (2011). How can leaders achieve high employee engagement? *Leadership & Organization Development Journal*, 32, 399-416. doi:10.1108/01437731111134661
- Zeffane, R., Tipu, S. A., & Ryan, J. C. (2011). Communication, commitment & trust: Exploring the triad. *International Journal of Business and Management*, 6(6), 77-87. doi:10.5539/ijbm.v6n6p77

- Zhang, M., Fried, D. D., & Griffeth, R. W. (2012). A review of job embeddedness: conceptual, measurement issues, and directions for future research. *Human Resource Management Review*, 22, 220-231. doi:10.1016/j.hrmmr.2012.02.004
- Zimmermann, A. (2011). Interpersonal relationships in transnational, virtual teams: Towards a configurational perspective. *International Journal Of Management Reviews*, 13(1), 59-78. doi:10.1111/j.1468-2370.2010.00284.x

Appendix A: Research Use of the UWES

Subject: RE Research use of the UWES
Date: September 22, 2012 12:44PM CST
From: Wilmar Schaufeli
To: Ryan N. Mitchell

Dear Ryan,

As indicated on my website, the UWES can be used and reprinted freely for academic, non-commercial research.

However, I am afraid that I do not have time to communicate with you throughout the process of your research.

With kind regards,

Wilmar Schaufeli

Wilmar B. Schaufeli, PhD | *Social and Organizational Psychology*

Appendix B: Organizational Invitation Letter

ABC Design

Attn: VP Human Resources

Dear Ms. xxxxxxxx,

I am a doctoral student conducting research of professional issues that affect organizations where employees work remotely, and I would greatly appreciate your participation in my study by asking your firm's employees to complete a brief online survey that requires less than 10 minutes. You can and should assure your employees that all responses will be anonymous and used for no other purpose other than academic research. The survey collects no personally identifiable information.

A limited time window is available to participate in this research survey, so please offer the opportunity for your firm's employees (and yourself) to participate now before the data collection period closes. The online survey is accessible by visiting the following URL:

Your assistance in helping me complete my doctoral research is very much appreciated. Results of this research project will be available once publication of this study is complete. Thank you again.

-Ryan N. Mitchell

Appendix C: Survey Invitation

I am a doctoral student conducting research of professional issues affecting you and your colleagues. I would greatly appreciate your participation in my study by completing a brief survey. Your responses will be anonymous and used for no other purpose than academic research. Results of this research project will be available once the study is concluded.

There is a limited time window to participate in this research survey. Please read the consent information below embedded within this email.

Statement of Consent

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

I CONSENT AND WISH TO COMPLETE THE SURVEY

Thank you!

Ryan N. Mitchell

Doctor of Business Administration – Leadership

Walden University

xxxx.xxxx@xxx.xxx

Appendix D: Consent Form

CONSENT FORM

You are invited to take part in a research study of The Correlations between Virtual Communication on Employee Engagement. The researcher is inviting employees and contractors at ABC Design to be in the study. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Ryan N. Mitchell, who is a doctoral student at Walden University.

Background Information:

Many American employees and contractors work in different locations from their managers. In fact, the number of employees who do not work in the same office as their managers increases steadily each year. Employees that work in geographically disbursed teams are called *virtual employees*.

Communication with direct managers often impact employees’ level of engagement or commitment. The purpose of this study is to gain a better understanding of virtual management communication.

Information in this proposed study may assist researchers in the field of management communication in determining whether significant correlations exists between virtual management, communication, and employee engagement. Therefore, the research question is: Are there any significant correlations between the quantity of time managers spend communicating with virtual employees, quality of virtual communication, and employee engagement?

Procedures:

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

- Complete the electronic survey. The survey should take 10 minutes to complete.
- Answer the questions honestly. (Data will only be collected once from each participant.)
- Select the direct link within the email from researcher. Once the direct link to the survey instrument is selected, the Survey Monkey[®] instrument will appear.

Here are some sample questions:

- I am enthusiastic about my job.
- My job inspires me.
- Outside of team meetings, my manager and I communicate on the telephone.
- Outside of team/ group emails, my manager emails me.

- My manager and I communicate via Instant Messenger

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at ABC Designs will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as fatigue, stress, or becoming upset. Being in this study would not pose risk to your safety or wellbeing.

Research on the topic of virtual communication and employee engagement will aid 21st century businesses. Your participation will help to get an unbiased perspective.

Payment:

There will be no financial compensation for completing the study. There is however the satisfaction of knowing how you contributed to the study of business management.

Privacy:

Any information you provide will be kept anonymous. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by Ryan N. Mitchell. The raw data will be placed onto an online server, as well as a personal jump drive that will be locked in a safe. Data will be kept for a period of at least 5 years, as required by the university. Participants can request a 1-2 page summary of the research results via email after March 1st, 2015 by emailing xxxx.xxxx@xxx.xxx.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via email at xxxx.xxxx@xxx.xxx. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 612-312-1210 (for US based participants). Walden University's approval number for this study is 07-03-14-0113452 and it expires on July 2, 2015.

Online survey

Please print or save this consent form for your records. (For online research)

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 the link below, I understand that I am agreeing to the terms described above.

Appendix E: Survey Instrument

The Impact of Virtual Communication on Employee Engagement**1. Welcome to the Impact of Virtual Communication on Employee Engagement survey!**

1 / 4

25%

Thank you for participating in my anonymous 19-question research survey. Your feedback is very important. Any information you provide will be kept anonymous, and your survey responses will not be used for any purposes outside of this research project.

As a thank you for your voluntary participation, a token of appreciation will be provided to you following the submission of the survey. After the submission of the survey, please select the second link, and enter the requested email address to redeem your gift.

NOTE: The collection of your email address will not be tied in any way to your survey responses. Providing your email address allows me to show my sincere appreciation for your time. Your token of appreciation will be sent via email within 48 hours.

Thank you again!

Powered by **SurveyMonkey**
Check out our [sample surveys](#) and create your own now!

***12. Outside of team/ group emails, my manager and I communicate via email.**

	Almost never	Rarely	Sometimes	Often	Very Often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***13. My manager and I communicate via Instant Messenger.**

	Almost never	Rarely	Sometimes	Often	Very Often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***14. Outside of team/ group meetings, my manager and I communicate via video conference.**

	Almost never	Rarely	Sometimes	Often	Very Often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Prev

Next

***17. Outside of team/ group emails, I have high-quality or inspiring work-related communication with my manager via email.**

	Almost never	Rarely	Sometimes	Often	Very Often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***18. I have high-quality or inspiring communication work-related with my manager via Instant Messenger.**

	Almost never	Rarely	Sometimes	Often	Very Often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***19. I have high-quality or inspiring work-related communication with my manager via video conference.**

	Almost never	Rarely	Sometimes	Often	Very Often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Done

Receive an eCard Token of Appreciation

Receive a Token of Appreciation

Thank you for participating in today's anonymous survey. Your survey was completed and submitted. I would like to show my appreciation to you, by emailing you an e-gift card to a popular coffee franchise. The collection of your email address cannot be tied in any way to your previous responses. This is a way for me to show my sincere appreciation. Many Thanks!

1. Where should I email your token of appreciation?

Done

Appendix F: NIH Certificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Ryan Mitchell** successfully completed the NIH Web-based training course “Protecting Human Research Participants”.

Date of completion: 11/14/2010

Certification Number: 569895

Curriculum Vitae

Ryan N. Mitchell**Education****Walden University**, Minneapolis, MN, 2010-2015

Doctor of Business Administration - Leadership

Faulkner University, Montgomery, AL, 2004-2005

Master of Science - Management

Florida Agricultural and Mechanical University, Tallahassee, FL, 1998-2002

Bachelor of Science - Healthcare Management

Professional Experience**Credit Risk Senior Trainer**, 2014- present

- **Pacific Union Financial, LLC.**, Farmers Branch, TX

Support three lines of business by assessing their learning needs, design curricula, facilitate material. Manage large scale learning projects from inception to completion. Design learning materials for instructor led, virtual, and e-learning.

Bank of America Corporation, 2005-2014

- **Assistant Vice President, Instructor II**
- **Assistant Vice President, Interim Learning Manager I**
- **Assistant Vice President, Learning Consultant**
- **Performance Consultant**
- **Mortgage Loan Officer**

Labor Relations Organizer, Washington, DC 2002-2003

- **Service Employees International Union**

Related Experience**Director of Programming**, 2013-Present

- **Guide Right Foundation of Dallas**, Dallas, TX

Lead a youth mentoring organization with four programs, twenty volunteers, serving underserved youth in the southern sector of Dallas, TX. Provide academic support for the youth. Design curricula. Maintain budgetary responsibilities. Lead staff and volunteers.

Conference Presenter

- **IBAM 2014 Annual Conference**, Orlando, FL