

THE EFFECTS OF VIRTUAL LEADERSHIP COMMUNICATION ON EMPLOYEE
ENGAGEMENT

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ABSTRACT

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Research on employee engagement has found that it can both positively and negatively affect organizational performance, including recruitment, retention, customer service, and profitability. Hence, businesses are investigating how to increase engagement and in turn their bottom line. Several studies have concluded that effective organizational communication practices can enhance employee engagement. However, the way that information is distributed within organizations is now becoming increasingly complex with globalization. This has led to the increase use of information communication technologies (ICTs) to communicate since leaders and employees are not often in the same location. While ICTs are more efficient and cost effective, they can lead to miscommunication and lack of engagement when used to communicate important information. Based on the link between leadership communication and engagement and the increased use of ICTs in organizations, this quantitative study attempted to measure employee engagement and what, if any, relationship exists frequency of communication, richness of communication channels, quality of leader-member exchange relationship, and perceived satisfaction with organizational communication. In order to examine the relationship between these variables, 265 full-time employees completed a survey made of four instruments— Dennis Communication Climate Inventory (1974), Leader-Member Exchange-7 (1984), Communication Channel Instrument (1999), and the Schaufeli and Bakker's (2004) Utrecht Work Engagement Scale (UWES).

The results of this study revealed that perceived organizational communication satisfaction has the most significant relationship with employee engagement, followed by the quality of leader-member exchange relationship. However, the frequency of lean, moderate, and

rich communication channels did not have a significant impact on employee engagement. This includes ICTs categorized within these three channels. The frequent use of the virtual technologies also did not have a significant relationship with employee engagement. However, the regression data revealed that rich face-to-face communication channels does affect organizational communication satisfaction. Finally, one of the most surprising results of the study was that being collocated with one's manager did not affect employee engagement or organizational communication satisfaction. Therefore, as employees continue to be spatially distributed, this will not affect employee engagement compared to perceived organizational communication satisfaction and LMX.

This dissertation is dedicated to the hardest worker I know, my dad, Michael Barhite. My dad became sick in the middle of my doctoral journey, first with cancer and then with a mysterious illness that attacked his brain causing him to lose control of his speech and motor skills. Many days I sat by his hospital bed working on my research. When he was still able to talk, I vividly remember my dad lying in a hospital bed, and proudly telling his sister that I would be the first “doctor” in the Barhite family. I bashfully told my father to stop and it was not a big deal, but I could see the pride on his face. Unfortunately, my dad did not live long enough to see me become a doctor, but I know he has been with me throughout the process. While my dad ended his life with an awful illness, he lived his life as a strong, wonderful father, husband, coworker, and friend. My dad taught me to work hard, but also do to the job right. He was a kind, intelligent man that was a role model to many. I would be proud if I could leave a mark on this Earth like my dad. That would truly be an accomplishment. Thank you dad for teaching me the value of hard work, learning, and dedication. “The price of success is hard work, dedication to the job at hand, and the determination that whether we win or lose, we have applied the best of ourselves to the task at hand.” – Vince Lombardi

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CHAPTER I: INTRODUCTION

Research on employee engagement has found that it can both positively and negatively impact organizational performance (Mishra et al., 2014). In fact, Gallup, a research-based, global performance-management consulting company, reported in its *2014 State of the American Workplace Report*, that employee disengagement costs the United States \$450 billion to \$550 billion per year (Gallup, 2014). Gallup's findings also revealed that "Organizations with an average of 9.3 engaged employees for every actively disengaged employee in 2010-2011 experienced 147% higher earnings per share compared with their competition in 2011-2012 (Sorenson, 2013, p. 1). Based on these findings, businesses have investigated how to increase engagement and in turn their bottom line. Several studies have concluded that effective organizational communication practices can enhance employee engagement (Mishra et al., 2014). However, communicating with employees can be complex, especially with the impact of globalization on businesses (Putnam & Mumby, 2014). As globalization increases, leaders are increasingly relying on information and communication technologies (ICTs), such as email and virtual meetings, to communicate with their employees worldwide (Klitmoller & Luring, 2013). While ICTs are an efficient form of sending messages, they can also cause miscommunication because of the lack of ability to provide context and nonverbal communication (Leonardi & Bailey, 2008). As a result of the increased use of ICTs for leaders to communicate with employees, this study will examine the effects ICTs may have on employee engagement.

Background

Employee engagement has been defined as those who have a strong emotional bond to their employer and are willing to commit energy and time to their work (Kahn, 1990; Frank & Taylor, 2004). Macey et al. (2009) have argued that organizations can gain a competitive advantage when employees are more engaged. In fact, studies on engagement have claimed it is

a key propeller of individual attitudes, behavior, and performance, which in return, produces positive effects on organizational performance, productivity, retention, financial performance, and shareholder return (Bates, 2004; Harter et al., 2002). A 2009 study of 65 firms in different industries found that those in the top 25% on an engagement index had a greater return on assets and shareholder value compared to those in the bottom 25% (Macey et. al, 2009) Hence, researchers have argued that organizations should focus on enhancing employee engagement in order to reap its potential benefits.

One of the ways organizations can increase engagement is through organizational and leader communications. The quantity of time that the leader communicates with employees and the perceived quality of these interactions can influence the workers' level of engagement (Mone et al., 2011). In fact, researchers Welch and Jackson (2007) wrote, "Effective internal communication is crucial for successful organizations as it affects the ability of strategic managers to engage employees and achieve objectives (p. 177). An empirical study on the influence of internal communication on employee engagement was also conducted in 2015. Researchers Karanges, Johnston, Beatson, and Lings (2015) concluded, "Internal organizational communication and internal supervisor communication support workplace relationships based on meaning and worth, and have a significant part to play in developing and maintaining optimal employee engagement" (p. 129).

Researchers Carriere and Bourque (2009) surveyed Canadian Paramedics to determine if there was a link between their organization's internal communication systems and job satisfactions. Their data revealed that there was indeed a significant link. They stated, "Internal communication systems that fail to generate communication satisfaction amongst employees will not foster job satisfaction or affective organizational commitment regardless of the quantity of the information that is transmitted. Thus, managers must provide employees with timely and

highly valued information” (Carriere & Bourque, 2009, p. 44). Finally, researchers in a qualitative study interviewing CEOs, found that all leaders agreed that face-to-face communication was critical to employee engagement (Mishra et al., 2014).

While studies have found communication to be an essential piece of employee engagement, the way that information is distributed within organizations is becoming increasingly complex with globalization (Putnam & Mumby, 2014). The term globalization describes how the world continues to become connected (Macionis & Plummer, 2008). “Nations have become tied to economic interdependence. No nation is absolutely self-sufficient. Markets and cultures continued to converge, and major enterprises have seized the opportunity to go global” (Chitakornkijasil, 2010, p. 7). In fact, the current global environment has increased the number of organizations that are becoming more spatially distributed around the globe (West & Heath, 2011). The number of workers working from home and/or away from their managers has also increased dramatically. According to the U.S. Census Bureau 2005-2014 American Community Survey, employees working from home has grown 103% since 2005 and 6.5% in 2014. As of 2014, 3.7 million American employees work from home at least half of the time (Global, 2015). Worldwide, globalization has become the forefront of business planning and strategies (Royal & Stark, 2015).

Due to organizations’ spatially distributed workforce, ICTs have become an important and necessary medium for communication (Shockley-Zalabak, 2002). ICTs and globalization also share a causal relationship with each other, gaining and building on each other (Chareonwongsak, 2002). In essence, ICTs propel globalization and globalization drives ICT usage and expansion.

ICT is a term used to describe “a range of tools and media that provide both infrastructure for communication and includes devices such as telephones and computers with all their

applications including internet, email, mobile telephones, instant message and social networking” (West & Heath, 2011, p.211). Researchers Deborah West and David Heath (2011) stated, “ICT provides both infrastructure for, and key propulsion of, the phenomenon of globalization” (p. 211). ICTs can help organizations be competitive since information can be accessed and communicated quickly and efficiently throughout the world (West & Heath, 2011). Operational costs can also be reduced because employees are working from different geographical locations, and ICTs are inexpensive ways to communicate with employees and customers (West & Heath, 2011). ICTs also provide flexible working patterns, challenging the traditional assumptions about work, including an employees’ location (Barnes, 2012). Despite the benefits of ICTs as companies become more global, studies have indicated that ICTs can also complicate the communication process (Derks & Bakker, 2010).

While ICTs are an efficient way to communicate globally, virtual communication can cause complications and contribute to misinterpretation or equivocality. Equivocality has been defined as the multiple misinterpretations of messages by employees that can cause collective action within organizations to become disorganized (Weick et al., 2005). Studies on teams that are distributed across diverse locations have revealed that employees have a tough time internalizing an organization’s mission and eventually are dissatisfied with their organization (Putnam & Mumby, 2014).

Research has found that communication technologies lack in the ability to convey contextual cues that help employees understand the message as intended by the source. Authors Leonardo and Bailey stated that “communication technologies inadequately convey contextual cues and consequently impede separated individuals from establishing mutual knowledge, sharing unique knowledge, and deciphering new knowledge” (p. 412). A large part of context comes from nonverbal communication, which is an essential piece of a message (Beebe &

Masterson, 2009). The increased use of email and instant messaging, therefore, causes nonverbal cues to be mostly eliminated from the message. This lack of nonverbal cues and ability to understand emotion in ICTs can increase equivocality, which can potentially cause harm to workplace relationships and communication (Byron, 2008). Friedman and Currall (2003) argued that email increased the likelihood of conflict escalation because of the potential to misinterpret the email message. In another study, Sarbaugh-Thompson and Feldman found employees felt less connected to their colleagues with an increase in email usage (Byron, 2008). The virtual communication technology company, Cisco Systems, also conducted research on virtual teams. Despite Cisco Systems creating products for virtual teams, the report, *The Psychology of Effective Business Communications in Geographically Dispersed Teams*, also acknowledged the difficulties with virtual teams. Author Kandola (2006) stated in the report:

Virtual teams experience significantly more conflict than do face-to-face (F2F) teams as their distant members struggle to come to terms with different perspectives, unshared information and tensions between distant subgroups. Conflict tends to be more prolific in virtual teams because team members are less likely to have a history of working together. This, coupled with the impersonal nature of virtual communication, means that such teams have much weaker interpersonal bonds than do F2F teams (p. 2).

While ICTs are a necessary tool as companies continue to become spatially diverse, equivocality can increase since ICTs are used as a main communication tool. In order for organizations to utilize ICTs effectively for communication and decrease equivocality, it is important for leaders to choose the appropriate communication channel for the message. One framework for choosing communication channels is Media Richness Theory (MRT). MRT is a tool to categorize the richness of communication mediums or channels in an effort to determine the most effective channel for the message (Lengel & Daft, 1988). According to MRT's creators, Daft and Lengel, each channel of communication has characteristics that make it more appropriate in certain situations than in others. If the message is equivocal, with more

opportunities for misunderstanding, then a richer channel should be used. Face-to-face communication is the richest channel because it has the capacity for direct experience with immediate feedback and multiple information cues (Lengel & Daft, 1988). Daft and Lengel (1988) said, "The more learning that can be pumped through a medium, the richer the medium (p. 226). Written one-way communication, like fliers and memos, are leaner channels because they provide less verbal cues with limited opportunity for feedback (Lengel & Daft, 1998). With the increase use of technologies due to a spatially distributed workforce, selecting the correct channel for the message is becoming even more important to help decrease equivocality. In fact, Lengel and Daft (1998) said, "Many executives do not understand the relationship between a communication medium and communication effectiveness. A medium can enhance or distort the intended message, and the explosion in electronic technology is making medium selection an even more critical issue" (p. 225).

One example where the communication channel had impact on interpretation of messages was in a study conducted within a private United Kingdom Organization. Researcher Barnes concluded that while ICTs were an efficient way for employees to communicate within the organization, the technology did have serious implications on organizational and individual interpretations of messages (Barnes, 2012). Day et al. (2012) argued that employees became increasingly stressed as they were barraged with information from ICTs (lean and moderate channels), and this information overload caused misinterpretation of organizational messages (O'Driscoll et al., 2010). Therefore, employees trying to make sense of the daily chaos within the organization may be more likely to have varying perceptions of the truth, which could lead to disengagement.

Another variable that must be considered when studying the impact of leadership communication on employee engagement is leader-member exchange (LMX). The theory of

LMX suggests that leaders form varying social exchange relationships (low to high quality) with their team members influencing the employees' role within the team and in the organization (Deluga & Perry, 1994). These varying levels of relationships between the leader and team affects the role and benefits received by the employee. For example, research has suggested that those employees in a high-quality LMX relationship receive more open communication and opportunities for advancement (Yildiz, 2011). Furthermore, these benefits of being in a high-quality LMX relationships can in turn impact a wide range of work outcomes associated with employee engagement including, organizational commitment, job satisfaction, and willingness to contribute (Scandura & Pellegrini, 2008). In fact, a 2003 study found that the beneficial effects of those in a high quality LMX relationship with their leader was amplified by communication frequency (Kacmar et al., 2003). Thus, communication frequency with the team leader is a moderator that can strengthen positive outcomes like employee engagement.

LMX and communication frequency can also affect globally distributed teams. In a 2012 study of 40 globally distributed teams, researchers looked to examine how leaders of globally distributed teams could enhance innovation by enabling member influence on team decisions. This study was significant since member input on team decisions is critical for innovation, but members of distributed teams often feel isolated, thus, discouraging member input (Gajendran & Joshi, 2012). After studying these 40 teams, the research concluded that high-quality LMX relationships between the leader and employee are effective in encouraging member input with remote employees when coupled with frequent communication (Gajendran & Joshi, 2012). Most importantly, the researchers found that the benefits of a high-quality LMX relationship was dampened if communication frequency was low. Therefore, communication plays a critical role in developing LMX relationships, as well as improving member input and innovation (Gajendran

& Joshi, 2012). Based on this research and a multitude of LMX studies, it is critical to include the LMX variable when studying the impact of virtual communication on employee engagement.

Purpose of Study

Based on the link between leadership communication and engagement and the increased use of ICTs in organizations, this quantitative study attempted to measure employee engagement and what, if any, relationship exists among employee engagement, frequency of communication, richness of communication channels, quality of leader-member exchange relationship, and satisfaction with organizational communication.

Procedures

The study was quantitative in nature. Full-time employees that work either in the same location or remotely from their leader(s) were asked to complete a survey that measured organizational communication satisfaction, frequency of communication channels, leader-member exchange relationship, and employee engagement. The survey instrument was made up of the following sections/surveys: Dennis Communication Climate Inventory (1974), Leader-Member Exchange-7 (1984), Communication Channel Instrument (1999), and the Schaufeli and Bakker's (2004) Utrecht Work Engagement Scale (UWES).

Dennis Communication Climate Inventory (1974) measured employee perceptions on how the organization and leaders communicate. For the purpose of this study, internal communication is defined as the exchange of information both informal and formal between leaders and employees. Dennis divided the survey questions into five factors: superior-subordinate communication, quality of information, superior openness/candor, opportunities for upward communication, and reliability of information (Dennis, 1974; O'Connell, 1979). For this study, the superior openness/candor section was deleted since it pertains only to manager-level employees. In addition, two of the items within the opportunities for upward communication

factor were removed for the same reasons as noted above. Participants rated each question using a five-point Likert Scale ranging from Strongly Disagree (1) to Strongly Agree (5).

The Leader-Member Exchange-7 scale developed by Scandura and Graen (1984) was used to measure the quality of exchange or relationship between leaders and subordinates. This instrument is made up of seven questions rated using a five-point Likert Scale (1 = Strongly Disagree; 5 = Strongly Agree). While the main purpose of this research was to examine potential relationships between communication satisfaction, communication channels, and employee engagement, the quality of the relationship or leader-member exchange can influence employee engagement as well. Thus, these seven questions were included to help control for any influence that the leader and employee relationship may have on engagement.

A communication channel instrument was adapted from a 2009 dissertation study on internal communication and employee engagement. The instrument was updated to reflect new communication channels developed for organizational communications since 2009. The purpose of the instrument was to determine the frequency of communication channels leaders are using to communicate with employees and whether or not it correlates to employee engagement and communication satisfaction. The channels used were then categorized based on MRT (lean, moderate, and rich), as well as virtual channels, in order to understand if the richness of the channel also effects employee engagement.

Finally, the Schaufeli and Bakker's (2004) UWES scale was used to measure the dependent variable employee engagement. Researchers have used UWES to assess employee engagement in various companies and psychometric research results confirm the factorial validity of the UWES (Seppala et al., 2009; Schaufeli & Bakker, 2004).

Research Questions

The goal of this study was to gain a better understanding of the impact of virtual communication on employee engagement. Understanding the possible correlations among leadership communication, ICTs, and employee engagement adds value because virtual team members continue to grow as businesses expand globally. Therefore, the research questions explored were following:

1. (a) How is employee satisfaction with the organization's communication, as measured by the Dennis Communication Climate Inventory (Dennis, 1974; IV) related to employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV), for both employees who are collocated with their manager, as well as for employees who are distanced from their manager,?

- (b) How does the quality of leader-member exchange (LMX) as measured by the LMX-7 Scale (Scandura & Graen, 1984; IV) interact with employee satisfaction with the organization's communication and employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV)?

2. (a) How does frequency of communication channels, as classified according to Media Richness Theory (Lengel & Daft, 1988, IV), both for employees who are collocated with their manager, as well as for employees who are distanced from their manager, predict employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV)?

- (b) How does the quality of LMX, as measured by the LMX-7 Scale (Scandura & Graen, 1984; IV) interact with the frequency of communication channels and employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV)?

3. (a) How does the frequency of communication between managers and employees (IV), both for employees who are collocated with their manager, as well as for employees who are distanced from their manager, predict employee satisfaction with the organization's communication, as measured by Dennis Communication Climate Inventory (Dennis, 1974; DV)?

- (b) How does the quality of LMX, as measured by the LMX-7 Scale (Scandura & Graen, 1984; IV) interact with the frequency of communication between managers and employees (IV) and employee satisfaction with the organization's communication, as measured by Dennis Communication Climate Inventory (Dennis, 1974; DV)?

Conceptual Framework

The conceptual framework for this study is Weick's theory of sensemaking. Weick believes equivocality in information is inherent in organizations, especially because organizations are bombarded with information (2001). In order to make sense of the chaotic state of their organizational world, employees participate in sensemaking to help make it more orderly by labeling the world based on past experiences (Weick, et al., 2005). The term sensemaking describes individuals' iterative efforts to refine their knowledge structures to develop useful representations of reality that ultimately enable effective action. In the article, *Organizing and the Process of Sensemaking*, it stated, "Sensemaking involves turning circumstances into a situation that is comprehended explicitly in words and that serves as a springboard into action" (Weick et al., 2005, p. 409). In essence, employees recognize, act upon, create, recall, and apply patterns from their lived experiences to impose order on the present. According to Weick, Sutcliff, and Obstfeld (2005), "Sensemaking is not about truth and getting it right. Instead, it is about continued redrafting of an emerging story so that it becomes more comprehensive, incorporates more of the observed data, and is more resilient in the face of criticism" (p. 415). Research has found that sensemaking plays a key role in enabling effective actions in organizations (Gray et al., 2015).

The problem that can occur with sensemaking is that each employee is labeling and categorizing the chaos based on his or her personal experiences, context, and preconceived notions. While an employee's story may have helped him or her make sense of the current organizational chaos, another employee could have created a completely different story based on his/her own experiences, and subsequently, equivocality occurs. In fact, studies have found that sensemaking is not typically accurate (Weick et al., 2005). One study of managers' perceptions at Starbucks discovered that managers' perceptions or stories were highly inaccurate to the real

situation occurring within the organization (Weick et al., 2005). Thus, equivocality can happen daily as employees make sense of organizational situations, in both face-to-face and virtual situations.

According to Weick, sensemaking is a part of the cultural web of the organization and communication is a key component of sensemaking (Weick et al., 2005). Improving internal communications practices can increase sensemaking among employees, which in turn can increase employee engagement and job satisfaction. (Carriere & Bourque, 2009). Weick contends that organizations must play an active role in helping employees choose an interpretation best suited for the organization's interests (Weick 1995, 2001). Thus, since communication is a key component of both sensemaking and employee engagement, and sensemaking is an integral part of organizational culture, how does the increase use of ICTs for leadership communication affect employee engagement? Weick identified that sensemaking can cause equivocality within organizations and if the complexity of communicating through ICTs globally is added to the organizational communication process, the sensemaking and accuracy of employees' stories could potentially be even worse because of technology and globalization.

Operational Definitions

Collocated: For this study, collocation was used to describe if a leader or manager were located in the same office/building.

Employee Engagement: Feeling a strong emotional bond to one's employer and committing time and effort to one's work (Kahn, 1990; Frank & Taylor, 2004; Schaufeli & Bakker, 2009).

Information Communication and Technologies (ICTs): Is an umbrella term that includes any communication device or application, including computer and network hardware

and software, phones, radio, television, satellite systems. ICTs also include the communication devices' associated applications and services such as video conferencing (West & Heath, 2011).

Internal Communication: For this research, internal communication is defined as the exchange of information both informal and formal between leaders and employees (Karanges, et al., 2015).

Leader-Member Exchange Theory: Leader-member exchange refers to the quality of the relationship between an employee and his/her leader (Graen & Uhl-Bien, 1995).

Media Richness Theory: Media richness theory states that different communication channels (i.e. phone, email, video) used within organizations possess different levels of richness (amount of data shared) of information and this richness level affects how the communication is perceived (Byrne & Lemay, 2006).

Assumptions

It is assumed that participants answered the survey questions truthfully, especially with the knowledge that the answers are anonymous. Since I organized and summarized the raw data, I also needed to be aware of my biases and values. From my work experiences at a global company, I do believe virtual communication can hinder employee engagement. Personally, I have felt more engaged when my leadership has taken the time to meet with me face-to-face regularly. I have also received feedback when I have trained global employees from various cultures that utilizing a web camera can assist them with comprehension because they have access to my nonverbal communication. The purpose of articulating these biases is to help raise my awareness level so that I could attempt to be more neutral throughout the study.

Limitations

Due to convenience, the participants for this study were purchased from the survey company, Qualtrics. The identities were anonymous and subjects opted in to participate in the survey, thus it cannot be assured that the participants were representative of the entire population. Therefore, is at risk for external validity since the findings cannot be generalized to organizations or populations outside the study.

Significance of Study

While employee engagement has become a more popular topic in recent years, especially for business practitioners, it is still a relatively new concept in academic research (Macey & Schneider, 2008). In addition, while sensemaking research has been around for decades, it has mainly focused on what happens when people are collocated. Little research has been conducted on how leadership communication enabled by ICTs may influence individual's sensemaking behaviors and how it relates to engagement (Gray et al, 2010). Also, the current global environment has increased the number of organizations that are becoming more spatially distributed around the globe (West & Heath, 2011). Therefore, the present study adds to the body of literature on leadership communication by examining if there is a correlation between leadership communications filtered through ICTs, communication satisfaction, and employee engagement.

CHAPTER II: LITERATURE REVIEW

Introduction

Based on the link between leadership communication and engagement (Welch & Jackson, 2007; Welch, 2011) and the increase use of ICTs in organizations (West & Health, 2011), this study will attempt to measure employees' perceived satisfaction with leadership communication, employee engagement and what, if any, effect the use and frequency of ICTs has on engagement. This study is significant because employee engagement is key to the retention of talent and business productivity (Glen, 2006). While businesses have noticed the importance of engagement, more academic research is still needed on this topic (Gray et al., 2010). The following literature review sheds light on previous research conducted in the areas of employee engagement, communication, globalization and ICTs, and organizational sensemaking. The literature highlighted also affirms the gap in research on these topics.

Engagement

History and Definition

Researcher William Kahn first introduced the term employee engagement in 1990. Prior to 1990, employee morale, work ethic, productivity, and motivation had been analyzed, but Kahn was the first to define and argue the importance of engaged employees (Kahn, 1990). Kahn (1990) defined engaged employees as organizational members who were willing to invest emotional, physical, and cognitive resources in the performance of their roles. He argued that engaged employees are cognitively focused when they are absorbed in their work. Engaged employees are also emotionally connected when their feelings are directed toward their work.

Finally, engaged employees are physically active when their actions demonstrate extra effort and vigor (Kahn, 1990). The more active an employee is within these physiological dimensions (emotional, physical, and cognitive), the more engaged the employee will be. Kahn's qualitative analysis of organizational members also revealed three psychological conditions needed in order for employees to be engaged. These conditions were:

- **Meaningfulness:** Employee believes there is a return on investment based on his/her performance
- **Safety:** Feeling able to complete work tasks without fear of negative consequences to the employee's self-image or career
- **Availability:** Having the physical, emotional, or physiological resources to complete the work (Kahn, 1990)

Kahn also stated that either consciously or subconsciously, organizational members ask themselves three questions before taking on work, "(1) How meaningful is it for me to bring myself into this performance? (2) How safe is it to do so? (3) How available am I do to so?" (Kahn, 1990, p. 703). When employees ask themselves these three questions, they are entering themselves into a "contract" where clear benefits for themselves and the organization are defined (Kahn, 1990).

Despite Kahn's extensive work over the past thirty years on engagement, as well as the growing interest from business practitioners, employee engagement has been less researched in academia and, therefore, lacks a universal definition (Choo et al., 2013). Gallup defined employee engagement as "those who are involved in, enthusiastic about and committed to their work and workplace" (Sorenson, 2013). Researcher Quirke (2008) described engaged employees as "feeling a strong emotional bond to their employer, recommending it to others and committing

time and effort to help the organization succeed” (p. 102). Frank and Taylor (2004) defined employee engagement as the amount of discretionary effort exhibited by employees in their job. Hallberg and Schaufeli (2006) defined employee engagement as representing experiences of vigor, dedication to the role, and periods of absorption over extended periods of time. While not a universal definition, these descriptions have overlapping themes that emphasize employee commitment to the organization and effort put into tasks. For the purpose of this study, employee engagement will be defined as those who feel a strong emotional bond to their employer and commit time and effort to their work.

Researchers on employee engagement, including Kahn, have commonly drawn upon social exchange theory to understand how organizations and leaders can foster employee engagement. Researchers Cropanzano and Mitchell said, “Social exchange theory (SET) is among the most influential conceptual paradigms for understanding workplace behavior” (Cropanzano & Mitchell, 2005, p. 874). SET is described as a series of interactions between two interdependent parties that feel obligated to reciprocate (Choo, et. al, 2013). Cropanzano and Mitchell (2005) said of SET, “Social exchange comprises actions contingent on the rewarding reactions of others, which over time provide for mutually and rewarding transactions and relationships” (p. 890). In essence, a trusting relationship made up of mutual commitments is established over time that consists of repayment rules. The actions of one party leads to actions by the other party in the relationship. For example, when an employee receives a paycheck or recognition from his/her employer, social exchange theorists believe that the employee now needs to reciprocate to the organization. One way an employee can reciprocate is through his/her level of engagement (Choo et al., 2013; Cropanzano & Mitchell, 2005). Kahn found in his research that SET or psychological meaningfulness as he phrased it, was essential to engagement. He stated, “Psychological meaningfulness can be seen as a feeling that one is

receiving a return on investments of oneself 'sin a currency of physical, cognitive, or emotional energy. People experienced such meaningfulness when they felt worthwhile, useful, and valuable—as though they made a difference and were not taken for granted” (Kahn, 1990, p. 703-4).

This definition of social exchange theory is also consistent with the meta-analysis of Harter, Schmidt, and Hayes on employee satisfaction, engagement, and business outcomes (2002). They determined employee engagement was a reciprocal construct that organizations should foster. A study conducted with 413 postal employees also supported social exchange theory finding that perceived organization support positively correlated to employees' commitment and job performance (Eisenberger, et al., 2001). According to the researchers, “The pattern of findings is consistent with organizational support theory's assumption that POS [perceived organizational support] strengthens affective commitment and performance by a reciprocation process” (Eisenberger, et. al., 2001, p. 42). Hence, because the organization is providing support, social exchange theory causes employees to reciprocate with engagement. This engagement equals productivity and improved performance.

Why Employee Engagement Matters for Organizations

Organizations have become increasingly interested in employee engagement as recent studies have revealed the extensive benefits of an engaged workforce. Studies by Towers Perrin (2003) found as engagement increased, employees were more likely to focus on their customers. Thus, increasing financial performance. In 2014, Gallup conducted 263 research studies across 192 organizations in 49 industries and 34 countries. The sample population included nearly 1.4 million employees. In each of the 263 studies, the Gallup researchers statistically calculated the work-unit-level relationship between employee engagement and performance outcomes (Gallup, 2014). The meta-analysis confirmed Gallup's previously established connection between

employee engagement and the following nine performance outcomes: customer ratings, profitability, productivity, turnover, safety incidents, shrinkage (theft), absenteeism, patient safety incidents, and quality (Sorensen, 2013). Gallup's chief scientist, Dr. Jim Harter stated, "Engaged workers have bought into what the organization is about and are trying to make a difference. This is why they're usually the most productive workers" (Sorensen, 2013, p.2). Furthermore, Gallup's *2014 State of the American Workplace Report* indicated that employee disengagement can cost companies billions of dollars each year (Gallup, 2014). In a 2002 study, 7,939 business units' employee engagement in 39 countries were studied. Both overall satisfaction and employee engagement showed a correlation with customer satisfaction, loyalty, profitability, productivity, safety, and turnover (Harter et al., 2002). Towers Perrin, a human resource consulting firm, in its 2003 talent study of 35,000 employees in U.S. companies, found a link between increased engagement and financial performance. Towers Perrin reported, "While it's important to recognize that there are many variables that affect business outcomes, our analysis nonetheless shows a clear relationship between increased engagement, improved retention of talent, and better financial performance" (Towers, 2003).

As the aforementioned studies affirmed, engagement can link to multiple performance outcomes, including customer ratings. A 2005 study examined 114 service units (58 hotel and 56 restaurants) to determine if there was a link between engagement and service climate. The study concluded that engagement can predict customer service and quality. The hotels and restaurants that had higher employee engagement also had higher customer loyalty (Salanova, et. al, 2005) In another study with 201 telecom managers, the data analysis revealed a link between negative engagement and the amount and duration of sick days (Schaufeli, et. al, 2009). Finally, Sak's (2006) found in his study of 102 employees from a variety of organizations, that there is a correlation between employee engagement and retention. The cost of employees quitting can

also add up. A 2012 study by the Center for American progress found in its analysis of 30 case studies the following costs of employee turnover:

- 16% of annual salary for high-turnover, low-paying jobs (earning under \$30,000 a year).
- 20% of annual salary for mid-range positions (earning \$30,000 to \$50,000 a year).
- Up to 213% of annual salary for highly educated executive positions. For example, the cost to replace a \$100k CEO can be up to \$213,000 (Boushey, H. & Glynn).

Therefore, the impact of employee engagement on profit, but also turnover rate, can be substantial to a company's bottom line.

Virtual Communication

Globalization and Increase Use of ICTs

While communication is seen as an essential piece of employee engagement, the way that information is dispersed within organizations is becoming increasingly complicated with globalization (Putnam & Mumby, 2014). Researcher Shockley-Zalabeck (2002) said of the current organizational life, "scholars and practitioners alike agree we live in turbulent times characterized by ongoing change. Few have escaped the "workquakes" of the past decade. Downsizing, reengineering, unprecedented competition, rapidly changing technologies, and globalization are but a few of the factors affecting the vast majority of those currently employed, not only in the United States but throughout Europe and Asia as well" (p. 231). Indeed, the current "workquakes" and global environment and has increased the number of organizations that are becoming more spatially distributed around the globe (West & Heath, 2011). This flattening and spreading of organizations due to globalization of trade and increase use of

technology has caused a shift from face-to-face teams to virtual teams (Shockley-Zalabeck, 2002). The changes to the competitive environment has significantly impacted organizations, most particularly organizational communication (Shockley-Zalabeck, 2002).

Globalization has been defined as ‘the increasing connectedness of societies’ (Macionis & Plummer, 2008). At the crux of globalization are the global communication networks supported by ICT networks (Macionis & Plummer, 2008). In fact, ICTs and their relationship with globalization is a key theme found in globalization discourse and research. “ICT provides both infrastructure for, and key propulsion of, the phenomenon of globalization” (West & Heath, 2011, p. 211). Globalization and ICTs have helped reduce operational costs because employees are working from different geographical locations, and ICTs are an inexpensive and efficient way to communicate with employees and customers (West & Heath, 2011). ICTs have also been shown to increase employees’ sense of professional competence and control since they have access to more knowledge and can communicate more efficiently (Ter Hoeven, et al., 2013). Employees also feel empowered by ICTs because it allows them to establish a connection to their work from different locations (Ter Hoeven, et al., 2013).

The increase use of ICTs over the past two decades has altered employees' “relationship with space and time” (Wellman et al., 2002). West and Heath (2011) said, “The pace of action and change is now much quicker with email, real time and instant messaging representing the new cornerstones of human interpersonal communication. The idea of the appropriate duration one should wait for a response is quite different now than what it was even 10 years ago” (p. 211). People are also becoming more spatially distributed within organizations, and ICTs have become an important and necessary medium for communication (Shockley-Zalabak, 2002). ICTs allow employees globally to communicate quickly and efficiently. Relationships can now be built outside of the office and the home. An overwhelming amount of information can be shared

quickly and services can be accessed remotely (Castells, 2000). Another benefit of dispersed global teams is the development of local products for the global market. ICTs facilitate the opportunity for a team member who is knowledgeable in his/her local market to provide valuable insight to the company on product and customer development, where in the past, team members would be collocated in one office and potentially lack a diverse perspective of the global market (McDonough, et al., 2001).

As global organizations continue to operate in fluid and virtual environments, the need to engage employees has become even more profound (Watson et al., 2002). Employees are being asked to work faster, respond sooner, and become proficient at technologies in order to stay competitive (West & Heath, 2002 & Shockley-Zalabak, 2002). While ICTs have propelled globalization and company growth, what impact has it had on organizational communication and engagement?

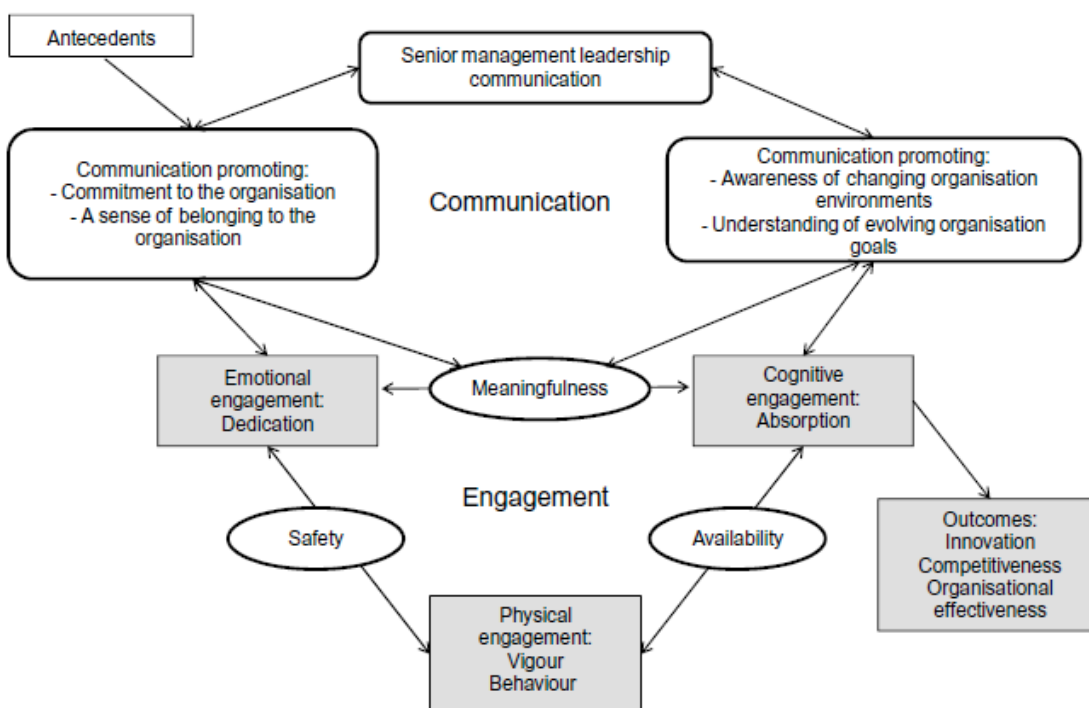
Correlation between Communication and Employee Engagement

As the literature has shown, employee engagement can be critical to profitability, employee turnover, and customer relations. If the impact of employee engagement is this great, what should organizations and leaders do in order to improve employee engagement?

An essential part of SET is the organizational support that employees perceive they are receiving. Communication is the primary vehicle in which organizational activities and support are conveyed to the employees. Reissner and Pagan (2013) said, "Communication across hierarchical layers is a medium through which the reciprocity of social relationships and associated attitudes of engagement can be fostered and maintained. Through two-way communication and management behaviors, organizations seek to create an environment, a culture, in which employees engage" (p. 2744). Mary Welch developed a model of employee

engagement from a communication perspective that illustrated the possible impact of communication on employee engagement at an organizational level (Welch, 2011).

Figure 1
Model of Employee Engagement with Communication Perspective



As seen in Figure 1, Welch included Kahn's (1990) three psychological conditions that are antecedents for engagement—meaningfulness, safety, and availability. Kahn argued that these conditions are necessary for engagement to occur. Welch also integrated commitment as an antecedent for engagement based on research conducted by Meyer et al., (2010). When the psychological conditions meaningfulness, safety, availability, and commitment are met, then Kahn's psychological dimensions, emotional, cognitive, and physical engagement can take place. Kahn's three psychological conditions are also paired with the engagement characteristics defined in Schaufeli and Bakker's (2004) research—dedication, absorption, and vigor. Schaufeli and Bakker (2009) stated, "Work engagement is defined as a positive work-related state of mind

that is characterized by vigor, dedication, and absorption” (p. 895). They believe dedication and vigor are at the core of engagement while absorption describes the employee’s flow—focused attention and effortless concentration (Schaufeli & Bakker, 2009).

Within Figure 1, Welch identified communication as an essential piece of the model that enables the antecedents of engagement (meaningfulness, safety, availability, and commitment) and promotes the physiological dimensions of engagement (emotional, cognitive, physical, dedication, absorption, and vigor engagement) (Welch, 2011). Welch argued that senior leadership communication is positioned as an integral part of engagement. According to Welch (2011), “Communication is one form of employee psychological needs which organizations have to meet to maintain and development employee engagement” (p. 340). The corporate communication function is also positioned as crucial to engagement in the model because it serves as both an antecedent of engagement (promoting commitment and a sense of belonging), and communicates the subsequent engagement outcomes (awareness and understanding) (Welch, 2011). Welch believed that as a result of effective leadership and corporate communication, the necessary physiological engagement conditions are created. These conditions lead to the physiological dimensions of engagement. This engagement then spurs the outcomes, innovation, competitiveness, and organizational effectiveness as seen in the model (Welch, 2001).

As discussed, according to SET, the employee is more likely to be invested when organizations foster engagement. One way to foster engagement is through communication (Reissner & Pagan, 2013). However, within the literature there is limited research on the role that communication truly plays within engagement (Reissner & Pagan, 2013). Reissner and Pagan (2013) referred to change management research to provide insights into creating a culture of engagement. They said, “Through two-way communication and management behaviours, organizations seek to create an environment, a culture, in which employees engage. In particular,

(1) managers communicating strategic and operational matters to employees; and (2) employees being able to communicate upwards with their managers have been shown to facilitate the generation of employee engagement” (p. 2744). Furthermore, research has shown that managers can develop employee motivation by delivering organizational engagement activities that ‘create opportunities for employees to connect with their colleagues, managers, and wider organization’ (Macleod & Clark, 2009). Also similar to organizational change theory, employee engagement is a process that provides opportunities for employees to make sense of the organizational chaos (sensemaking). Sensemaking, as defined in Chapter 1, describes employees’ iterative efforts to refine their knowledge structures to develop useful representations of reality that ultimately enable effective action. Communication is a key component of sensemaking (Weick, et al., 2005). Hence, improving internal communications practices can increase sensemaking among employees, which in turn can increase employee engagement and job satisfaction. (Carriere & Bourque, 2009). Weick, similar to Welch, contended that organizations must play an active role in helping employees choose an interpretation best suited for the organization’s interests (Weick, 2001; Welch, 2011).

In an effort to study the effects of communication on engagement, researchers Reissner and Pagan conducted a case study with a United Kingdom company in 2013. In their qualitative study, 24 individuals and three group interviews were conducted with both frontline employees and managers. The company had recently implemented new communication activities to help enhance employee engagement, including organization-wide events to increase shared understanding, a newsletter, and team meetings. Managers were also encouraged to communicate more strategic messages that included business outcomes, and communicate through their actions. To determine if the new communication activities were improving engagement, employees were asked questions about their engagement relationship with their

managers and the executed engagement activities. The data revealed that employees appreciated the increased opportunities for interaction that the company and managers had implemented. In addition, the increase in discussion and discursive communication seemed to help employees better understand the organization (Reissner & Pagan, 2013). The increase in two-way communication also allowed employees to feel more involved and engaged in the organization (Reissner & Pagan, 2013). Reissner and Pagan confirmed that the study further emphasized the importance of organizational communication activities and its link to engagement.

In another case study, the Rainbow Trust Children's Charity, a *Sunday Times* Top 100 Employer, was analyzed in an effort to reveal how it obtained award-winning employee engagement. After an employee survey in 2008, Rainbow Trust Children's Charity hosted supplemental focus groups that were in charge of planning activities to boost engagement. The number one action item to come out of the survey and focus groups was continuous communication through a variety of channels, including newsletters, employee stories, and formalized performance conversations between managers and employees (Powis, 2012). The Rainbow Trust Children's Charity's goal was to build in an environment where, "open and honest communication was promoted" (Powis, 2012). According to the case study, the communication activities that were implemented from 2008 to 2012 helped make the Rainbow Trust Children's Charity award winning in employee engagement.

Finally, the Corporate Communication International Organization published in its 2013 trends report that there is a renewed emphasis on corporate communication's role in employee engagement (Goodman et al., 2013). Organizational success lies in empowering customers, but also employees. The report stated:

There is a renewed emphasis placed on building positive corporate culture and employee engagement (corporate character) in response to volatile global economic conditions, changing business and media models, "big data," and the

networked enterprise. This internal focus acknowledges the essential role that employees play in the networked enterprise, and it continues to drive the need to boost employee morale (Goodman et. al, 2013, p.4).

Hence, interest in both corporate and leadership communication continues to expand as data shows the integral role it can play in employee engagement.

Impact of ICTs on Organizational Communication

With the increase use of ICTs, it can be argued that communication has become faster and more efficient. Information can be accessed and shared with thousands of employees in various locations within seconds (West & Heath, 2011). Speed and efficiency are positive results of ICTs since they facilitate the ability for companies to keep up with the dynamic, global market place (West & Heath, 2011). However, with the positives also comes the potential for the negative impacts of ICTs on organizational communication. As virtual communication has become more standard, research has indicated that employees are becoming overloaded with information. While ICTs help make information more efficient to obtain and distribute, they also cause more stress as employees need to sift through a vast amount of information. In one study conducted across five countries, 74% of managers experienced stress from information overload (Day et. al, 2012). The constant barrage of information also increases the number of interruptions, which can contribute to an increase in stress levels, and lack of productivity (O'Driscoll et al., 2010). For example, in one study employees felt obligated to respond to email messages within six seconds of receiving the message, causing interruption to their focus and work (Jackson et al., 2003).

Research has also found that virtual meetings have become less engaging and effective as face-to-face meetings (Smith, 2014). “Commonly cited factors include a tendency on the part of attendees to multitask, decreased interactivity, a lack of visual cues, the reduced influence of the facilitator, problems with the technology used to mediate communications, and the challenge of

maintaining momentum” (Smith, 2014). Virtual communication can also lead to miscommunication and escalated conflict because of the lack of nonverbal cues and delay in response time (Smith, 2014; Rainey, 2000). Studies have suggested that up to 93% of communication is nonverbal and when email, phone, or instant messaging is used, nonverbal context is limited. In fact, ICT-mediated communication has the greatest margin of error because of the limited verbal and nonverbal cues that typically assists the receiver in understanding the message (Rainey, 2000). Also, with the delay in response from certain technology, the opportunity to seek immediate clarification is absent (Hayward, 2002). Friedman and Currall (2003) argued that email increased the likelihood of conflict escalation because of the potential to misinterpret the email message. In another study conducted by Sarbaugh-Thompson and Feldman, they found employees felt less connected to their colleagues with an increase in email usage (Byron, 2008).

While ICTs like email and phone can lack nonverbal communication, studies examining dispersed teams utilizing videoconferencing showed an improvement in interpreting verbal and non-verbal cues (Hayward, 2002). Researcher Gary Baker studied the performance of 64 virtual teams using four modes of technological collaboration: text-only, audio-only, text and video, and audio video. He found that when video was added to the audio communication, there was significant improvement in team decision-making abilities (Beebe & Masterson, 2009). Baker believed video helped virtual teams because face-to-face communication builds trust, provides a “full picture” of the decision making issue, and provides essential nonverbal cues for understanding the messages (Beebe & Masterson, 2009). Shockley-Zalaback examined communication processes in a virtual customer support team. Through her research she concluded that, “Team members lacked a sense of place within the team and larger

organizations. Despite external evaluations of success, the team became increasingly dissatisfied” (Putnam & Mumby, 2014, p. 341).

In 2012, the hotel company, Crowne Plaza, conducted a global research study with more than 2,000 business people from five countries — United States, India, China, United Kingdom, and United Arab Emirates. The purpose of the study was to understand how business professionals were utilizing virtual and face-to-face meetings and how it affected revenue. Eighty-one percent of those surveyed said face-to-face meetings were more impactful at building long-term trust with clients. As a result of Crowne Plaza’s research, it estimated that companies could be missing out on an additional 24% of revenue because they are not investing enough time in face-to-face contact (Business, 2013).

Another study examined the performance of collocated teams (located all in the same place), virtual teams (moderate level of physical proximity and are culturally similar), and global teams (located in various countries across the globe). The results indicated that the mean performance of collocated teams was statistically greater than virtual teams and the mean performance of virtual teams was statistically greater than global teams. Ironically, while the benefit of ICTs is speed and efficiency, the researchers concluded that managers of virtual and global teams needed to dedicate more time to their teams. “Our finding that both global and virtual teams pose greater behavioral and project management challenges than collocated teams have other possible implications for companies. Companies may find that they need to devote greater effort and time to meeting the challenges associated with virtual and global teams, training the managers of these teams, and establishing organizational infrastructures to support these efforts” (McDonough, et al., 2001, p. 118)

Sensemaking

Employees and Sensemaking

As shown in Welch's engagement model, communication is integral to employee engagement. As companies continue to expand globally and teams become more spatially distributed, there is an increase use of ICTs to communicate. With the increase use of ICTs, there is a potential for organizational and leadership messages to be miscommunicated. Weick (2001) believes equivocality is inherent within organizations, especially as employees become bombarded with information. Part of this miscommunication can be equated to how employees are making sense of the workplace. Sensemaking plays a critical role in helping employees make sense of the chaos of an organization and decide how to move forward (Weber et al., 2015; Weick, 2001). Improving sensemaking can also improve employee engagement (Carriere & Bourque, 2009). Weick, similar to Welch, contended that organizations must play an active role in helping employees choose an interpretation best suited for the organization's interests (Weick, 2001; Welch, 2011).

Sensemaking theory suggests the real organization exists primarily in the minds of its members. According to Choo (1996), "The central concern of sensemaking is understanding how people in organizations construct meaning and reality, and then exploring how that enacted reality provides a context for organizational action, including decision making and knowledge building" (p. 337). Sensemaking is set into motion when employees experience circumstances that are contrary to what they already know. Sensemaking is a person's process for making sense of a chaotic situation. Weick (1993) stated, "The basic idea of sensemaking is that reality is an ongoing accomplishment that emerges from efforts to create order and make retrospective sense of what occurs" (p. 635). Employees will recognize, create, recall, and apply patterns from lived experiences in an effort to impose order on the present and rationalize what they are doing.

Sensemaking also serves as a 'springboard to action' within organizations (Weick, et al., 2005). Morgan, Frost, and Pondy (1983), described sensemaking well when they wrote, "individuals are not seen as living in, and acting out their lives in relation to, a wider reality, so much as creating and sustaining images of a wider reality, in part to rationalize what they are doing. They realize their reality, by reading in to their situation patterns of significant meaning" (p. 24).

Weick, Sutcliffe, and Obstfeld (2005), assigned multiple characteristics to sensemaking in organizations that highlight how employees notice and label chaos to help make sense of the constant fluxes that occur within organizations. Sensemaking starts with chaos. An employee will start to notice a variance within their normal activities and begin bracketing or inventing a meaning for the variance. Weick said of bracketing, "in this context sensemaking means basically inventing a new meaning (interpretation) for something that has already occurred during the organizing process, but does not yet have a name, has never been recognized as a separate autonomous process, object, event" (Magala, 1997). After the noticing and bracketing, the employee then begins to label interdependent events to help find common ground. "An organized activity provides actors with a given set of cognitive categories and a typology of actions" (Tsoukas & Chia, 2002, p. 574). Labeling and finding common ground with others is essential to sensemaking because it moves the group in a stable, similar direction. However, if the labeling is lacking, equivocality can exist and move people in a variety of directions.

Weick, Sutcliffe, and Obstfeld (2005) also observed that retrospective thinking is used to make sense of the chaos being observed. In essence, the employee looks back over earlier occurrences to find patterns and cues. During this retrospective thinking and labeling, presumptions are also being made by the employee. Sensemaking tests intuition and presumptions to confirm labeling. Finally, sensemaking is about action: "The first question of

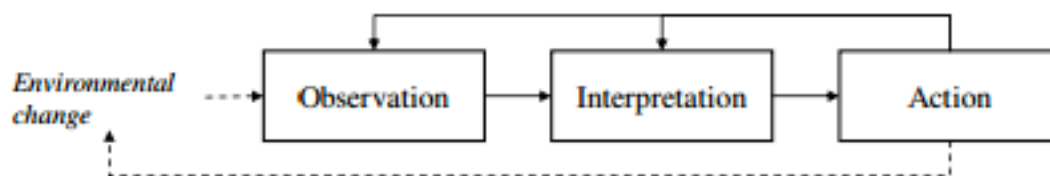
sensemaking is ‘what’s going on here?’ the second, equally important question is ‘what do I do next?’” (Weick, et al., 2005, p. 412).

Essential to sensemaking is the continuous flow through the various characteristics of sensemaking. It is not a step-by-step method, but rather a continuum of activity. Observing, labeling, interpreting, and action, take place throughout the sensemaking, as employees continue to make reiterative interpretations and new actions are created (Weick, 2005). Due to the continual interpretations, communication is vital to help employees make sense of the communication. In fact, sensemaking is mainly organized through communication because it enables people to discuss the situation and make sense of the situation.

While the sensemaking process has been defined in a variety of ways, in general, it consists of three interweaving steps seen in Figure 2 below (Weick, 2005).

Figure 2

Sensemaking Process



The employee observes the various situation, begins to interpret, and then takes action. Each step is also a process in itself and they are interdependent on each other. Action may be taken, but then the employee reconsiders the previous interpretation, learns, and then acts again. Therefore, the process is iterative.

The Role of Organizations in Sensemaking

Similar to the way communication plays an integral role in promoting engagement, communication also helps employees in the sensemaking process. In fact, Sutcliffe claimed that

organizations survive by making sense of and giving sense to their environment. Leaders and corporate communications departments can help employees label and frame situations by providing messages and symbolic action through communication (Weber, et al., 2006).

“Processes of sensemaking are at the core of a vibrant and continuing stream of research in Organization Studies that grapples to explain how people in organizations when confronted by discrepant events seek processually to negotiate and sustain meanings which permit coordinated, (putatively) rational action (Waldeck et al., 2007). Other researchers have claimed that the process of sensemaking is a basic requirement of leadership skills. A leader should reflect on what has been done, what he/she has learned, and how to solve issues to move strategically forward with their team (Waldeck et al., 2007). Research has also shown that leaders make sense of situations differently. Thus, the top management team is essential to helping direct organizational sensemaking (Daft & Weick, 1984). As Daft and Weick (1984) wrote, "strategic-level managers formulate the organizations' interpretation. When one speaks of organizational interpretation one really means interpretation by a relatively small group at the top of the organizational hierarchy” (p. 285). Organizations play a role in sensemaking and sensegiving. Sensegiving is when organizations attempt “to influence the sensemaking and meaning construction of others toward a preferred definition of organizational reality” (Gioia & Chittipeddi, 1991, p. 442). Leaders have the opportunity to communicate through both words and actions in order to set a path for the future (Weber, et al. 2015). When leaders participate in sensegiving and are able to align their visions with employees, this can lead to convergent sensemaking (Weber, et al., 2015).

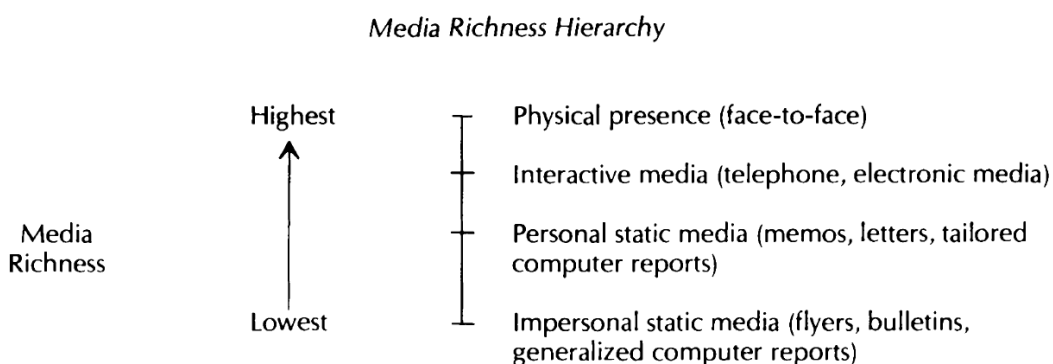
Sensemaking and Media Richness Theory

One ways leaders can participate in sensegiving is through applying MRT. According to MRT, leaders should choose the best communication channel for the situation (Daft & Lengel

1986). If the message is more complex, a richer channel should be chosen that allows associates to ask questions and clarifies the message. Daft and Lengel created a MRT continuum that categorizes channels along a richness axis. There are three categories for communication channels including, rich, moderate and lean. Written, non-electronic, non-interactive, routine messages like employee newsletters and letters are considered lean (Byrne & LeMay, 2006; Daft & Lengel, 1986; Lengel & Daft, 1988). More interactive channels that still lack the ability to exchange non-verbal cues are considered moderate, but allow for more fast response (Lengel & Daft, 1988). Interactive, immediate messages that enable the exchange of non-verbal cues like one-on-one meetings with the manager are considered rich channels. Although, in some research, email is categorized as a lean medium, especially when Daft and Lengel first created MRT in the 1980s, email has become a fast and interactive mode for information sharing. Email is also a daily routine for employees and more complex than a lean flier (Markus, 1994; Carlson & Zmud, 1999). Therefore, email has been classified as a more moderate channel. Figure 3 demonstrates Lengel and Daft's MRT model (1988).

Figure 3

Media Richness Theory Model



As a leader, is it important to diagnosis the level of complexity of the message and which channel to use to help with sensegiving. In fact, Lengel and Daft have argued that the selection of the correct communication channel is an essential executive skill (Lengel & Daft, 1988). Having this skill and understanding the essential role that communication media plays in helping with sensemaking is key for a leader. They said, “Communication media are tools executives use to interpret work situations and influence or direct co-workers” (Lengel & Daft, 1988, p. 226). Part of choosing the correct channel is understanding the complexity of the message. In hundreds of studies conducted by Daft and Lengel (1988), they found that messages could be classified on a continuum of routine and nonroutine messages. Nonroutine messages have a greater opportunity to be misinterpreted, thus MRT suggests a richer channel like a face-to-face meeting. A face-to-face meeting provides time for additional clarification of the messaging, allowing employees and leaders to make sense of the situation and move to action together. For more routine messages, a more lean channel can be used since there will less likely be equivocality (Lengel & Daft, 1988).

In a field study of middle and upper-level managers, Daft, Lengel, and Trevino examined manager selection of communication media. The findings indicated that media does indeed vary based on its ability to convey information cues. The data also suggested that high performing managers were more aware of the relationship between message ambiguity and media richness. Typically, these managers preferred rich media for unequivocal communications (Daft, et al., 1987). In another study, 598 fulltime employees were surveyed on their perceptions of organizational communication. The results revealed that rich media (face-to-face) was more related to satisfaction in perceived quality of information from their direct leader. Also, trust in top management was positively related to perceived quality of information (Bryne & LeMay

2006). Hence, as Daft and Lengel and Weick have suggested, a manager plays a critical role in sensegiving and reducing equivocality for employees (Daft & Lengel, 1986; Weick, 2001).

Sensemaking and Leader-Member Exchange Theory

As detailed in multiple research studies, media richness theory can influence how employees make sense of organizational communication. Another variable that may influence how employees react to organizational messages is Leader-Member Exchange Theory (LMX). First created in the 1970s by Graen and his colleagues, LMX focuses on the relationship between the manager and subordinate. The LMX models suggests that leaders form varying social exchange relationships with their subordinates (Deluga & Perry, 1994). The varying levels of relationships formed between the leader and his/her direct reports impacts the role of the subordinate on the team. According to Graen, “Leader-Member Exchanges will vary in quality because members differ in their needs and contributions and because a leader’s time and resources are limited” (Graen, 1976). Since there are varying levels of interactions between a leader and his/her employees, this leads to different levels of relationships amongst the team. Therefore, LMX argues that the quality of the relationship between a leader and employee can influence a wide range of work outcomes including, organizational commitment, job satisfaction, willingness to contribute, performance, and trust in supervisor (Scandura & Pellegrini, 2008). Hence, LMX must be considered when discussing employee engagement.

LMX theory states that all relationships go through three stages: role-taking, role-making, and routinization (Graen & Scandura, 1987; Scandura & Pellegrini, 2008; Yildiz, 2011). During the role-taking phase, the leader makes a request to the employees and then assesses the skills, motivation, and potential of their team members (Scandura & Pellegrini, 2008). During the role-making phase, the nature of the leader-member relationship continues to become more defined

and the leader begins to categorize the team members (often subconsciously) in either the in-group or out-group. Those employees categorized in the in-group often have more access to the manager and opportunities for advancement (Yildiz, 2011). During the final stage, routinization, routines between the leader and employees are established and employees work hard to maintain their positions in the in-group (Scandura & Pellegrini, 2008). Based on group placement, the leader-member relationships will vary in quality, from low to high, since the leader has limited resources (Graen, 1976; Yildiz, 2011). Most often, those members in the in-group have high quality levels of leader-member exchanges that can result in more open communication, increased opportunities, and positive performance appraisals (Yildiz, 2011). In fact, Liden and Graen (1980) stated, “These selected subordinates (in-group members) make contributions that go beyond their formal job duties and take on responsibility for the completion of tasks are most critical to the success of the unit. In return, they receive greater attention, support, and sensitivity from their supervisors” (p. 452).

The LMX theory first conceptualized after researchers interviewed 60 managers, who were both managers and direct reports, eight times over the course of nine months. The data from the interviews revealed that managers forged strategic alliances with only a subset of all direct reports (Graen, 2012). When the managers were asked why they formed strong relationships with only a small group of direct reports, the managers stated they formed strong alliances with only those that were dependable and willing to go above and beyond for the organization. Those subordinates with strong alliances to their leaders were more often rewarded with the leader’s time. The researchers also found that “alliance members” were more often satisfied with their jobs and more likely to receive positive performance reviews (Graen, 2012).

In follow-up research on LMX, studies showed that those with strong alliances or those in high-quality LMX relationships were more committed to goals (Dansereau et al., 1975; Liden & Graen, 1980) and commitment to goals directly relates to employee engagement (Frank & Taylor, 1994; Quirke, 2008; Sorenson, 2013). Gallup defined employee engagement as “those who are involved in, enthusiastic about, and committed to their work and contribute to their organization in a positive manner” (Gallup, 2014, p.12). Quirke (2008) also used commitment in his definition of employee engagement. He defined it as, “feeling a strong emotional bond to their employer, recommending it to others and committing time and effort to help the organization succeed (p. 102). Thus, the quality of the LMX can play a role in employee engagement.

Furthermore, high-quality LMX subordinates acquire a large percentage of tangible benefits including ample resources, premier assignments, emotional support, cooperative interactions, and more communication (Liden & Graen, 1980; Kacmar et al., 2003). As previously discussed, communication and cooperative two-way communication also affects employee engagement (Carriere & Bourque, 2009; Welch, 2011). In fact, in one LMX study done with six football clubs in Turkey, the team members with a higher quality member-exchange were less likely to burnout. Burnout, similar to disengagement, can lead to diminished performance (Yildiz, 2011). Thus, once again showing that LMX can affect levels of engagement.

In another study with government employees, a before-and-after field experiment was held to determine the impact of LMX training with leaders. Thirty-five leaders were assigned to the LMX intervention training and 65 were assigned to the control condition of no training. For six months, the leaders in the intervention received training on LMX topics including, active

listening skills, exchanging mutual expectations, exchanging resources, and practicing one-on-one sessions (Scandura & Graen, 1984). The data concluded that those leaders who received the leadership intervention training were able to improve the quality of their subordinate relationships. Furthermore, the leadership intervention produced a 19% improvement in productivity, which was measured by collecting weekly output records of individual performance from computer files. This led the company to a cost savings of 5 million dollars (Scandura & Graen, 1984). Based on these findings, it can be concluded that communication skills are at the core of LMX, as seen in the LMX training—active listening, exchanging mutual expectations and resources, and conversing 1-1 in conversations.

In another study on 188 private sector workers, researchers tested whether or not communication frequency was related to the quality of the LMX relationship and job-performance ratings. The data concluded that at high levels of LMX, workers reported frequent communication with their leader and more favorable job-performance ratings, rather than those reporting infrequent communication (Kacmar, 2003). As apparent from these studies, when studying sensemaking, virtual communication, and employee engagement, LMX should be taken into consideration, since the quality of the relationship can affect access to communication and engagement levels.

As the literature has shown, sensemaking is central element of an organization's culture and communication is a key component of sensemaking (Weick, et. al, 2005). In addition, improving internal communications practices can increase sensemaking among employees, which in turn can increase employee engagement and job satisfaction. (Carriere & Bourque, 2009). Weick argued that organizations must play an active role in helping employees choose an interpretation best suited for the organization's strategy (Weick, 2001). Part of a leader's role in

helping employees interpret the message is choosing an appropriate communication channel for the message (Lengel & Daft, 1988). LMX also should be considered when discussing sensemaking and communications. Since leaders can consciously or subconsciously form varying levels of relationships with employees, it is important for them to understand the consequences of categorizing their employees in the in and out-groups. Typically, those employees bucketed in the in-group, tend to receive more open communication, which can influence engagement (Yildiz, 2011).

Consequently, since communication is an element of both sensemaking and employee engagement, and sensemaking is an essential piece of organizational culture, what impact does the increase use of more moderate and lean channels (ICTs) for leadership communication have on employee engagement? While the literature review summarized various studies in the field, there is an apparent gap in research concerning the effect of ICTs (lean and moderate channels) on leadership communication and engagement. Accordingly, this study will examine the impact of virtual communication on employee engagement by examining communication satisfaction, frequency of lean, moderate, and rich communication channels used, and employee engagement.

CHAPTER III: METHODOLOGY

While employee engagement is just starting to gain traction within academic research, business practitioners over the past decade have recognized the impact engagement can have on a company's bottom line (Harter, et al., 2002). In a 2012 study of 50,000 businesses and an estimated half a million employees, Gallup discovered the businesses that scored in the top half of employee engagement had double the odds of success of those in the bottom half (Gallup, 2014). Also, those that scored in the 99th percentile had four times the success rate. Similar studies within academia have shown that employee engagement can affect organizational performance, productivity, retention, financial performance, and shareholder return (Bates, 2004; Harter et al., 2002). Studies have also demonstrated that leadership communication can play a critical role in improving employee engagement. However, as businesses continue to expand globally, organizations are increasing their use of ICTs to communicate vital organizational messages (Klitmoller & Luring, 2013). Therefore, this study examined the effects, if any, that virtual communication has on employee engagement. In order to study the research questions, this chapter outlines the research design, participants, instrumentation, procedures, research questions, data analysis, and assumptions for the study.

Research Design

This study evaluated the relationship between four quantitative variables — employee engagement, leadership communication, leader-member exchange relationship, and perceived satisfaction of organizational communication. A survey was used in order to test the research questions. A correlational design that uses surveys to examine quantitative variables is an effective design procedure because they can show trends within populations (Creswell, 2012). The survey was distributed to 265 anonymous full-time employees. Approximately, 50.9% were collocated with their leader and 49.1% are not. The instrument was broken down into four

sections, a communication climate inventory, a communication channel instrument survey, a leader-member exchange survey, and an engagement survey. The Dennis Communication Climate Inventory (1974) measured participants' perceptions on how the organization and leadership communicates. The LMX-7 scale (Scandura & Graen, 1984) was the second section of the survey. This scale assessed the quality of the relationship between the leader and team members or the leader-member exchange (LMX). The third part of the survey asked the participants to rate the frequency that the leader communicates through the three categories of MRT including, lean, moderate, and rich channels. Finally, the fourth part of the survey rated employee engagement using the Schaufeli and Bakker's (2004) Utrecht Work Engagement Scale (UWES). This scale has 17 statements that asked participants to rate how they feel about work. These four sections were then analyzed to see if there is a relationship between employees' satisfaction with the organization communication, frequency of lean, moderate, and rich channels, LMX, and employee engagement.

Participants

Two hundred and sixty five participants were purchased from Qualtrics, the world's leading enterprise survey technology solution. Qualtrics partners with over 20 online panel providers to supply a network of diverse, quality respondents. Based on the research demographic needs, Qualtrics recruited 265 participants through their network. An email was sent out inviting potential respondents to take the survey. Potential respondents could unsubscribe at any time. In addition, to avoid self-selection bias, the survey invitation did not include specific details about the contents of the survey. Therefore, this survey sample was a convenience sample. Convenience sampling was utilized because there was an opportunity to have access to employees from a variety of locations and companies that were likely to utilize ICTs to communicate.

Instrumentation

The survey instrument had the following four sections/surveys: Dennis Communication Climate Inventory (1974), Communication Channel Instrument (2009), the LMX-7 scale (Scandura & Graen, 1984), and the Schaufeli and Bakker's (2004) Utrecht Work Engagement Scale (UWES) (See Appendix for complete survey instrument).

Dennis Communication Climate Inventory

The Dennis Communication Climate Inventory (1974), as published by O'Connell (1979), measured employee perceptions on how the organization communicates internally. For the purpose of this study, internal communication is defined as the exchange of information both informal and formal between management and organizational members. Dennis divided the survey questions into five factors. Four out of five of these factors were measured: superior-subordinate communication, quality of information, superior openness/candor, opportunities for upward communication, and reliability of information (Dennis, 1974; O'Connell, 1979). For this study, the superior openness/candor section was deleted since it pertains only to manager-level employees. In addition, two of the items within the opportunities for upward communication factor were removed for the same reasons as noted above. Participants rated each question using a five-point Likert-scale item ranging from "strongly disagree" to "strongly agree." The scale was coded from one to five, with one representing "strongly disagree." Internal consistency for four out of five of these dimensions were reported by Lockhart (1987): (a) superior-subordinate communication Cronbach's $\alpha = .94$, (b) quality and accuracy of downward information Cronbach's $\alpha = .88$, (c) upward communication Cronbach's $\alpha = .89$, and (d) perception of reliability Cronbach's $\alpha = .83$. However, it should be noted that Lockhart (1987) slightly changed the wording of the Dennis Communication Climate Inventory questions. While the meaning of the questions generally remained the same, the reliabilities cannot be considered a

direct comparison. To ensure further reliability of the Dennis Communication Channel Inventory, internal consistency (Cronbach's alpha) was computed for each subscale.

Communication Channel Instrument

A Communication Channel Instrument (CCI) originally created for another dissertation by Hayase (2009) was adapted for the study. This present study's instrument assessed the frequency that the participants' organizations used the three categories of communication channels—lean, moderate, and rich. Hayase's Communication Channel Instrument was also updated to reflect technological advancements since it was created in 2009. In addition, it was altered to include commonly used communication channels. Finally, the scale was changed to reflect frequency.

The CCI included twenty-nine communication channels that participants rated with the following scale: 1 = Never; 2 = Almost Never (A few times a year or less); 3 = Rarely (Once a month or less); 4 = Sometimes (A few times a month); 5 = Often (Once a Week); 6 = Very Often (A few times a week); 7 = Always; (Every day). The twenty-nine communication channels were categorized based on Daft and Lengel's MRT categories, lean, moderate, and rich channels. The categories were divided based on Daft and Lengel's (1986) Media Richness Theory (MRT). The definitions for each channel for this study are outlined below citing both Daft and Lengel's thoughts on the communication channels, as well as follow-up research that has occurred as research continues to grow on MRT. Also, an asterisk (*) denotes the information communication technologies in each category since one of the purposes of this study is to see how lean, moderate, and rich communication channel usage affects employee engagement.

Lean: Written, non-interactive, routine messages like employee newsletters and mailings are considered lean channels. Lean channels do not show nonverbal cues and restrict feedback (Daft & Lengel, 1986).

Moderate: More interactive channels that still lack the ability to exchange non-verbal cues are considered moderate (Daft & Lengel, 1986). Although, in some research, email is categorized as a lean medium, especially when Daft and Lengel first created MRT in the 1980s, email has become a fast and interactive mode for information sharing. Email is also a daily routine for employees and more complex than a lean flier (Carlson & Zmud, 1999; Markus, 1994).

Therefore, email has been classified as a moderate channel.

Rich: Interactive, immediate messages that enable the exchange of non-verbal cues like one-on-one meetings with the manager are considered rich channels (Byrne & LeMay, 2006; Daft & Lengel, 1986). While video conferencing is not as rich as face-to-face communication, it is still considered rich because it has the ability to communicate non-verbal cues which play an integral role in helping employees determine social meaning (Burgoon et al., 1996).

Table 1

Communication Channels Categorized by MRT

| Lean Channels | Moderate Channels | Rich Channels |
|--------------------------|--------------------------------------|---|
| Intranet* | Instant Messenger* | Employee Recognition Ceremonies |
| Internet* | Yammer* | Town hall meetings with executive leaders in-person |
| Posters, Fliers, Banners | Emails* | Town hall meetings with executives via video* |
| At home mailing | Town hall meeting via phone* | Team meetings in-person |
| eLearning* | Team meetings via phone* | Team meetings via video* |
| TV monitors* | Department meetings via phone* | Department meetings in-person |
| eNewsletters* | 1:1 meetings with manager via phone* | Department meetings via video* |
| | Instructor-led training via phone* | 1:1 in-person meetings with manager |
| | Text messages* | 1:1 meetings with manager via video* |
| | Voicemails* | Classroom training |
| | Company videos* | Instructor-led training via video* |

Note. *Denotes information communication technologies

The goal of this instrument was to determine whether frequency of certain communication channels (lean, moderate and rich) resulted in higher prediction of employee engagement. Specifically, it examined if increasing the use of virtual channels (ICTs) to communicate affected engagement.

Since this instrument was used in only in two studies previously, the following steps were taken to assess validity, or the extent to which any instrument measures what it is intended to measure (Carmines & Zeller, 1979). The first step was to review validity evidence based on test content. Three experienced corporate communication professionals reviewed the CCI to provide feedback on the channels listed. A communications scholar also reviewed the entire instrument

and provided feedback. Finally, a confirmatory factor analysis (CFA) was computed to review relationships between both the observed and unobserved (latent) variables.

LMX-7 Scale

The LMX-7 scale (Scandura & Graen, 1984) was used to measure the quality of relationship between the leader and employee. Depending on the quality of the relationship between leader and employees, this may affect engagement levels and satisfaction with communication (Yildiz, 2011). The LMX-7 scale from Janseen and Yperen (2004) used in the survey has also been used and tested in multiple research studies (Scandura & Graen, 1984; Wayne et al., 1997). In fact, the creators of the scale provided a history of the scale, which has evolved over the years.

Investigations have used a 2-item, 4-item, 5-item, 7-item, 10-item, and 14-item LMX scale.

This refinement of the measure has occurred from our learning through research and theorizing about LMX. Different measures have involved the use of added experimental items to tap into and test the dimensionality of LMX. Conclusion from this testing indicates to us that, even though items were added to tap into possible multiple dimensions, the expanded measure was highly correlated with the more concise 7-item LMX and produced the same affects (Scandura & Graen, 1984, p. 236).

The survey has seven questions with a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). The instrument was found to be reliable with a Cronbach's alpha of 0.83 in a 1986 study and a 0.92 in 2012 study (Gajendran & Joshi, 2012; Scandura et al., 1986).

Furthermore, Scandura and Graen have found through their testing and research, the internal consistency for a one-factor scale has consistently been in the 80-90% range (Scandura & Graen, 1984).

Utrecht Work Engagement Scale (UWES)

Finally, the Schaufeli and Bakker's (2004) UWES scale was used to measure the dependent variable employee engagement. Researchers Schaufeli and Bakker (2002) defined work engagement as, "a positive work-related state of mind that is characterized by vigor,

dedication, and absorption” (p. 895). Based on this definition, the survey included seventeen questions that are split under these three dimensions — vigor (6 items), dedication (5 items), absorption (6 items). Participants rated each response on the following scale: 0 = Never; 1 = Almost Never (A few times a year or less); 2 = Rarely (Once a month or less); 3 = Sometimes (A few times a month); 4 = Often (Once a Week); 5 = Very Often (A few times a week); 6 = Always; (Every day).

The UWES has been utilized in multiple studies that confirmed positive psychometric scores. For example, internal consistencies (Cronbach’s alpha) in studies using the UWES scale ranged between .80 and .90. (Demerouti et al., 2001; Montgomery et al., 2003; Schaufeli & Bakker, 2004). Typically, if Cronbach’s alpha exceeds .70 or higher, it is considered acceptable (Mertler & Vannatta, 2013). Further reliability and confirmatory factor analysis was run within this study to further confirm accuracy of the UWES scale.

Within the Demographic section, participants were first asked to choose if they currently worked full-time. If they selected yes, they continued with the survey. If they selected no, they were not included in the survey. Participants were asked age, gender, ethnicity, and office location. They were also asked to identify their proximity to the organizational leaders (executive team) and their direct leader (same location versus separate location).

Lastly, a consent form was provided at the beginning of the survey. Participants learned how their data would be used, how to contact the HSRB or myself with any questions, and were reminded that all information as anonymous. Each section of the survey also had brief instructions helping participants understand how to complete that specific section, including any operational definitions and the ratings scale.

Procedures

Since the survey was distributed to employed human subjects, this study was first approved by the Human Subjects Review Board (HSRB). Following approval, the survey instrument was then distributed by Qualtrics via email to potential respondents. Two hundred and sixty-five responses were collected and the survey took approximately fifteen minutes to complete. The instrument in the Appendix includes the questions that was used in order to examine the research questions.

The participants were asked to take the survey through email. The email sent to potential respondents said the following: “Complete one of the following surveys to claim your reward. You qualify for [enter number of surveys they qualify for] surveys.” If participants opted in and completed the survey, they had a chance to earn points towards prizes distributed by Qualtrics.

Research Questions

1. (a) How is employee satisfaction with the organization’s communication, as measured by the Dennis’ Communication Climate Inventory (Dennis, 1974; IV) related to employee engagement, as measured by the Utrecht Work Engagement Scale (UWES) (Schaufeli and Bakker’s, 2004; DV), for both employees who are collocated with their manager, as well as for employees who are distanced from their manager,?

- (b) How does the quality of leader-member exchange (LMX) as measured by the LMX-7 Scale (Scandura & Graen, 1984; IV) interact with employee satisfaction with the organization's communication and employee engagement, as measured by the Utrecht Work Engagement Scale (UWES) (Schaufeli and Bakker’s, 2004; DV)?

2. (a) How does frequency of communication channels, as classified according to Media Richness Theory (Lengel & Daft, 1988, IV), both for employees who are collocated with their manager, as well as for employees who are distanced from their manager, predict employee engagement, as measured by the Utrecht Work Engagement Scale (UWES) (Schaufeli and Bakker’s, 2004; DV)?

- (b) How does the quality of LMX, as measured by the LMX-7 Scale (Scandura & Graen, 1984; IV) interact with the frequency of communication channels and employee engagement, as measured by the Utrecht Work Engagement Scale (UWES) (Schaufeli and Bakker’s, 2004; DV)?

3. (a) How does the frequency of communication between managers and employees (IV), both for employees who are collocated with their manager, as well as for employees who are distanced from their manager, predict employee satisfaction with the organization's communication, as measured by Dennis Communication Climate Inventory (Dennis, 1974; DV)?

(b) How does the quality of LMX, as measured by the LMX-7 Scale (Scandura & Graen, 1984); IV) interact with the frequency of communication between managers and employees (IV) and employee satisfaction with the organization's communication, as measured by Dennis Communication Climate Inventory (Dennis, 1974; DV)?

Data Analysis

Within this study, the independent variables, communication channels, frequency of communication, LMX, and satisfaction with organizational communications were examined to determine if there is a relationship amongst these variables and employee engagement. Perceived satisfaction with organizational communication was also a dependent variable and tested to see if a relationship exists between frequency of communication channels and LMX. For the data analysis, multiple measures were put into place to ensure data accuracy. First, a speeding check was added to the survey. The median length of the survey was 7.7 minutes, a speeding check was added that measured as 1/3 the median soft launch time. This means that the survey automatically terminated those who did not responding thoughtfully. Next, the data was screened for outliers or extreme values by examining the frequency distribution or histogram for outliers (Mertler & Vannatta, 2013). The data was also screened for missing data, but none was found.

Next, a factor analysis was run for each survey (four total) within the instrument. The factor analyses determined internal consistencies and dimensions of each of the scales. Descriptive statistics was also run to provide a summarization of the data collected, including the sum and mean of the scales and subscales. Finally, the research questions were analyzed by running regression tests to determine if certain variables explain or predict the outcomes.

Assumptions

In order for the study to make significant contributions to the field of leadership and communication, multiple assumptions must be determined true. First, it is assumed that participants will complete the survey truthfully. Participants were not required to enter their name, only regional location, gender, and proximity to executive leadership and their direct leader. Thus, responses were anonymous.

The data collection instrument must be assumed to be reliable as well. As previously discussed, three of the surveys, the Dennis' Communication Climate Inventory and Schaufeli and Bakker's UWES survey have been tested and utilized in multiple studies and deemed valid and reliable (Schaufeli & Bakker, 2004; Seppala et. al., 2009). However, in order to measure employees' perceptions and satisfaction with communication channels, the Communication Channel Instrument, which has only been used for one other dissertation will be utilized. This survey has not been tested for internal consistencies. Hence, proper steps will be taken to confirm that the survey is reliable prior to data analysis.

CHAPTER IV: FINDINGS

This chapter presents the statistical analyses of the data gathered in this study. The purpose of this study was to determine the effects, if any, that virtual communication has on employee engagement. Since numerous factors can affect employee engagement, multiple variables were examined through the survey including, frequency of communication channels, richness of communication channels, quality of leader-member relationships, and satisfaction of organizational communication. This chapter features a detailed review of the participants, internal consistency of the instruments and the statistical results of each of the hypotheses. All data was analyzed using IBM SPSS Statistics 24 with the alpha level of .05.

Description of Participants

The global survey company, Qualtrics, distributed the survey instrument via email to its pool of survey panelists. Qualtrics maintains a large resource of survey panelists that will complete surveys to earn points towards prizes. Participants who opted to take the survey were asked to complete the demographics section that included questions on gender, age, ethnicity, and location. They also received a screener question asking if they worked full-time. If they answered that they did not work full-time, they were sent to the end of the survey and their data was not collected. Participants also answered whether or not they were in the same location as their manager. This information is insightful for the study because employees who are collocated with their manager may have the opportunity for more face-to-face time (richer communication channel) than those spatially dispersed. Two hundred and sixty five panelists participated in the survey. Table 2 outlines their demographics.

Table 2

Summary of Participant Demographics, Location and Travel (N = 265)

| Categorical Variables | <i>n</i> | <i>%</i> |
|--------------------------------|----------|----------|
| Gender | | |
| Male | 121 | 46.8 |
| Female | 144 | 52.3 |
| Office with Manager | | |
| Office Collocated with Manager | 135 | 50.9 |
| Office Not Same as Manager | 130 | 49.1 |

Instrument Internal Consistencies

The Dennis' Communication Climate Inventory (1974), as published by O'Connell (1979), measures employee perceptions on how the organization communicates internally. For the purpose of this study, internal communication is defined as the exchange of information both informal and formal between management and organizational members. Dennis divided the survey questions into five factors. Four out of five of these factors were measured: superior-subordinate communication, quality of information, superior openness/candor, opportunities for upward communication, and reliability of information (Dennis, 1974; O'Connell, 1979). For this study, the superior openness/candor section was deleted since it pertains only to manager-level employees. In addition, two of the items within the opportunities for upward communication factor were removed for the same reasons as noted above. Participants rated each question using a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). Reliabilities for four out of five of these dimensions were reported by Lockhart (1987): (a) superior-subordinate communication Cronbach's alpha = .94, (b) quality and accuracy of downward information Cronbach's alpha = .88, (c) upward communication Cronbach's alpha = .89, and (d) perception of reliability Cronbach's alpha = .83. However, it should be noted that Lockhart (1987) slightly changed the wording of the Dennis Communication Climate Inventory questions.

While the meaning of the questions generally remained the same, the reliabilities cannot be considered a direct comparison. While Dennis and O'Connell intended for the Dennis Communication to have four subscales, my exploratory factor analysis only computed one factor. A second exploratory factor analysis was executed forcing four factors, but a majority of the items still loaded into one factor causing the other three factors to be weak. Based on this statistical evidence, for this study, the Dennis Communication Climate Inventory was a one-scale instrument. Internal reliability was also computed for this study and that revealed a Cronbach's alpha of .981.

The LMX-7 survey is intended to measure the quality of leader-member relationship. The survey is made up of seven questions using a five-point Likert Scale ranging from Strongly Disagree (1) to Strongly Agree (5). The LMX-7 has shown strong internal consistencies in numerous research studies (Gajendran, et al., 2012; Kacmar, et al., 2003; Wayne et al., 2008). While the scale has occasionally been multi-dimensional, the creators have determined the LMX-7 works best a one-factor scale since the dimensions are so highly correlated (Graen & Uhl-Bien, 1995). "The most consistent finding of the testing across these studies, however, is homogeneity on the single dimension (Cronbach alphas for single measure in the 80-90% range) and mixed findings for multidimensionality" (Graen & Uhl-Bien, 1995, p. 236). My study found similar results with a Cronbach alpha of .927. In addition, the correlation matrix showed all seven items well above the recommended $r \geq .70$.

The CCI was made up of 29 items with a 7-point Likert-scale item ranging from Never (1) to Always (7). The survey was intended to measure the frequency of communication channels used by organizations. While this instrument was inspired by Hayase's (2009) CCI, the

instrument was revamped with seventeen communication channels added and the scale changed from satisfaction to frequency. Hence, there is no previous research on internal consistencies.

First, a factor analysis was run with the CCI data. Based on the data, there was a clear indication that there were no patterns amongst the communication channels. While the data showed only a one-factor structure, I divided the communication channels into three theoretically informed categories—lean, moderate, and rich channels. The categories were divided based on Daft and Lengel's (1986) Media Richness Theory (MRT). The definitions for each channel for this study are outlined in Chapter 3. Table 3 shows the categorization of the channels. An asterisk (*) denotes the information communication technologies in each category.

Table 3

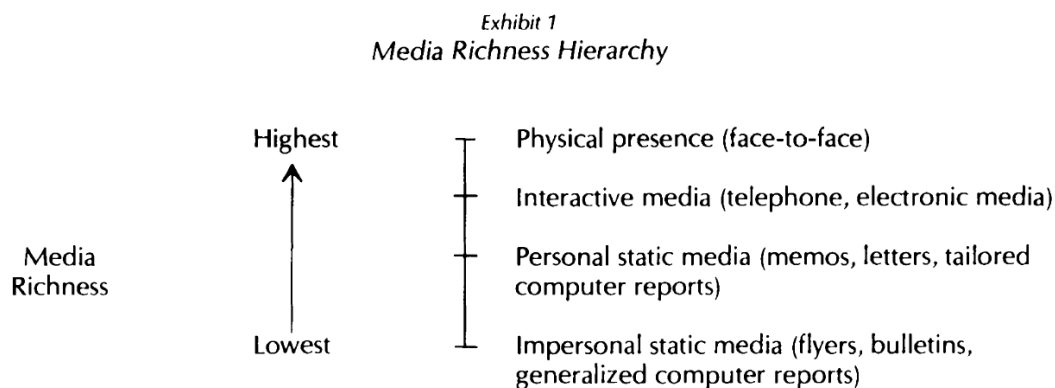
Communication Channels Categorized by MRT

| Lean Channels | Moderate Channels | Rich Channels |
|--------------------------|--------------------------------------|---|
| Intranet* | Instant Messenger* | Employee Recognition Ceremonies |
| Internet* | Yammer* | Town hall meetings with executive leaders in-person |
| Posters, Fliers, Banners | Emails* | Town hall meetings with executives via video* |
| At home mailing | Town hall meeting via phone* | Team meetings in-person |
| eLearning* | Team meetings via phone* | Team meetings via video* |
| TV monitors* | Department meetings via phone* | Department meetings in-person |
| eNewsletters* | 1:1 meetings with manager via phone* | Department meetings via video* |
| | Instructor-led training via phone* | 1:1 in-person meetings with manager |
| | Text messages* | 1:1 meetings with manager via video* |
| | Voicemails* | Classroom training |
| | Company videos* | Instructor-led training via video* |

Note. *Denotes information communication technologies

While the channels were categorized by lean, moderate and rich for the purpose of this study, it is essential to remember that the MRT is actually a continuum that flows from lean to rich channels as seen in Figure 1 below (Lengal & Daft, 1988). For example, a face-to-face meeting is richer than a video conference meeting.

Figure 4
Media Richness Theory Model



After dividing the channels as indicated above, these subscales were then used in analyzing the research questions. However, after computing initial descriptive statistics and regressions with the sum of each channel category (lean, moderate, and rich), it was noticed that some of the 29 communication channels were not frequently used by participants. This could have been because the participants' organization did not have those communication channels and/or did not use them. To test out the theory that leaders and employees in this study were not using many of the 29 channels, the top five channels from each category were used to run the regressions instead. This time there was significance in the model with moderate and rich channels. Based on these findings, the top five communication channels from each category were used to compute the regressions instead. Table 4 outlines the top five communication channels for each category.

Table 4
Top Five Communication Channels Most Frequently Used by Participants

| Lean Channels | Moderate Channels | Rich Channels |
|--------------------------|--------------------------|-------------------------------------|
| Intranet* | Emails* | Classroom training |
| Internet* | Team meetings via phone* | Team meetings in-person |
| Posters, Fliers, Banners | Instant Messenger* | Department meetings in-person |
| eNewsletters* | Text messages* | 1:1 in-person meetings with manager |
| eLearning* | Voicemails* | Employee Recognition Ceremonies |

Note. *Denotes information communication technologies

Finally, the UWES was utilized in the survey to measure employee engagement. The survey contains 17 questions with a 7-point Likert Scale ranging from Never (1) to Always (7). The UWES survey was originally created to have three dimensions—vigor, dedication, and absorption. Past studies show positive psychometric features for its scores. For example, internal consistencies (Cronbach's alpha) typically ranged between .80 and .90 (Demerouti, et al., 2001; Schaufeli & Bakker, 2004; Schaufeli et al., 2009).

While previous studies using confirmatory factor analyses have shown that the three-factor structure of the UWES is superior to the one-factor model, this was not the case for my study (Schaufeli, et al., 2002; Schaufeli et al. 2002). After running an exploratory factor analysis, the data did not neatly categorize into a three-factor model. Similarly, Sonnentag (2003) did not find a clear three-factor structure and used the total score of the UWES as a measure for employee engagement. Thus, for this study, the total score of the UWES was used to measure engagement.

In this study, internal consistency for the UWES was extremely strong with a Cronbach's alpha of .973. Reviewing the seventeen items of the UWES, the data showed that if an item was removed from the survey, it would either reduce the internal consistency or leave it unchanged,

with the exception of item number 16. Removing item number 16 would actually increase internal consistency by .001. Also item number 16's factor loading was .674, below the recommended 0.7. While dropping item number 16 from the UWES was considered, after careful review of numerous studies utilizing the UWES, there was no evidence of previous researchers removing any of the items (De Bruin et al., 2013; Salanova & Peiro, 2005; Schaufeli, et al., 2002; Schaufeli et al. 2002). Furthermore, since it was a small change in the internal consistency (.001), it was decided to keep all 17 items within the data.

Results of Research Questions

For all three research questions, linear regressions were conducted to determine if there were relationships among perceived organizational communication satisfaction, employee engagement, frequency of communication channels, and LMX. The research question A's represent the initial relationship to be examined. The research question B's include the LMX relationship and interaction terms. As mentioned in Chapter 2, those employees with high quality leader-member relationship receive more benefits than those employees in a low quality relationship including, ample resources, premier assignments, emotional support, cooperative interactions, and more communication (Kacmar et al., 2003; Liden & Graen, 1980). Also, those employees in a high-quality relationship are more likely to be committed to their goals and organization (Sorenson, 2013; Quirke, 2008; Frank & Taylor, 1994). Hence, the LMX variable and interaction was added to each research question because LMX can also potentially affect satisfaction with organizational communication, frequency of communication, and employee engagement.

Research Question 1A: How is employee satisfaction with the organization's communication, as measured by the Dennis Communication Climate Inventory (Dennis, 1974; IV) related to employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and

Bakker's, 2004; DV), for both employees who are collocated with their manager, as well as for employees who are distanced from their manager?

Research Question 1B: How does the quality of leader-member exchange (LMX) as measured by the LMX-7 Scale (Scandura & Graen, 1984; IV) interact with employee satisfaction with the organization's communication and employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV)?

A linear regression was conducted to examine the first research question, the relationship between perceived satisfaction with organizational communication and employee engagement. LMX was added to Model 2, while the interaction variable LMX and organizational communication satisfaction was added to Model 3 of the regression. Preliminary analyses were conducted to ensure there was no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. Mertler and Vannatta (2013) state the first step in analyzing for multicollinearity is to examine the correlation matrix for the predictor variables, Tolerance and Variance Inflation Factor (VIF), looking for moderate to high intercorrelations. Tolerance is a measure of collinearity among IVs, with values ranging from 0 to 1. A value for Tolerance near zero is an indication of multicollinearity (Mertler & Vannatta, 2013). VIF is an indicator of the amount of variability of the specified independent variable that is not explained by the other independent variables in the model, as well as the inverse of tolerance. Values of VIF that are greater than 10 are usually causes for concern (Mertler & Vannatta, 2013). For research question one, both Model 1 and Model 2 were well within the recommended limits. When the LMX interaction variable was added to the regression, the VIFs did increase, but collinearity is expected when interaction variables are added.

The Normal Probability Plot (P-P) of the Regression Standardized Residual was examined to further test for assumptions, outliers, normality, linearity and homoscedasticity. The

Normal P-P Plots for all three research questions showed a relatively straight diagonal line from the bottom, left to the top right (Meyers et al., 2006).

Next, the mean and standard deviation of the variables were reviewed. Table 5 shows the model summary of employee engagement ($M=81.23$, $SD=24.19$), perceived satisfaction with organizational communication ($M=141.88$, $SD=30.33$), Collocation ($M=.51$, $SD=.50$), and LMX ($M=28.21$, $SD=6.15$). Participants rated employee engagement on the following scale:

0 = Never; 1 = Almost Never (A few times a year or less); 2 = Rarely (Once a month or less); 3 = Sometimes (A few times a month); 4 = Often (Once a Week); 5 = Very Often (A few times a week); 6 = Always; (Every day). Organizational communication satisfaction and LMX were both rated on a scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

Table 5

Summary of Employee Engagement, Organizational Communication Satisfaction, Collocation, and LMX Mean Scores (n=265)

| Variables | <i>M</i> | <i>SD</i> |
|---|----------|-----------|
| Employee Engagement | 81.23 | 24.19 |
| Organizational Communication Satisfaction | 141.88 | 30.33 |
| Collocated with Manager | .51 | .50 |
| LMX | 28.21 | 6.15 |

After reviewing the mean scores, the model summary was then evaluated. Model 1 examined the relationship between employee engagement (DV) and perceived satisfaction of organizational communication (IV). Model 1 was significant, $F(2, 262) = 80.45$, $p < .001$, while in Model 2, the addition of LMX, did not significantly add to the model, $\Delta F(1, 261) = 1.93$, $p = .166$. Model 3, which added the LMX interaction with communication satisfaction, did not significantly contribute to the explanation of employee engagement either: $\Delta F(1, 260) = 3.50$,

$p = .063$. The results for Model 3 indicate that for this study, there is no interacting relationship between LMX and satisfaction with organization communication and employee engagement.

Therefore, the non-significant interaction term was dropped for this study.

Table 6 outlines the Adjusted R^2 for Model 1, which examined the relationship between employee engagement (DV) and perceived satisfaction of organizational communication (IV), as well as Model 2 that includes the LMX variable.

Table 6

Model Summary Organizational Communication Satisfaction, Employee Engagement, and LMX

| Variables | R | R^2 | Adjusted R^2 | Std. Error of the Estimate |
|-----------|-----|-------|----------------|----------------------------|
| Model 1 | .62 | .38 | .38 | 19.11 |
| Model 2 | .62 | .39 | .38 | 19.08 |

The R^2 represents the variance in the dependent variable explained by all predictor variables.

Model 1 R^2 reveals that the variable communication satisfaction contributes to 38% variance in employee engagement. Adding in the variable LMX does not significantly change the R^2 or variance.

Next, the independent variables, perceived satisfaction of organizational communication and LMX were evaluated using the standardized Beta (β), t , and p -value. A standardized beta compares the strength of the effect of each individual independent variable to the dependent variable using standard deviations as their units (Field, 2003). The t -value is based on the ratio of explained variance to unexplained error and shows whether the B is large compared to the amount of error in that estimate (Field, 2013). Finally, the p -value indicates the statistical significance or strong evidence against the null hypothesis. The data values for satisfaction with organizational communication interacting with employee engagement in Model 1 are: $\beta = 0.62$, $t = 12.6$, $p < .001$, revealing that perceived satisfaction with organizational communication does

have a significant relationship with employee engagement. Specifically, when communication satisfaction increases by 1 standard deviation, employee engagement increases by .62 standard deviations. Collocation with the participant's manager does not have a significant relationship with employee engagement: $\beta = -.02, t = -.373, p = .710$. In Model 2, communication satisfaction remains significant: $\beta = .74, t = 7.30, p < .001$, while collocation remains insignificant: $\beta = -.02, t = -.34, p = .732$. LMX does not have a significant relationship with employee engagement when satisfaction with organizational communication is part of the regression: $\beta = -.14, t = -1.39, p = .166$. Table 7 outlines the coefficients of both models.

Table 7

Coefficients of Organizational Communication Satisfaction, Collocation, and LMX (N=265)

| Variables | B | β | t | p |
|---|------|---------|-------|------|
| Model 1: | | | | |
| Organizational Communication Satisfaction | .49 | .62 | 12.60 | .000 |
| Collocated with Manager | -.89 | -.02 | -.37 | .710 |
| Model 2: | | | | |
| Organizational Communication Satisfaction | .39 | .74 | 7.30 | .000 |
| Collocated with Manager | -.81 | -.02 | -.34 | .732 |
| LMX | -.56 | -.14 | -1.39 | .166 |

Based on this data, it can be concluded that for this study, perceived satisfaction with organizational communication does have a significant relationship with employee engagement, while collocation with one's manager does not.

Research Question 2A: How does frequency of communication channels, as classified according to Media Richness Theory (Lengel & Daft, 1988, IV), both for employees who are collocated with their manager, as well as for employees who are distanced from their manager, predict employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV)?

Research Question 2B: How does the quality of LMX, as measured by the LMX-7 Scale

(Scandura & Graen, 1984; IV) interact with the frequency of rich communication channels and employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV)?

A regression was conducted for research questions two to determine if the frequency of lean, moderate, and rich communication channels has any effect on employee engagement. The independent variable, LMX was added to Model 2 of the regression, and an interaction term for LMX and lean frequency, LMX and moderate frequency, and LMX and rich frequency was computed and then added to Model 3. First, the VIF, Tolerance and the Normal P-P Plot were examined to test for assumptions, outliers, normality, linearity and homoscedasticity. The Tolerance and VIF of Model 1 and 2 were within the recommended limits and the Normal P-P Plot had the relatively straight diagonal line from the bottom, left to the top right.

Next, the mean and standard deviation of the variables were reviewed. Table 8 lists the mean scores of employee engagement ($M=81.23$, $SD=24.19$), communication channel frequencies (lean frequency: $M=18.00$, $SD=8.31$, moderate frequency: $M=19.60$, $SD=7.80$, rich frequency: $M=17.92$, $SD=8.33$), collocation: $M=.51$, $SD=.50$, and LMX ($M=28.21$, $SD=6.15$). Employee engagement and the communication channel frequencies were rated on the following scales: 1 = Never; 2 = Almost Never (A few times a year or less); 3 = Rarely (Once a month or less); 4 = Sometimes (A few times a month); 5 = Often (Once a Week); 6 = Very Often (A few times a week); 7 = Always; (Every day). Finally, LMX was rated on a scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

Table 8

Summary of Employee Engagement, Communication Channel Frequencies, Colocation, and LMX Mean Scores (N =265)

| Variables | <i>M</i> | <i>SD</i> |
|-------------------------|----------|-----------|
| Employee Engagement | 81.23 | 24.19 |
| Lean Frequency | 18.00 | 8.31 |
| Moderate Frequency | 19.60 | 7.80 |
| Rich Frequency | 17.92 | 8.33 |
| Colocation with Manager | .51 | .50 |
| LMX | 28.21 | 6.15 |

After reviewing the mean scores, the model summary was evaluated. Model 1 examined the relationship between frequency of communication channels and employee engagement. Model 2 added the LMX variable, while Model 3 added the LMX interaction variable with each communication channel. Model 1 was significant, $F(4, 260) = 20.36, p < .001$. Model 2, with the addition of LMX, significantly added to the model, $\Delta F(1, 259) = 53.80, p < .001$. Model 3, which added the LMX interactions with communication channel frequency, did not significantly contribute to the explanation of employee engagement: $\Delta F(3, 256) = .16, p = .922$. Indicating that for this study, there is no interacting relationship between LMX and communication channel frequencies and employee engagement. Therefore, the non-significant interaction terms were dropped for this present study.

Table 9 outlines the Adjusted R^2 for Model 1, examining the relationship between employee engagement (DV) and the communication channel frequencies (IVs), as well as Model 2, which added LMX (IV).

Table 9

Model Summary Communication Channel Frequencies, Colocation Employee Engagement, and LMX

| Variables | <i>R</i> | <i>R</i> ² | Adjusted <i>R</i> ² | Std. Error of the Estimate |
|-----------|----------|-----------------------|--------------------------------|----------------------------|
| Model 1 | .49 | .24 | .23 | 21.27 |
| Model 2 | .61 | .37 | .36 | 19.39 |

Table 9 shows that the addition of LMX into the regression increases the *R*² from 24% to 37% in predicting employee engagement. Hence, LMX has a more significant impact on the variance of the dependent variable, employee engagement.

Next, the independent variables, lean, moderate, and rich communication channel frequency and LMX, as well as colocation was reviewed using the Standardized Beta, *t*, and *p*-value. In Model 1, moderate and rich communicational channel frequencies revealed a significant relationship with employee engagement, while lean did not (lean frequency: $\beta = .05$, $t = .54$, $p = .590$; moderate frequency: $\beta = .24$, $t = 2.80$, $p = .006$; rich frequency: $\beta = .25$, $t = 2.67$, $p = .008$). Employees who are collocated with their manager were also added into the regression model. Those employees who were collocated with their managers did not show a significant relationship with employee engagement: $\beta = -.04$, $t = -.63$, $p = .531$. Once again, the LMX variable was added to Model 2 of the regression. With the addition of LMX, the moderate communication channel frequency lost its significance: $\beta = .13$, $t = 1.57$, $p = .117$, as well as rich communication channel frequency: $\beta = .16$, $t = 1.82$, $p = .070$. A high quality leader-member relationship becomes the significant factor in predicting employee engagement: $\beta = .39$, $t = 7.34$, $p < .001$. Colocation with the employees' leader remains insignificant in Model 2: $\beta = -.06$, $t = -1.14$, $p = .256$. Table 10 outlines the coefficients of both models.

Table 10

Coefficients of Communication Channel Frequencies, Collocation, and LMX (N=265)

| Variables | <i>B</i> | β | <i>t</i> | <i>p</i> |
|--------------------------|----------|---------|----------|----------|
| Model 1: | | | | |
| Lean Frequency | .16 | .05 | .54 | .590 |
| Moderate Frequency | .74 | .24 | 2.80 | .006 |
| Rich Frequency | .72 | .25 | 2.67 | .008 |
| Collocation with Manager | -1.70 | -.04 | -.63 | .072 |
| Model 2: | | | | |
| Lean Frequency | .33 | .11 | 1.24 | .215 |
| Moderate Frequency | .39 | .13 | 1.60 | .117 |
| Rich Frequency | .45 | .16 | 1.82 | .070 |
| Collocated with Manager | -2.79 | -.06 | -1.14 | .256 |
| LMX | 1.54 | .39 | 7.34 | .000 |

Table 10 shows that a high quality leader-member relationship becomes the significant factor in predicting employee engagement, not frequency of communication channels or collocation.

To examine whether or not virtual communication channels impact employee engagement, the virtual communication channels from the CCI were also categorized by lean, moderate, and rich (as denoted in Table 4) and computed in a linear regression along with collocation and LMX. Table 11 reviews the mean and standard deviation of each variable. Employee engagement and the virtual communication channel frequencies were rated on the same scale: 1 = Never; 2 = Almost Never (A few times a year or less); 3 = Rarely (Once a month or less); 4 = Sometimes (A few times a month); 5 = Often (Once a Week); 6 = Very Often (A few times a week); 7 = Always; (Every day). Finally, LMX was rated on a scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

Table 11

Summary of Employee Engagement, Virtual Communication Channel Frequencies, Colocation, and LMX Mean Scores (N =265)

| Variables | <i>M</i> | <i>SD</i> |
|----------------------------|----------|-----------|
| Employee Engagement | 81.23 | 24.19 |
| Virtual Lean Frequency | 17.50 | 8.55 |
| Virtual Moderate Frequency | 36.69 | 17.80 |
| Virtual Rich Frequency | 14.00 | 9.61 |
| Colocation with Manager | .51 | .50 |
| LMX | 28.21 | 6.15 |

As noted above, in Model 1, the rich and moderate communication channels (a mixture of ICTs and face-to-face) were found to have a significant relationship with employee engagement until LMX was added into Model 2. However, in Model 1 of the regression examining the relationships of the virtual communication channels, rich virtual communication channel frequency was not significant with employee engagement: $\beta = -.13$, $t = -.87$, $p = .388$. Since the moderate channels are all virtual communication channels, moderate communication frequency remained significant in this regression for Model 1 and became insignificant with the addition of LMX in Model 2: $\beta = .21$, $t = 1.37$, $p = .174$. Collocation remained insignificant once more in Model 1 and Model 2. Table 12 outlines the coefficients for virtual communication technologies, collocation, and LMX in regards to employee engagement.

Table 12

Coefficients of Virtual Communication Channel Frequencies, Collocation, and LMX (N=265)

| Variables | <i>B</i> | β | <i>t</i> | <i>p</i> |
|----------------------------|----------|---------|----------|----------|
| Model 1: | | | | |
| Virtual Lean Frequency | .44 | .16 | 1.51 | .132 |
| Virtual Moderate Frequency | .58 | .43 | 2.54 | .012 |
| Virtual Rich Frequency | -.34 | -.13 | -.87 | .388 |
| Collocation with Manager | -.38 | -.01 | -.138 | .890 |
| Model 2: | | | | |
| Virtual Lean Frequency | .45 | .16 | 1.70 | .090 |
| Virtual Moderate Frequency | .29 | .21 | 1.37 | .174 |
| Virtual Rich Frequency | -.09 | -.04 | -.25 | .80 |
| Collocated | -2.13 | -.04 | -.86 | .389 |
| LMX | 1.64 | .42 | 7.87 | .000 |

Research Question 3A: How does the frequency of communication between managers and employees (IV), both for employees who are collocated with their manager, as well as for employees who are distanced from their manager, predict employee satisfaction with the organization's communication, as measured by Dennis Communication Climate Inventory (Dennis, 1974; DV)?

Research Question 3B: How does the quality of LMX, as measured by the LMX-7 Scale (Scandura & Graen, 1984); IV) interact with the frequency of communication between managers and employees (IV) and employee satisfaction with the organization's communication, as measured by Dennis Communication Climate Inventory (Dennis, 1974; DV)?

A final regression was conducted for research question three to determine if the frequency of communication between managers and employees affects satisfaction with the organization's communication. The top five communication channels for each MRT category (lean, moderate, and rich) were included in the regression, as well as collocation. LMX was added to Model 2 and the interaction variables of LMX and frequency of each communication

channel were also added to Model 3. The VIF, Tolerance and the Normal P-P Plot were again examined to test for assumptions, outliers, normality, linearity and homoscedasticity. The Tolerance and VIF of Model 1 and Model 2 were within the recommended limits and the Normal P-P Plot had the relatively straight diagonal line from the bottom, left to the top right.

The next step was to review the mean and standard deviation of the variables. Table 13 shows the model summary of organizational communication satisfaction ($M=141.88$, $SD=30.33$), lean frequency ($M=18.00$, $SD=8.31$), moderate frequency ($M=19.60$, $SD=7.79$), rich frequency ($M=17.92$, $SD=8.33$), collocation ($M=.51$, $SD=.50$), LMX ($M=28.21$, $SD=6.15$). Participants rated each Dennis Communication Climate Inventory question on organizational communication satisfaction using a five-point Likert Scale ranging from Strongly Disagree (1) to Strongly Agree (5). The communication frequencies were rated on the following scale: 1 = Never; 2 = Almost Never (A few times a year or less); 3 = Rarely (Once a month or less); 4 = Sometimes (A few times a month); 5 = Often (Once a Week); 6 = Very Often (A few times a week); 7 = Always; (Every day).

Table 13

Summary of Organizational Communication Satisfaction, Communication Channel Frequencies, Collocation, and LMX Mean Scores (N =265)

| Variables | <i>M</i> | <i>SD</i> |
|---|----------|-----------|
| Organization Communication Satisfaction | 141.88 | 30.33 |
| Lean Frequency | 18.00 | 8.31 |
| Moderate Frequency | 19.60 | 7.79 |
| Rich Frequency | 17.92 | 8.33 |
| Collocation with Manager | .51 | .50 |
| LMX | 28.21 | 6.15 |

Next, the model summary was evaluated. Model 1 examined the relationship between communication channel frequency and organizational communication satisfaction. Model 2

added the LMX variable, while Model 3 included the LMX interactions between each communication channel frequency and organizational communication satisfaction. Model 1 was significant, $F(4, 260) = 20.31, p < .001$. In Model 2, LMX variable significantly added to the model, $\Delta F(1, 259) = 733.49, p < .001$. Model 3, which added the LMX interaction with communication channel frequencies did not significantly contribute to the explanation of employee engagement: $\Delta F(3, 256) = .35, p = .787$. Indicating that for this study, there is no interacting relationship between LMX and the communication channel frequencies and organizational communication satisfaction. Therefore, the non-significant interaction terms were dropped for this present study.

Table 14 outlines the Adjusted R^2 for Model 1, examining the relationship between organization communication satisfaction (DV) and communication channel frequency (IV), as well as Model 2, which added the LMX variable (IV).

Table 14

Model Summary Communication Channel Frequencies, Organizational Communication Satisfaction, Collocation, and LMX

| Variables | R | R^2 | Adjusted R^2 | Std. Error of the Estimate |
|-----------|-----|-------|----------------|----------------------------|
| Model 1 | .49 | .24 | .23 | 26.68 |
| Model 2 | .90 | .80 | .80 | 13.65 |

Thus, Model 1 which includes only the three communication channels, explains 24% variance in the dependent variable, perceived organizational communication satisfaction, while adding the leader-member relationship (LMX) dramatically increases the effect on organizational communication satisfaction to 80%.

Next, the standardized $Beta$, t , and p -values were reviewed for the independent variables, communication channel frequencies and LMX. The data in Table 15 revealed that both rich and

moderate channel frequency have a significant relationship with communication satisfaction (lean frequency: $\beta = -.11$, $t = -.11$, $p = .254$; moderate frequency: $\beta = .31$, $t = 3.60$, $p < .001$; rich frequency: $\beta = .31$, $t = 3.32$, $p = .001$). Once again, collocations showed no significant relationship with organizational communication satisfaction: $\beta = .04$, $t = .71$, $p = .476$. While moderate and rich channel frequency initially showed a significant relationship with organizational communication satisfaction, once the independent variable LMX was added to the regression, the moderate channel frequency lost its significance. LMX became the significant variable interacting with organizational communication satisfaction: $\beta = .82$, $t = 27.08$, $p < .001$, and rich communication channel frequency remained significant as well: $\beta = .12$, $t = 2.44$, $p = .016$. Thus, rich communication channels (face-to-face meetings with manager and department, recognition ceremonies, and classroom training) can impact organizational communication satisfaction, but LMX has a larger effect on communication satisfaction as seen in the *Beta* and *R*² data.

Table 15

Coefficients of Communication Channel Frequencies, Collocation, and LMX (N=265)

| Variables | <i>B</i> | β | <i>t</i> | <i>p</i> |
|--------------------------|----------|---------|----------|----------|
| Model 1: | | | | |
| Lean Frequency | -.41 | -.11 | -1.14 | .254 |
| Moderate Frequency | 1.20 | .31 | 3.60 | .000 |
| Rich Frequency | 1.13 | .31 | 3.32 | .001 |
| Collocation with Manager | 2.41 | .04 | .71 | .476 |
| Model 2: | | | | |
| Lean Frequency | .04 | .01 | .19 | .852 |
| Moderate Frequency | .28 | .07 | 1.62 | .107 |
| Rich Frequency | .43 | .12 | 2.44 | .016 |
| Collocated | -.48 | -.01 | -.28 | .782 |
| LMX | 4.01 | .82 | 27.08 | .000 |

To examine whether or not virtual communication channels impact organizational communication satisfaction, the virtual communication channels were categorized by lean, moderate, and rich and were computed in linear regression along with collocation and LMX.

Table 16

Summary of Organizational Communication Satisfaction, Virtual Communication Channel Frequencies, Collocation, and LMX Mean Scores (N =265)

| Variables | <i>M</i> | <i>SD</i> |
|---|----------|-----------|
| Organization Communication Satisfaction | 141.88 | 30.33 |
| Virtual Lean Frequency | 17.51 | 8.54 |
| Virtual Moderate Frequency | 36.69 | 17.80 |
| Virtual Rich Frequency | 14.00 | 9.61 |
| Collocation with Manager | .51 | .50 |
| LMX | 28.21 | 6.15 |

While the top five rich communication channels (all face-to face channels) were found to have a significant relationship with organizational communication satisfaction as noted above, rich virtual communication channels had no significance in Model 1 ($\beta = -.13, t = -.84, p = .404$) or Model 2 ($\beta = .07, t = .85, p = .399$). The coefficients as outlined below in Table 14, reveals that LMX ($\beta = .82, t = 28.16, p < .001$) is the only independent variable with a significant relationship to organizational communication satisfaction when examining the virtual forms of the three MRT communication channels and LMX.

Table 17

Coefficients of Virtual Communication Channel Frequencies, Collocation, and LMX (N=265)

| Variables | <i>B</i> | β | <i>t</i> | <i>p</i> |
|----------------------------|----------|---------|----------|----------|
| Model 1: | | | | |
| Virtual Lean Frequency | -.02 | -.01 | -.06 | .953 |
| Virtual Moderate Frequency | .95 | .56 | 3.30 | .001 |
| Virtual Rich Frequency | -.41 | -.13 | -.84 | .404 |
| Collocation with Manager | 4.14 | .07 | 1.21 | .227 |
| Model 2: | | | | |
| Virtual Lean Frequency | -.01 | -.002 | -.03 | .975 |
| Virtual Moderate Frequency | .21 | .13 | 1.47 | .144 |
| Virtual Rich Frequency | .21 | .07 | .85 | .399 |
| Collocated | -.19 | -.003 | -.11 | .911 |
| LMX | 4.06 | .82 | 28.16 | .000 |

CHAPTER V: DISCUSSION AND CONCLUSION

This chapter provides a review of the statement of the problem, purpose, methodology, and summary of results. Based on the findings, this chapter also includes a discussion and interpretation of the results, as well as recommendations for future research.

Statement of the Problem, Purpose, and Methodology

As discussed in Chapter 1, studies have concluded that organizational performance can affect employee engagement (Mishra et al., 2014). In fact, numerous performance variables have been linked to engagement, including customer satisfaction, profitability, productivity, turnover, safety incidents, shrinkage (theft), turnover, patient safety incidents, and quality (Boushey & Glynn, 2012; Sorensen, 2013; Towers, 2013). Based on these findings, businesses are researching how to increase engagement in an effort to improve profitably. Several studies have concluded that effective organization communication practices can enhance employee engagement (Mishra et al., 2014). However, communicating with employees can be complex, especially as companies and employees become more spatially distributed across the globe (Shockley-Zalabak, 2002; West & Heath, 2011). While ICTs are an efficient and affordable way to communicate messages, they can also cause miscommunication because of the lack of ability to provide context and nonverbal communication (Leonardi & Bailey, 2008).

The theoretical framework for this study was Weick's sensemaking. Weick believes sensemaking is a part of the cultural web of the organization and communication is a key component of sensemaking (Weick et al., 2005). Improving internal communications practices can increase sensemaking among employees, which in turn can improve employee engagement. (Carriere & Bourque, 2009). Weick contends that organizations must play an active role in helping employees choose an interpretation best suited for the organization's interests (Weick 1995, 2001). Thus, since communication is a key component of both sensemaking and employee

engagement, and sensemaking is an integral part of organizational culture, how does the increase use of ICTs for leadership communication affect employee engagement? Weick identified that sensemaking can cause equivocality within organizations and if the complexity of communicating through ICTs globally is added to the organizational communication process, the sensemaking and accuracy of employees' stories could potentially be even worse because of technology and globalization. Based on the link between leadership communication and engagement and the increased use of ICTs in organizations, this study attempted to measure employee engagement and what, if any, relationship exists among employee engagement, frequency of communication channels (including ICTs), richness of communication channels, quality of leader-member exchange relationship, and perceived satisfaction with organizational communication.

Summary of Results

The following section will summarize and review the results of each of the research questions.

Research Question 1A: How is employee satisfaction with the organization's communication, as measured by the Dennis Communication Climate Inventory (Dennis, 1974; IV) related to employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV), for both employees who are collocated with their manager, as well as for employees who are distanced from their manager?

How does the quality of leader-member exchange (LMX) as measured by the LMX-7 Scale (Scandura & Graen, 1984; IV) interact with employee satisfaction with the organization's communication and employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV)?

For this question, the linear regression showed that organizational communication satisfaction is a significant predictor of employee engagement: $\beta = 0.62, t = 12.6, p < .001$. When LMX was added to the model it did not show significance with employee engagement: $\beta = -.14, t = -1.39, p = .166$, but organizational communication satisfaction did remain significant: $\beta = .74, t = 7.30, p < .001$. Being located in the same office as one's leader was not a significant predictor of employee engagement: $\beta = -.02, t = -.373, p = .710$. Overall, research question one revealed that satisfaction with organizational communication does have a significant relationship with employee engagement.

Research Question 2A: How does frequency of communication channels, as classified according to Media Richness Theory (Lengel & Daft, 1988, IV), both for employees who are collocated with their manager, as well as for employees who are distanced from their manager, predict employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV)?

Research Question 2B: How does the quality of LMX, as measured by the LMX-7 Scale (Scandura & Graen, 1984; IV) interact with the frequency of communication channels and employee engagement, as measured by the Utrecht Work Engagement Scale (Schaufeli and Bakker's, 2004; DV)?

A regression was conducted for research questions 2A and 2B to determine if the frequency of lean, moderate, and rich communication channels has any effect on employee engagement. Moderate and rich communication channel frequencies initially showed significance with employee engagement (lean frequency: $\beta = .05, t = .54, p = .590$; moderate frequency: $\beta = .24, t = 2.80, p = .006$; rich frequency: $\beta = .25, t = 2.67, p = .008$) until LMX was added to the model. A high-quality LMX relationship became the significant factor in regards to

employee engagement: $\beta = .39, t = 7.34, p < .001$. Colocation with the employees' manager remained an insignificant predictor of employee engagement.

Further testing was done on the relationship between virtual communication channels and employee engagement. Model 1 of the regression revealed that rich virtual communication channel frequency was not significant with employee engagement: $\beta = -.13, t = -.87, p = .388$. Moderate virtual communication channel frequency remained significant in Model 1 and became insignificant with the addition of LMX in Model 2, but that was expected since the moderate communication channels are all virtual. Colocation remained insignificant once more: (Model 1: $\beta = -.01, t = -.14, p = .890$; Model 2: $\beta = -.04, t = -.86, p = .389$).

In conclusion, research question two revealed that the frequency of lean, moderate, and rich communication channels did not have a significant impact on employee engagement. Furthermore, virtual communication channels and colocation did not have a significant relationship with employee engagement. Instead, having a high-quality leader-member relationship was the significant predictor of employee engagement.

Research Question 3A: How does the frequency of communication between managers and employees (IV), both for employees who are collocated with their manager, as well as for employees who are distanced from their manager, predict employee satisfaction with the organization's communication, as measured by Dennis Communication Climate Inventory (Dennis, 1974; DV)?

Research Question 3B: How does the quality of LMX, as measured by the LMX-7 Scale (Scandura & Graen, 1984); IV) interact with the frequency of communication between managers and employees (IV) and employee satisfaction with the organization's communication, as measured by Dennis Communication Climate Inventory (Dennis, 1974; DV)?

A final regression was conducted for research questions 3A and 3B to determine if the frequency of communication between managers and employees affects satisfaction with the organization's communication. The results of the regression revealed that rich and moderate channel frequency have a significant relationship with organizational communication satisfaction (lean frequency: $\beta = -.11$, $t = -1.14$, $p = .254$; moderate frequency: $\beta = .31$, $t = 3.60$, $p < .001$; rich frequency: $\beta = .31$, $t = 3.32$, $p = .001$) until LMX was added to the regression. Once LMX was added, moderate communication channel frequency became an insignificant predictor of organizational communication satisfaction. LMX became the significant variable interacting with organization communication satisfaction: $\beta = .82$, $t = 27.08$, $p < .001$, and rich communication channel frequency remained significant as well: $\beta = .12$, $t = 2.44$, $p = .016$. Thus, rich communication channels (face-to-face meetings with manager, team, and department, recognition ceremonies, and classroom training) can influence organizational communication satisfaction. However, based on the model summary, LMX is a larger predictor of organizational communication satisfaction ($R^2 = 80\%$), compared to communication frequency ($R^2 = 24\%$). Finally, collocation with one's manager showed no significant relationship with organization communication satisfaction in Model 1 ($\beta = .04$, $t = .71$, $p = .476$) or Model 2 ($\beta = -.01$, $t = -.28$, $p = .782$).

To examine whether or not virtual communication channels impact organizational communication satisfaction, the virtual communication channels were also categorized by lean, moderate, and rich channels and then computed in a linear regression. While the top five rich communication channels (all face-to face) were found to have a significant relationship with organizational communication satisfaction as noted above, rich virtual communication channels had no significance in Model 1 ($\beta = -.13$, $t = -.84$, $p = .404$) or Model 2 ($\beta = .07$, $t = .85$, $p = .399$). The output showed that LMX ($\beta = .82$, $t = 28.16$, $p < .001$) is the only independent

variable with a significant relationship to organizational communication satisfaction when examining the virtual forms of the three MRT communication channels.

Overall, research question three revealed that LMX has a significant relationship with perceived satisfaction of organizational communication. Rich communication channels can also affect organizational communication satisfaction, but LMX has the larger effect as seen in the *Beta* and *R²* data. Virtual communication channel frequency and colocation did not impact perceived satisfaction of organizational communication.

Discussion of Results

This study was interested in the potential relationships among organizational communication satisfaction, frequency of communication channels, including virtual communication channels, LMX, and employee engagement. This study was especially relevant since employees are quickly becoming spatially dispersed from their leaders and/or working remotely (Putnam & Mumby, 2014).

First, the current study confirmed what previous research has also discovered, satisfaction with organizational communication does have a significant relationship with employee engagement. In fact, research question 1 found that communication satisfaction contributes to 38% variance in employee engagement and it was the only question where adding in the LMX variable did not significantly change the *R²* or variance. Hence, organizational communication plays an integral role in employee engagement.

Research question two examined if the frequency of lean, moderate, or rich communication channels, as well as the virtual channels, affected employee engagement. The results of this study revealed that communication channels, including virtual channels, do not significantly influence employee engagement. While Model 1 of research question 2 initially revealed moderate and rich communication channel frequency having a significant relationship

with employee engagement, when LMX was added to Model 2 of the regression, the moderate and rich communication channel frequencies were no longer significant. Instead, LMX significantly affected employee engagement. A potential reason for this change in significance is that moderate and rich communication frequency are actually correlated with LMX. When LMX is not included in the model, communication channel frequency takes credit for the variability in employee engagement. However, when LMX is included in the regression, the model recognizes that LMX and not the communication channel frequency is responsible for the effect and, therefore, switches to attributing the effect appropriately to LMX. Based on literature review of LMX, communication does play an integral role in building high-quality leader-member exchange relationships so it is quite possible they are correlated (Mayfield & Mayfield, 1998; Scandura & Graen, 1984; Yildiz, 2011). Therefore, leaders could look to improving communication satisfaction as one aspect of improving low-quality LMX relationships. However, suggested LMX training goes beyond the type and frequency of communication channel used to send messages. It also includes active listening skills, exchanging mutual expectations, exchanging resources, practicing one-on-one sessions, understanding LMX, and training employees (Mayfield & Mayfield, 1998; Scandura & Graen, 1984).

Examining the effect of virtual communication channels with employee engagement, LMX once again had the most significance relationship with employee engagement. While the increase use of moderate virtual rich communication channels initially had a significant relationship with employee engagement, this significance was lost when LMX was added to the regression. In addition, the use of virtual rich communications did not show significance with employee engagement in Model 1 or Model 2. While this could be that employees do not like using rich virtual communications to communicate, it is more likely because participants in the study do not frequently use and/or have access to video capabilities. Video capabilities to

communicate in organizations are still relatively new and expensive, so not all companies offer the opportunity or training to use this technology. The data from this study showed very low frequency and without further information, it is suggested that the lack of significance between rich virtual communication and employee engagement is due to availability of these tools. However, the moderate communication channels (emails, team meetings via phone, instant messenger, text messages, and eLearning) are commonly used within organizations, but those also did not have a significant relationship with employee engagement.

Overall, research question two revealed that the frequency of lean, moderate, rich, and virtual communication technologies did not have a pivotal impact on employee engagement. Instead, LMX was the more important variable in determining employee engagement. While the regression showed that frequency and type of communication channel could correlate with LMX and hence effect the quality of LMX, further research is needed to explore this potential relationship.

The final research question conducted examined if the frequency of lean, moderate, rich, or virtual communication channels influenced perceived satisfaction of organizational communication. As seen in research question one, organizational communication satisfaction is a significant predictor of employee engagement. Thus, understanding what predicts organizational communication satisfaction is also important to understand.

Model 1 showed a significance between moderate communication channel frequency (all virtual channels) and rich communication channel frequency (all face-to-face channels). Once LMX was added to the model, however, moderate communication channel frequency became insignificant. Rich communication channel frequency remained a significant contributor to variance in the dependent variable, organizational communication satisfaction. Thus, rich communication channels (face-to-face meetings with manager, team, and department,

recognition ceremonies, and classroom training) can impact organizational communication satisfaction. However, LMX also showed a significant relationship with organizational communication satisfaction, with the *Beta* and *R*² values revealing a larger effect on the dependent variable than rich communication channel frequency.

Virtual rich communication channel frequency once again showed an insignificant relationship with organization communication satisfaction. While it is possible that people prefer face-to-face meetings to video meetings, as mentioned above, it is more likely that not enough participants in the study use video technologies at their organizations. Most importantly, research question three reveals that LMX is an integral factor in organizational communication satisfaction, as well as frequent use of the rich communication channels—team meetings in-person, department meetings in-person, 1:1 in-person meetings with manager, recognition ceremonies, and classroom training.

One of the most fascinating conclusions from this study was that colocation with one's manager did not have a significant relationship with employee engagement or satisfaction with organizational communication. This a significant finding that is important as organizations continue to expand globally and employees become more and more spatially distributed. Furthermore, this would suggest that it does not matter whether the employee is in the same office as his/her leader. While face-to-face meetings in this present study have a significant relationship with organizational communication satisfaction, the data shows that colocation does not seem to affect communication satisfaction. Instead, what matters is the quality of communication the employee is receiving and the quality of the leader-member relationship, no matter where the employee and leader are located. Hence, even if a leader is located in a different location than his/her employees, it is important to make time for face-to-face meetings and build high-quality relationships since this can lead to higher satisfaction with organizational

communication. Furthermore, as shown in research question one, organizational communication satisfaction is linked to employee engagement so improving organizational communication satisfaction through rich communication channels and strong leader-member exchange relationships could influence employee engagement.

Overall, satisfaction with organizational communication, more than frequency of moderate and rich communication channels and LMX, is an influential variable in determining employee engagement. Based off this data, it can be suggested that it is not so much about the quantity of communication, but the perceived quality of communication that is important to employee engagement. However, as the research questions revealed, many of the discussed variables (communication satisfaction, LMX, rich communication channel frequencies, ICTS) can directly or indirectly influence employee engagement.

Limitations of the Study

One of the limitations of this study is external validity. In order for a survey to provide evidence of generalization, the participants must represent the entire population. This was not the case with this study's participants. The participants of this study were randomly chosen from those that belonged to the Qualtrics survey program. Therefore, the population does not represent the entire global population, only those that opted to belong to Qualtrics. In addition, the participants were 98.9% American and 88.7% White, causing concern for cultural bias. This study is also at risk of response bias. The four instruments within the survey were self-reporting and thus, participants answered based on their own self-perception and interpretation of the questions. Self-reporting instruments are inherently subject to self-report bias. Furthermore, while the study attempted to study virtual communication, it was apparent that participants did not frequently use the rich virtual communication channels. While the data does not reveal why

they were not used by employees (preference, cost, availability, etc.), it is possible that participants do not have access to these channels. Finally, research bias should also be considered. While statistical analyses were run to solve for potential error and bias, my understanding and preconceived notions of the constructs studied must be considered.

Implications for Leaders

One of the most interesting findings from the study was that employees being located in the same offices as their leader did not significantly affect the participant's engagement level. This is positive news for those managers that lead employees in multiple locations. When leaders travel into town, however, they should make time for face-to-face meetings since the data in this study revealed that frequently utilizing rich communication channels does significantly predict satisfaction with organizational communication, and organizational communication satisfaction is linked to employee engagement as seen in research question one.

In addition, the type and frequency of communication channels was not an important factor of employee engagement compared to satisfaction with the organizational communication. Thus, leaders can focus on how to provide quality messaging to the satisfaction of their employees in order to improve employee engagement.

Compared to frequency or type of communication channels, LMX became an important variable in employee engagement. Thus, leaders should understand LMX theory to help with bias. Many times leaders subconsciously place employees in the in or out-group. If leaders take the time to understand LMX, this alone can help improve employee relationships (Yildiz, 2011). In addition, leaders should participate in formal LMX training to help improve low-quality relationships. Multiple research studies have examined LMX training interventions and its link to improving engagement. In one study, the first step of the LMX training was to educate leaders on the value of LMX relationships and how their strategic behavior can facilitate high-quality

relationships. The second step was communication training that focused on feedback and clarification skills (Mayfield & Mayfield, 1998). Another study on LMX training found the following topics to be effective for improving relationships: active listening skills, exchanging mutual expectations, exchanging resources, and practicing one-on-one sessions (Scandura & Graen, 1984). When leaders participated in this intervention training, they dramatically increased the number of high-quality relationships (Scandura & Graen, 1984).

As seen in these studies, communication is a variable intertwined throughout the theory of organizational communication satisfaction, employee engagement, sensemaking, media richness theory, and LMX. Thus, leaders should constantly continue to grow and educate themselves on the many facets of organizational communication in order to engage their employees. This study merely scratched the surface on ICTs, communication frequency, and LMX. Since organizational communication will continue to change as technology and companies evolve in the fast-paced business environment, both researchers and practitioners should continue to examine these topics since employee engagement plays an integral role in productivity and profit (Boushey. & Glynn, 2012; Sorensen, 2013; Towers, 2013).

Future Recommendations

While this research studied an aspect of the relationship among virtual communication, employee engagement, and organizational communication satisfaction, most of the research participants were from the United States. Thus, there was very few cultural differences in the data. Further research could be done on cultural communication, ICTs and employee engagement. As discussed in this paper, ICTs can cause miscommunication, especially because they lack the ability to convey nonverbal cues and provide clarification (Smith, 2014; Rainey, 2000). How do language barriers and cultural differences affect communication satisfaction and

employee engagement when ICTs are utilized to communicate? In addition, surveying participants across the globe could provide data on communicating across time zones. While instant messaging, text messaging and emails have been classified as moderate channels because they provide a more fast paced two-way communication tool than lean channels (posters, memos, etc.), when employees and leaders are spatially distributed across the globe, many time zones apart, these moderating channels are not as fast. Therefore, how do these large time zone differences affect satisfaction with organizational communication and employee engagement?

In addition, technology is forever advancing, but so is the ability of younger generations to use these new communication tools (Myers & Sadaghiani, 2010). Further research could look at the various generations in the workforce to see if the younger generations are more comfortable with communicating through ICTs and how these tools interact with employee engagement and communication satisfaction. Perhaps, the younger generations will prefer virtual communication instead of face-to-face communication.

Finally, since this study found a significant relationship between organizational communication satisfaction and employee engagement, more research could be done on how to improve organizational communication for employees. It is essential for organizations to understand how to best communicate with their employees and keep them engaged. Since communication technologies continue to advance and organizations continue to globalize and change to compete in fast-paced markets, communication and employee engagement research should continue to evolve and change.

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APPENDIX A: SURVEY INSTRUMENT

Informed Consent

Investigator: Brittany Barhite
Doctoral Student, Leadership Studies

Phone: 419-819-0418

Project Title: The Effects of Virtual Leadership Communication on Employee Engagement

Purpose: You are invited to participate in a research study to assess perception of leadership communication within your organization, as well as your level of engagement with your company. The purpose of this study is to investigate the implications of leadership communication and the communication channels used (face-to-face, virtual meetings, emails, etc.), and the impact (if any) it may have on employee engagement.

Procedures: You are being asked to click the next arrow below to complete the survey. The survey and entire research study will take 15 minutes to complete. You will be asked to answer five different sections of the survey. The first section is the demographics section. The second section is the Dennis Communication Climate Survey. The Dennis Communication Climate Survey measures employee perceptions on how the organization communicates. The third section is the LMX-7 Scale. The LMX-7 measure is used to assess the quality of relationship between leader and team member. The fourth section is the Communication Channel Instrument. The purpose of this section is to determine the frequency leaders are using communication channels. Finally, the Schaufeli and Bakker's Utrecht Work Engagement Scale (UWES) will be used to measure the dependent variable, employee engagement.

Benefits: You will be helping to further research employee engagement and leadership communication. There are no monetary or extra benefits to participating in this study.

Voluntary: Your participation in this study is completely voluntary and you may withdraw at any time. You may choose to end the survey at any time. To do so, simply close your browser to exit from the survey. Deciding to participate or not will not affect your status within the profession or your organization or BGSU. You must be at least 18 years old to participate.

Risks: The risks associated with this study are no greater than those encountered in normal daily life.

Anonymity: Your participation in this survey is completely anonymous. It will not have access to information directly from you; therefore I will not be able to identify individuals. Once submitted, the surveys will be sent directly to Qualtrics. The information will be used for research purposes only. Your Internet browser and page should be cleared after taking the survey ensure anonymity.

Contact Information: If you have any questions or comments about this study, you can contact Brittany Barhite at 419-819-0418 or bbarhit@bgsu.edu. You may also contact the Chair of the dissertation, Dr. Chris Willis at 419-372-0249 or wchris@bgsu.edu. Finally, you can contact the Human Subjects Review Board at 419-372-7716 or hsrb@bgsu.edu, if you have any questions about your rights as a participant in this research.

To continue to the survey, click the next arrow button below. By doing so, you are providing your consent that you understand your options to participate in this study. If at any time you choose to end the survey, simply close your browser.

Demographic Section

1. Do You currently work full time?: Yes or No
2. Gender: Male or Female
3. Age: 18-24, 25-34, 35-44, 45-54, 55-64, 65+
4. Ethnicity: White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander Other
5. Location: Asia Pacific, Canada, Europe, Malaysia, Middle East and Africa, South America, United States East, United States West
6. Is your home office the same location as your direct manager? Yes or No
7. Are you located in the same location as an executive leader? Yes or No
8. How often do you travel for work? Less than 10%, 10%, 25%, 50%, 75%, 100%
9. How often does your immediate manager travel for work? Less than 10%, 10%, 25%, 50%, 75%, 100%

Survey #1: Dennis Communication Climate Inventory (1974)

This questionnaire will ask you questions concerning internal communication within an organization. For the purpose of this study internal communication is defined as the exchange of information both informal and formal between management and organizational members.

Dennis Part I: When reading each question think of your current job when answering. It is recommended that you choose the first response that comes to mind. Rate the following statements according to how you feel about your relationship with your immediate manager.

Ratings: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

1. Your superior makes you feel free to talk with him/her.
2. Your superior really understands your job problems.
3. Your superior encourages you to let him/her know when things are going wrong on the job.
4. Your superior makes it easy for you to do your best work.
5. Your superior expresses his/her confidence with your ability to perform the job.
6. Your superior encourages you to bring new information to his/her attention, even when that new information may be bad news.
7. Your supervisor makes you feel that things you tell him/her are really important
8. Your superior is willing to tolerate arguments and to give a fair hearing to all points of view.
9. Your superior has your best interests in mind when he/she talks to his/her boss.

10. Your superior is a really competent, expert manager.
11. Your superior listens to you when you tell him/her about things that are bothering you.
12. It is safe to say what you are really thinking to your superior.
13. Your superior is frank and candid with you.
14. You can communicate job frustrations to your superior.
15. You can tell your superior about the way you feel he/she manages your department.
16. You are free to tell your superior that you disagree with him/her.
17. You think you are safe in communicating "bad news" to your superior without fear of retaliation on his/her part.
18. You believe that your superior thinks he/she really understands you.
19. You believe that your superior thinks that you understand him/her.
20. Your superior really understands you.
21. You really understand your superior.

Dennis PART II: Rate the following statements according to how you feel about the quality of information you receive in your current position.

Ratings: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

1. You think that people in this organization say what they mean and mean what they say.
2. People in top management say what they mean and mean what they say.
3. People in this organization are encouraged to be really open and candid with each other.
4. People in this organization freely exchange information and opinions.
5. You are kept informed about how well organizational goals and objectives are being met.
6. Your organization succeeds in rewarding and praising good performance.
7. Top management is providing you with the kinds of information you really want and need.
8. You receive information from the sources that you prefer (e.g. from your superiors, department meetings, co-workers, newsletters).
9. You are pleased with the management's efforts to keep employees up-to-date on recent developments that relate to the organization's welfare - such as success in competition, profitability, future growth plans, etc.
10. You are notified in advance of changes that affect your job.
11. You are satisfied with explanations you get from top management about why things are done as they are.
12. Your job requirements are specified in clear language.

Dennis PART III: Rate the following statements according to how you feel about your opportunities to communicate to upper management.

Ratings: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

1. Your opinions make a difference in the day-to-day decisions that affect your job.
2. You believe your views have real influence in your organization.
3. You can expect that recommendations you make will be heard and seriously considered.

Dennis Part IV: Rate the following statements according to how you feel about the reliability of information you receive from your organization.

Ratings: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

1. You think that information received from management is reliable.
2. You think that information received from your colleagues (coworkers) is reliable.

Survey #2: Communication Channel Instrument (Hayase, 2009)

The below items refer to the specific communication your organization uses to share information. Rate the frequency your leaders use the communication channels. Mark "does not apply" if you don't believe your leader currently uses that channel to communicate with you.

Note: The answer choices in this section are different from the previous section. Please review the new answer choices prior to making your selection.

| | | | | | | |
|-------|----------------------------|----------------------|---------------------|-------------|--------------------|-----------|
| | 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 |

1. Intranet (POWER)
2. Internet (firstsolar.com)
3. Instant Messenger
4. Yammer/Other social media tool
5. Posters, flyers, banners
6. Voicemails
7. Emails
8. At home mailing
9. Employee recognition & rewards ceremonies or presentations
10. Town Hall meetings in-person with executive leaders

11. Town Hall meetings via video conference with executive leaders
12. Town Hall meetings via phone with executive leaders
13. Team meetings in-person
14. Team meetings via phone
15. Team meetings via video conferencing
16. Department meetings in-person
17. Department meetings via phone
18. Department meetings via video conferencing
19. 1:1 In-person meetings with immediate manager
20. 1-1 Phone conference with immediate manager
21. 1-1 Video conferencing with immediate manager
22. Classroom training
23. eLearning
24. Instructor-led training via video conferencing
25. Instructor-led training via phone
26. Company videos
27. Text messages
28. eNewsletters
29. TV monitors

Survey #3: Leader-Member Exchange (LMX-7) (Scandura & Graen, 1984)

Please indicate how strongly you agree or disagree with each of these statements about your direct supervisor. Scale: Strongly agree, Somewhat agree, Neutral, Somewhat disagree, Strongly disagree

1. I know where I stand with my direct supervisor.
2. I usually know how satisfied my direct supervisor is with what I do.
3. My direct supervisor understands the job problems and needs I experience.
4. My direct supervisor recognizes my potential.
5. Regardless of his/her formal authority in his/her position, my direct supervisor would use his/her power to help me solve problems in my work.
6. Regardless of the amount of formal authority my direct supervisor has, he/she would help me out of a tough situation at his/her expense.
7. I have enough confidence in my direct supervisor that I would defend and justify his/her decision if he/she was not present to do so.

Survey #4: Utrecht Work Engagement Scale Survey (Schaufeli & Bakker, 2003)

| | | | | | | |
|-------|----------------------------|----------------------|---------------------|-------------|--------------------|-----------|
| 0 | Almost never | Rarely | Sometimes | Often | Very often | Always |
| Never | 1 | 2 | 3 | 4 | 5 | 6 |
| | 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 |

1. At my work, I feel that I am bursting with energy.
2. I find the work that I do full of meaning and purpose.
3. Time flies when I'm working.
4. At my job, I feel strong and vigorous.
5. I am enthusiastic about my job.
6. When I am working, I forget everything else around me.
7. My job inspires me.
8. When I get up in the morning, I feel like going to work.
9. I feel happy when I am working intensely.
10. I am proud of the work that I do.
11. I am immersed in my work.
12. I can continue working for very long periods at a time.
13. To me, my job is challenging.
14. I get carried away when I'm working.
15. At my job, I am very resilient, mentally.
16. It is difficult to detach myself from my job.
17. At my work I always persevere, even when things do not go well.