PERCEIVED LEADERSHIP COMMUNICATION, MODALITIES OF

COMMUNICATION, AND PERCEIVED ORGANIZATIONAL SUPPORT

by

Allison Maas

Liberty University

A Dissertation Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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ABSTRACT

Organizations are constantly evaluating methods and looking for new ways to improve retention. Perceived Organizational Support (POS) is used as a predictor of intent to stay; therefore, it is important to know what behaviors lead to greater POS. Understanding this will enable organizations to coach their leaders on styles that are most effective so they can make the best use of their time. This study focused specifically on supervisor-employee engagements, evaluating the correlation between perceived leadership communication and POS, and the significance of modality. The study concluded that perceived leadership communication was positively correlated with POS. Of the five communication modalities considered, face-to-face communication, videoconferences, phone conversations, texts/IMs, and e-mails, only face-to-face was positively correlated to POS, both phone and e-mail were negatively correlated. Because some teams or individuals do not have face-to-face as an option due to geography, the geographic makeup of the team was also a consideration. Team dispersion by city or individual office location did not moderate the relationship between perceived leadership communication and POS; however, team dispersion by time zones was a negative moderator on perceived leadership communication on POS. These findings may be used to assist supervisors in communication modality selection and aid human resource leaders in organizational structuring and team compositions to maximize opportunity for POS.

Keywords: Perceived Organizational Support, supervisor engagement, perceived leadership communication, communication modality, team dispersion

Acknowledgments

Thank you, Dr. Lindsey, for your prayers and unwavering belief in my ability to push through every obstacle that we faced to make it through this process. This would not have been possible without your continuous support and patience; your dedication and responsiveness exceeded my wildest expectations. The feedback and guidance you provided throughout this process has epitomized the type of professor and coach I aspire to be. I would like to express my sincere gratitude to Dr. Anson for taking the time to understand the objective of my research, helping shape the study by providing suggestions on constructs to leverage, and insightful comments on my research throughout the journey.

Thank you to my family, friends, colleagues, and acquaintances who have joined me along this journey. I am grateful for those who practiced patience with me as I committed time away from other ventures to pursue this degree, provided words of encouragement, acted as sounding boards for the countless iterations of this study, and every individual who participated in this study. Finally, I would like to recognize my sister for her encouragement, perspective, patience, support, and love in this chapter of our lives.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Introduction

Technology emergence has transformed how organizations communicate and collaborate. Any dyad whose work is mediated through advanced information technologies is considered virtual (Garcia Carreño, 2020). As the primary source of one-on-one communication between an employee and their organization, a supervisor's communications, whether it be face to face (FtF), videoconference, phone, text/IM, or email, contribute to how effectively the employee perceives their supervisor's support. Scaling up, leaders play a larger role in each employee's perception of the organization's commitment to their values and concern for their well-being (Eisenberger et al., 1986). With the new variety of mediums to communicate and share knowledge that virtuality presents, leaders must understand how to communicate with the most impact and best represent their organization to each employee, anticipating the reciprocity of commitment. Perceived Organizational Support (POS) is a construct that had been studied for 35 years, reflecting the notion that perceived commitment from an employee's organization influences the return commitment to the employee's organization (Eisenberger et al., 1986). This study was designed to understand the relationship between the communication modality leaders use to engage with their employees and those employee's POS.

While traditional, FtF environments have been studied ad nauseum regarding the impact of leader's behavior on their employee's performance, organizational commitment, and satisfaction (Erben et al., 2019; Meixner, 2020), there is not sufficient literature on the impact of leader's behavior in virtual teams. Virtuality introduces a new

series of mechanisms, the different communication modalities, with which employees and their supervisors engage. Within the virtual realm there are moderating levels, from asynchronous media with long lag times and interruption (e.g. e-mail) to synchronous media with very little distinction from non-virtual communication (e.g. videoconference; Mehtab & Ishfaq, 2017). The variety of communication modalities available enable teams to select synchroneity for what best matches the geographic constraints of the team and select richness fitting each task's complexity and necessary reproducibility. Geographic separation impacts the opportunity to have FtF engagements but also the effectiveness of different modalities; thus, it is analyzed as a moderator.

Background

The golden rule to treat others as one would like to be treated spans back to at least the 7th century BC, as Moses instructs followers to "love your neighbor as yourself" (*New International Version Bible*, 2011, Leviticus 19:18). Reciprocity between a leader and their employee can be observed through the exchange where David's reward of honor in building a temple was revoked due to the bloodshed he caused (*New International Version Bible*, 2011, 1 Chronicles 17:2). Fairness heuristics are not new, so it is no surprise that the exchange between organizations and their employees is a point of study.

POS was introduced by Eisenberger et al. (1986) as the relationship between the perceived extent that an organization values an individual's contribution and cares for their well-being and absenteeism. Essentially, there is a sense of reciprocity an employee feels based on the level of support they receive from the organization. POS is associated with team effectiveness, innovation, safety and organizational citizenship behavior through ability and motivation, and predicts work life balance (Morales-Sánchez &

Pasamar, 2019; Törner et al., 2017). Traditionally, the employee's supervisor acts as a primary agent of the organization; therefore, that level of perceived support is significantly drawn through employee-supervisor interactions. Regardless of communication modality, supervisors have to maintain a keen sense of employee's mental state (negative affectivity, dark personality traits), as mental state impacts POS and relationship between POS and intention to quit (Sears et al., 2016; Treglown et al., 2018). As long as supervisors are able to recognize the health and well-being of employees, they can accommodate for mental states, and virtual communication is not a barrier to observing mental health changes, which is possible through virtual engagement (Efimov et al., 2020). While various contexts of team training and perceived supervisor status have been studied, almost all of the current literature is constrained to environments with high levels of FtF interaction (Eisenberger et al., 1986; Howe-Walsh & Torka, 2017; Lyubovnikova et al., 2018; Meyers et al., 2019). In the thirty-five years that have passed since the inception of POS, the use of advanced information technologies has grown exponentially, opening the opportunity for new constructs to be studied it the context of POS.

Since the relationship between perceived support and reciprocal commitment to an organization have held steady (Eisenberger et al., 2002; Morales-Sánchez & Pasamar, 2019), it is important to study how communication modalities have enabled employees to feel that same level or more support that was felt before these advances in technologies. The absence of social cues has been a concern for teams and businesses since the introduction of e-mail (Charlier et al., 2016). Increased virtuality has also been shown to result in weaker organizational identification and perceived respect from the organization

(Campion & Campion, 2020) as well as challenges resulting from greater general levels of uncertainty and ambiguity than in traditional teams (Hill et al., 2014). However, the preference for FtF resulting from the effects the forementioned studies identified needs to be separated from a view that FtF is universally more effective. In the professional environment, while employees feel a higher level of satisfaction with FtF leaders rather than those who communicate over virtual means, there is no variation in performance (Gonzales, 2014). In academia, while students prefer FtF, there is no evidence that that preference negatively impacted online course satisfaction (Cole et al., 2017).

One possible explanation of the continued preference for FtF, despite the lack of evidence that it results in higher performance, is that the challenges once perceived in communication over virtual means are not as different from challenges in FtF environments. Even Jesus's disciples were repeatedly unable to understand his FtF messages (e.g., Mark 8:14, John 6:32-35, Mark 9). Effective leadership in a virtual environment requires skills and awareness of communication clarity, and avoidance of information overload to enable higher productivity and employee satisfaction (Van Wart et al., 2019). There is also a wealth of literature on how non-verbal cues can be transmitted via orthography (interjections, laugher, comic strip sounds) and typography (punctuation, emoticons) in electronic media (Darics, 2020). Furthermore, leaders are becoming more equipped with skills to address communication breakdown, engagement, and technology barriers. The necessity of employees to maintain the skills to overcome these barriers is so prolific that a Midwestern university, observing the need to prepare students to operate in remote teams and virtual environments, conducted a course of instruction to prepare students to enter the workforce (Loucks & Ozogul, 2020). The

intent of the effort was to set their students up to learn how to overcoming real-world challenges, like low student engagement and technology issues, prior to entering the workforce (Loucks & Ozogul, 2020).

Daim et al. (2012) identifies the ways that reliance on electronic communication increases misunderstandings and erodes team communication and productivity. However, as of June 2020, 43.6% of jobs can be performed remotely, and 24.7% of the workforce in the US have teleworked (Bureau of Labor Statistics, 2020). If face-to-face interaction is proportional to POS than it could be presumed that communication, productivity, and POS also decreased by 24.7%. This researcher proposed that is not the case. This increase in virtuality has resulted in more leaders-employee dyads interacting over virtual means (teleconference, phone, e-mail and text). Current research on POS does not account for the adjustment in modern practiced organizational engagements and leadership styles.

The COVID-19 pandemic provided organizations with heightened awareness of just how much employees utilize advanced information technologies in the execution of their daily work, and how many are capable of executing their daily tasks maintaining social distancing, with no FtF interaction. At the height of uncertainty, amongst the first rise of COVID-19 cases and deaths in America in April 2020, 51% of Americans were working completely remotely, indicating full team dispersion with zero FtF interaction (Brenan, 2020). Almost a year into the pandemic, though 25% of employees work virtually (Campion & Campion, 2020), research has not considered how changes in leadership interactions (face-to-face, teleconference, phone, e-mail, and texting) in a virtual work environment impact POS.

Beyond the need to study how communication modalities between the supervisor and employee impact POS, there is also a need to study team dispersion as a moderating variable. Semi-virtual teams set up in-group/out-group biases because of the availability of some members to meet in person while others are automatically outsiders, resulting in similar dynamics between teams with zero dispersion and high dispersion teams (Webster & Wong, 2008). Teams with high dispersion are more reliant on technology mediation for decision making, reducing in-group biases and increasing the ability for each member to be a valued contributor (Charlier et al., 2016). Dispersed members of semi-virtual teams are likely to feel higher levels of out-group biases and reduced POS (Tsachouridi & Nikandrou, 2019); therefore, dispersion between the employee and the supervisor is a moderating variable in this study.

Problem Statement

Many of the items in the Eisenberg et al. (1986) 36-item survey for POS include how an organization considers personal elements, like goals, values, absence due to illness, forgiveness, and request for change in working conditions. It is imperative that a leader understand and respect their employees in order to accommodate the items required for POS. One could expect that virtual environments that include more miscommunication and conflict (Schulze & Krumm, 2017), decreased social context cues (Charlier et al., 2016), and weaker organizational identification and perceived respect from the organization (Campion & Campion, 2020) would result in lower POS scores. Modern successful management requires developing an organizational POS-climate within the virtual realm (Törner et al., 2017). Regular interaction with subordinates and social team building are means of meeting employee needs that contribute to POS

(Biswas & Kapil, 2017). Since leadership is highly situational, virtuality challenges the known constructs of traditional organizations (Liu et al., 2018). The study of virtual leadership, including traits and best practices, is rising rapidly; however, studies are lacking on focus of how leaders can promote positive psychological states, work attitudes, and performance in virtual environments (Hill et al., 2014). Current studies have been very limited in the operationalization of communication behaviors such as perceived leadership communication and the relation between those behaviors and other constructs (Schneider et al., 2015). Furthermore, the modality leaders choose to engage with their employees is one such employee-supervisor psychological process that has not been linked to work outcomes. As organizations integrate advanced information technologies into their operating systems at a greater pace than ever before, employees have fewer rich connections with agents of the organization outside of their immediate supervisor; thus, their supervisor plays a greater role in the representation of the organization as a whole. Supervisors are the agents of the organization with the greatest opportunity to connect with employees with the richest mediums. Understanding the relationship between leadership communication modality and POS is imperative to retaining the reciprocated commitment from employees. There is very little research on the relationship between employee-supervisor communication modalities and other constructs, like POS (Schneider et al., 2015). While there is research on the richness of modalities, from asynchronous interrupted modalities with high virtuality to synchronous modalities that enable the conveyance of body language, there is no connection of the richness of the modality to the impact on POS.

Furthermore, existing literature is incomplete regarding examining virtuality facets, such as dispersion, as moderators (Schulze & Krumm, 2017). While virtuality as a construct is geographically agnostic, teams with zero dispersion and very high dispersion have similar characteristics of team trust, task skills, and group identity (Webster & Wong, 2008). This all-or-none geographic dispersion characteristic aligns with the presence of geographic subgroups in teams with non-extreme dispersion. These subgroups have more social influence on one-another, consistent with the theory of social impact and self-categorization theory (Charlier et al., 2016). It is not enough to understand the perceived richness of communication medium on POS, there is a need for research that has a focus on the construct of distributed teams (Webster & Wong, 2008).

Purpose of the Study

The purpose of this quantitative survey study was to examine the relationship between perceived leadership communication / modality of communication and perceived organizational support and examine how team dispersion moderates that relationship.

Research Question(s) and Hypotheses

Research Questions

RQ1: What is the correlation between perceived leadership communication and POS?

RQ1a: What is the correlation between supervisor face-to-face communication and POS?

RQ1b: What is the correlation between supervisor communication via videoconference and POS?

RQ1c: What is the correlation between supervisor communication via telephone and POS?

RQ1d: What is the correlation between supervisor communication via text/instant messenger and POS?

RQ1e: What is the correlation between supervisor communication via e-mail and POS?

RQ 2: Which medium (face to face, videoconference, telephone, text/instant messenger, or e-mail) of supervisor communication is most related to POS?

RQ 3: Does team dispersion moderate the relationship between perceived supervisor communication and POS?

Hypotheses

Hypothesis 1: Perceived leadership communication is positively related to POS.

Hypothesis 1a: Leadership communication via FtF is positively related to POS.

Hypothesis 1b: Leadership communication via videoconference is positively related to POS.

Hypothesis 1c: Leadership communication via telephone is positively related to POS.

Hypothesis 1d: Leadership communication via text/instant messaging is positively related to POS.

Hypothesis 1e: Leadership communication via e-mail is positively related to POS.

Hypothesis 2: The mediums with greater richness relate most positively with POS.

Hypothesis 3: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between perceived leadership communication and POS.

Hypothesis 3a: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via FtF and POS, such that this relationship is more strongly positive when the degree of team dispersion is low than when degree of team dispersion is high.

Hypothesis 3b: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via videoconference and POS, such that this relationship is more strongly positive when the degree of team dispersion is high than when degree of team dispersion is low.

Hypothesis 3c: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via telephone and POS, such that this relationship is more strongly positive when the degree of team dispersion is high than when degree of team dispersion is low.

Hypothesis 3d: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via text/IM and POS, such that this relationship is more strongly positive when the degree of team dispersion is high than when degree of team dispersion is low.

Hypothesis 3e: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via e-mail and POS, such that this relationship is more strongly positive when the degree of team dispersion is high than when degree of team dispersion is low.

Assumptions and Limitations of the Study

This study evaluated three levels of dispersion; across time zones, between cities, and between work sites. It was assumed that it is valid to consider people working from home in the same city (different sites) dispersed. However, it is likely that these employees may be able to gather at some periodicity; the assessment of these three levels of dispersion is intended to reveal this unique difference that is not readily apparent by a construct that exclusively looks at city-pairs. Another assumption made in the collection of the data was that employee-supervisor communication is limited to the five communication modalities identified (FtF, videoconference, phone/audioconference, text/IM, and e-mail), and that the brand/software of enabling advanced information technology was not required to be distinct independent variables. This study assumed nuances of systems, such as video quality, delays, and ease to login to systems, are not moderators.

One of the foremost limitations is that many of the teams reporting high level of team dispersion at time of sampling may not have always operated in this manner (sampling occurred 16 months after 51% of the American workforce transitioned to completely virtual employment; Brenan, 2020). It is likely many employees reporting high levels of dispersion at the time of sampling worked with their supervisor FtF at some time in the past, which may limit the applicability of the results to teams originating with high levels of virtuality. The differences between dyad and teams who were constructed to operate virtually and those who started with FtF operations and are now fully virtual due to changing work environments were not assessed in this study and may compromise the validity of the results. FtF meetings enable members to learn one another's vocal-inflections and match those to body cues, increasing the level of non-verbal

communication between team members (Daim et al., 2012) and teams with at least one FtF meeting perform better than completely virtual teams (Gilson et al., 2013). The perception of media richness from employees who had the opportunity for regular FtF interaction pre-COVID-19 may be different than the construct is designed to measure. Also, this study assumed that the employee's POS is a reflection of their current state and leadership communication over the past month, rather than a reflection of pre-COVID-19 dynamics or the economy.

The sample size and demographic relative to the world workforce could be a limitation. The sampling method was convenience, where the researcher's social, academic, and professional network was leveraged for participants. Between a military career, career at a Fortune 500 company, four graduate programs, church community, and acquaintances, the primary participant pool represented a wide variety of employment types, nationalities, and organizational types. However, the population was skewed to mid- to late-career individuals and those with higher levels of education. Additionally, most of the participants were either located in America or employed by an American organization. The nature of the online survey format, while increasing availability to participants from around the world, introduced two additional limitations. First, those most sensitive to virtual communication modalities and not comfortable or at ease with the study platform may have declined to participate. Second, online format was more convenient for those with desk-jobs, potentially skewing participation away from manual labor occupations. Variations in culture or profession are not assessed in this study except for the assessment of the communication demands of an occupation. Finally, nature of the data collection was self-report, and there may be error in the measure of leadership

communication due to participants inaccuracy in estimation of their use of electronic

communication with their supervisor, misinterpretation of the questions, inexact and

subjective nature of Likert scale, and response bias. While it may be technically possible

to look back at a previous week's emails, texts, or calendar meetings to compute how

much time was spent in these modalities, it is more challenging to estimate. It has been

found that while higher performers tend to be more accurate in their self-report metrics,

most self-report subjects display inaccuracies, which highlights the potential limitation of

using self-report measures (Fronzetti Colladon & Grippa, 2018). Like with other studies

executed with self-report data, common method variance was assumed to exist.

Theoretical Foundations of the Study

This study combined the research theory of POS with the constructs of virtual teams

and supervisor-employee relationships to develop a new theoretical construct. The first

research theory is that of POS, first established by Eisenberg et al. (1986) through an

initial study with a 36-item survey for POS, with the purpose of tying the perceived

commitment that organization has for the employee to the employees commitment to the

organization in turn, measured by absenteeism and retention. Because supervisors often

act as agents of the organization to employees, leaders influence the employee's

perception of each of the metrics of support. The second line of research framing this

study was virtual teams and the supervisor-employee relationship when influenced by

advanced information technologies. Virtual communications are associated with

miscommunication and conflict (Schulze & Krumm, 2017), decreased social context cues

(Charlier et al., 2016), and weaker organizational identification and perceived respect

from the organization (Campion & Campion, 2020), all hindering the effectiveness of a

supervisor to convey positive elements of support to an employee. In addition, there is a

biblical foundation for miscommunication with both FtF communications (e.g. Mark

8:14, John 6:32-35, Mark 9) and asynchronous virtual communications of its time (1

Corinthians 8). In Paul's letter to the Romans he preaches that the Gospel is for

"everyone who believes: first to the Jew and then to the Gentile" (New International

Version, 2011, Romans 1:16). One way to look at this direction is to observe that while

the gospel is first meant for the salvation of those with fewer barriers (geographically and

culturally), the intent is for it to spread far beyond the Roman empire, requiring many

messengers and asynchronous communication modalities. Physical and cultural

dispersion between the message carrier and the recipient are clearly elements recognized

in the Word. The Bible also develops a foundation for overcoming some of the common

barriers to global teams, like the language barrier overcome through the Holy Spirit in

Acts 2.

Furthermore, team dispersion plays a significant role to how an employee perceives

value in their virtual communications, both through their position within a team and their

perceived richness of communication. Teams with very high-dispersion and teams with

very low-dispersion operate similarly, with the tendency to coalesce around a common

communication method for coordination and decision making (FtF method for low

dispersion and all virtual method for high-dispersion; Charlier et al., 2016). The

combination of these theoretical foundations is shown in Figure 1.

Figure 1

Theoretical Framework for Study

<div align="center">
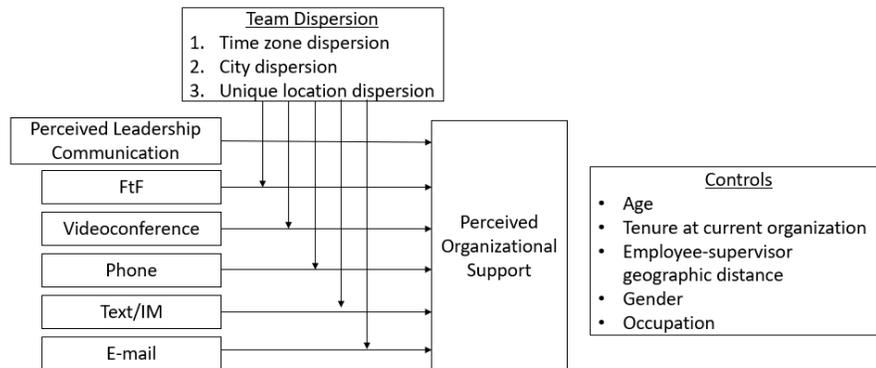
Definition of Terms

</div>

The following is a list of definitions of terms that are used in this study.

Co-located teams – Colocation is the presence of two team members in the same physical space (Charlier et al., 2016), fully collocated teams are when all team members are in the same space.

Dispersion - Dispersion is a measurement of the extent to which team members are distributed across locations and time zones (Gajendran & Joshi, 2012).

Media Richness Theory – Media richness theory proposes that the characteristics of a medium determine its appropriateness to meet the communication requirements of any given task (Armengol et al., 2017).

Perceived Organizational Support (POS) - POS is a construct to measure an employee's perceived commitment from their organization, by caring for the employee's values and well-being; thus influencing the return commitment to the employee's organization (Eisenberger et al., 1986).

Traditional teams – Traditional teams are defined as teams where work is completed through FtF interaction (Mehtab & Ishfaq, 2017).

Virtual Teams – Virtual teams are teams that rely on various advanced information technologies to stay connected (Byrd, 2019).

<div align="center">Significance of the Study</div>

As almost every organization integrates some form of advanced information technology to their operations, some level of virtuality is inevitable. Organizations seeking to embrace virtuality and the efficiencies provided, may also have concern that the dehumanization of processes may affect organizational commitment. This study intended to provide both a theoretical construct to consider the significance of supervisor communication and team dispersion on POS. This study also has practical implications, advising supervisors on the most constructive communication modality to employ when seeking POS.

Contributing to the growing body of literature on virtuality, this study focused on the relationship of virtuality to POS. It is important for the progression of the field to understand virtual facets as moderators (Schulze & Krumm, 2017); therefore, the inclusion of team dispersion as a moderator added to the theoretical foundation for virtual organizations. This study was consistent with other studies that incorporate facets of virtuality, including team dispersion, in context of other organizational psychology constructs. For example, Gajendan and Joshi (2012) assessed team dispersion is a moderator between LMX and team innovation.

This study is significant to the practice of leadership and organizational planning. The learnings provide leaders with a resource to help leaders understand the impact of

geographic distance on the communication modality they select. Understanding the relationships in the purposed construct could guide leaders, when they have a choice, to select a communication modality that will more positively contribute to POS. As more organizations increase remote work, voluntarily or involuntarily, there is concern that accomplishments may not be acknowledged and valued by supervisors (Hill et al., 2014). Leaders can influence the primary employee concerns of lack of accomplishment visibility and task ambiguity in virtual environments. Leaders who are engaged but manage by exception, enable continuity between tasks and reduces task ambiguity associated with the virtual nature of the relationship (Gross, 2018). This study will provide organizations a greater perspective on how leadership engagement can be used to retain POS whether organizations transition to greater use of advanced information technologies to create a virtual environment or completely transition to geographically dispersed locations.

Summary

Knowing the importance of supervisors as agents of an organization in an employee's interpretation of support is important to study the changes to the employee-supervisor relationship since the inception of POS. Most significantly, the use of advance information technologies has increased and teams have developed various levels of dispersion. The purpose of this quantitative survey study was to examine the relationship between modality of leadership communication and perceived organizational support, and examine how team dispersion moderates that relationship.

Bounding the scope of this study are assumptions and limitations. As a study of actual work relationships rather than a controlled study, there may have been pre-existing

conditions and relationships that influence the perceived richness of each virtual communication modality. For example, dyads who meet FtF even once have the opportunity to learn and observe one another's social cues and are likely to be more effective in the virtual environment (Daim et al., 2012), that element was not included in this study. Also, there are limitations to the accuracy of self-report metrics inherent to real-world studies. Finally, the study was distributed via an online survey, skewing the availability and ease of response to occupations with readily available internet access. Despite these limitations, the study proposes to develop a theoretical model in which the level of team dispersion and supervisor-subordinate dispersion moderates the relationship that the modality of communication between a leader and their subordinate has on POS. This study is grounded on the wide body of research already conducted in the study of POS, the growing body of research on communication within virtual teams, and the biblical principles delineated in Chapter 2.

CHAPTER 2: LITERATURE REVIEW

Overview

Chapter Two contains a synthesis of research on perceived organizational support, virtual teams, virtual leaderships, communication modalities common to employee-supervisor engagements, and team dispersion, along with a biblical foundation for the study. The historical context and foundation of literature are introduced, along with recent developments and changes to our understanding of these concepts that are pertinent to the employee-supervisor relationship.

The review of literature commences with a review of the construct of perceived organizational support, along with the evolution, applicability in assessment of other constructs, and continued application and relevance over the past 35 years. Whereas POS has maintained a steady presence and consistent definition over time, virtuality and virtual teams have evolved exponentially. The sections on virtual teams and virtual leadership address the challenges and advantages of working in virtual organizations, as well as the leadership styles and skills associated with success in virtual organizations. Communication modalities are introduced, along with the relevant literature on media richness theory as it applies to employee-supervisor communication. Finally, the dynamics of team dispersion are presented.

Description of Search Strategy

Literature searches were conducted on the Liberty University Jerry Falwell Library search engine, which includes the databases of APA PsycNET, EBSCO Quick Search, JSTOR, ProQuest Central, SAGE Premiere, and ScienceDirect, over the 2020-2021 time period. Additionally, Google and Google Scholar were used to access cited

literature not available via the Liberty University databases. National standards, including Gartner and Gallup survey results, were used for most recent statistics on virtuality. Search terms used in literature searches included the following, alone or in combination with each other: communication modalities, dispersion, e-mail communication, leadership, perceived organizational support, phone communication, teams, text communication, virtual.

Searches were made to locate the most seminal and recent works, in English only texts, on perceived organizational support, virtual teams and leadership, communication modalities, and team dispersion. Academic books, organizational publications, and grey literature were also reviewed. The number of full resources and abstracts reviewed was approximately 350. The primary type of literature reviewed was peer reviewed studies and articles.

Biblical research was conducted through both word study and discussion with Christian colleagues on the application of the dimensions of reciprocity and fairness in the workplace, challenges of virtual leadership, and modalities of communication. While advanced information technologies were not available in biblical times, there is a biblical foundation for how modern leaders should take on the opportunities and challenges presented by advanced information technologies.

<div align="center">**Review of Literature**</div>

Introduction

The notion of perceived organizational support (POS) was introduced by Eisenberger et al. (1986) as the relationship between the perceived extent that an organization values an individual's contribution and cares for their well-being, and

absenteeism. For over thirty years, POS has been studied in the context of traditional face-to-face office environments. Since then, even before COVID-19, organizations have increased remote working and reliance on virtual teams (Burgoon et al., 2005; Saltman, 2020), and increased virtuality results in weaker organizational identification and perceived respect from the organization (Campion & Campion, 2020). Since the introduction of e-mail, there has been concern that decreased social context cues of virtuality would have substantial deregulating effects on communication (Charlier et al., 2016). In a laboratory environment, Gonzalez (2014) determined that while performance did not change, employees were more satisfied with leaders who were face to face than those who led over virtual means. As of now, even though 25% of employees work virtually (Campion & Campion, 2020), research has not considered how changes in leadership interactions (face-to-face, teleconference, phone, e-mail, and texting) in a virtual work environment impact POS.

Perceived Organizational Support

Founded on reciprocity, social exchange view, fairness heuristics, cognitive dissonance theory, and equity sensitivities; POS reflects the notion that perceived commitment from an employee's organization influences the return commitment to the employee's organization (Eisenberger et al., 1986). It serves as a metric of how well an employee perceives that their organization values their contributions and cares for their well-being. That perceived commitment then inversely correlates to greater retention and reduced absenteeism (the higher the perceived support, the lower the absenteeism), with greater effect in those with stronger exchange ideology (Eisenberger et al., 1986). Exchange ideology implies that if there is a greater effort-outcome expectancy,

employee's will increase work effort (Eisenberger et al., 1986). POS is associated with team effectiveness, innovation, safety and organizational citizenship behavior through ability and motivation, and predicts work life balance (Morales-Sánchez & Pasamar, 2019; Törner et al., 2017).

Equity theory in the workplace

Organizational commitment has two elements, economic and affective. The economic elements of organizational commitment include perceived value of their skills or anticipated raises, and is reflected by Survey of Perceived Organizational Support (SPOS) survey statements (e.g. "If the organization could hire someone to replace me at a lower salary, it would do so" and "If the organization earned a greater profit, it would consider increasing my salary"). The affective elements include emotional ties and identification with the organization, and is also represented in survey statements (e.g. "The organization would understand a long absence due to my illness" and "The organization takes pride in my accomplishments at work", Eisenberger et al., 1986). Employees form global beliefs of the organization, as employees view actions of agents of the organization as actions of the organization itself, personified. Furthermore, although many predictors of employee well-being are culturally dependent, the POS scale and measurement had been found effective in a wide variety of cultures beyond Western societies (Meyers et al., 2019).

The primary economic element of POS is related to salary; thus, perceived salary equity is an antecedent to POS (Khalifa & Zaki, 2017). As expected, gender also plays a role in salary and salary equity. The relationship between perceived salary equity and POS is stronger amongst males, likely due to the dipropionate impact of inter-personal

relations and salary expectations on POS for females in the workforce (Khalifa & Zaki, 2017).

It is important to note that equity theory is not isolated to co-workers. Perceived equity includes both how employees feel compared to co-workers within their organization (internal equity) and outside their organization (external equity; Khalifa & Zaki, 2017). Since the millennial generation constitutes a third of the workforce (and growing) and millennials change jobs more than three times more often than non-millennials (Gallup, 2017), there is an increasing awareness of salaries and cultures outside of current organizations. Base pay, promotional opportunities, and base pay/merit increases are the top three concerns employees voice concerning external equity or fairness (Scott, 2018). This greater understanding of external equity raises the importance of the need for organizations to focus on perceived equity versus an insularly look at actual internal equity.

Team and supervisor influenced variations of POS

There are many variations of POS, focusing in on the support of specific elements of workforce relationships, including POS in a team context and perceived organizational support for strengths (POSSU). In the healthcare industry, perceived organizational support for teamwork training (POS-TT) contributed to greater shared objectives and resulted in increased team productivity and team innovation (Lyubovnikova et al., 2018). The mechanisms which translate the team training to generating shared objectives are esteem and affiliation, which is elevated by the team training. POSSU is how much employees feel supported to employ unique strengths within their organizations (Meyers et al., 2019).

Similar to variables like job security and autonomy, the ability to fully take advantage of one's strengths results in maximizing outputs and work goals, leading to greater employee well-being. With the rising amount of literature and drive away from focusing feedback on failures and opportunities for improvement, the focus on skills and strengths is increasing. This focus on strength results in increased employee health and well-being, which is why it is considered a facet of POS (Meyers et al., 2019).

Supervisors have an immense influence on how supported an employee feels (Drzewiecka & Roczniewska, 2018). Supervisor's engagement can foster a loyalty to them greater than the organization, and while on average Perceived Supervisor Support (PSS) is higher than POS, PSS is still a contributing factor to POS (Shanock & Eisenberger, 2006). The contribution of PSS on POS has been studied in multiple contexts. A study of 314 university alumni linked PSS to POS, finding that PSS was positively related to temporal changes in POS (Eisenberger et al., 2002). Inversely, a supervisor's POS is positively related to a subordinate's PSS, and that PSS continues the pattern as it is positively associated with subordinate's POS and performance. Additionally, a study of 300 retail sales employees found that the relationship between PSS and POS increased as their superior's status within the organization increased, and a study of 493 retail sales employees found that POS mediated the relationship between PSS and employee turnover (Eisenberger et al., 2002). These studies support exchange theory, whereas supervisors who feel more supported reciprocate to the organization through support of their employees.

The theory of POS is examined in organizational psychology from many different aspects. From the start, it was evaluated as an independent variable in relation to the

outcome of absenteeism and retention (Eisenberger et al., 1986, 2002) and later in the study of POS-TT and POSSU (Lyubovnikova et al., 2018; Meyers et al., 2019). POS is often studied as a dependent variable, such as which individuals have the largest impact on POS for repatriating employees (Howe-Walsh & Torka, 2017) and the role of PSS on POS (Eisenberger et al., 2002). Finally, POS operates as a moderator between other organizational metrics. In a study of the relationship of human resources management practices on organizational citizenship behavior, POS was evaluated as a moderator (Morales-Sánchez & Pasamar, 2019). Researchers were able to not only isolate which human resource management practices (from ability, motivation, and opportunity) were positively related to OCB (ability and motivation), but also the moderating effects of POS on OCB (Morales-Sánchez & Pasamar, 2019). The variety of research topics and studies of POS reinforce the creditability of the metric and application as not only a condition that serves as an indicator of retention or absenteeism, but also as a factor that can be manipulated and influenced.

Organizational structure

The smaller the organization, the more likely supervisors are viewed as organizational agents. Regular interaction with subordinates and social team building are means of meeting employee needs that contribute to POS (Biswas & Kapil, 2017). It is hypothesized that in smaller organizations, employees may have a stronger identification of their supervisors as agents of the organization, thus stronger PSS-POS relationships (Eisenberger et al., 2002).

Employees assess how much the organization cares for their well-being from sources other than their supervisor; the influence of such is greatly determined by the norms,

standards, and behaviors of peers (Tsachouridi & Nikandrou, 2019). Greater uncertainty, like that in a virtual organization, complicates the understanding of what is expected and the extent of authority, challenging self-determination (Hill et al., 2014). The sustained uncertainty can impact the employee's perception that they can get help when they have a problem, which is one of the dimensions of POS. POS is also constructed on the value of the organization taking pride in the employee's work and understanding of challenges (Eisenberger et al., 1986). In order to do so, the organization must have the ability to observe the employee's successes and challenges. However, electronic communication used in virtual teams can be a barrier to observing the impact of one's work on others (Hill et al., 2014). The greater amount of time and effort to communicate virtually relates to POS in two ways; it can have a negative impact on perceived competence as well as contribute to the feeling that the organization does not care to compensate employees for the extra effort.

While the points above indicate traditional contributors to POS are not as strong in virtual teams, other factors may arise with these teams. With greater levels of virtuality, the mutual support of team members can play a more significant role in an employee's perceived support, thus replacing traditional agents of the organization with self-organized structures (Efimov et al., 2020). Also, the lack of perceived oversight in virtual teams can be interpreted in trust and respect for each member's ability to contribute their part towards task accomplishment. For example, in a study of foreign commercial banks in the Northern West Bank, effective virtual leadership was found to be associated with a high degree of organizational commitment (Iriqat & Khalaf, 2017).

Leadership and POS

   While this study is focused exclusively on the supervisor aspect of POS, it is not only supervisors who can act as agents of the organization and influence POS. One characteristic of POS that makes it unique from job satisfaction, job performance, and organizational commitment, is the level of influence of organizational agents outside of the immediate team. While this study focuses on the supervisor's contribution to POS, organizational factors out of the supervisor's control are also in play. One example of non-supervisor influence on POS is with repatriating employees. While supervisors were essential elements supporting the employees, Howe-Walsh and Torka (2017) found that HR professionals are primarily responsible for the level of support and thus POS of repatriating employees. It is important to note that while supervisors manifest POS by regularly interacting with subordinates (Biswas & Kapil, 2017), there are circumstances where HR is significantly more important than supervisor support in determining POS (Howe-Walsh & Torka, 2017).

   Since this study is concentrated on the relationship between leaders and POS, it is important to understand the mechanisms in which POS transcends the dyadic employee-employer relationship (Tsachouridi & Nikandrou, 2019). Reciprocity and social exchange theory are based on perceived impacts, and that perception is heavily influenced by engagement with the employee's peers (internal and external to the organization). Simply stated, employee's evaluation of their treatment is not insular to their own experiences. Employees evaluate their treatment as better or worse than their peers, resulting in an influence on the negative and positive views, respectively, of their own treatment (Tsachouridi & Nikandrou, 2019). Leaders can address this by looking beyond the dyadic

relationship and raising the perception of the team or organization, with focus on raising the team or organization relative to other comparable internal or external teams. The construct that relative perceived organizational support (RPOS), a measurement of an employee's global perception that the organizational supports him or her more than others, is positively related to POS is supported by the finding that leadership support relates to positive view of organizations and feelings of fulfillment (Tsachouridi & Nikandrou, 2019).

There is no single climate that contributes to high POS, so leaders must always balance context and consider second and third order effects of their actions. For example, in POS-TT (Lyubovnikova et al., 2018), innovation is positively associated with POS, and in POSSU autonomy is positively associated with POS (Meyers et al., 2019); however, in another context, it is the seemingly contradictory idea of a formal and constraint climate that contribute to POS. Conforming to standard procedures inherently opposes the notion of POS (e.g., one of the SPOS elements is "The organization cares about my opinions"; Eisenberger et al., 1986). However, in certain contexts, that level of formal control reduces ambiguity, failed coordination and need for situational information, resulting in increased efficiency (Törner et al., 2017). That efficiency contributes to meaning, which then improves POS. The bounty of research on behaviors and various contributing factors for POS implies that the organizational psychology community has found very few universal truths that characterize POS. This, in-turn, indicates why active leadership is so important in the development and continued attention to POS within organizations. When faced with paradoxes of innovation versus efficiency, and safety versus productivity, organizational POS-climate is what reframes

the trade-offs into single objectives related to employee well-being (Törner et al., 2017). Since innovation, efficiency, safety, and productivity all promote employee well-being, the demands are thought to complement one another within POS rather than challenge one another (Törner et al., 2017).

   As with all constructs of leadership, there is no one-size-fits-all leadership approach to garnering high POS. Personal characteristics like self-efficacy, organizational cynicism, and personal negativity must be considered when assessing the weight or value or POS on reciprocated commitment (Cheng et al., 2020; Erkutlu & Özdemir, 2018; Sears et al., 2016). For example, while organizational cynicism is a result of over-hierarchical organizational structures, which a leader has no control of, authentic leadership can be a tool to reduce the severity of organizational cynicism (Erkutlu & Özdemir, 2018). Similarly, while an employee's emotions can be influenced by a leader's behavior, affectivity and dark personalities are more wholistic constructs for which leaders should be cognizant, though they have little influence. Negative affectivity is a trait associated with pessimistic views and negative emotions, and in the case of organizational behavior, it can have a negative influence on the overall 'value' of POS (Sears et al., 2016). It is important to understand the impact of employee affectivity on constructs like POS, as the 'value' of POS can influence the relationship between POS and other organizational measures. While POS is positively related to employee commitment and performance, negative affectivity moderates that positive effect (Sears et al., 2016). Like negative affectivity, the dimensions of dark personalities are additional constructs that influences the relationship between POS and organizational measures. Dark personality traits are those that come out when employees are stressed or

overworked, experiencing depleted cognitive resources (Treglown et al., 2018). The traits represent the maladaptive behaviors in psychological disorders including excitability, skepticism, caution and mischievousness (Treglown et al., 2018). POS plays a mediating and moderating role on dark personality and intention to quit (Treglown et al., 2018). Given the relationship between POS and personality constructs, like negative affectivity and dark personalities, one can conclude that the expected performance and retention results expected from a level of POS vary based on personality. Therefore, when seeking retention and excellence, it is not enough to have high levels of POS. Leaders must also strive for positive affectivity and be aware of the influence negative affectivity has on the expected resulting behaviors associated with high POS.

Leadership style significantly impacts POS, with styles like leader member exchange (LMX) having a positive relationship (AlHashmi et al., 2019). In distributed teams, relationships amongst members more geographically dispersed from leaders actually results in stronger LMX with enhanced member influence on team decisions when sustained through frequent communication, and thus LMX is strengthened with increased team dispersion (Gajendran & Joshi, 2012). Regardless of dispersion, professional respect is the only dimension of LMX that plays a significant moderator role in the positive relationship between structure and POS, and the relationship is even stronger when the subordinate respects their superior (Gaudet & Tremblay, 2017). This is consistent with the findings that the moderating relationship is stronger with higher levels of PSS (Eisenberger et al., 2002). In the case of contractors, the positive influence of participation in decision making on perceived insider status is greater for those with lower POS (Ding & Shen, 2017).

Virtual Organizations

The late 1990s brought upon a rise of advanced information technologies and studies on how technology transforms organizations and selective adoption at both the personal and enterprise levels (Van Wart et al., 2017). Even with the rise of technology, there remains a lack of consensus in literature as to the exact definition of virtual organizations. This evolution of definition demonstrates the rapid change of pace in the use of technologies and the shift in perception in recent literature (Orhan, 2017). Historically, geographic dispersion was a crucial element of defining virtual teams. Early on, virtual teams were a necessity for large business to operate globally, characterized by electronic communication usage, and cultural and geographic (Daim et al., 2012; Mehtab & Ishfaq, 2017) and built to reduce time and space barriers and exist for when teams cannot be co-located (Mehtab & Ishfaq, 2017). A more modern explanation is that geographic dispersion is not a necessity for virtuality. FtF teams and virtual teams are not dichotomous (Liao, 2017), even FtF teams can be virtual if they predominately communicate and coordinate via advanced information technologies (Garcia Carreño, 2020). Many studies have identified that the relative use of virtual tools has impact on both individual and team outcomes (Hill et al., 2014). There is a general perception that while virtual teams do not foster the same level of collaboration and relationship-building, they are just as effective in task-related performance (Burgoon et al., 2005). Likewise, the traditional role of technology in the workplace was person-machine interaction, which has evolved to interpersonal communication (Charlier et al., 2016).

While virtuality is a construct that is broader than just remote work, virtual capabilities and structure are required for employees to operate remotely. With improved

virtual technologies, remote working has been slowly increasing in popularity for two decades, with a forced spike in spring of 2020. The COVID-19 environment, that has forced changes in operating practices, has opened organizations eyes to adopt strategies in place to ensure productivity in all types of businesses (Bekirogullari & Thambusamy, 2020). According to a Gallup poll, the number of remote working dates per month doubled in the first few months of the COVID-19 pandemic (Jones, 2020). In April of 2020, 51% of Americans were consistently working remotely; by September, many businesses had reopened and the percent of Americans consistently working remotely was reduced to 33%. Another 25% were sometimes working remotely, up from 18% in April (Brenan, 2020). A Gartner survey found that 90% of HR leaders intended to allow employees to work remotely even after the COVID-19 vaccine becomes available (Baker & Zuech, 2020), proving the organizational culture, perception, capability and effectivity around remote working has changed forever.

Virtual organizations are so prolific that there is a rising need to prepare young university graduates in the skills required to be effective in virtual teams to ensure workplace success. Gilson et al. (2013) found that while students were academically aware of the differences between FtF and virtual teams, they lacked real world experience with the advantages and challenges. At a mandatory online course at a Midwestern college, students are provided with opportunities to lead via a cascading strategy, where the instructor communicates goals and recommended strategy to a single student-leader, who then facilitates the student team to execute the assignment. Loucks and Ozogul (2020) conducted a case study to understand the most fundamental developments when entering virtual teams for the first time in one's career, observing the translation of

theoretical behaviors to an authentic context. Here the student-leaders were faced with

overcoming real-world challenges, including low student engagement and technology

issues (Loucks & Ozogul, 2020). Another key learning for these students was that the

level of commitment between teammates from multiple universities was neither

consistent nor controllable (Gilson et al., 2013). On the technology front, students are

forced to work through challenges like distracting background environments, talking on

mute, unreliable internet and other issues they will encounter when entering the

workforce. From the virtual leadership front, students learned how to overcome the

challenge of cascading dissemination vice the traditional method of communication

directly from the instructor. Students also experienced the convenience of efficient

coordination and open communication that came with positive rapport within their teams

(Loucks & Ozogul, 2020).

Advantages and Challenges

While electronic media results in a higher level of knowledge sharing, the media also

increases the cognitive effort required to effectively communicate (Daim et al., 2012).

The balance between the advantages of operating with virtual organizations is often

balanced with dissimilar challenges. This section will first address the advantages and

necessity of virtual teams, followed by the unique considerations that need to be

addressed due to virtuality.

Whether raised with technologies, or adapted mid-career, generally employees find a

natural ease and availability of infrastructure and software (Garcia Carreño, 2020;

Mehtab & Ishfaq, 2017). The youngest generation in the workforce believe in the

communication technologies so much that they feel there is little need for FtF

communication (Gilson et al., 2013). Researchers of university students participating in a controlled virtual technology study were faced with the challenge of students organically choosing to meet on platforms like GroupMe and Skype because of the perceived ease of those platforms rather than the limited communication technology proposed by the researchers, proving that the default work-around when an assigned virtual technology is not preferred is to use another virtual technology, not revert to FtF communications (Gilson et al., 2013). This demonstrates the ease at which diverse and international teams can find common ground and adapt technologies that accommodate the group best.

Along the same lines as the ease of use, flexibility in timing is an advantage of adapting a variety of virtual tools. For those who need immediate knowledge transfer, colleagues can seek assistance in real-time rather than waiting for scheduled meetings. Synchronous communication enables greater social relationships through positively balanced interactions (Burgoon et al., 2005). These social relationships develop into social contracts, building team commitment over time. Adoption of synchronous tools can reduce travel costs and enable flexible staffing strategies, as leaders can construct teams with the right talents and skills without the restriction of geographical limits. Developing asynchronous technologies is also important, as colleagues can work on projects at times that are most convenient for each employee's schedule

Most organizations do not use a single advanced information technology; rather they use a blend of asynchronous and synchronous tools. When synchronous communication is required, organizing meetings for team of members from various time zones can put strains on personal and family obligations (Mehtab & Ishfaq, 2017). In addition to scheduled meetings after hours, synchronous tools result in employees being in constant

contact (Garcia Carreño, 2020). The continual engagement can be burdensome, requiring employees to be constantly connected and multitasking, which has been linked to performance deficits, stress, and superficial relationships without understanding. Solace can be found in the knowledge that one can prioritize online chats more easily than reducing disruptions to concentration that come from FtF engagements (Daim et al., 2012). Even when synchronous communications are not required, that spatial distance can be translated to psychological distance, where employees who are out of sight are out of mind (Gajendran & Joshi, 2012). Furthermore, supervisors are not always cognizant of all the organizational efforts their employees are contributing to, resulting in competing taskings and priorities (Daim et al., 2012). Being respectful of colleague's time and transitioning tasks that would usually be synchronous without virtual tools to asynchronous can add significant complexity and cause ambiguous expectations around roles and goals. The subsequent effect is competing lines of authority and poor delegation (Daim et al., 2012).

In a study of 252 students, it was found that neither setting expectations for effort level nor demonstrating effort themselves effected a leader's ability to prevent or overcome coordination failure (Dong et al., 2018). The advantage of not being geographically constricted when forming teams introduces two new coordination challenges that are not as prevalent with FtF communications, the first being communication through body language, and the second being cultural differences. Since the introduction of email in the workplace, social cues have been a topic of research and concern. Virtual systems introduce a lack of physical and body language cues (Charlier et al., 2016), fewer opportunities to collaborate informally, and risk of isolation (Byrd,

2019). While information systems are effective in communicating information, transferring knowledge can be more demanding. Since social context cues directly relate to the degree of awareness of one another, reduced social cues can result in less connectedness, less shared understanding, and greater uncertainty (Hill et al., 2014). Thus, communication breakdowns in distributed teams result in a greater risks for project delivery than with co-located teams (Daim et al., 2012). It is widely accepted that considerations and adaptations are necessary to accommodate for the reduction in verbal and non-verbal cues from the use of electronic media (Byrd, 2019). Beyond barriers due to lack of physical cues between people of a common culture, geographically expanding teams may introduce barriers of cultural understanding. Specific language skills and cultural differences often result in difference in levels of cooperation (Efimov et al., 2020; Gross, 2018; Liao, 2017). Additionally, managers who are not comfortable with language or cultural differences may be hesitant to delegate responsibility to team members (Daim et al., 2012).

Cultural differences are not only barriers to effective communication, but can also be barriers to trust in global teams. While not a variable in the assessment of virtuality, cultural diversity is the most common dimension of global virtual teams (Liao, 2017). Perception of unfair benefits strains trust between a team, for example, the standard two weeks per year holiday Americans are entitled to versus the standard six weeks per year many Europeans are entitled to. While both successful leadership and team performance rely on trust and communication, the lack of social norms, social interactions, and shared experiences in global organizations make it harder to develop trust between members (Burgoon et al., 2005; Daim et al., 2012). While it may be harder to develop trust,

established teams are able to achieve and retain trust. It is interesting to note that in a decade long study led by the U.S. Army Research Institute's Research and Advanced Concepts Office and Center for the Management of Information at the University of Arizona, trust did not differ between FtF, audioconferencing, and videoconferencing (Burgoon et al., 2005).

The social context of imposing fundamental norms and guidelines for a virtual team extends beyond the local cultures of the team members and company culture, to include the technology itself as an element of the social context (Charlier et al., 2016). Organizations, team leaders, and individuals must adapt social guidelines for interacting with the system and other users of the system (Charlier et al., 2016). The technology as a social context is perhaps the most dynamic of the three cultural elements. In order to stay competitive, there needs to be a continuous investment into evolving these technologies with business needs (Mehtab & Ishfaq, 2017). Investments are required to ensure selected systems are equipped to handle user traffic and are real time user-friendly for collaboration (Saltman, 2020). One example of such rapid investment and adaption of advanced information systems came within the first few months of the COVID-19 pandemic, where 86% of organizations began to conduct virtual interviews for new candidates (Baker, 2020). This required adapting the tools and training teams on how to use the technology to conduct these interviews. It is not enough to select and approve appropriate tools to work, organizations must also overcome the implementation obstacles to employ technologies for maximum effectiveness (Liu et al., 2018; Mehtab & Ishfaq, 2017).

While many of the advantages of virtual organizations are offset with challenges, researchers have identified leaderships skills to overcome these barriers in virtual teams. Often members of virtual teams feel they are isolated with less input towards team decisions; however, there are leadership styles, like LMX, which can assist leaders in overcoming this barrier. Behaviors that foster ownership and commitment towards team goals and formally, or informally delegate leadership throughout the team for common goals, can increase social identity (Gajendran & Joshi, 2012).

Virtual Leadership

Characteristics

A common belief is that FtF is the only means of personal contact between a manager and their employees (Mehtab & Ishfaq, 2017). Personal contact still exists in a virtual environment, it just manifests different than in a FtF environment. Virtual leadership does not mean a gap in leadership. The majority of leaders are able to detect changes in health of team members, even when geographically distant if they have open communication and good social relations (Efimov et al., 2020). Many of the characteristics of traditional teams and leadership carry over into the virtual environment. Like with traditional teams, virtual leaders are responsible for goal-setting, creating a shared vision, rewarding performance, developing group norms, building trust, being mindful of pace of meetings to ensure all content is reviewed, encouraging continued conversation, following up with minutes and task lists, and fostering a sense of community; virtual tools just add the required need for leaders to also be cognizant of time zones, be patient with technology, and have a contingency plan (Campion & Campion, 2020; Daim et al., 2012).

Many young employees entering the workforce do not have the skills to effectively operate in the workforce, and there is little research on how to teach the skills required to operate in a virtual environment (Gilson et al., 2013) or how to lead in a virtual context (Liu et al., 2018; Maduka et al., 2018; Mehtab & Ishfaq, 2017). The balance of general leadership skills and unique skills required of virtual leaders is critical to success (Van Wart et al., 2019). Since 1990, a term rising in popularity has been 'e-leadership', which steps beyond virtual leadership to acknowledge the blend of traditional and technology based relationships, both proximal and distal (Van Wart et al., 2019).

The most obvious challenge that is unique to virtual leadership is with the technology itself. Organizations may provide a vast number of tools for leaders to communicate with their teams; however, acceptance of those technologies is not the same as adoption (Liu et al., 2018; Roman et al., 2019). Change aversion and inertia with past practices may contribute to a lack of adoption (Liu et al., 2018), and there are specific traits, including willingness to assume responsibility, flexibility, and continual learning, that contribute to higher levels of adoption (Van Wart et al., 2017). Many leaders may find it challenging to identify and adopt tools that support trans-generational and trans-cultural exchange (Doyle, 2020). It is important that leaders employ the tools they are provided in a meaningful way.

The next challenge virtual leaders must face regards new norms and standards of communication, adapting to a more decentralized structure. While co-located teams are more likely to have hierarchical relationships, virtual teams have stronger sense of peer-to-peer accountability and emergence of team members as leaders; this results in the effective decentralized management structure (Daim et al., 2012; Hoch & Dulebohn,

2017). In order to enable a sense of fairness as peer leaders emerge, leaders need to first develop standards for communication, including contextual clues (Daim et al., 2012; Mehtab & Ishfaq, 2017). Gaining acceptance and buy-in regarding decorum and standard rules of engagement for duration of relationship enables leaders to sense when norms are being violated and recognize pattern changes indicating emergence of conflict (Saltman, 2020). Once norms and standards are established, trust must developed between leaders and their subordinates; with acknowledgment that interactivity, trust and credibility may be restricted by distance and technology (Burgoon et al., 2005; Maduka et al., 2018; Mehtab & Ishfaq, 2017).

At the highest level, leaders can decrease detachment and increase trust through increasing individual participation and reducing one-way communication (Burgoon et al., 2005). More specifically, trust is formed through each member understanding what the other team members bring to the project and knowing how to effectively communicate with each person on the team. Trust is more quickly formed when individuals have strong past performance demonstrating their expertise, enabling delegation faster in the team development (Gajendran & Joshi, 2012). When past performance is not known to everyone on the team, introductions are important and help build report. Initial FtF meetings are ideal, as they enable members to learn one another's vocal-inflections and match those to body cues, increasing the level of non-verbal communication between team members (Daim et al., 2012). Teams with at least one FtF meeting in the beginning perform better than teams that are always virtual (Gilson et al., 2013). While FtF introductions are optimal, it is important that, even when that is not an option, individuals dedicate time to introduce themselves on a personal level and discuss their role and

operating style. Proper introductions have long term impact on team coordination, conflict management, and decision making (Gilson et al., 2013). The most successful teams invest in introductions during team formation, sharing personal information which in turn enables them to understand work preferences, styles, schedules, and habits (Burgoon et al., 2005). Leaders should ensure that all team members understand their colleague's expertise to raise overall team trust (Liao, 2017; Mehtab & Ishfaq, 2017).

Leadership Theories in Virtual Teams

Various leadership theories have been applied in the context of virtual teams. The most important conclusion is that there is no single correct method. When leadership styles are flexed to improve team effectiveness, *esprit de corps* is generated (Gross, 2018). There is a basic understanding that influence and empowerment take place FtF; however, modern organizations supplement these FtF interactions with digital technologies (Roman et al., 2019). Empowerment is an essential trait of leaders because it builds up emergent leaders and forms a perceptual cue that the employee's decisions and contributions are valued (Törner et al., 2017). The way employees are empowered varies between transformational leadership, transactional leadership, laissez fair, and leader-member exchange leadership styles.

Transformational leadership has a stronger effect on team performance in virtual teams than in traditional (FtF) teams (Purvanova & Kenda, 2018). Through reducing one-way communication, leaders can leverage transformational leadership skills to increase trust by increasing individual participation towards a common goal (Burgoon et al., 2005). Transformational leadership is effective in virtual teams because it creates social networking structures while promoting goal and vision sharing (Gross, 2018). These

shared goals result in a quality over quantity perspective, and feelings of satisfaction and team cohesion. One step beyond transformational leadership is empowering leadership, where in addition to the characterizing of inspiring individual to follow organizational visions, empowering leadership also affords greater ownership and self-leadership, common to virtual teams. The only catch with the high level of delegation is that it is possible to have too much of a good thing. There is a curvilinear relationship between empowering leadership and task performance, where, at the highest levels of delegation, positive influence of empowerment, increased autonomy, and self-responsibility on an individual actually result in a lower task performance (Lee et al., 2017). Leaders need to be cognizant of this relationship when empowering, delegating, and trying to transition from the traditional controlled hierarchies.

Transactional leadership is traditionally associated with citizenship behavior and employee commitment. Compared to transformational leadership, transactional leadership is associated with higher quantitative performance and lower qualitative performance, leadership satisfaction, and group cohesion. While transformational leadership is praised for group cohesiveness, the lower cohesion resulting from transactional leadership could aid in greater ownership as effective task-goal clarity and delegation increase. Task clarity and clear directions are transactional leadership characteristics identified as core competencies of ideal leaders in virtual organizations (Maduka et al., 2018). In virtual teams transactional leadership contributes to greater task accomplishment and absorptive capacity because of the clear focus on task-goal completion (Gross, 2018). Furthermore, the negative outcomes associated with low POS

can be mitigated through the promotion of positive consequences, like task performance, which is clearer in transactional leadership environments (Biswas & Kapil, 2017).

While constant feedback is another competency of ideal leadership in virtual teams (Maduka et al., 2018), there are also advantages to a more hands-off approach. Laissez-Faire is traditionally associated with lack of engagement; however, in virtual teams, the absentia can actually promote creativity and an entrepreneurial spirit. The less engaged approach enables each team member to explore new ideas and spark innovation through autonomy and freedom (Gross, 2018).

Leader-member exchange (LMX) is a trending theory based on the quality of the relationship between an employee and their supervisor. The depth of this relationship then has direct implications on the development of psychological empowerment (Hill et al., 2014). Virtuality is an obvious factor into the development of quality relationships, as the technology itself is an element of the social context (Charlier et al., 2016). Fourteen years after the word 'email' was coined and two years before the first public videoconference, research indicated that physical distance had a negative effect on LMX quality (Anand et al., 2018). The strength of LMX relationships creates dyads that go beyond formal obligations, providing employees with greater trust, attention, and support from supervisors (Hill et al., 2014). Furthermore, these in-group members feel more included, valued and respected in organizations, resulting in greater POS. Leaders in virtual teams must now handle the greater strain that comes with the benefits of traditional LMX in-groups due to the complexity inherent in distributed work arrangements. In-groups must be balanced with the increased risk of isolation and exclusion from activities that make them feel less consequential to team decision making

(Byrd, 2019; Gajendran & Joshi, 2012). LMX fosters greater trust between leaders and their employees, raising participation in team decision making and autonomy in work decisions (Hill et al., 2014). The positive influence of participation in decision making on perceived insider status is reduced with increasing POS, indicating that those who feel most supported by the organization are more likely to feel like insiders.

Twenty years after the study indicating physical distance's negative effect on LMX quality (Napier & Ferris, 1993), and with great advancements to technology, we find that like transformational leadership, LMX can be stronger in dispersed teams (Avolio et al., 2014). A study of 224 employees from multinational Fortune 500 information technology companies, tasked with nonroutine hardware and software problems, tested the impact of leadership on a team's ability to innovate with a high degree of interdependence(Gajendran & Joshi, 2012). It was found that high quality LMX relationships include frequent leader-member communication, which can counter the feeling of isolation and exclusion (Gajendran & Joshi, 2012). The feeling of isolation in a virtual environment can be opposed through the development of in-groups that encourage employees to feel central, included, and valued. This is a unique extension to traditional LMX leadership implemented in FtF dyads, as it can be applied as a socialized leadership across all members of the team. The study also concluded that relationship based leadership, like LMX, is more effective when team salience is low (Gajendran & Joshi, 2012). A 2014 study of 353 full-time employed early-career professionals enrolled in an MBA program concluded that the degree of electronic communication (relative to FtF) amplified the positive relationship between LMX and employee psychological empowerment (Hill et al., 2014). The results of these two studies, it can be inferred that

while LMX and the focus on a relationship-based dyad has been a trending leadership style in traditional situations, it is actually more effective with virtual teams than co-located dyads. When considering LMX, extent of team dispersion is important.

In a study of thirteen culturally diverse global teams, the most effective leaders displayed many of the same traits demanded of FtF leaders; however, the effectiveness of the team's overall performance was hindered by technology (Kayworth & Leidner, 2002). The best virtual leaders are able to act as mentors while simultaneously demonstrating empathy through the technology modality they select. Like with FtF leadership, effective leaders avoid coming across as overbearing as they assert authority, however technology and perceptions make this more challenging in the virtual environment (Darics, 2020). Finally, the best leaders clearly defined roles and demonstrated frequent and accurate communication with their peers and teams (Kayworth & Leidner, 2002). The challenges were also in-line with those of FtF leaders, including motivating employees who are not direct-reports and therefore inhibit the leader's ability to exercise positional authority. Inability to access shared services, file size limitations in e-mails and server reliability were all barriers to effective team performance in this study (Kayworth & Leidner, 2002). Virtual leaders need skills and awareness beyond that of FtF leaders, including maintaining team motivation and cohesion even when one member or geographic location is relatively 'cut-off' and dedicating time to teach the skills required to use the technologies selected.

Leadership Communication Modality

Leaders are responsible for effectively communicating work-relevant information, provide feedback, and instruction (Schneider et al., 2015). While there is extensive

literature on why certain individuals rise as leaders in traditional workplaces, there is little research on the variables that contribute to leaders rising in virtual organizations (Charlier et al., 2016). The electronic communication is one of those variables, impacted by both the soft skills to be effective and hard skills to effectively use the technology. Leader's establish their unique style of communication and leadership through the variation and implementation of electronic communication systems, which then influences their subordinate's motivation and performance as well as the organizational climate (Drzewiecka & Roczniewska, 2018).

The degree of electronic communication is a moderator of the relationship of LMX on psychological empowerment, job satisfaction, organizational commitment, and job performance (Hill et al., 2014). Taken a step further, it is not just the degree of electronic communication, but the richness of that communication. Media Richness Theory is a framework established to evaluate the value of a media type to facilitate shared meaning, from mediums that are hard to reproduce (like FtF discussions) to leaner mediums (like email) that lack the richness of the former (Maynard et al., 2019). Richer mediums are more effective for complex or ambiguous tasks (A. W. Cole, 2016), but require a more synchronous engagement; thus, it is important for leaders to weigh the communication modality with the objective for that communication. The impact of perceived richness has proven to influence subjective performance measures in multiple contexts. In the adoption of online health communities, perceived media richness has a significant positive impact on the patient's perception of informational and emotional support (Mirzaei & Esmaeilzadeh, 2021). In the corporate world, the ability to customize communications and media type to effectively communicate result in higher employee

job satisfaction (Delgado & Lubbers, 2021; Erben et al., 2019; Van Wart et al., 2019).

Channel Expansion Theory has taught that media richness is perception based, meaning

that an employee's experiences and ease with a medium impacts the richness to them

individually (Armengol et al., 2017; Mirzaei & Esmaeilzadeh, 2021). This theory also

indicates that perceived richness can change over time as experiences are gained

(Armengol et al., 2017), requiring leaders to stay attuned to their team's adoption of

mediums.

Modern organizations offer employees myriad ways to communicate and

collaborate. The mix of the various communication methods define the level of virtuality

for the team. Some methods are asynchronous, meaning that they do not rely on

simultaneous engagement, such as e-mail and electronic knowledge repositories (Mehtab

& Ishfaq, 2017). E-mail has a long lag and interruption of information, which indicates

the highest level of virtuality (Mehtab & Ishfaq, 2017). Modalities that cross between

asynchronous and synchronous, like texting and instant messenger chatting, have a more

moderate level of virtuality. While the conversation may feel real-time, there is a slight

lag between delivery and receipt as ideas are interrupted because they are conveyed at the

end of each full thoughts or sentences. Finally, some methods are completely

synchronous, like FtF conversations, phone calls, and videoconferences. These modalities

have the lowest levels of virtuality. Most leaders in virtual organizations employ a mix of

communication methods. Leaders can practice polychronic communications, employing

multiple technologies simultaneously (e.g. document sharing during a phone call),

successive technologies (e.g. e-mail followed by another e-mail), or complementary

successive technologies (e.g. following up a meeting with an email; Roman et al., 2019;

Schulze & Krumm, 2017). The use of complementary technologies is a common tool used to reduce errors and ambiguity (Schulze & Krumm, 2017). While the level of virtuality for a single interaction or throughout a relationship changes over time, there are generally preferred and common modalities for each dyad.

Face to Face Modality

Chanel Expansion Theory explains that experience with a medium results in greater ability to operate effectively in that medium (Schulze & Krumm, 2017). Since FtF is the medium one experiences since birth, it is the medium we have the most experience with and highest level of comfort. FtF is not only the traditional modality of leadership but also, when given the choice, the most popular (Gonzales, 2014). Being the modality of choice should not be confused with being the most effective modality. In academia, while students prefer FtF, there is no evidence that that preference negatively impacted online course satisfaction (A. Cole et al., 2017). Furthermore, the most significant predictor of student satisfaction with online courses was the satisfaction of communication with the online instructor (A. Cole et al., 2017); this concept challenges the notion that organizations need to give positive consideration to the availability of employee-supervisor FtF communication when constructing teams.

There seems to be an underlying assumption that there is no miscommunication or misinterpretation when operating FtF, as technology mediated communications are cited as faulting in these areas. However, FtF communications are not perfect and the social pressures associated may hinder the quality of the interaction (Gonzales, 2014). As the social pressures of FtF communications were reduced, communication became less regulated. Also, even when FtF is an available option, research has shown that even short

distances (like different floors or sections of the same building) result in a preference for electronic communication over FtF communication (Hill et al., 2014).

In a study of 3649 social interactions, it was found that while 62% of communication was FtF, 22% text-based (texting, email, social media), and 14% voice communication; the meaningful interactions from text-based communication had a more significant impact on self-esteem than FtF or phone (Gonzales, 2014). While individuals still prefer to interact FtF, it is the text-based channels that lead to more disclosure, possibly due to the absence of in-person social pressures.

Advanced Information Technology Enabled Modalities

Access to a wealth of data via advanced information technologies enables employees greater understanding of leader's communications, the effect is that FtF interactions are not as meaningful or necessary to visionary understanding as they are in workplaces with zero virtuality. Recent years have benefitted from exponential improvements in reliability, bandwidth compression, and ease of use of videoconference technologies (Liu et al., 2018). Videoconference is a growing medium for workplace communication, as it is the closest tool to simulate FtF interactions. Phones and other forms of audio communication require less bandwidth, but remove the benefit of social cues and body language that knowledge sharing activities benefit from. Audio communication is more favorable for providing efficient, task-focused and analytical exchange and coordination, connectedness, and comprehension than FtF and videoconference (Burgoon et al., 2005).

While audio communication is effective for communicating information, it requires the receiver to remember or record the information presented. Texts and instant messages offer users both the clarity of division of labor and a permanent record of

communication (Burgoon et al., 2005). Furthermore, many of the cues available in FtF and videoconferences, but lost in audio communication, are restored through chat functions (Darics, 2020). Through orthography (interjections, laugher, comic strip sounds) and typography (punctuation, emoticons), functions that are usually achieved by audio and visual non-verbal communications face-to-face can be communicated through electronic means (Darics, 2020). For example, the change in conveyance of 'okay', 'OK', and 'k' can indicate formality; the use of ellipsis can indicate pause for thinking; and capitals can indicate heightened emotions (Darics, 2020). Texting and instant messages hover between synchronous and asynchronous styles, as communication is conveyed in complete thoughts and while one can respond in real-time, delayed, asynchronous responses are also acceptable. Like the forementioned modalities, the synchronous nature of chat has the benefit of increased interactivity, which in turn increases trust and credibility (Burgoon et al., 2005). However, unlike the forementioned modalities, texting can be more mentally tasking and less interactive, so it is better suited for less mentally taxing tasks (Burgoon et al., 2005).

When considering the volume of texts and emails between leaders and their teams, Gluckeler & Schrott (2007) determined that there is no change to the volume of electronic communications (text and emails) for employees who report face to face and those who report virtually. E-mail is often the least personal form of communication as it opens up the dyad for miscommunication, lower levels of mutuality, coordination, and trust; however, these attributes are able to be built and retained over longer periods of time regardless of media (Burgoon et al., 2005). One advantage is that the asynchronous nature of e-mail enables team members to set their own pace and rhythm for absorption

of content and generation of ideas (Mehtab & Ishfaq, 2017). Another advantage of asynchronous media is avoiding unnecessary information processing from synchronous conversations (FtF, chat, audioconference) and reduce probability of hasty decisions (Burgoon et al., 2005).

Team Dispersion

Advanced information technologies have enabled the rising number of teams composed of individuals from across the globe. Often these teams are fully distributed; however, virtual teams can be geographically aligned a myriad of configurations. Dispersion is a measurement of the extent to which team members are distributed across locations and time zones (Gajendran & Joshi, 2012). A virtual team may be all co-located (zero dispersion) and still virtual by their use of information technologies to complete tasks. In general, teams with zero dispersion are less reliant on technology to collaborate and make group decisions (Charlier et al., 2016).

A very low dispersion could be a large team where all but one member is co-located, and that one member is in a physically different geographic location. A team that is split evenly between two geographic locations is considered low dispersion. When there are two or more team members co-located, geographic subgroups are formed, resulting in their own social categorization (Charlier et al., 2016). These co-located subgroups have the highest level of team identification. The co-located team members have more influence on one another, as indicated by the theory of social impact and self-categorization theory (Charlier et al., 2016). There seems to be an inevitable bond of those in the same location. In a study of university students, it was found that even when they were discouraged from meeting FtF, when two team members were co-located and a

third was not, the two would meet in person, leaving the other feeling overpowered and marginalized (Gilson et al., 2013). A team with some co-location, spread across many geographic locations is considered high dispersion, and a team with zero co-location is considered to have very high dispersion. As level of dispersion increases, the playing field levels as there are fewer opportunities for FtF interactions, increasing the commonality of context for task completion, reducing the ability to build consensus without technology mediation, and increasing the opportunity for all members to be equal part in decision making (Charlier et al., 2016). This is consistent with Webster and Wong's (2008) findings that zero dispersion teams are most similar to very high dispersion teams in team trust, task skills and group identity, while local members of semi-virtual (between zero and very high dispersion) develop in-group perceptions and have more positive perceptions of one another than their geographically dispersed colleagues. Since individuals familiar with working across geographic lines have a greater ability to cope with decreased social support (Schulze & Krumm, 2017), individuals familiar with teams of very high dispersion are less likely to be reliant on the engagement from their supervisor for POS.

It is important to consider both the co-location of the leader-member dyad as well as the dispersion dynamic of the given team. In a study on emergent leadership within controlled undergraduate business students, 344 participants were divided into teams of four (various dispersion levels) to complete the Tinsel Town simulation, at the completion they were asked to rate one another on emergent leadership traits. It was determined that the geographic relationship between the rater/ratee and the rating was stronger in teams with low dispersion and weaker in teams with high dispersion (Charlier

et al., 2016). This indicates that the less dispersion a team has, the more important co-location is to perception of one another.

The use of electronic communication due to geographic separation can add additional challenges to make social comparisons and assess performance relative to others (Hill et al., 2014). This is significant in the study of team dispersion as a moderator of POS because assessing perceived equity implies some level of social comparison (Khalifa & Zaki, 2017). Overall, it is not enough to study the relationship between team dispersion and POS, as physical distance is just one characteristic of a virtual work environment. Since employees regularly use electronic communication even when co-located, the use of electronic communication and geographic physical locations warrant separate analysis (Hill et al., 2014).

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Biblical Foundations of the Study

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Perceived Organizational Support

While the construct of POS was first coined in 1986, the root of the theory stems from the fundamental belief in reciprocity and fairness heuristics. This concept is reflected in how Christians are directed to treat one another, such as the golden rule Jesus shares with the disciples in Matthew 7:12, to treat others as you would like to be treated, and through the continuous reminders that we reap what we sow (*New International Version Bible*, 2011, Galatians 6:7-8, 2 Corinthians 9:6). Reciprocity is seen through a more direct one-to-one relationship in David's relationship with God recorded in 1 Chronicles. David had initially been given the honor of creating a temple for the Lord (*New International Version Bible*, 2011, 1 Chronicles 17:2); however, because of the bloodshed in his many wars the honor was revoked and in turn provided to his son,

Solomon (*New International Version Bible*, 2011, 1 Chronicles 22:8). Here we can see

that God, as a supervisor, evoked a sense of reciprocity in David's work for Him.

In the workplace, evaluating one's own effort and contributions related to salary to

others is a antecedent to POS (Khalifa & Zaki, 2017). In Matthew 20, Jesus shares a

parable about the conflict between the contract fairness and perceptions of fairness in

relating the workplace to entering the kingdom of heaven. It is apparent through this

scripture that the POS is not just the quantitative element of getting paid a fair day's

wages, but also the perceived fairness of being paid more than those who were hired in

the final hour. While the "last will be first, and the first will be last" (*New International

Version Bible*, 2011, Matthew 20:16) in entering the kingdom of heaven, this idea can be

challenging to accept because it violates the comfort of fairness heuristics.

Leadership Communication

This study is focused on the comparison of the influence of communication

modalities on POS because POS has primarily been studied in traditional workplaces and

there is a perception that FtF communication is more effective than communicating

through advanced information technologies. However, scripture challenges the

effectiveness of team leader to team member communication and the need for

clarification even for teams will low virtuality and zero team dispersion. Even the

disciples, guided by the perfect teacher and leader, struggled to properly interpret FtF

communications.

There are many examples of this, such as when Jesus instructed the disciples in a FtF

modality to watch out for the yeast of false leaders (*New International Version Bible*,

2011, Mark 8:14), which the disciples interpreted as a judgement on the yeast for bread

rather than asking Jesus for clarification. In verse 21 Jesus responds with frustration when the disciples had not immediately understood his instruction without need for clarification. This happens again when Jesus shares that He is the bread of life (*New International Version Bible*, 2011, John 6:32-35). At this point his FtF communication is so misinterpreted that even after internal discussion, all but the original twelve disciples left. Jesus seemed to not show great concern for the misinterpretation. Finally, when walking down a mountain together, recorded in Mark 9, Jesus instructs the disciples to not share what they had seen (Elijah and Moses) until the son of man had risen from the dead. Once again, this is a misunderstood message that the disciples discussed on their own without gaining further clarification. The FtF modality does nothing to bring heightened sense of clarity. Even though full body language and the ability to respond in a synchronous manner was available, the team failed to leverage the FtF advantages to enhance the discussion.

The communication overload and feeling of constant contact that virtual tools enable can be a struggle as individuals try to separate from work for an hour on Sunday morning or a prayer in the evening, challenging the role these technologies play in our lives (Garcia Carreño, 2020). However, it was not until the COVID-19 pandemic that the world noticed how important communication modalities are to the practice of religion. Broadcasting services over the internet has become a standard practice to meet congregants where they are, whether they cannot attend in person because of sickness, travel, or other conflicts. During the pandemic, many churches practiced drive-through communions, combining the letter of the law to come-together to the church with the advanced information technology of broadcasting the message through car radios. Many

services have been led by pastors standing on tailgates, streaming their message through car radios to the parking lot full of families, isolating from one another. The ability to come together is redefined by the option for communication modalities past FtF.

One of the most discussed subjects has been whether to follow the spirt or the letter of the law during Passover seder during the pandemic. The letter of the law indicates that for Orthodox believers, electricity is strictly prohibited on the Sabbat, however the spirt of the gathering is for families to come together in community. The use of advanced information technologies violates the law, however physically coming together introduces potentially life-threatening risks, and in certain areas of the world is even illegal by state laws in time of quarantine. The head of the Jerusalem Rabbinical Court, Rabbi Eliyahu Abergel, among others, participated in a very controversial response to queries of properly gathering in light of the pandemic. He conditionally approved the use of Zoom for families to gather (Sharon, 2020). This landmark decision was made for emergency times only, yet still recognizes occasions when FtF is not the best modality to communicate with family over the Passover seder.

Furthermore, there are some practices followed as we work in the church, but easily lost in the hustle of business. Virtual teams have been criticized because it is more difficult to observe one another's actions and give credit to individual contributions (Hill et al., 2014). However, that challenge may be for the best, as Christians are instructed to be generous in sharing credit and not seeking it for ourselves (*New International Version Bible*, 2011, Hebrews 13:16, 1 Timothy 6:18, and Philippians 2:3). Also, the church is built on the delegated authority to speak the Word in the great commission, and then the expanded delegation as Paul wrote thirteen recorded letters to various developing

churches. Delegation is an essential skill for a virtual leader, and one who has observed

and practiced delegation in the church is more equipped to thrive with the use of

advanced information technologies (Gajendran & Joshi, 2012). While it is not impossible

to overcome the miscommunication that can come with asynchronous communication, it

does require a leader to be perceptive to how their message has been understood and the

actions of their followers. For example, Paul had to correct various misunderstandings on

being married to non-Christians, eating in pagan temples, and misbehaving at the Lord's

Supper (*New International Version Bible*, 2011, 1 Corinthians 8). The same applies to

leaders giving professional instruction over virtual means; like Paul, a tentative leader

can observe responses and provide additional clarity ensuring the success of the

enterprise.

Summary

Demonstrated in this review of literature is the abundance of applications of POS

throughout the past thirty-five years. POS has remained an effective measurement of

correlation between an employee's perceived commitment of the organization to them

and the reciprocity they will share in their commitment to the organization. The rise in

virtual modalities in the past thirty years have changed how teams communicate, the

context for which leaders are operating, and the perceived entitlement for supervisor-

employee communication. When POS was developed, the assumptions were for a high

level of entitlement for FtF communications, since other modalities were not extremely

prevalent and the global nature of the workforce was more aligned around the

coordination between multiple co-located teams, rather than a team with very high

dispersion. Thus, the gap that this study will address if the communication modality

selected for supervisor-employee communications is related to the employee's POS. Furthermore, when those without the entitlement of FtF communications serve on the same team as those who do have that entitlement, the level of team dispersion is an influential element in the relationship between perceived leadership communication and POS that needs to be studied further.

CHAPTER 3: RESEARCH METHOD

Overview

Understanding the significance of POS to an organization, and the role supervisors traditionally play in relation to POS, aids organizations to make various decisions from benefits to supervisor selection. The added complexities of communication modality add a dynamic for leaders in any engagement; this study examined how those selections relate to POS. Furthermore, whether through globalization, the advanced knowledge sharing capabilities of advanced information systems, or the necessities of social distancing in a pandemic, team dispersion has become a critical variable in many organizations. The purpose of this quantitative survey study was to examine the relationship between modality of leadership communication and perceived organizational support and examine how team dispersion moderates that relationship.

Study participants were recruited via professional, academic, and social networks (primarily LinkedIn) to complete the online survey. Participants spent less than five minutes to complete the survey, including demographics, eight elements of POS (Likert scale, Eisenberger et al., 1986), perceived leadership communication (PLCQ, Likert scale), the five communication modalities (measured as the percentage of total employee-supervisor dyad communications in each modality), and team dispersion. The demographics were age, job tenure, gender, and occupation. Occupations were converted to job communications demands via the U.S. Department of Labor O*Net scoring methodology (U.S. Department of Labor, 2021). The independent variables were perceived leadership communication and communication modality, the dependent variable is POS, and the moderators are the three types of team dispersion (time zone,

city pairs, and discrete locations). Spearman rank-order correlation was used to measure the strength and direction of association between each independent variable and the dependent variable. The strength of the correlation between each communication modality was ranked to test the hypothesis that mediums with greater richness relate most positively with POS. A second set of Spearman correlations was used to measure the strength between the product of the centered moderators and centered independent variables with the dependent variable. A Wilcoxon-Mann-Whitney test was used for the control variables of gender and employee geographic dispersion.

Research Questions and Hypotheses

Research Questions

RQ1: What is the correlation between perceived leadership communication and POS?

RQ1a: What is the correlation between leadership face-to-face communication and POS?

RQ1b: What is the correlation between supervisor communication via videoconference and POS?

RQ1c: What is the correlation between supervisor communication via telephone and POS?

RQ1d: What is the correlation between supervisor communication via text/instant messenger and POS?

RQ1e: What is the correlation between supervisor communication via e-mail and POS?

RQ 2: Which medium (face to face, videoconference, telephone, text/instant messenger, or e-mail) of supervisor communication is most related to POS?

RQ 3: Does team dispersion moderate the relationship between perceived supervisor communication and POS?

Hypotheses

Hypothesis 1: Perceived leadership communication is positively related to POS.

Hypothesis 1a: Leadership communication via FtF is positively related to POS.

Hypothesis 1b: Leadership communication via videoconference is positively related to POS.

Hypothesis 1c: Leadership communication via telephone is positively related to POS.

Hypothesis 1d: Leadership communication via text/instant messaging is positively related to POS.

Hypothesis 1e: Leadership communication via e-mail is positively related to POS.

Hypothesis 2: The mediums with greater richness relate most positively with POS.

Hypothesis 3: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between perceived leadership communication and POS.

Hypothesis 3a: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via FtF and POS, such that this relationship is more strongly positive when the degree of team dispersion is low than when degree of team dispersion is high.

Hypothesis 3b: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via videoconference and POS, such that this relationship is more strongly positive when the degree of team dispersion is high than when degree of team dispersion is low.

Hypothesis 3c: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via telephone and POS, such that this relationship is more strongly positive when the degree of team dispersion is high than when degree of team dispersion is low.

Hypothesis 3d: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via text/IM and POS, such that this relationship is more strongly positive when the degree of team dispersion is high than when degree of team dispersion is low.

Hypothesis 3e: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique locations) moderates the relationship between leadership communication via e-mail and POS, such that this relationship is more strongly positive when the degree of team dispersion is high than when degree of team dispersion is low.

Research Design

The design of this study was to first analyze the relationship between perceived leadership communication and POS, and then independently look at each communication modality of that leader's communication. In highly dispersed teams operating in virtual environments, the team members play a more significant role in the employee's perceived support than in traditional teams, suggesting that the role of the leader as an agent of the organization is reduced (Efimov et al., 2020). As POS is personified through

the leader, the shift towards more influence by a team suggests that the relationship between perceived leadership communication and POS is weaker for highly dispersed teams. Moderators are external variables that affect the strength and direction of the relationship between independent and dependent variables. This study was designed with team dispersion as a moderator, as the level of dispersion may influence the relationship between communication modality and POS, while communication modality does not have any influence on the team dispersion.

This design fulfills the purpose of this study by enabling organizational leaders to understand how team dispersion moderates the relationship between perceived leadership communication and POS for each communication modality. In areas where team dispersion is a moderator, this study reported which characteristic of team dispersion was most significant (time zone, city, or unique location). The hypotheses from the preceding section are illustrated within the theoretical framework in Figure 2.

Figure 2

Hypothesis Integration to Theoretical Framework
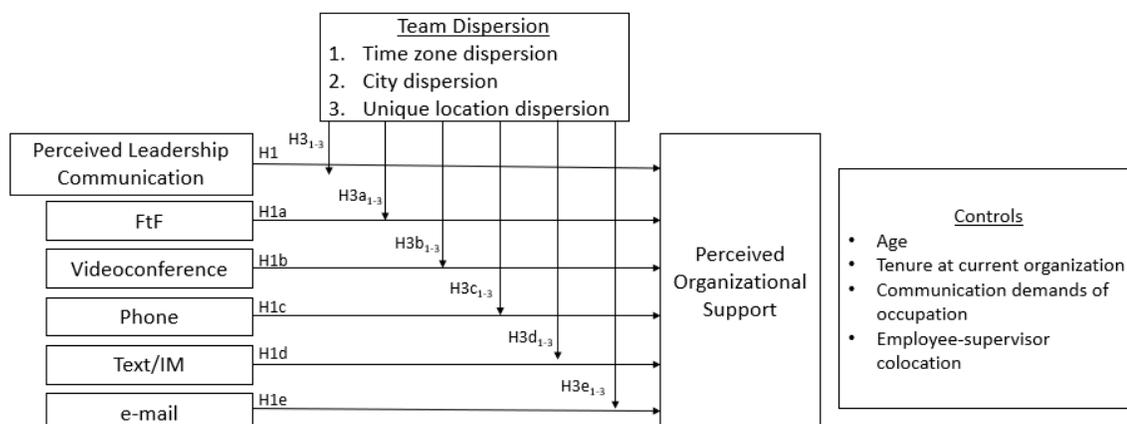
Participants

The cross-sectional dataset was collected by convenience sampling. Individuals from professional, academic, and social networks (primarily LinkedIn) were asked to complete the online survey. Appendix A is the recruitment notice. The requirement for participating in this study was that individuals were 18 years or older, employed (not self-employed) at the time of participation, and members of teams of 10 or fewer (in addition to themselves and their supervisors). No additional permissions were required to recruit participants. The participant sample size for a Spearman correlation was determined using power analysis for a medium effect size ($\rho = 0.3$). This study was structured to have a minimum power of 0.80 with an alpha of 0.05, which required 82 participants.

Study Procedures

Following IRB approval, participants were recruited through professional, academic, and social networks. The posting included a link to the questionnaire. The first element of the survey was informed consent; informing participants that participation is voluntary, they may choose to withdraw from the survey at any time, records are kept private, and responses are anonymous. Participants represented various occupations, work environments, gender and ages; these demographics were gathered in the questionnaire. Questionnaire format was consistent with that in Appendix C: Questionnaire Template. Distribution and fulfillment of the questionnaire was through Google Forms®. The survey was available to all participants for forty calendar days to allow for an adequate collection period. The resulting responses were downloaded and entered into IBM SPSS® Statistics for Windows, version 25 (IBM Corp., Armonk, N.Y.,

USA) for analysis as described in the Data Analysis section. No personally identifying information was obtained.

Instrumentation and Measurement

Independent Variables

Perceived Leadership Communication Questionnaire other-rating version (PLCQ-OR)

The PLCQ is a short instrument for the measurement of perceived leadership communication, to measure leadership communication from the follower's perspective (Uzonwanne, 2017). Because employees view actions of the agents of the organization as actions of the organization itself (Eisenberger et al., 1986), the perceived communication effectiveness from the leader then relates to how effectively a leader can represent the organization. This item is measured with Schneider et al.'s (2015) PLCQ, consisting of a 6-item scale assessed on a five point Likert-scale, with a modification to the gender specific item from "My supervisor seems to like devoting *his* time to me" to "My supervisor seems to like devoting *their* time to me" (italics for emphasis). This scale has been proven to have internal consistency, construct validity, and criterion validity (Schneider et al., 2015; Uzonwanne, 2017).

Communication Modality

Whether using multiple medias to enrich a single experience, or for sequencing over time, virtual teams never employ just one modality of leadership communication (Roman et al., 2019). Thus, the proportion of communication through five of the most common workplace modalities was assessed: FtF, videoconference, phone/audioconference, text/instant messenger, and e-mail. The variable of communication modality was established in a similar fashion to a study on communication and trust conducted by

Burgoon et al. (2005) and a study on leadership theory and electronic communication

conducted by Hill et al. (2014), where modality and degree of electronic communication

were control and independent variables. Following precedence set by the latter study,

participants reported the percentage of interactions they have with their supervisors using

each different modality, where the figures reported had to total to 100%. Each modality

varied in increments of 10% from 0% to 100%. With each modality being discrete,

validity and reliability analysis are not required.

Moderating Variable

Team Dispersion

Spatial and temporal proximity both contribute to social influences between

individuals. The social influence contributes to individuals being valued in the "in-group"

or homogenous in the "out-group" (Charlier et al., 2016). Since leaders interact with co-

located members more than geographically dispersed members, in-groups are created

adding a significant element to employee perception of their place and value within the

team and organization (Liao, 2017). The three categories of team dispersion are by time

zones (indicating less opportunity for synchronous communication), by city (the

generally accepted metric for dispersion), and by discrete location (to take into account

the unique COVID-19 dynamic where employees living in the same city are dispersed).

Consistent with Petersson & Wallin's (2017) assessment, the validity of a study with

three different measures of the team dispersion diversity construct is high.

Consistent with (Gajendran & Joshi, 2012), these three measures of team dispersion

were calculated using Blau's index. The index was used to calculate the dispersion of

team members across different time zones, different cities, and different unique work

locations. Blau's index is derived from the equation $1 - \sum_{i=1}^{R} p_i^2$, where R is the number

of different time zones, locations, or unique locations the dataset contains, and p is the

percent of the population in any time zone, location, or unique location. Data was

gathered with open filed answers requesting participants to list the cities represented by

their teammate and how many teammates are in each of those cities. Individuals who

work remote from the same city, were annotated with letters, e.g., 'Cincinnati -A' and

'Cincinnati -B'.

Dependent variable

Survey of Perceived Organizational Support (SPOS)

Measuring both the economic and affective elements of POS, this standard

measures the employee's perception of how the organization values their contributions

and cares for their well-being, effectively the perceived commitment from an employee's

organization (Eisenberger et al., 1986). Since the original 36 item SPOS is

unidimensional and has high internal reliability, the use of shorter versions is acceptable,

and consistent with seminal studies on POS, eight high-loading items (Items 1, 3, 7, 9,

17, 21, 23, and 27) from the original scale (Eisenberger et al., 1986) were selected to

measure POS (Eisenberger et al., 2002). Responses were obtained using a seven-point

simple Likert scale, where 6 ='Strongly agree'. 5 = 'Moderately Agree', 4 = 'Slightly

Agree' 3 = 'Neither Agree nor Disagree', 2 = 'Slightly Disagree', 1 = 'Moderately

Disagree', and 0 = 'Strongly disagree'. Items 3, 6, 17, and 23 (2, 3, 5, and 7 on the 8 item

SPOS) are negatively worded questions, and as-such, are reverse scored, and the mean is

computed for the participant's POS score. A higher number indicates a higher POS.

Control variables

Five control variables were deemed theoretically relevant to testing the theoretical

model. First, age was controlled since technology adaption varies with age. Second,

tenure in the organization was controlled since time in job can influence employee

attitudes. Third, the co-location of the employee and supervisor was controlled for as

geographic proximity in-group biases are stronger than effects of existing role and

organizational categories in semi-virtual teams and in-group classification relates to

organizational identity (Tsachouridi & Nikandrou, 2019; Webster & Wong, 2008).

Fourth, gender was considered as women are more likely to form communal relations

than exchange relationships (Thompson et al., 2020), suggesting that the communal

benefits of team dispersion may have a positive correlation to the relationship between

perceived leadership communication and POS.

The final control variable was the extent to which the job requires communication.

This was controlled because jobs that do not require significant levels of communication

are less likely to find significance in the relationship between communication modality

and POS compared to jobs that require high levels of communication. Consistent with the

Hill et al. (2014) assessment of job communication demands, the job communication

demands score for each participant's job was assessed with the use of the Occupational

Information Network (O*NET) database. O*NET is a primary source of occupational

information, encompassing hundreds of occupation-specific descriptors on almost 1,000

occupations (U.S. Department of Labor, 2021). O*NET provides ratio data for the extent

a variety of skills are required for any given occupation. Two independent raters matched

participant's recorded occupations to the O*NET job titles, enabling a job

communication demands score to be established for each occupation. In the case of

disagreement, the raters meet to discuss and reached agreement. The scores for "Oral

Comprehension", "Written Comprehension" and "Communicating with Supervisors,

Peers, or Subordinates" provided in the abilities and work activities sections of the

detailed evaluation for each occupation was then extracted. The mean of these scores

forms a job communications demand score for each participant in the sample.

Operationalization of Variables

Perceived Leadership Communication (Independent Variable) –This variable is ordinal

and measured with the 6-item PLCQ-OR (Schneider et al., 2015).

Communication Modality (Independent Variable) - Leveraging the approach used in

existing research (Hill et al., 2014) and consistent with the definition of degree of

electronic communication as how much one communication technology is used

relative to others, modality of leadership communication was assessed by asking

participants the percent of total interactions with their supervisor using FtF,

videoconferencing, phone, text/IM, and e-mail. The sum of interactions was

100%. These variables are ordinal.

Perceived Organizational Support (Dependent Variable) –This variable is ordinal and

measured with the 8-item SPOS (Eisenberger, 2021).

Team Dispersion (Moderating Variable) – Consistent with (Gajendran & Joshi, 2012),

the three measures of team dispersion will be calculated using Blau's index.

Blau's index is a ratio measurement following the equation $1 - \sum_{i=1}^{R} p_i^2$, where R

is the number of different time zones, locations, or unique locations the dataset

contains, and p is the percent of the population in any time zone, location, or

unique location. This is a ratio variable.

Age (Control Variable) – Age is measured in years and is a ratio variable.

Organizational Tenure (Control Variable) - Tenure is the number of years the employee

has worked for the organization and is a ratio variable.

Employee-Supervisor Co-location (Control Variable) – Co-location is a nominal

variable, employee-supervisor dyads are assessed as either co-located (coded as

"1") or not co-located (coded as "0"). If in the same city but discrete locations,

where FtF could be an option, this category will be coded as "1". This data was

collected in conjunction with the set of data on team dispersion.

Gender (Control Variable) – Gender is a nominal variable coded as "0" for female and

"1" for male.

Job Communication Demand (Control Variable) - This variable is ratio and measured

from the conversion of qualitative occupational descriptions to job communication

demand scores as reported by the U.S. Department of Labor (2021).

Data Analysis

The independent variables of perceived leadership communication (Likert scale) and communication modality (percentage of communication) are ordinal, as well as the dependent variable of POS. Each independent variable was paired with the dependent variable with a monotonic relationship. Scatterplots were graphed and inspected to validate monotonicity. Non-parametric correlations were required, as none of these distributions were assumed to be normal. To assess H1 and H1a-e, a Spearman rank-order correlation was used to measure the strength and direction of association between each independent variable and the dependent variable.

Team dispersion is a moderating variable as it was expected to have an effect on the explained variance between perceived leadership communication and POS (H3). Variance between the six independent variables (perceived leadership communication and five communication modalities) and the dependent variable of POS were assessed for each team dispersion element (time zone, cities, discrete locations). This moderating variable was analyzed using a Spearman correlation with the product of the centered value of each type of team dispersion and the centered independent variables from H1 (perceived leadership communication and the five communication modalities) to create a new independent variable, with POS as the dependent variable. Centering is important to reduce multicollinearity and is accomplished through subtracting the mean of each variable from each value in that variable. Perceived leadership communication is measured on a Likert-scale of 0-4, so the centering value was between -4 and 4. The communication modalities are percentages, so the centering value was between -1 and 1. Team dispersion is measured using the Blau index, so the centering value was between -1 and 1.

The control variables of age and tenure within the organization followed the same statistical analysis as the moderator with perceived leadership communication to understand the strength and direction of association between the control variables with perceived leadership communication and POS. Since the employee-supervisor dyad geographic co-location is a nominal variable, a Wilcoxon-Mann-Whitney test was used. Two comparisons were made, one to determine the significance of co-location on POS, and the other on perceived leadership communication. This analysis enables organizations to understand if there is a statistically significant difference between the underlying POS scores of co-located dyads and geographically dispersed dyads. A Wilcoxon-Mann-Whitney test was used for the control variable of gender as well, assessing if there is statically significant difference between the underlying distributions of perceived leadership communication and POS between males and females.

The qualitative control variable of occupation was coded to a job communication demand through O*Net data and thus a ratio variable. This variable was centered and paired with each of the communication modalities to assess the strength and direction of association between the communication demands with communication modality and POS. Table 1 contains the independent variables and statistical methods for each analysis completed to address the hypothesis and control variables.

Table 1

Statistical Methods to Test Hypothesis

Hypothesis	Independent Variable	Statistical Method
H1	Perceived Leadership Communication (PLCQ)	Spearman
H1a	FtF	Spearman
H1b	Videoconference	Spearman
H1c	Phone	Spearman
H1d	Text/IM	Spearman
H1e	e-mail	Spearman
H2	H1a through H1e	Ranking
$H3_1$	*PLCQ x *$TD_{time\ zone}$	Spearman
$H3_2$	*PLCQ x *TD_{city}	Spearman
$H3_3$	*PLCQ x *$TD_{unique\ location}$	Spearman
$H3a_1$	*FtF x *$TD_{time\ zone}$	Spearman
$H3a_2$	*FtF x *TD_{city}	Spearman
$H3a_3$	*FtF x *$TD_{unique\ location}$	Spearman
$H3b_1$	*Videoconference x *$TD_{time\ zone}$	Spearman
$H3b_2$	*Videoconference x *TD_{city}	Spearman
$H3b_3$	*Videoconference x *$TD_{unique\ location}$	Spearman
$H3c_1$	*Phone x *$TD_{time\ zone}$	Spearman
$H3c_2$	*Phone x *TD_{city}	Spearman
$H3c_3$	*Phone x *$TD_{unique\ location}$	Spearman
$H3d_1$	*Text/IM x *$TD_{time\ zone}$	Spearman
$H3d_2$	*Text/IM x *TD_{city}	Spearman
$H3d_3$	*Text/IM x *$TD_{unique\ location}$	Spearman
$H3e_1$	*e-mail x *$TD_{time\ zone}$	Spearman
$H3e_2$	*e-mail x *TD_{city}	Spearman
$H3e_3$	*e-mail x *$TD_{unique\ location}$	Spearman
Age	*Age x *PLCQ	Spearman
Tenure	*Tenure x *PLCQ	Spearman
Gender	*Gender x * PLCQ	Spearman
Occupation	*Communication demand x *FtF	Spearman
Occupation	*Communication demand x *Videoconference	Spearman
Occupation	*Communication demand x *Phone	Spearman
Occupation	*Communication demand x *Text/IM	Spearman
Occupation	*Communication demand x *e-mail	Spearman
Dyad	Dyad co-location (DV: POS)	W-M-W
Dyad	Dyad co-location (DV: PLCQ)	W-M-W

Note. An asterisk (*) preceding a variable indicates centered value of variable

Delimitations, Assumptions, and Limitations

The delimitations made in this study were that all participants are 18 years or older, employed full time (not self-employed) at the time of participation, and members of teams with 10 or fewer individuals reporting to their supervisor. This may limit the understanding of perceived leadership communication and POS in larger teams, but made the analysis of the moderator of team dispersion more manageable.

This study evaluated three levels of dispersion; across time zones, between cities, and between work sites. It is assumed that it is valid to consider people working from home in the same city (different sites) dispersed. However, it is likely that these employees may be able to gather at some periodicity; thus, the Blau index indicates that they are more unique and dispersed than the city pairs would imply. Another assumption made in the collection of the data is that employee-supervisor communication is limited to the five modalities identified (FtF, videoconference, phone/audioconference, text/IM, and e-mail), and that the brand/software of enabling advanced information technology should not be distinct independent variables. Therefore, this study assumed nuances of systems, such as video quality, delays, and ease to login to systems, are not moderators.

One of the foremost limitations is that many of the teams reporting high level of team dispersion at time of sampling (15 months since 51% of the American workforce transitioned to completely virtual employment; Brenan, 2020) have likely had worked with their supervisor FtF at some time in the past, which may limit the applicability of the results to teams originating with high levels of virtuality. The difference between dyad and teams who were constructed to operate virtually and those who started with FtF operations and are now fully virtual due to changing work environments is not assessed

in this study and may compromise the validity of the results. FtF meetings enable members to learn one another's vocal-inflections and match those to body cues, increasing the level of non-verbal communication between team members (Daim et al., 2012) and teams with at least on FtF meeting perform better than completely virtual teams (Gilson et al., 2013). The perception of media richness from employees who had the opportunity for regular FtF interaction pre-COVID-19 may be different than the construct is designed to measure. Also, this study assumed that the employee's POS is a reflection of their current state and leadership communication over the past month, rather than a reflection of pre-COVID-19 dynamics or the economy.

The sample size and demographic relative to the world workforce could be a limitation. The sampling method is convenience sampling, where the researcher reached out to social, academic, and professional network for participants. Between a military career, a career at a Fortune 500 company, four graduate programs, church community, and acquaintances, the primary participant pool represented a wide variety of employment types, nationalities, and organizational types. However, the population was skewed to mid- to late-career individuals and more white-collar than blue-collar. Additionally, most of the participants were be based in America or employed by an American organization. Also, the survey was going to be offered online to increase availability to participants from around the world, but this format introduces two additional limitations. First, those most sensitive to modalities and not comfortable with the study platform may have declined to participate. Second, online format is more convenient for those with desk-jobs, potentially skewing participation away from manual labor occupations. Variations in culture or profession are not assessed in this study except

for the assessment of the communication demands of an occupation. Finally, nature of the data collection is self-report, and there may be error in the measure of leadership engagement due to participants inaccuracy in estimation of their use of electronic engagement with their supervisor, misinterpretation of the questions, inexact and subjective nature of Likert scale, and response bias. While it may be easy to look back at a previous week's emails, texts, or calendar meetings to estimate how much relative time was spent in these modalities, it is more challenging to estimate. It has been found that while higher performers tend to be more accurate in their self-report metrics, most self-report subjects display inaccuracies, which highlights the potential limitation of using self-report measures (Fronzetti Colladon & Grippa, 2018). Like with other studies executed with self-report data, common method variance is likely to exist.

Summary

Through the aforementioned study, practitioners have a better understanding of the thirty-four relationships measured. Following the recruitment of participants, the collection of data lasted three months, followed by analysis. With one undergraduate degree, two graduate degrees, one graduate certificate, and current Liberty University online community, the academic network represented a diverse set of experiences and career fields which provided a wide distribution of communication modalities, perceived leadership communication, POS, and team dispersion. While diverse, none of the constructs were expected to be normal, requiring the use of non-parametric tests, including Spearman paired ranks and Wilcoxon-Mann-Whitney test. The only analysis that required a second researcher to validate prior to calculation was the conversion of the open-ended occupation field to job occupations listed by the U.S. Department of Labor.

Whether organizations are increasing level of virtuality to enhance knowledge sharing or sustaining higher levels of team dispersion for quality of life, the understanding of how these factors relate to POS is important. Whether positively or negatively associated, significant findings regarding perceived leadership communication and POS can guide leaders towards focused efforts to be effective. Depending on how organizations are currently operating, the increased understanding of team dispersion may either comfort organizations concerned with the risks and pitfalls of team dispersion, or drive awareness to the specific elements of dispersion that are most significant, so effective countermeasures can be implemented. The implementation of any countermeasures or adjustments to virtuality or leadership styles provides ample opportunity for follow-on research. While this study does not validate all of the aforementioned hypotheses, the insights around some of the communication modalities' correlations with POS and influence of team dispersion as a moderator can directly be applied to organizations seeking to optimize teams with various levels of dispersion.

CHAPTER 4: RESULTS

Overview

The understanding of both the significance of POS to an organization and the role

supervisors traditionally play in relation to POS, aids organizations to make various

decisions from benefits to supervisor selection. The added complexities of the

communication modality add a dynamic for leaders in any engagement; this study

examined how those selections relate to POS. Furthermore, whether through

globalization, the advanced knowledge sharing capabilities of advanced information

systems, or the necessities of social distancing in a pandemic, team dispersion has

become a critical variable in many organizations. The purpose of this quantitative survey

study was to examine the relationship between modality of leadership communication

and perceived organizational support and examine how team dispersion moderates that

relationship.

Study participants were recruited via professional, academic, and social network

(LinkedIn) to complete the online survey. Participants spent less than five minutes to

complete the survey, including demographics, eight elements of POS (Likert scale,

Eisenberger et al., 1986), perceived leadership communication (PLCQ, Likert scale), the

five communication modalities (measured as the percentage of total employee-supervisor

dyad communications in each modality), and team dispersion. The demographics were

age, job tenure, gender, and occupation. Occupations were converted to job

communications demands via the U.S. Department of Labor O*Net scoring methodology

(U.S. Department of Labor, 2021). The independent variables were perceived leadership

communication and communication modality, the dependent variable is POS, and the moderators are the three types of team dispersion (time zone, city pairs, and discrete locations). Spearman rank-order correlation was used to measure the strength and direction of association between each independent variable and the dependent variable. The Media Richness Theory presents a framework to evaluate the value of a media type to facilitate shared meaning, from richer mediums that are hard to reproduce (like FtF discussions) to leaner mediums (like email) that lack the richness of the former (Maynard et al., 2019). The correlations between each communication modality evaluated in this study were ranked to test the hypothesis that the communication modalities with greater richness will relate most positively with POS. A second set of Spearman correlations was used to measure the relationship between the product of the centered moderators and centered independent variables with the dependent variable. A Wilcoxon-Mann-Whitney test was used for the control variables of gender and employee geographic dispersion.

The research questions that guided this study are listed below.

RQ1: What is the correlation between perceived leadership communication and POS?

RQ1a: What is the correlation between leadership face-to-face communication and POS?

RQ1b: What is the correlation between supervisor communication via videoconference and POS?

RQ1c: What is the correlation between supervisor communication via telephone and POS?

RQ1d: What is the correlation between supervisor communication via text/instant messenger and POS?

RQ1e: What is the correlation between supervisor communication via e-mail and POS?

RQ 2: Which medium (face to face, videoconference, telephone, text/instant messenger, or e-mail) of supervisor communication is most related to POS?

RQ 3: Does team dispersion moderate the relationship between perceived supervisor communication and POS?

Descriptive Results

Over the course of two months, 250+ individuals were invited to participate by clicking on a link to an online survey, which resulted in usable responses from 115 individuals (response rate about 50%). Responses were included in this study only if participants met the inclusion criteria and completed the entire survey. At the conclusion of the survey, there were 130 respondents; however, there were 15 instances where the participant did not complete the survey as directed, mostly due to the sum of communication modalities not equaling 100%. Those respondents were dropped. The final acceptable sample consisted of 115 individuals. This study was structured to have a minimum power of 0.80 with an alpha of 0.05, which required 82 participants. The 115 participants enabled a higher power, 0.917, than was determined to be required (see Appendix B).

Demographics

Table 2

Descriptive Statistics-Gender

Gender	Count of participants
Male	57
Female	58

The average team size (including supervisor and participant) was 8.37 members. The average age of participants was 40.2 years old with a standard deviation of 8.5 years; 80% of the participants were between 31 and 51 years old. The average tenure of participants was 8.39 years, with half of the participants having been at their organizations for less than 6 years. Fifty percent of the sample was male (Table 2).

The variable of communication modality was established in a similar fashion to a study on communication and trust conducted by Burgoon et al. (2005) and a study on leadership theory and electronic communication conducted by Hill et al. (2014), where modality and degree of electronic communication were control and independent variables. Following precedence set by the latter study, participants reported the percentage of interactions they have with their supervisors using each different modality, where the figures reported had to total to 100%. Each modality varied in increments of 10% from 0% to 100%. As shown in figure 3, the most common dyad communication modality was FtF (26.1%), followed by videoconference (23.1%), e-mail (21.5%), text (15.6%) and phone or audioconference (13.7%).

Figure 3

Average Dyad Communication Modalities

Communication Modality

e-mail, 21.5

FtF, 26.1

Text, 15.6

Video, 23.1

Phone, 13.7
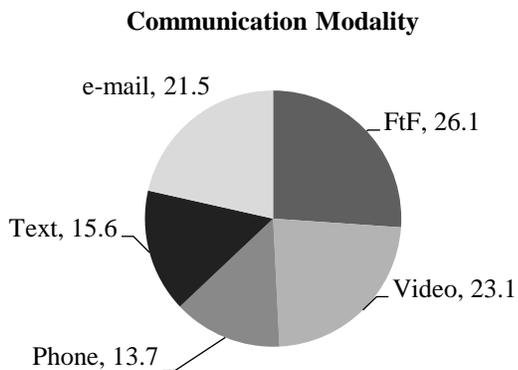
Job communications demand was measured from the conversion of qualitative occupational descriptions to job communication demand scores as reported by the U.S. Department of Labor (2021). The resulting demand scores averaged 78.5 with a standard deviation of 3.5 (Figure 4). About two in five of the participants were General and Operations Managers or Marketing Managers.

Figure 4

Job Communications Demand Scores
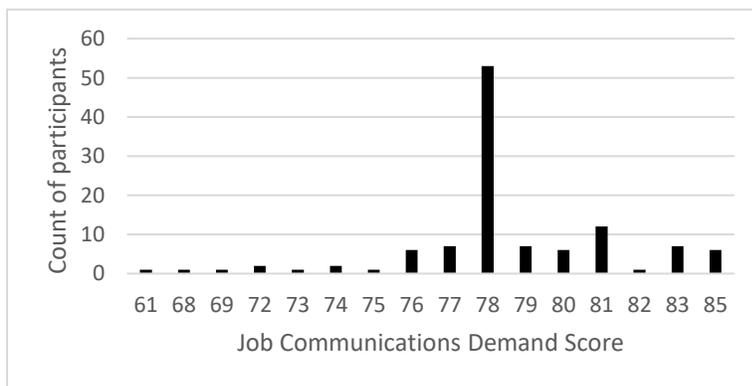
Descriptive statistics for the variable of interest

Variables for this study included POS, PLCQ, and team dispersion. Perceived Organizational Support is ordinal and was measured with the 8-item SPOS (Eisenberger, 2021). The average score was 4.0 on a scale of 0-6 (Figure 5).

Figure 5

Descriptive Statistics-POS
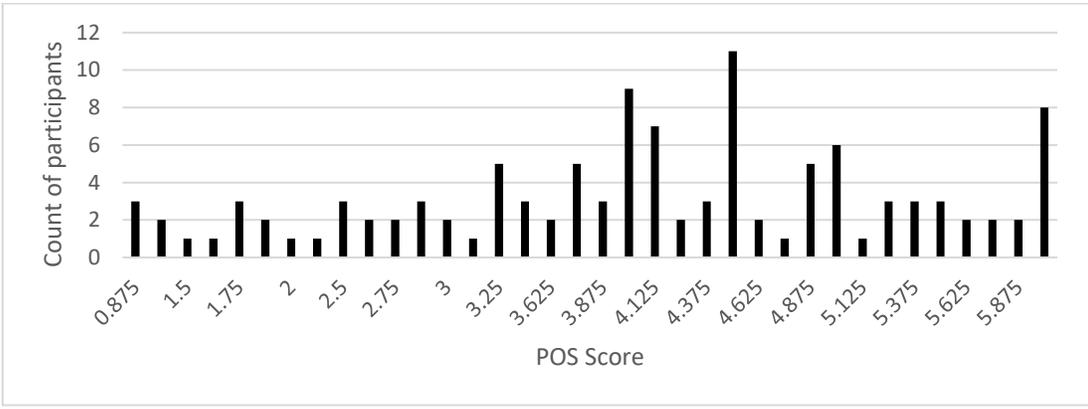
Perceived Leadership Communication is ordinal and was measured with the 6-item PLCQ-OR (Schneider et al., 2015). The average score was 3.1 on a scale of 0-4 (Figure 6).

Figure 6

Descriptive Statistics-PLCQ
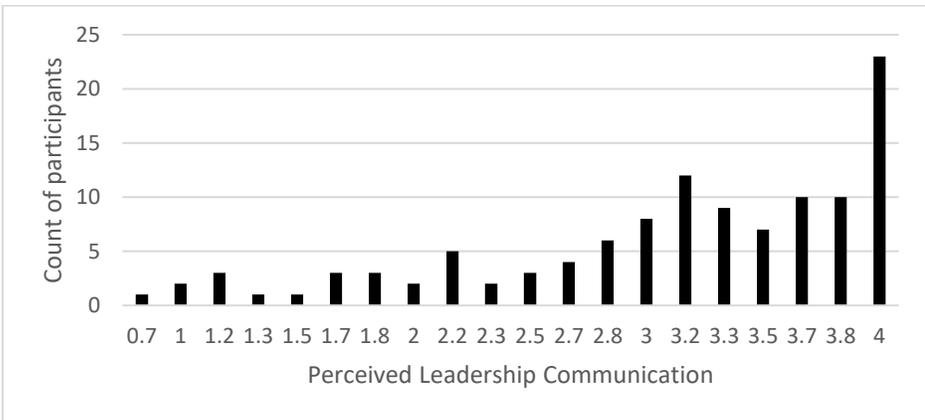
Participants were from seventy unique cities around the globe, the average team had members in 1.6 time zones, 2.3 cities, and 3.2 unique locations. Sixty-nine percent of participants work in the same city as their supervisor and 46% in the same office (Figure 7).

Figure 7

Dyad dispersion
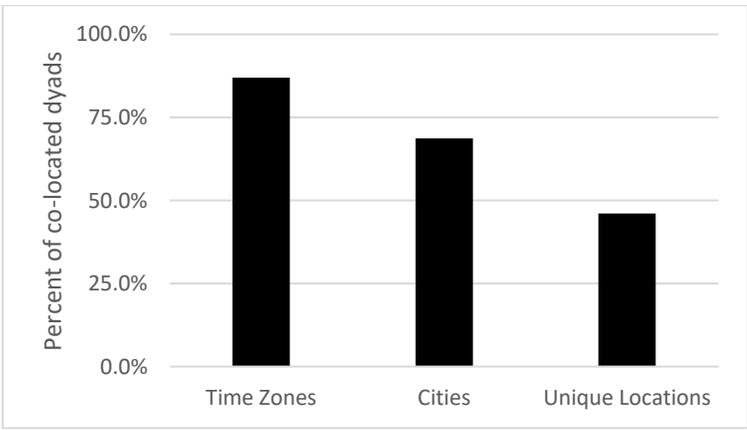
Consistent with (Gajendran & Joshi, 2012), the three measures of team dispersion were calculated using Blau's index, where 0 indicates no dispersion and higher numbers indicate higher team dispersion. For this study team sizes were limited to 10 members in addition to the supervisor and participant, so the maximum team dispersion possible was .91, this level was recorded by three participants at the unique location level. The average at the time zone to unique levels was 0.14 to 0.40 (Figure 8).

Figure 8

Team dispersion
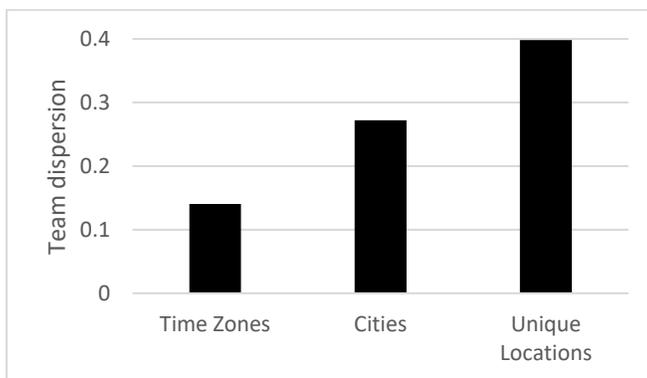
Study Findings

Cronbach's alpha was used to determine the reliability of the measures; both were found to be reliable. For POS, other studies have found a value of 0.96 (Meyers et al., 2019); for this study it was calculated to be 0.923. For PLCQ, other studies have found a value of 0.79 (Schneider et al., 2015); for this study it was calculated to be 0.923.

Table 3

Descriptive Statistics-Scale and Subscale Reliability Test

Subscales	Number of Questions	Cronbach's a
POS	8	0.923
PLCQ	6	0.914

The hypotheses were tested to address each of the research questions. In sum, two of the high-level hypotheses were validated and one requires further research to confirm.

To assess H1 and H1a-e, a Spearman rank-order correlation was used to measure the strength and direction of association between each independent variable and the dependent variable.

RQ1: What is the correlation between perceived leadership communication and POS?

Hypothesis 1: Perceived leadership communication is positively related to POS.

Spearman's *rho* for RQ1 indicated the variables of POS and PLCQ were found to be strongly correlated, $r_s(115) = .489, p < .001$. Table 4 shows results from the correlation analysis for this hypothesis.

Table 4

Spearman's rho for Perceived Leadership Communication and POS

Variable	Spearman's rho	Significance	N
PLCQ on POS	0.489	<.001	115

RQ1a-e: What is the correlation between leadership a) face-to-face, b) videoconference, c) telephone, d) text/instant messenger, e) e-mail communication and POS?

Hypothesis 1a-e: Leadership communication via a) face-to-face, b) videoconference, c) telephone, d) text/instant messenger, e) e-mail is positively related to POS.

Spearman's *rho*s for each of the subcategories of RQ1 indicated the variables of POS and FtF were found to be strongly correlated, $r_s(115) = .224$, $p = .016$, POS and phone were found to be strongly negatively correlated, $r_s(115) = -.224$, $p = .015$, and POS and e-mail were found to be strongly negatively correlated, $r_s(115) = -.208$, $p = .025$. The variables of POS and videoconference were found to not be significant, $r_s(115) = .010$, $p = .912$, as well as the variables of POS and text, $r_s(115) = .017$, $p = .855$. Table 5 shows results from the correlation analysis for this hypothesis. Figures 9-13 show the correlation between each communication modality (as a percentage of dyad communications) and POS.

Table 5

Spearman's rho for Communication Modalities and POS

Communication Modality	Spearman's *rho*	Significance
FtF	0.224	0.016
Videoconference	0.010	0.912
Phone	-0.224	0.015
Text	0.017	0.855
e-mail	-0.208	0.025

Figure 9

Dyad FtF communications and POS
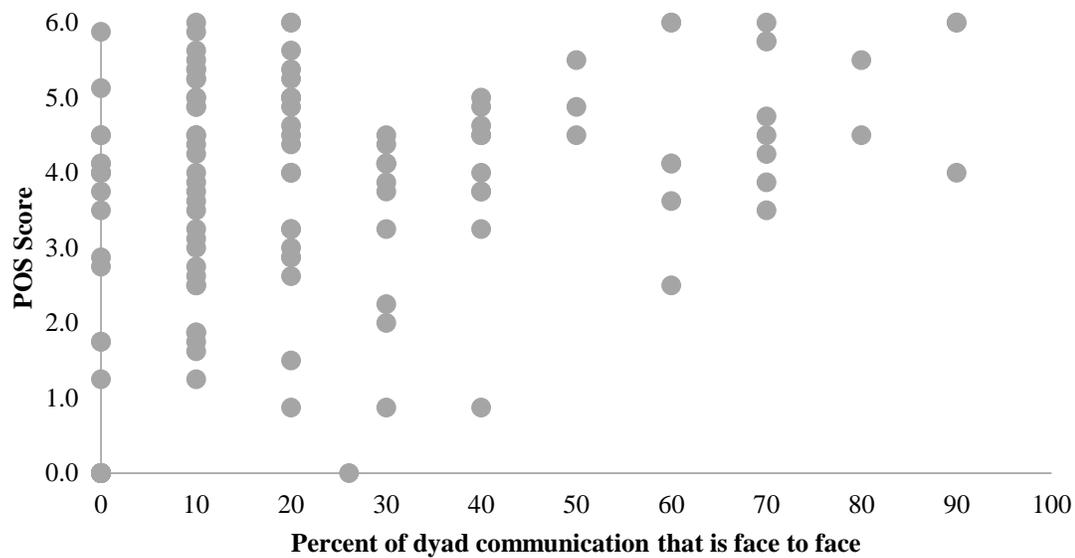
Figure 10

Dyad videoconference communications and POS
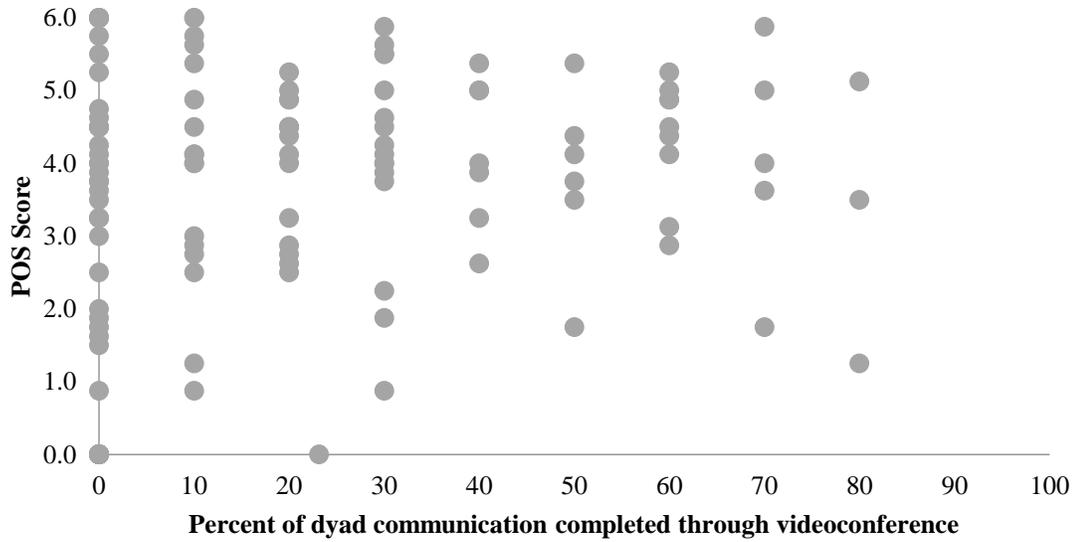
Figure 11

Dyad phone communications and POS
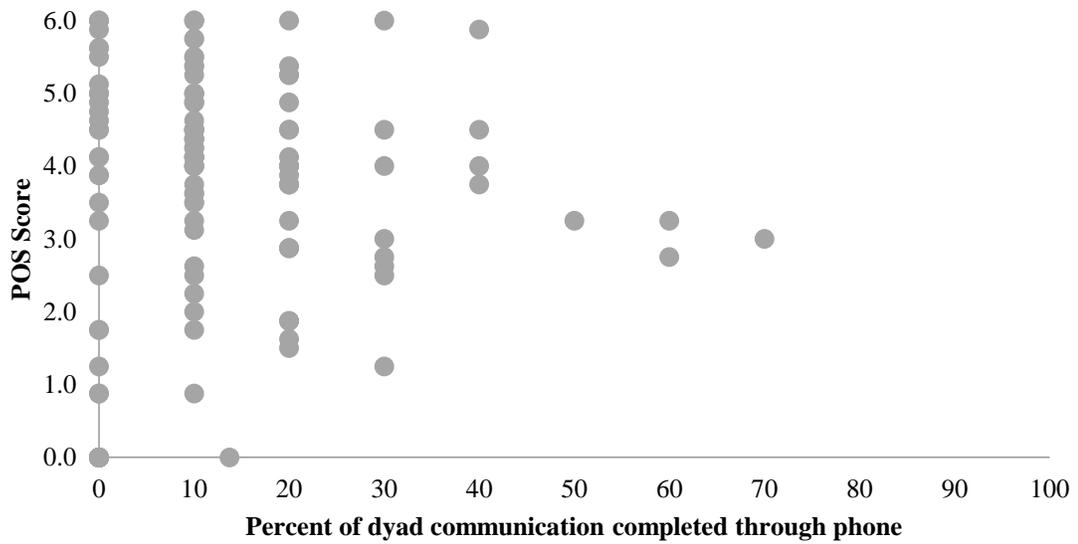
Figure 12

Dyad text communications and POS
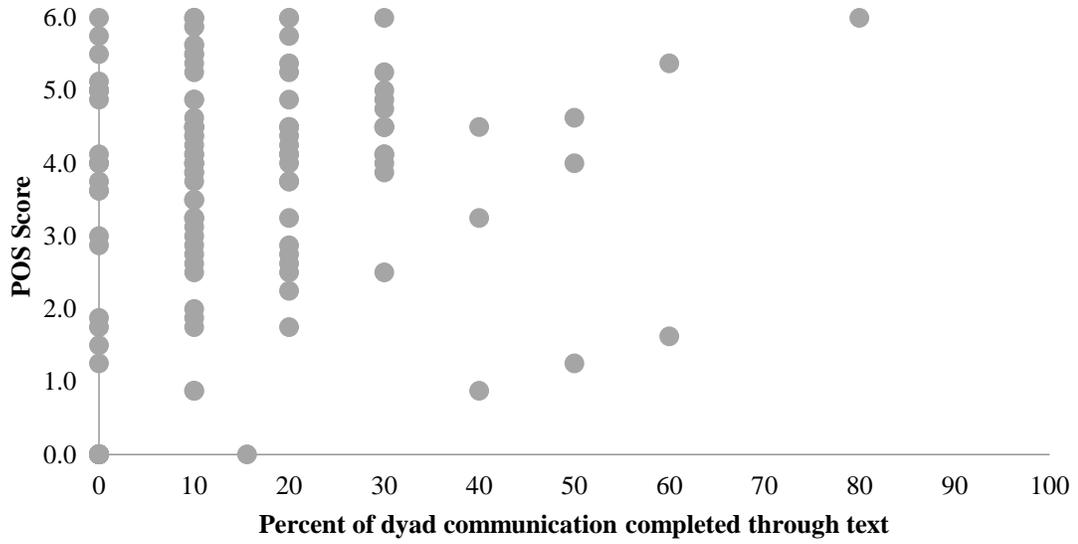
Figure 13

Dyad e-mail communications and POS
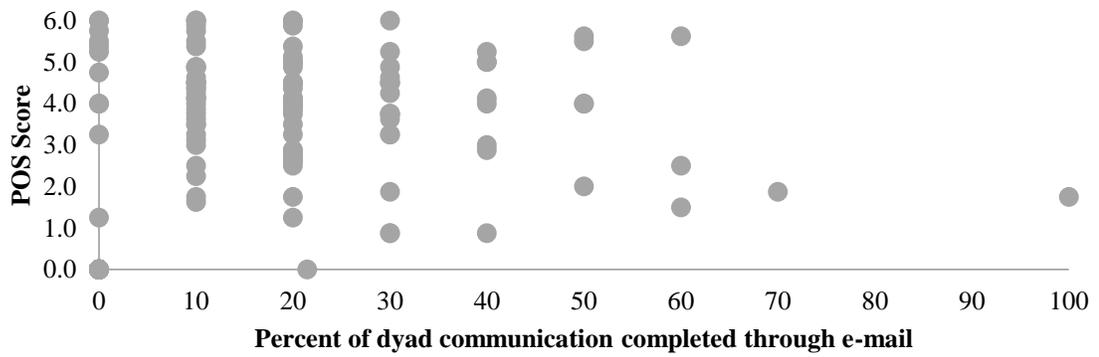
RQ 2: Which medium (face to face, videoconference, telephone, text/instant messenger, or e-mail) of supervisor communication is most related to POS?

Hypothesis 2: The mediums with greater richness relate most positively with POS.

RQ2 was evaluated by ranking. The result is that for those modalities with correlation to POS, the mediums with greater richness related most positively with POS. The modalities, ranked by richness, are FtF, videoconference, phone, text, and e-mail. FtF, phone, and e-mail all had statistically significant correlations with correlation magnitudes reflecting the richness ranking.

Figure 14

Correlation coefficients of modalities and POS

Team dispersion is a moderating variable and was expected to have an effect on the explained variance between perceived leadership communication and POS (H3). Variance between the six independent variables (perceived leadership communication and five communication modalities) and the dependent variable of POS were assessed for each team dispersion element (time zone, cities, discrete locations). This moderating

variable was analyzed using a Spearman correlation with the product of the centered

value of each type of team dispersion and the centered independent variables from H1

(perceived leadership communication and the five communication modalities) to create a

new independent variable, with POS as the dependent variable.

RQ 3: Does team dispersion moderate the relationship between perceived

supervisor communication and POS?

Hypothesis 3: Level of team dispersion (by 1 – time zone, 2 – city, and 3- unique

locations) moderates the relationship between perceived leadership communication and

POS.

Spearman's *rho*s for each of the subcategories of RQ3 indicated the variables of

POS and team time zone dispersion on PLCQ were found to be strongly negatively

correlated, $r_s(115) = -.29$, $p = .002$, POS and team city dispersion on PLCQ were found to

not to be significant, $r_s(115) = -.040$, $p = .674$, and POS and team unique location

dispersion on PLCQ were found not to be significant, $r_s(115) = -.070$, $p = .460$. Table 6

shows results from the correlation analysis for this hypothesis.

Table 6

Spearman's rho for Team Dispersion on Perceived Leader Communication and POS

Variable	Spearman's *rho*	Significance
Time zone team dispersion on PLCQ	-0.290	0.002
City team dispersion on PLCQ	-0.040	0.674
Unique location team dispersion on PLCQ	-0.070	0.460

Hypothesis 3a-e: Level of team dispersion (by 1 – time zone, 2 – city, and 3-unique locations) moderates the relationship between leadership communication via a) face-to-face, b) videoconference, c) telephone, d) text/instant massager, e) e-mail and POS, such that this relationship is more strongly positive when the degree of team dispersion is low than when degree of team dispersion is high.

Spearman's *rho*s for each of the subcategories of RQ3a-e indicated the variables of POS and team time zone dispersion on each of the communication modalities were found not to be significant. Table 7 shows results from the correlation analysis for this hypothesis.

Table 7

Spearman's rho for Team Dispersion on Communication Modalities and POS

Variable	Spearman's *rho*	Significance
Time zone team dispersion on FtF	0.052	0.581
City team dispersion on FtF	0.029	0.755
Unique location team dispersion on FtF	0.083	0.378
Time zone team dispersion on Videoconference	0.010	0.916
City team dispersion on Videoconference	-0.071	0.454
Unique location team dispersion on Videoconference	-0.026	0.187
Time zone team dispersion on Phone	-0.174	0.062
City team dispersion on Phone	-0.137	0.143
Unique location team dispersion on Phone	-0.104	0.268
Time zone team dispersion on Text	0.054	0.563
City team dispersion on Text	0.047	0.620
Unique location team dispersion on Text	0.048	0.612
Time zone team dispersion on e-mail	0.045	0.630
City team dispersion on e-mail	0.020	0.831
Unique location team dispersion on e-mail	-0.049	0.601

The control variables of age and job tenure within the organization followed the same statistical analysis as the moderator with perceived leadership communication to understand the strength and direction of association between the control variables with perceived leadership communication and POS. Spearman's *rho* for age as a moderator to PLCQ on POS was found not to be significant, $r_s(115) = -.022$, $p = .815$. Spearman's *rho* for job tenure as a moderator to PLCQ on POS was found to be negatively correlated at the alpha = .05 level, $r_s(115) = -.0205$, $p = .028$. Table 8 shows results from the correlation analysis for these two demographics as moderators to PLCQ on POS.

Table 8

Spearman's rho for Age and Job Tenure on Communication Modalities and POS

Variable	Spearman's *rho*	Significance
Age on PLCQ	-0.022	0.815
Tenure on PLCQ	-0.205	0.028

Since the employee-supervisor dyad geographic co-location is nominal, a Wilcoxon-Mann-Whitney test was used. Two comparisons were made, one to determine the significance of co-location on POS, and the other on perceived leadership communication. POS of co-located dyads (Mdn = 4.3) were higher than those of non-co-located dyads (Mdn = 4.0). A Mann-Whitney test indicated that this difference was statistically significant at the .10 alpha level, $U(N_{co-located} = 53, N_{non-co-located} = 61) = 1298.5$, $z = -1.809$, $p = .070$. PLCQ of co-located dyads (Mdn = 3.3) was the same as those of non-co-located dyads (Mdn = 3.3). A Mann-Whitney test indicated that co-location on PLCQ was not statistically significant, $U(N_{co-located} = 53, N_{non-co-located} = 61) = 1459.5$, $z = -.897$, $p = .370$. Table 9 shows the Wilcoxon-Mann-Whitney results.

Since gender is also nominal, a Wilcoxon-Mann-Whitney test was used for the control variable of gender as well, assessing if there is statically significant difference between the underlying distributions of perceived leadership communication and POS between males and females. Two comparisons were made, one to determine the significance of gender on POS, and the other on perceived leadership communication. POS of females (Mdn = 4.2) were higher than those of males (Mdn = 4.0). A Mann-Whitney test indicated that this difference was not statistically significant, $U(N_{female} = 58, N_{male} = 57) = 1608$, $z = -.252$, $p = .801$. PLCQ of females (Mdn = 3.3) was the same as those of males (Mdn = 3.3). A Mann-Whitney test indicated that co-location on PLCQ was not statistically significant, $U(N_{female} = 58, N_{male} = 57) = 1462.5$, $z = -1.072$, $p = .284$. Table 9 shows the Wilcoxon-Mann-Whitney results.

Table 9

Wilcoxon-Mann-Whitney for Colocation on POS and Perceived Leadership

Communication

Variable	Wilcoxon-Mann-Whitney	z score	Significance
Dyad co-location on POS	1298.5	-1.609	0.070
Dyad co-location on PLCQ	1459.5	-0.897	0.370
Gender on POS	1608	-0.252	0.801
Gender on PLCQ	1462.5	-1.072	0.284

The qualitative control variable of occupation was coded to a job communication demand through O*Net data and thus evaluated as a ratio variable. This variable was centered and paired with each of the communication modalities to assess the strength and direction of association between the communication demands with communication modality and POS. Spearman's *rho* for job communications demand as a moderator to the communication modalities on POS was found not to be significant for any of the modalities (Table 10).

Table 10

Spearman's rho for Job Communication Demands on Communication Modalities and POS

Variable	Spearman's *rho*	Significance
Job Communications Demand on FtF	-0.068	0.469
Job Communications Demand on Videoconference	-0.076	0.419
Job Communications Demand on Phone	-0.072	0.436
Job Communications Demand on Text	0.101	0.285
Job Communications Demand on e-mail	0.101	0.285

Summary

Among the 115 valid survey responses, the average team size was 8.37 people, average participant age was 42.2 years old, and average tenure in their roles was 8.39. FtF and videoconferencing makes up half of the leader member dyad communications, and e-mail, text and phone make up the other half. The POS scores varied widely, while PLCQ scores skewed towards higher values. The Cronbach's alphas for both POS and PLCQ indicated both measures are reliable (.923 and .919 respectively).

Hypothesis 1 was confirmed, that PLCQ is positively related to POS. Hypotheses 1a-e showed mixed results. While FtF was positively correlated with POS, phone and email were negatively correlated with POS and video and text were found not to be significant. Hypothesis 3, that the mediums with greater richness relate most positively with POS, was generally confirmed. While two of the five modalities did not have statistically significant correlations with POS, the greatest correlation was with the richness modality (FtF), while phone and e-mail had similar negative correlations with POS. Hypothesis 3 tested if team dispersion moderated the relationship between perceived leadership communication and the communication modalities on POS. The relationship between perceived leadership communication and POS was not found to be more strongly positive with a higher team dispersion. Team dispersion brought down the Spearman's *rho* of perceived leadership communication on POS, indicating it did moderate by reducing the strength of the relationship between perceived leadership communication and POS. The results did not indicate if the relationship was more strongly positive when team dispersion was high or more strongly negative when team dispersion was low; time zone team dispersion had a negative Spearman's *rho*, which

could indicate either high time zone team dispersion resulted in lower-than-average POS, or that low time zone team dispersion resulted in higher-than-average POS. Both conclusions support the idea that team dispersion amongst time zones had the greatest influence as a negative moderator to perceived leadership communication on POS. No level of team dispersion moderated the relationship between the communication modalities and POS. The results of this study enable both supervisors and organizational managers to have a greater understanding of which communication modalities to focus their efforts on and how to structure teams to optimize POS. Additionally, future researchers may expand on this study to delve further into the framework or explore beyond the limitations inherent to the structure of this study.

CHAPTER 5: DISCUSSION

Overview

The purpose of this quantitative survey study was to examine the relationship between perceived leadership communication / modality of communication and perceived organizational support and examine how team dispersion moderates that relationship. The key findings were that perceived leadership communication was positively correlated with POS, the richer the communication modality, the stronger the correlation with POS, and team dispersion amongst time zones negatively moderates the relationship between perceived leadership communication and POS. One implication of this study is that supervisors should consider choosing the richest medium available to communicate with their subordinates. Another implication is that organizational managers should consider localizing supervisors to reduce the negative impact to the organization that time zone dispersion has on POS.

Summary of Findings

Age, dyad co-location, gender, and job communications demand requirements were found not be statically significant moderators on perceived leadership communication on POS. Longer job tenures shifted the relationship between perceived leadership communication from positive to negative.

Hypothesis 1 was confirmed, that perceived leadership communication is positively related to POS. Hypotheses 1a-e showed mixed results. While FtF was positively correlated with POS, phone and email were negatively correlated with POS

and video and text were found not to be significant. Hypothesis 3, that the mediums with greater richness relate most positively with POS, was generally confirmed. While two of the five modalities did not have statistically significant correlations with POS, the greatest correlation was with the richness modality (FtF), while phone and e-mail had similar negative correlations with POS. Hypothesis 3 tested if team dispersion moderated the relationship between perceived leadership communication and the communication modalities on POS. The relationship between perceived leadership communication and POS was not found to be more strongly positive with a higher team dispersion. Team dispersion brought down the Spearman's *rho* of perceived leadership communication on POS, indicating it did moderate by reducing the strength of the relationship between perceived leadership communication and POS. The results did not indicate if the relationship was more strongly positive when team dispersion was high or more strongly negative when team dispersion was low; time zone team dispersion had a negative Spearman's *rho*, which could indicate either high time zone team dispersion resulted in lower-than-average POS, or that low time zone team dispersion resulted in higher-than-average POS. Both conclusions support the idea that team dispersion amongst time zones had the greatest influence as a negative moderator to perceived leadership communication on POS. No level of team dispersion moderated the relationship between the communication modalities and POS.

Discussion of Findings

With 43.6% of employed people in the US having positions capable of teleworking and 24.7% of the workforce having teleworked (Bureau of Labor Statistics,

2020), it is expected that the ability to effectively communicate in the virtual environment and therefore perceived leadership communication in virtual environments would have met parity with FtF. Contrarily, this study found that there is still a strong positive relationship between FtF and POS, and negative relationship for electronic modalities. This validates the idea that despite the commonplace nature of electronic modalities, the concern that decreased social context cues of virtuality has substantial deregulating effects on communication is valid (Charlier et al., 2016). Even with all of the advancements in technology since the Church was formed, many of the challenges that Paul encountered while supervising and teaching through letters are still present today. Where Paul had to correct various misunderstandings on being married to non-Christians, eating in pagan temples, and misbehaving at the Lord's Supper (*New International Version Bible*, 2011, 1 Corinthians 8), the expedited nature of texting and emailing has not completely eliminated the potential for misunderstandings that were apparent 2,000 years ago in handwritten letters.

FtF was the only statistically significant positive correlation to POS and all statistically significant electronic communication modalities resulted in negative correlation to POS. This analysis validated the research competed by Hill et al. (2014) that the degree of electronic communication is a moderator of the relationship of LMX on psychological empowerment, job satisfaction, organizational commitment, and job performance.

Jesus calls Christian's to make disciples of all nations (New International Version, 2011, Matthew 28:19). This study showed the importance of FtF communications, which should frame Christians' interpretation of how to execute this great commission. While

easier and often more comfortable, it is not sufficient to share the gospel over the least rich mediums when we are capable of sharing the Gospel FtF, as this study demonstrated that the less rich mediums will likely reduce the new follower's perception of support from the church.

This study also validates the construct that increased virtuality results in weaker organizational identification and perceived respect from the organization (Campion & Campion, 2020). This applies to the increased virtuality of both the employee-leader dyad as well as the team (dispersion amongst time zones). POS of co-located dyads (Mdn = 4.3) were higher than those of non-co-located dyads (Mdn = 4.0) and Spearman's rhos indicate that the variables of POS and team time zone dispersion on PLCQ were found to be strongly negatively correlated, $r_s(115) = -.29, p = .002$.

Contrary to the research provided in the literature review, there was no curvilinear relationship for team dispersion, where high levels of team dispersion are expected to demonstrate the same characteristics as teams with zero dispersion. In distributed teams, relationships amongst members more geographically dispersed from leaders actually results in stronger LMX with enhanced member influence on team decisions when sustained through frequent communication, and thus LMX is strengthened with increased team dispersion (Gajendran & Joshi, 2012). Styles like leader member exchange (LMX) are expected to have a positive relationship with POS (AlHashmi et al., 2019). In addition to the dyad relationship, Wong's (2008) findings that zero dispersion teams are most similar to very high dispersion teams in team trust, task skills and group identity, while local members of semi-virtual (between zero and very high dispersion) develop in-group perceptions and have more positive perceptions of one another than

their geographically dispersed colleagues. This study did not observe similar

characteristics of the most and least dispersed teams. The only significant correlation for

team dispersion was time zone dispersion, and that was actually negatively correlated

with POS ($r_s(115) = -.29, p = .002$).

One observation from the analysis of demographics is that there was no trend

observed between tenure and POS, indicating that retention (longest tenure) is not a

singular contributor or consequence of greater POS. This contradicts the aforementioned

research that indicated the perceived commitment accounted for in a high POS score

correlates to greater retention (the higher the perceived support, the greater the retention,

Eisenberger et al., 1986).

While many churches introduced online streaming of services through the

pandemic, this research identifies the gap and potential misgivings of exclusive online

content. In the context of a pastor/congregant dyad, Christians should consider

transitioning back to in-person services if comfortable, knowing that FtF interactions

have a positive correlation with POS. Phone conferences and e-mails are similar

mediums to the podcasts and blogs that many congregants have turned to; however, the

findings that both of those are negatively correlated with POS should drive Christians to

either favor FtF or find other means to compensate for the reduced POS.

Implications

In regard to the time zone team dispersion being the only team dispersion metric

with significant negative moderating effect to PLCQ on POS, managers should consider

the advantage those in the same city or office share and how to moderate the inadvertent

barriers created by time zone team dispersion. When managers and organizational psychologists are establishing teams that will need to operate around the globe, they should consider either ensuring the opportunity for in initial FtF engagement or locating the leader in-region. The initial FtF meetings recommended enables the dyad and team members to match one another's vocal-inflections to body cues, increasing the level of non-verbal communication between team members (Daim et al., 2012). As indicated by the Wilcoxon-Mann-Whitney test, POS of co-located dyads (*Mdn* = 4.3) were higher than those of non-co-located dyads (*Mdn* = 4.0). Placing managers in the region where the employees operate increases the chance they will share the same social norms. A lack of social norms, social interactions, and shared experiences in a globally distributed team make it harder to develop trust between members (Burgoon et al., 2005; Daim et al., 2012).

The team being dispersed did not moderate the relationship between any communication modality and POS. To organizations, this indicates that no modality is more impactful than another in regards to a demographic of dispersion. While highly dispersed teams are less likely to have the opportunity to use rich modalities of communication, the level of dispersion does not moderate the relationship between the less rich modalities available and POS. Simply stated, highly dispersed teams do not experience a stronger relationship between e-mail and POS, nor do collocated teams experience a stronger relationship between FtF and POS. Organizations can take this into account and make the most of every interaction available, regardless of modality, when working with dispersed teams. While globally dispersed teams may prefer FtF, in the lack of FtF opportunities due to their team dispersion is not consequential to their POS. This

aligns with the research on FtF communication. Even when there is a preference for FtF, there is no evidence that that preference negatively impacted online course satisfaction in the academic environment (A. Cole et al., 2017). Furthermore, the most significant predictor of student satisfaction with online courses was the satisfaction of communication with the online instructor (A. Cole et al., 2017); this concept reinforces the aforementioned recommendation to make the most of every interaction, regardless of modality.

Prior research has shown that when FtF is an available option, even short distances (like different floors or sections of the same building) result in a preference for electronic communication over FtF communication (Hill et al., 2014). This was validated by this study where, even when dyads were collocated in the same office, 56.4% of communication was not FtF and in the same city 66.1% of communication was not FtF. Knowing this, organizational leaders can ensure that electronic modalities are available and robust even for co-located teams.

There is an abundance of research that the meaningful interactions from text-based communication have a more significant impact on self-esteem than FtF or phone (Gonzales, 2014) and text-based channels lead to more disclosure due to the absence of in-person social pressures. This study demonstrated an opposing theory: that the e-mail communications negatively moderated the relationship between perceived leadership communication and POS. Organizational leaders should take both views into consideration. For many, text-based communications will be a negative moderator; however, that should not be assumed for all individuals. Many may still benefit from the lack of in-person social pressures and thrive with text-based channels. It is important for

leaders to consider each individual's character and preferences before writing off text-communications as detrimental to POS.

The analysis of the demographics indicates that while age does not impact the relationship between PLCQ and POS, job tenure does. The longer employees have worked at their organizations, the stronger negative moderation of PLCQ on POS. When considering retention, human resources leaders at the organizational level should understand the true drivers of retention. It is possible that pensions or location/moving cost overshadow the lower POS to drive longer retention driver. Organizational leaders need to understand at what level in their organizations POS is the primary driver of retention and focus on POS increasing behaviors with that demographic. Furthermore, there may be opportunity to reduce investment in POS increasing benefits with the demographic who is staying despite reduced POS. For example, there are some benefits, like transferability of the GI bill to dependents for US service members, that the DoD tried to revoke at a certain tenure because they saw little need to offer retention focused benefits to those who are less than 4 years from reaping retirement benefits. The benefit drives retention and POS for those under 16 years of services but is no longer a necessary expense for those who have demonstrated they are committed to stay regardless of feeling supported. The decision was then overturned by Congress because pulling benefits from longer tenured service members impacted the perception of the service to those not in that demographic, negatively affecting the ability to recruit and retain service members across the ranks (Doornbos, 2020). Organizations should consider the need to contribute to benefits that positively influence POS for longer tenured employees despite

the seemly inconsequential relationship between POS and retention, because it can impact the perceptions to those in other levels of the organization.

Limitations

The sample size and demographic relative to the world workforce may have been an inadvertent limitation. The sampling method was convenience, where the researcher reached out to social, academic, and professional networks to recruit participants. Between a military career, career at a Fortune 500 company, four graduate programs, church community, and acquaintances, the primary participant pool represented a wide variety of employment types, nationalities, and organizational types. However, the population was skewed to mid- to late-career individuals and those with higher levels of education. The average age of participants was 40.2, with 80% between 31 and 51 years, and the average tenure of participants was 8.39 years, with 80% between 1 and 19 years. Additionally, most of the participants were either located in America or employed by an American organization.

The nature of the online survey format, while increasing availability to participants from around the world, introduced two additional limitations. First, those most sensitive to virtual communication modalities and not comfortable or at ease with the study platform may have declined to participate. Second, online format was more convenient for those with desk-jobs, potentially skewing participation away from manual labor occupations. Variations in culture or profession are not assessed in this study except for the assessment of the communication demands of an occupation.

This study evaluated three levels of dispersion; across time zones, between cities, and between work sites. It was assumed that it is valid to consider people working from home in the same city (different sites) dispersed. However, it is likely that these employees may be able to gather at some periodicity; the Blau index is intended to reveal this unique difference that is not readily apparent by a construct that exclusively looks at city-pairs. Another assumption made in the collection of the data was that employee-supervisor communication is limited to the five communication modalities identified (FtF, videoconference, phone/audioconference, text/IM, and e-mail), and that the brand/software of enabling advanced information technology was not required to be distinct independent variables. This study assumed nuances of systems, such as video quality, delays, and ease to login to systems, are not moderators.

One of the foremost limitations is that many of the teams reporting high level of team dispersion at time of sampling may not have always operated in this manner (sampling occurred 16 months after 51% of the American workforce transitioned to completely virtual employment; Brenan, 2020). It is likely many employees reporting high levels of dispersion at the time of sampling worked with their supervisor FtF at some time in the past, which may limit the applicability of the results to teams originating with high levels of virtuality. The difference between dyad and teams who were constructed to operate virtually and those who started with FtF operations and are now fully virtual due to changing work environments is not assessed in this study and may compromise the validity of the results. Meeting FtF enables members to learn one another's vocal-inflections and match those to body cues, increasing the level of non-verbal communication between team members (Daim et al., 2012) and teams with at least one

FtF meeting perform better than completely virtual teams (Gilson et al., 2013). The

perception of media richness from employees who had the opportunity for regular FtF

interaction pre-COVID-19 may be different than the construct is designed to measure.

Also, this study assumed that the employee's POS is a reflection of their current state and

leadership communication over the past month, rather than a reflection of pre-COVID-19

dynamics or the economy.

Finally, nature of the data collection was self-report, and there may be error in the

measure of leadership communication due to participants inaccuracy in estimation of

their use of electronic communication with their supervisor, misinterpretation of the

questions, inexact and subjective nature of Likert scale, and response bias. While it may

be technically possible to look back at a previous week's emails, texts, or calendar

meetings to compute how much time was spent in these modalities, it is more challenging

to estimate. It has been found that while higher performers tend to be more accurate in

their self-report metrics; most self-report subjects display inaccuracies, which highlights

the potential limitation of using self-report measures (Fronzetti Colladon & Grippa,

2018). Like with other studies executed with self-report data, common method variance

was assumed to exist.

One new limitation learned during the course of this study was that using

Spearman's *rho* to understand moderators does not enable full understanding the driving

factors for shifting from positive to negative correlations for centered variables. For

example, the nature of the analysis on team dispersion as a moderator to perceived

leadership communication on POS does not lend itself to decisive conclusions. Team

dispersion brought down the Spearman's *rho* of PLCQ on POS, indicating it did

moderate by reducing the strength of the relationship between PLCQ and POS. However, the results did not indicate if the relationship was more strongly positive when team dispersion was high or more strongly negative when team dispersion was low; time zone team dispersion had a negative Spearman's *rho*, which could indicate either high time zone team dispersion resulted in lower-than-average POS, or that low time zone team dispersion resulted in higher-than-average POS.

Recommendations for Future Research

One recommendation for future research is to dive deeper into the age demographic in regards the significance of each of the communication modalities. While the youngest generation in the workforce believe in the communication technologies so much that they feel there is little need for FtF communication (Gilson et al., 2013), the results show that age was not significantly correlated to PLCQ. This study was not intentional in ensuring participants represented all ages, resulting in 80% of participants between 31 and 51 years old. An area for further research would be to purposefully expand the demographic of the study to include a wider range of participants.

This study provided contradictory analysis to the Gluckeler & Schrott (2007) study that determined that there is no change to the volume of electronic communications (text and emails) for employees who report face to face and those who report virtually. This study observed that dyads in the same office experienced 14% less electronic communication for employees who report face to face than those who report virtually. Given the 14-year time differential between the studies and the ever-changing office environments, it is recommended that further research be conducted in this area.

This study did not examine the overall volume of dyad interaction, just the percentage of each modality making up the entirety, regardless of total volume. There is opportunity to research not just preferences for modalities, but overall time committed to dyad communications. Biswas & Kapil (2017) found that regular interaction with subordinates and social team building are means of meeting employee needs that contribute to POS. Challenges with accuracy amongst large demographics with self-report data (Fronzetti Colladon & Grippa, 2018) precluded this study going to that level of analysis; however it could benefit organizations to know not just the impact of each modality but also the relationship between time spent in dyad communication and perceived leadership communication.

Another opportunity to expand on this study would be to assess the leadership style as either a moderator to perceived leadership communication or as an independent variable with team dispersion as the moderator. Leadership style significantly impacts POS, with styles like leader member exchange (LMX) having a positive relationship (AlHashmi et al., 2019). Organizations investing in leadership training would benefit from understanding the relationships between leadership style, perceived leadership communication, team dispersion, and POS within their specific organization.

Summary

Regarding the communication modalities and correlation to POS, the greatest correlation was with the richness modality (FtF), while phone and e-mail had similar negative correlations with POS. Leaders within organization should consider this when building report amongst their team. Supervisors should take advantage of opportunities to

engage with their subordinates FtF, while respecting the elements of virtual and remote work that also contribute positively to POS. Also, knowing that team dispersion did not significantly impact the correlation of any of the modalities on POS, leaders do not need to moderate the tools and modalities used for teams of different dispersion levels.

The team being dispersed did not moderate the relationship between any communication modality and POS, no modality was more impactful than another in regards to a demographic of dispersion. Both leaders and organizational psychologist can apply the learnings from this study when planning their team member locations or structuring new teams. Knowing that reducing time zone team dispersion has a significant positive moderating effect to PLCQ on POS, managers should consider the advantage those in the same city or office share. When possible, supervisors should be geographically distributed to minimize the impact of team dispersion amongst time zones. The COVID-19 pandemic has forever impacted how the global workforce accomplishes their jobs and perceptions of effectiveness of distributed teams. The result is that this area of study will continue to be impacted and require revisiting as advanced communication technologies become more ubiquitous and the workforce evolves. Researchers and practitioners must be continuously willing to adapt, developing new behaviors and practices, to ensure continued emphasis n employee's POS.

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APPENDIX A: RECRUITMENT MATERIAL

I am conducting research as part of the requirements for a doctoral degree at Liberty University. The purpose of my research is to understand the relationship between perceived leadership communication and Perceived Organizational Support and I am writing to invite eligible participants to join my study.

Participants must be 18 years of age or older, employed (not self-employed), and members of teams of 10 or fewer. Participants will be asked to complete a short (5-10-minute) online survey. Participation will be completely anonymous.

If you would like to participate and meet the study criteria, please click the link below. A consent document is provided as the first page of the survey.

https://docs.google.com/forms/d/e/1FAIpQLSfQS6UT-8ubwwI_-hQZfZN7o0iJvmEsJpxJ4IYgZ74gbmCSMg/viewform?vc=0&c=0&w=1&flr=0

APPENDIX B: POWER ANALYSIS
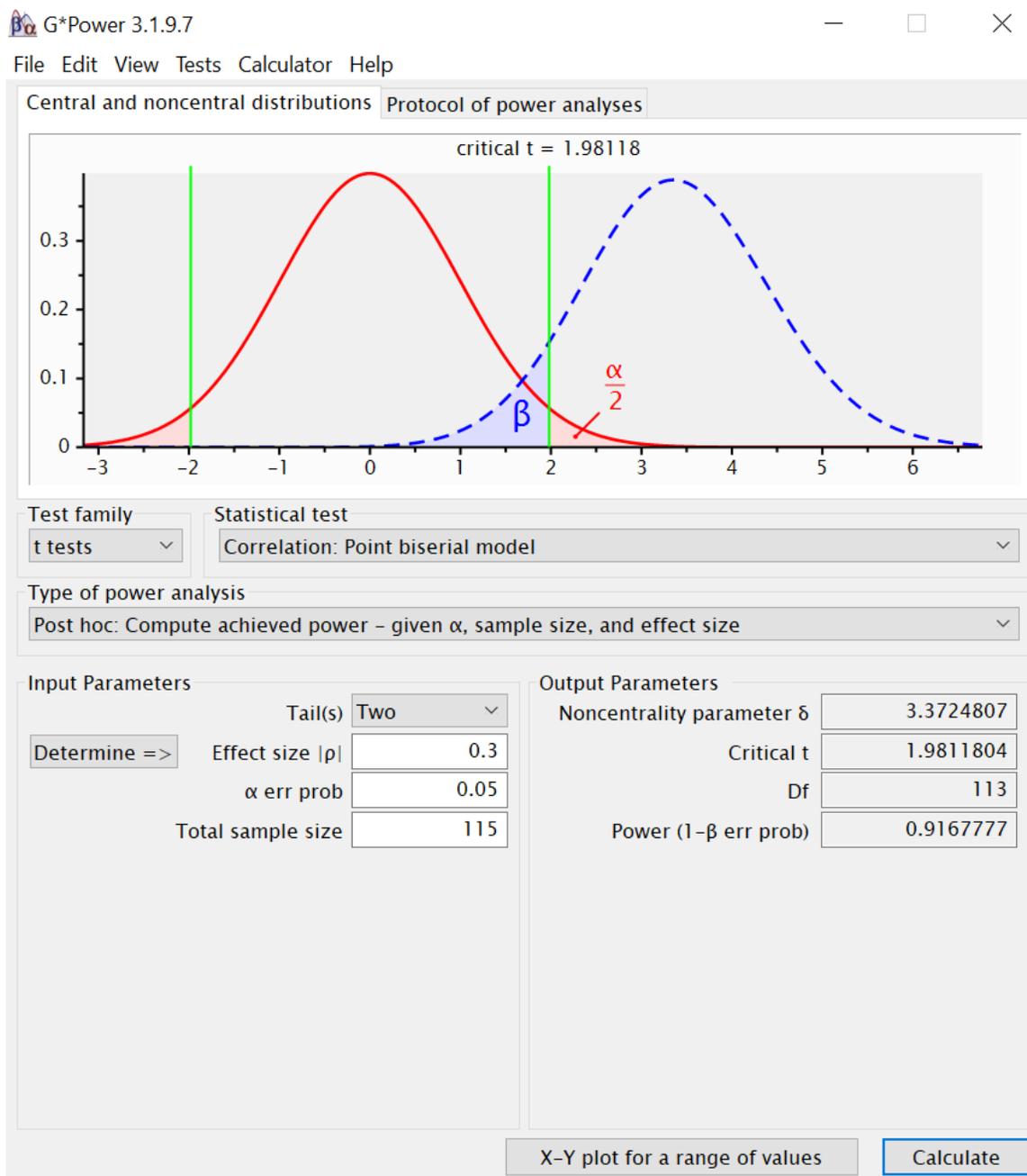
APPENDIX C: QUESTIONAIRE TEMPLATE

	Questionnaire Items
Control Variables	Age * Your answer Tenure at current organization (years) * Your answer Occupation * Your answer Gender ○ Male ○ Female

Dependent Variable: SPOS, *derived from Eisenberger' s (2021) 8-item survey*

Listed below are statements that represent possible opinions that you may have about working at your organization. Please indicate the degree of your agreement or disagreement with each statement.

The organization values my contribution to its well-being. *

	0	1	2	3	4	5	6	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The organization fails to appreciate any extra effort from me. *

	0	1	2	3	4	5	6	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The organization would ignore any complaint from me. *

	0	1	2	3	4	5	6	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The organization really cares about my well-being. *

	0	1	2	3	4	5	6	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

Even if I did the best job possible, the organization would fail to notice. *

	0	1	2	3	4	5	6	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The organization cares about my general satisfaction at work. *

	0	1	2	3	4	5	6	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The organization shows very little concern for me. *

	0	1	2	3	4	5	6	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The organization takes pride in my accomplishments at work. *

	0	1	2	3	4	5	6	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

Independent Variable: Perceived leadership communication questionnaire (PLCQ-OR; Schneider et al., 2015)

Listed below are statements that represent possible opinions that you may have about your supervisor. Please indicate the degree of your agreement or disagreement with each statement.

My supervisor is sensitive to the needs of others. *

	0	1	2	3	4	
Completely Disagree	○	○	○	○	○	Completely Agree

My supervisor seems to like devoting their time to me. *

	0	1	2	3	4	
Completely Disagree	○	○	○	○	○	Completely Agree

I am content with the way my communication with my supervisor is going. *

	0	1	2	3	4	
Completely Disagree	○	○	○	○	○	Completely Agree

My supervisor and I share in understanding of how we would like to achieve our goals. *

	0	1	2	3	4	
Completely Disagree	○	○	○	○	○	Completely Agree

My supervisor and I can speak openly with each other. *

	0	1	2	3	4	
Completely Disagree	○	○	○	○	○	Completely Agree

Especially when problems arise, my supervisor and I talk to each other even more intensively in order to solve the problems. *

	0	1	2	3	4	
Completely Disagree	○	○	○	○	○	Completely Agree

Independent Variables: Communication Modalities	Using the five communication modalities below, indicate the percent of each type your supervisor uses when communicating with you (modalities should add up to 100%). *

<table>
<tr><th></th><th>0</th><th>10</th><th>20</th><th>30</th><th>40</th><th>50</th><th>60</th><th>70</th></tr>
<tr><td>Face to face</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>Videoconference</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>Phone / Audioconference</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>Text / Instant Message</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td>e-mail</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr>
</table>

Note: Slide-bar moves to 100%

Team Dispersion

For your supervisor immediate team members, please annotate how many are in each location (city). For members in the same city but working remote or from separate offices most of the time, please indicate that by a letter after the city. For example, my supervisor and I live both live in Cincinnati, but work remote most of the time, so I would label my location as "Cincinnati A" and my supervisor's as "Cincinnati B".

Self

Own location *

Your answer

Supervisor

Supervisor location *

Your answer

Teammates
If team is in less than 10 locations, leave additional rows blank.

Teammate location #1 *

Your answer

Number of teammates at location #1 *

Your answer

Team Dispersion

Teammate location #2

Your answer

Number of teammates at location #2

Your answer

Teammate location #3

Your answer

Number of teammates at location #3

Your answer

Teammate location #4

Your answer

Number of teammates at location #4

Your answer

Teammate location #5

Your answer

Number of teammates at location #5

Your answer

Team Dispersion

Teammate location #6

Your answer

Number of teammates at location #6

Your answer

Teammate location #7

Your answer

Number of teammates at location #7

Your answer

Teammate location #8

Your answer

Number of teammates at location #8

Your answer

Teammate location #9

Your answer

Number of teammates at location #9

Your answer

Thank you for your participation, please click "submit" to complete the survey.

Back   Submit