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A Grounded Theory of Emergent Leadership in Nonhierarchical Virtual Teams

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Abstract

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MS, Colorado Technical University, 2008

BA, The Ohio State University, 1984

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Organizations rely on positive contributions of leadership and global virtual teams who collaborate on projects spanning geographies, time zones, and cultures. Although researchers have determined that leadership is a significant predictor of virtual team performance, there is a scarcity of research on how to facilitate the emergence of leaders with the critical skills needed in leading nonhierarchical virtual teams to higher performance and successful project outcomes. The purpose of this qualitative, grounded theory study was to develop a grounded theory of how leaders emerge in nonhierarchical virtual teams. The conceptual framework for the study was the behavioral complexity theory of leadership in which effective leaders use a range of complex behaviors to improve team performance. Constant comparison of data from semi structured interviews with a purposeful sample of 15 virtual team members enabled the building of a grounded theory of emergent leadership in nonhierarchical virtual teams. Results indicated that leaders emerge when critical decisions are necessary, and that virtual team members who are honest, transparent, conscientious, and good communicators make good virtual team leaders. The implications for a positive social change include providing organizational leaders with information to improve the leadership of nonhierarchical virtual teams and increase the success rates of virtual team projects.

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Dedication

This dissertation would not have been possible without the firm support of my beloved family: my wife Yukiko, and our children Lisa, and Mark for their unwavering encouragement. I would also like to acknowledge the Walden University professors, especially my mentor Dr. Robert Levasseur, my committee members, Dr. Stephanie Hoon, and University Research Reviewer Dr. Daphne Halkias, and to Dr. Joseph Gredler for editing; and the advice provided by the Walden University support staff. I am extremely grateful for the patience and tremendous support received from beginning to end. The encouragement, attention to detail, advice, and recommendations have made this document possible.

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Chapter 1: Introduction to the Study

Global organizations are using virtual teams composed of subject matter experts on projects as a critical strategy to improve efficiency, productivity, and profitability. Three areas of high complexity influence virtual team performance: people, process, and technology (Tian, Chiong, Martin, & Stockdale, 2015). Individuals from distant locations interact as a group, share knowledge and decisions, and use telecommunications rather than face-to-face communication (Pinjani & Palvia, 2013). These factors and support systems are highly complex. Virtual teams almost exclusively use inexpensive telecommunications technology to coordinate tasks and schedule meetings to deal with various challenges including cultural differences and language. The complexities present challenges to organizational leadership for goal alignment, knowledge sharing, and team motivation (Lisak & Erez, 2015). Although many consider direction as a critical predictor of virtual team success, there is little understanding of how to encourage or develop team members to emerge and assume roles as leaders who can motivate virtual teams toward higher performance and successful project outcomes (Serban et al., 2015; Zander, Zettinig, & Mäkelä, 2013).

This chapter has three parts. The first part includes a summary of the research literature, problem, purpose, and research questions. The second part provides information on the conceptual framework, the nature of the study, definitions, assumptions, scope, and limitations. The third part covers the study's significance and importance to social change and concludes with a summary leading to the next chapter.

Background of the Study

The focus of the interpretive summary of the literature is on research studies related to virtual teams, leadership emergence, and nonhierarchical organizations. The analysis that follows includes research in leadership emergence, virtual teams, and nonhierarchical organizations as they align with the objectives of the study. This study was an investigation of the processes of leadership emergence in nonhierarchical virtual groups.

Organizations in global competition increasingly rely on virtual teams to deliver services and improve organizational performance (Long & Meglich, 2013). Virtual teams are a collection of individuals who are geographically or organizationally dispersed, have cultural differences, and use information and communications technology (ICT) for collaboration toward accomplishing specific goals (Batarseh, Usher, & Daspit, 2017; Harris, 2017).

Virtual teams are highly dependent on reliable communications technology to coordinate process steps in various stages of projects to achieve mission goals for the organization (Saafein & Shaykhian, 2014). E-leadership that provides timely feedback, motivation, and communications with virtual team members is vital to achieving ultimate success. These teams have members from different cultural backgrounds who have spent formative years in different countries learning different values, demeanors, and languages. Individuals in leadership positions need to have skills and competencies to recognize, react, and resolve problems that stem from cultural and language differences (Goleman, 2017). Leadership issues include lower levels of team cohesion, reduced

satisfaction and trust, lower cooperative behaviors of members, and reduced commitment

to team goals (Cagiltay, Bichelmeyer, & Akilli, 2015; Charlier, Stewart, Greco, &

Reeves, 2016).

Jawadi, Daassi, Favier, and Kalika (2013) discussed the behavioral complexity

theory as a framework to explain how emergent leaders use complex behaviors when

faced with wide-ranging problems in organizational projects. Some of the highly complex

behaviors used in situations to influence individuals appear to be contradictory. Emergent

leaders may become innovators, producers, directors, coordinators, and monitors

depending on the situation. These roles require leaders who are adaptable to situations

and express an ability to work with peers and leadership. Transformational leaders show

interest in the subordinate's personal and professional development and listen to the

needs or concerns of the follower (Lawlor, Batchelor, & Abston, 2015). These leaders

work to create a social identity of the team, to instill confidence, and to influence

subordinates with inspirational motivation while also using intellectual stimulation.

Transactional leaders use incentives to encourage performance, such as contingent

rewards for meeting expectations (Appelbaum, Karasek, Lapointe, & Quelch, 2015).

These leaders monitor performance and attempt to take corrective action when problems

arise. The alternative is for leaders to take a more passive stance and allow a minor issue

to occur and use the experience as lessons learned to teach individuals better ways to

handle the situation in the future.

According to Norton, Ueltschy Murfield, and Baucus (2014), organizations will

appoint or allow team members to elect the virtual team leader whom they work for

within the organization's hierarchical structure. Norton et al. described the difficulty of predicting emerging leadership in teams without a hierarchical structure and when members have no history of interaction. In this situation, a member or members must arise within the virtual unit who has specific skills and behaviors that can serve the interests of the team and the organization (Ziek & Smulowitz, 2014).

Esposito and Evangelista (2014) discussed the differences between hierarchical and nonhierarchical organizations that use teams working together on projects. The hierarchical organization in the study assumed the role as the lead company in charge, the project integrator, and as the primary decision-maker with responsibility for the final product (Esposito & Evangelista (2014). In contrast, nonhierarchical corporate organizations will cooperate on projects acting as a single business entity that self-organizes in a partnership to coordinate and share the efforts in the project. The benefits from this arrangement are the sharing of costs, risks, and competencies in a dynamic environment. (Vargas, Cuenca, Boza, Sacala, & Moisescu, 2014). Cogliser, Gardner, Gavin, and Broberg (2012) indicated that traditional hierarchical leadership can reduce the social climate and negatively affect team trust. Researchers have not widely examined these virtual team issues despite their overall negative impact on team performance and effectiveness.

According to Salminen-Karlsson (2014), the Swedish organizational culture is based on a strong community of practice with formal and informal communication, knowledge sharing between experts and novices, and an emphasis on learning. The Swedish practice of knowledge sharing between experts and a novice is a basic element

in organizations that emphasize knowledge sharing in virtual teams (Pinjani & Palvia, 2013). These factors are characteristics of a nonhierarchical organization that is unlike hierarchical organizations.

How organizations form project teams and the project settings that produce higher performance outputs remains unclear (Cogliser et al., 2013; Mathieu, Kukenberger, D'innocenzo, & Reilly, 2015). Stronger team cohesion does not seem to predict increased project performance, as other factors seem to be involved in requiring more research on the roles and responsibilities of leaders (De Jong, Dirks, & Gillespie, 2016). Global leadership studies are scarce considering that virtual teams consist of members facing communication challenges, a variety of languages, and diverse cultures (Hosseini & Chileshe, 2013). Considering that there are few studies of leadership characteristics and behaviors in virtual teams, there is a critical need for more research to understand ways of leading team members toward higher performance and successful outcomes. Regarding emergent leadership research, most studies have concentrated on examining collocated teams (Cogliser et al., 2012). A better understanding of the attributes, traits, and behaviors of emergent leadership processes is needed, especially regarding how emergent leaders influence team performance and outcomes with communications technologies (Gibson, Huang, Kirkman, & Shapiro, 2014). More research is needed to understand how to build relationships between leaders and members and how each contributes to the management of the relationship including exerting influence that positively affects performance (LePine, Zhang, Crawford, & Rich, 2016). Studies that focused on team virtuality based on the use of electronic media in combination with national and cultural

differences in teams are few. Most studies addressed face-to-face teams (Norton et al., 2014). There are difficulties involved in predicting whether a member of a virtual team will decide to emerge as the team leader in those organizations without a hierarchical structure that uses virtual team members without any prior history of working together (Serban et al., 2015). Organizations could benefit from more studies that address this gap.

<div align="center">**Problem Statement**</div>

Organizations face issues of project failure from virtual teams with low motivation, poor coordination, and poor performance that stalls or interrupts projects (Haselberger, 2016). A 2013 Standish Group report finding indicated that 61% of IT projects delivered past deadlines or over planned costs, or were canceled as total failures (Marinho, Sampaio, Lima, & Moura, 2014). The general problem for organizational leaders who use virtual teams is to determine how to structure team leadership in a way that enhances team engagement and increases team cohesion, coordination, and performance that leads to project success (Salas, Shuffler, Thayer, Bedwell, & Lazzara, 2014). The specific problem organizational leaders face is that although researchers have determined that leadership is a major predictor of virtual team performance, there is a scarcity of research on how leaders with the critical skills needed to lead nonhierarchical virtual teams to higher performance and successful project outcomes emerge. Liao (2017) reported that the research on virtual team leadership occurred in laboratory settings with student participants, with researchers controlling key variables to permit causal inferences. However, these laboratory settings did not adequately capture the complex

interactions of virtual teams in organizations, resulting in issues in validity that require further research.

Purpose of the Study

The purpose of this qualitative, grounded theory study was to develop a grounded theory of how leaders emerge in nonhierarchical virtual teams. Interviews with members of nonhierarchical teams whose leaders have emerged and led them to successful project completion were conducted to answer the research question. A rigorous and critical evaluation of the collected data from these interviews provided the necessary information related to various factors involved in virtual team leadership emergence to develop the grounded theory.

Research Question

The overarching research question was the following: How do leaders emerge in nonhierarchical virtual teams?

Conceptual Framework

The conceptual framework for the study was the behavioral complexity theory of leadership in which effective leaders use a range of complex behaviors to improve team performance. Constant comparison of data from semi structured interviews with a purposeful sample of 15 virtual team members enabled the building of a grounded theory of emergent leadership in nonhierarchical virtual teams. According to behavioral complexity theory, leaders must exhibit highly effective and varied skills in assessment of team members to guide and direct effective teams in handling contingencies when the team encounters critical project issues (Jawadi et al., 2013; Metcalf & Benn, 2013). Such

leaders may use as many as nine leadership competencies, including direction and goal setting, communication, facilitating teamwork, motivating, inspiring, empowering, boundary spanning, mentoring, and resources acquisition (Ziek & Smulowitz, 2014). The basis of the theory is the premise that leaders must have the ability to perform both task and social/relational process behaviors to be competent in handling any given situation (Shollen & Brunner, 2014).

Leaders set directions and goals so that employees clearly understand the expectations for their achievements within the team. This includes the leader setting limitations to specific higher-level tasks as determined by the leader's assessment of current abilities. Employees do not have to perform tasks above their skill set; leaders can encourage them to do things that promote the growth of knowledge and skills that lead to eventual empowerment. The achievement of a successful task that was not easy to complete can be motivating and inspiring to an employee (Fan, Chen, Wang, & Chen, 2014). This can also expand the boundary of tasks that are routine and boring into more satisfying work. The team leader must also acquire resources so that the team can fulfill tasks as needed. Bonet Fernandez and Jawadi (2015) described leadership as a socially influencing process to produce changes in attitudes, feelings, thinking, behavior, and performance of the virtual team. The difference is that e-leaders face more challenging communication issues, as virtual teams use ICT (Amali, Mahmuddin, & Ahmad, 2014). Effective leaders will adapt their leadership style to fit the situation.

Nature of the Study

I conducted a qualitative, grounded theory study that involved the investigation of the phenomenon of virtual team emergent leadership in organizations that employ virtual teams without assigned leadership. This research method included systematically collecting and analyzing qualitative data to facilitate the development of a theory of emergent virtual team leadership (see Corbin & Strauss, 2015). This method began with research questions and proceeded to the recruitment and sampling of participants who served as recurrent contacts who shared their perceptions of the phenomenon in response to in-depth interview questions. The process also included the categorization and analysis of data to identify themes and patterns. Constant comparison of the collected data was interactive and continuous to the point of saturation (see Gandomani & Nafchi, 2015). A variety of coding methods based on Corbin and Strauss's (2015) recommendation provided a systematic approach to analyzing the data.

Glaser and Strauss (2017) emphasized that joint collection, coding, and analysis of data are important for the generation of theory as a process. This method requires all three to be done together as much as possible rather than one process followed by the other. Another key factor is for open-ended interviews to be unrestrictive, thereby enabling participant views and insights to emerge (Corbin & Strauss, 2015). At the time of the study, the phenomenon of how, why, or when virtual team members choose to assume leadership roles was not well understood in the literature (Kayworth & Leidner, 2002).

Definitions

The following terms frequently appear throughout the document.

E-leadership: Jawadi et al. (2013) defined e-leadership as a social influence process involving the use of advanced information technology to produce changes in attitudes, feelings, thinking, behaviors, and performance in groups, individuals, or organizations.

Information and communications technology: ICT are a diverse set of applications, goods, and services that allow individuals to create, connect, and share information. ICT enables virtual teams to coordinate efforts over time and distances to complete projects of mutual interest (Marcial & Pablito, 2015).

Leadership behavioral complexity theory: Leadership behavioral complexity theory is an integrative theoretical framework rooted in the complex theory of adaptive systems with a focus on the interactions and dynamics of leadership behavioral skills (complimentary and contradictory) that manage all encountered situations. The theory implies that leaders need to develop cognitive and behavioral skills to manage all situations (both complex and contradictory) in their environment (Jawadi et al., 2013).

Leadership Emergence: Serban et al. (2015) defined leadership emergence as a fundamentally social-cognitive process that occurs when a person in a leaderless group exhibits high leadership behavior. The leadership behavior accounts for followers' positive perceptions of how well the leader fits their ideal image of a prototypical leader and leads them to follow the leader's instructions willingly.

Virtual team: Virtual teams are functioning teams that have members who are geographically and organizationally dispersed and rely on ICT to accomplish work activities (Bonet-Fernandez & Jawadi, 2015).

Assumptions

I assumed that the interviews with virtual team members conducted by computer-mediated communications would go as scheduled and without procedural or technical issues. I also assumed that the interviewed participants would provide honest and truthful responses that would be easily understood, and that the data collected would provide useful, valid research findings when analyzed. These assumptions were critical for the collection of data that would yield findings that could be applied to areas beyond of the scope of this study. The results of this study may provide information on techniques useful in leadership training, interpersonal communication methods, task monitoring, and performance feedback.

Scope and Delimitations

The scope of the study was three to five virtual teams composed of not more than four or five members. The study was delimited to between 12 and 25 virtual team members who volunteered for interviews. The ideal participants were those engaged in short-term projects of 2- to 6-month duration. Virtual team members who worked on projects lasting more than 6 months, such as software development, enterprise resource planning, or various types of business process reengineering projects, were not included in this study.

Team members who have worked together in the past are likely to have formed trust and respect for one or more members whom they would respect, elect, and follow as their leader (Buvik & Tvedt, 2017). A delimitation of the study was to the focus on the examination of emergent leaders from a behavioral complexity point of view. The data collection and analysis involved an examination of behavioral patterns that reflect the leader's motivation, directions, mentoring, and influence over the team members (see Verner, Babar, Cerpa, Hall, & Beecham, 2014). Current virtual team leaders operating in a variety of projects are likely to provide insights into leadership behaviors that are applicable to virtual teams in different project initiatives.

Limitations

Virtual team members work in different geographical locations and communicate through computer-mediated communications that pose a challenge to scheduled interviews. In addition, 65% of virtual team members commonly work on multiple teams simultaneously (Gandal & Stettner, 2016). There were limitations in using a grounded theory research method when the participants resided in different countries and scheduling interviews across various time zones was challenging. A grounded theory study requires rigorous methodology involving significant time and effort. I had to factor in contingencies to ensure that the rigor of the grounded theory method produced consistent and reliable results.

Participants in virtual teams for this study used e-mails to communicate, rather than other media such as video conferencing. E-mails are lean media because they do not convey social or nonverbal cues that are present in face-to-face or video communication.

Using e-mail reduces miscommunication that would occur due to language differences in the teams (Hill & Bartol, 2016). There also was a limitation to the study in that the participants were volunteers from virtual teams who might have had a positive bias toward virtual teams and the work performed. These individuals might have avoided discussing anything negative about their jobs, personnel, or management. However, the participants were straightforward and honest in disclosing their real-life experiences with a balance of positive and negative information that was invaluable to this study. There were very few areas that participants would not discuss regarding influencing tactics or power struggles (see Wadsworth & Blanchard, 2015).

Limiting the study to highly dispersed virtual team members where teams may not have had uniform backgrounds, such as the same country, same culture, or same language, did not occur. Only one participant discussed the cultural barriers and how they handled the situation to maintain a trusting relationship that kept the team working at a high level. Overall, the team composition did not vary, which could have resulted in a range of differing responses (see Pauleen, 2003). According to Stray, Sjoberg, and Dyba (2016), interviews yield data that require efforts to organize various individual experiences into groupings.

The virtual team members in this study did not indicate a preference to answer survey questions. Surveys would not have provided the rich in-depth data that are obtainable from person-to-person interviews. Klitmøller and Lauring (2013) reported that it is critical to use measures that provide immediate, rather than delayed, participant input. An alternative solution that was not needed was video conferencing technology

that enables face-to-face interviews. The logistical challenges would have included the interviewer and interviewee having compatible equipment and the right timing in busy schedules. Two alternatives to technology are workplace or home settings. There are benefits and challenges to coordinating the time, equipment, and location.

Video conferencing was not available. The secondary choices were to use telephone conference interviews, computer instant messaging, or e-mails. The problem with technologies other than video conferencing was that I would miss the subtle body messages and cues available from a person-to-person interview. Grounded theory research is a meticulous and systematic approach in which the researcher must put in significant time and effort in each stage of the process. However, the method is not meant to be applied mechanically as there must be room for creativity and flexibility when analyzing and interpreting the data. Any researcher who intends to use a grounded theory approach should plan contingencies (Gligor, Esmark, & Gölgeci, 2015).

Significance of the Study

There is very little published research on virtual team performance and success and on emergent leadership related to virtual teams (Nordback & Sivunen, 2013; Pinar, Zehir, Kitapçi, and Tanriverdi, 2014). According to Lisak and Erez (2015), most studies on emergent leadership have addressed individual characteristics such as intelligence, personality traits, and emotional responses with a concentration on co-located teams. There have been very few emergent leadership studies addressing task and social-oriented behaviors (Yoo & Alavi, 2004).

Significance to Practice

The findings may result in an important contribution to the literature based on the identification of the factors that lead to emergent leadership in nonhierarchical virtual teams. In addition, the results may help organizations and their practitioners by identifying processes and practices that improve team motivation and performance and lead to increased project success. Norton et al. (2014) reported on the difficulty of predicting the emergence of leaders when a leader is not already in place in a virtual team, especially on teams where members do not have a history of working together. Norton et al. implied that trust and satisfaction among team members must build over time. The current study may contribute to an organization's leadership training and development program by presenting information and insights based on the behavioral complexity theory of emergent leadership. The findings also may suggest ways to improve a group's cohesiveness and trust, which is crucial to team performance.

Significance to Theory

According to the behavioral complexity theory, successful emergent leaders are capable of exhibiting highly effective behaviors and skills that positively influence or motivate members to higher performance and group success (Jawadi et al., 2013). Day, Fleenor, Atwater, Sturm, and McKee (2014) reported that research on leader self-development could contribute to the understanding of intrapersonal issues such as leadership stress. This study contributed to theory through the analysis of practitioner discussions in interviews regarding how they understand and use complex behaviors in leading, engaging, and motivating virtual team members. Emergent leaders use those

behaviors to solve issues including coordinating member tasks, keeping the team

performance at a high level, and using influence to maintain team motivation. At the

same time, emergent leaders have to pay attention to deadlines, keep costs down, and

raise the self-confidence of team members. The study findings have the potential to

provide insights that may add to the existing body of literature about behavioral

complexity theory.

Significance to Social Change

The implications for positive social change include information that

organizational leaders can use to improve the leadership of nonhierarchical virtual teams.

Jones Christensen, Mackey, and Whetten (2014) described three categories of leadership

traits that influence positive social responsibility: the individual as a leader, the processes

occurring between leaders and followers, and shared or distributed leadership. Wang,

Fang, Qureshi, and Janssen (2015) described the importance of leadership roles in the

individual's personality, skills, and abilities. Corporate management influences the

development of leadership traits throughout the organization to distribute and preserve

the company's social change policies and initiatives. The objective is to have decisions

that follow the company values and mission while creating an environment conducive to

positive social change. The results of this study may also provide insights into ways to

impact corporate social responsibility (see Petrenko, Aime, Ridge, & Hill, 2015).

<center>**Summary and Transition**</center>

Emergent leadership in virtual teams in nonhierarchical organizations where

subject matter expert individuals work together without a designated leader have unique

issues to resolve (Chrisentary & Barett, 2015). Problem areas within the group include a loss of cohesion, trust, and motivation. The purpose of this qualitative study was to develop a grounded theory of how leaders emerge in nonhierarchical virtual teams. The conceptual framework for the study was the behavioral complexity theory of leadership in which effective leaders use a range of complex behaviors to improve team performance. Constant comparison of data from semi structured interviews with a purposeful sample of 15 virtual team members enabled the building of a grounded theory of emergent leadership in nonhierarchical virtual teams. The chapter included definitions of terms used in the study, assumptions, the scope and delimitations, and limitations of the study. The chapter also included a description of the significance of the study to practice, theory, and positive social change. Chapter 2 includes a review of the relevant literature relating to the behavioral complexity theory, emergent leadership, virtual teams, nonhierarchical organizations, and grounded theory research as it applies to virtual teams.

Chapter 2: Literature Review

This chapter is a critical synthesis of the literature that was relevant to the research problem of emergent leadership in nonhierarchical virtual teams. The general problem for organizational leaders who use virtual teams is to determine how to structure team leadership in a way that enhances team engagement and increases team cohesion, coordination, and performance that lead to project success (Salas et al., 2014). The specific problem organizational leaders' face is that although researchers have determined that leadership is a major predictor of virtual team performance, there is a scarcity of research on how to facilitate the emergence of the leaders with the critical skills that are essential in leading virtual teams to higher performance and successful project outcomes (Liao, 2017).

The purpose of this qualitative, grounded theory study was to develop a grounded theory of how leaders emerge in nonhierarchical virtual teams. The literature review represented an iterative process of my connection to the stated problem, purpose, research questions, and analytic framework that leads to the research approach. There are four major components to the chapter: a description of the search strategy, a discussion of the conceptual framework, the literature review, and a summary and conclusions.

Literature Search Strategy

The reviewed literature included online databases, peer-reviewed journal articles, books, and Internet sites. Most of the journal articles were located through Google Scholar, with approximately half accessed and downloaded from direct links to the Walden University library. A completed list of peer-reviewed journals appears in

Appendix A. The words and phrases used in searches came from content analyses.

Several key terms recurred frequently including emergent leadership, behavioral

complexity, virtual teams, online teams, globally disbursed teams, transnational teams,

and leadership emergence of virtual teams. Cited references were stored in a Microsoft

Word document and online through a free account at http://www.citefast.com, which is

useful in providing digital object identifier information.

Conceptual Framework

Kayworth and Leidner (2002) described effective virtual team leaders as

performing a variety of behaviors and asserting authority without the perception of being

overbearing while also demonstrating a high degree of empathy for their team members.

Global organizations have highly complex circumstances that require leadership from

individuals who can perform various types of leadership skills and who are effective in

increasing team performance and output. Effective leaders have the cognitive and

behavioral skills to respond to different situations. The conceptual framework for the

study was the behavioral complexity theory of leadership in which effective leaders use a

range of complex behaviors to improve team performance. Constant comparison of data

from semi structured interviews with a purposeful sample of 15 virtual team members

enabled the building of a grounded theory of emergent leadership in nonhierarchical

virtual teams.

Melo, Silva, and Parreira (2014) defined behavioral complexity in terms of leader

effectiveness as combining both cognitive and behavioral complexity to respond to a

wide range of situations that may require contrary or opposing behaviors. Effective

leaders were capable of selecting behaviors from a wide range of options as they performed their jobs. And leaders had a pool of initiatives or responses to react to various situations effectively. As organizational environments increase in complexity, the solutions can be hard. The behavioral complexity theory relates to areas that include cognitive complexity, behavioral repertoires, paradox, and contradiction where responses have to be dynamic to fit the situation.

Misiolek and Heckman (2005) compared the studies by Kayworth and Leidner (2002) and Yoo and Alavi (2004) in which leaders gave attention to social- and task-related roles in leadership behaviors that support the behavioral complexity theory. The organization appointed leaders in the study by Kayworth and Leidner. The leaders in the study by Yoo and Alavi (2004) were emergent. The results indicated that task-related behaviors rather than social-related behaviors were significantly associated with an emergent leader. Yoo and Alavi reported that all team members were sending and receiving social-related messages during the study. These researchers noted that only the emergent leaders were sending task-related messages with more content in the role as leader. The results led to support that emergent leaders in virtual settings send more content-rich, task-oriented messages to team members. And these researchers studied student participants with findings that may generally apply to behaviors that emergent leaders exhibit, including communicating tasks, monitoring an individual's progress, and giving timely feedback that could improve the member's performance, confidence, and overall job satisfaction.

Yoo and Alavi (2004) conducted exploratory research on the roles and behaviors of emergent virtual team leaders using a combination of qualitative and quantitative methods to identify the differences between team members and emergent leaders. Yoo and Alavi found that emergent leaders sent more messages with higher content in task-oriented messages compared to social-oriented and expertise-related messages. Yoo and Alavi described the behavioral complexity theory as suggesting effective leaders need to be able to display a variety of complex behaviors that are paradoxical and contradictory as a means to cope with complex organizational issues. Quinn (1988) examined leadership roles and categorized leaders into eight role groups: innovator, broker, producer, director, coordinator, monitor, facilitator, and mentor. The behavioral complexity theory postulates that no one single key behavior affects leadership effectiveness in complex managerial situations. The combinations of roles contribute to the understanding of complex task-related and social-related leader behaviors. Quinn's leadership model included four contradictory quadrants that included flexibility versus stability and internal focus versus external focus. Leaders in the role of innovator emphasized creativity and encouraged change. A polar opposite is the coordinator who maintained structure, scheduling, coordinating, and keeping rules, which requires high stability without changes. Jawadi et al. (2013), on the other hand, provided a simplified table with descriptions of the eight leadership roles and the qualities of leadership that enabled the development of collaborative leader and member relationships that improved performance and achieved goals.

Fung (2015) provided updated research on the previous research with Quinn's model of leadership that illustrated the eight roles in four quadrants reflecting opposing leadership roles and behaviors. Fung acknowledged that leaders learn leadership behaviors from experiences. Fung also discussed how leaders use these behaviors in managing various areas, such as relating to people (mentor, facilitator), leading change (innovator, broker), managing processes (monitor, coordinator), and producing results (producer, director). These roles represented the range of behaviors that effective leaders used to influence virtual team members to higher performance.

Shollen and Brunner (2016) reported that most leadership behavioral studies followed direct observation where leaders of face-to-face teams read visual social cues in real time and used a variety of behaviors to improve member performance. A second method for leaders was to use textual social cues by instant chat or emails in a text-only social cue environment. Virtual teams are unique and are absent of social cues that pose challenges to emergent leaders to exhibit influential behaviors. Typical leadership behaviors in task-oriented face-to-face work groups included planning, scheduling, coordinating work activities, monitoring operations and performance, clarifying rules and expectations, and providing resources for team members to use. Due to the wide range of variable leader behaviors that can depend on contextual contingencies, the behavioral complexity theory provided an explanation for leaders who adapted different behaviors to respond to a range of complex situations (Hooijberg, Hunt, & Dodge, 1997). Additional leadership behaviors that are social-oriented included providing support and encouragement, building relationships, consulting and collaborating, recognizing

contributions, and mentoring. Participative leadership behaviors included supervising group actions, involving subordinates in decision and problem-solving work, and facilitating cooperation in the team.

Norton et al. (2014) published a proposal for ways to develop a theoretical framework that explained leadership emergence in virtual teams that lacked a hierarchical structure. Norton et al. provided a theoretical framework, a testable model, and proposed research questions. The foundation for their proposed theoretical framework was the cognitive resource theory (CRT), which suggested enhancement of team effectiveness was possible if the process led to an individual with the expertise, experience, high team member support, and low interpersonal relationship stress. There are limits to CRT as a primary theoretical basis by the follower's perceptions of a leader's intelligence and experience. In virtual teams in which non-leaders emerged to assume a leadership role, there are additional perceptions of self-efficacy that included a willingness to serve, credibility, and goal attainment. There was also a potential for the individual to use various complex leadership behaviors depending on the situation (Zhang, Waldman, Han, & Li, 2015).

Kinicki, Jacobson, Peterson, and Prussia (2013) reported that variable leadership behaviors were useful to lead and manage team performance so that subordinates could be successful. Dulebohn and Hoch (2017) reported that the reason for the variable behaviors in leading virtual teams was due to the lack of face-to-face contact. Virtual team leaders compensated for the lack of visual cues as they sent more frequent messages of higher quality content and stayed focused on the subject under discussion. Areas of

focus for leadership skills included monitoring goal attainment, high quality

communication, and coaching (Gaddis & Foster, 2015). Moreover, it was essential to

ensure effectiveness through the use of a valid means of measurement.

Literature Review

This part of the chapter is a presentation of a critical review of literature related to

emergent leadership of virtual teams in nonhierarchical virtual teams. I also analyze

relevant literature pertaining to the conceptual framework and study methodology. The

literature review informed decisions for the research design as described in the Chapter 3**.**

Virtual Teams Features and Characteristics

Global virtual teams have grown in use and numbers, as the cost for using

information and communication technology has decreased significantly since 2005

(Gurung & Prater, 2017). Virtual teams are known as geographically dispersed,

specialized knowledge coworkers who predominantly use computer-mediated

communications such as e-mails for collaboration of tasks to meet the goals of an

organization (Bosch-Sijtsema & Haapamäki, 2014; Lilian, 2014). Zander et al. (2013)

attributed the rise in virtual teams, which started around the early 1990s, to advances in

information and communications technology. After 2005, significant reductions in rates

for international communication lines and reduced costs for technology hardware resulted

in roughly 67% of multinational companies using virtual teams (Gilson, Maynard,

Young, Vartiainen, & Hakonen, 2015). More organizations worldwide have been

investing in virtual teams. Killingsworth, Xue, and Liu (2016) reported that technologies

are more affordable, deliver messages more quickly, and allow team members to form bonds that result in higher member satisfaction and increased performance.

Schaubroeck and Yu (2017) expanded the definition to indicate why organizations need virtual teams:

Organizations have turned to team-based work structures as a means of responding to the increasing demands associated with rapid environmental changes, globalization, and heightened technical complexity. At the same time, the need to coordinate geographically dispersed units with diverse skillsets has limited the ability of organizations to co-locate team members. As a response to these demands and constraints, organizations are relying increasingly on information and telecommunication technologies to facilitate teamwork among individuals who have the necessary expertise to meet the demands of a given project or task, notwithstanding cultural, spatial, and temporal boundaries. (p. 1)

According to Jimenez, Boehe, Taras, and Caprar (2017), global virtual teams are temporary, culturally diverse, and geographically dispersed working groups that communicate electronically. Researchers who arrived at the same conclusion included Crisp and Jarvenpaa (2013), Erez et al. (2013), Gibbs, Sivunen, and Boyraz (2017), Hoch and Dulebohn (2017), and Lilian (2014). These researchers recognized that virtual teams, whose members may include freelancers, contractors, suppliers, and other collaborators, are the norm in today's business environment.

Organizations strive to be competitive by conducting global searches for talent and resources that can provide benefits at a cost. Global virtual team environments

provide leadership with potentially significant challenges. Leaders of these teams must manage social processes, task coordination, scheduling, and monitoring to achieve goals (Hoegl & Muethel, 2016). Leadership needs to build teams that have high quality technical skills, strong problem-solving abilities, and strong goal orientation with willingness to be flexible about a task schedule and go beyond expectations to complete critical tasks in a timely manner (Barnwell, Nedrick, Rudolph, Sesay, & Wellen; 2014). Hoegl and Muethel (2016) reported that team leaders have to understand limitations of influence and trust the competencies of their virtual team members. However, selecting virtual team leaders has been a challenge for organizations.

Paunova (2015) reported that generally organizations want to place the right person into leadership positions; however, in practice they fail to select the best-qualified people. A primary reason for failed leadership is due to leaders selecting individuals as team leaders before they have demonstrated sufficient competency to lead. Organizational leaders compound the problem of team leadership selections by basing 90% of them on judgments made in only a few seconds. Paunova reported that leadership emergence occurs in one of two ways. Either one or more members of a virtual team will perform actions, such as helping other team members, and earn leadership recognition, or, an individual designated to function as the leader and is eventually recognized as leader by the team's members. Hill and Bartol (2016) supported the view that organizations use team coaching to build situational judgment skills in virtual teams and to empower strong leadership as a means to develop leaders that will fully support the

team (Kim, Engel, Woolley, Lin, McArthur, & Malone, 2017; Nicolaides, LaPort, Chen, Tomassetti, Weis, Zaccaro, & Cortina, 2014).

Ford, Piccolo, and Ford (2016) also advocated that organizations must recognize that the advantage of having dispersed virtual team leaders formed from the best personnel located in any geographic location is a disadvantage to a team leader. This is due to the lack of face –to-face contacts that require the leader to have compensating skills. These researchers agree that team leader coaching or training is important because it sends a message to the team that they are valuable, and that what they do collectively is critical (Moe, Cruzes, Dyba, & Engebretsen, 2015).

Successful virtual team leaders use their influence and responsibilities to monitor team members, identify deficiencies, and initiate immediate action to prevent adverse effects while enabling team performance to continue (Muethel & Hoegl, 2013). Leaders must provide the tools, materials, and a backup plan that accounts for the absence or replacement of personnel when necessary (Carter, Seely, Dagosta, DeChurch, & Zaccaro, 2014). Additionally, new personnel need training followed by pairing with experienced members that are willing to mentor and share knowledge that enable personal growth, the development of critical skills, and leads to the satisfaction and positive sense of self-worth of new and existing members (Hart, 2016; Hoch & Kozlowski, 2014). The influence of leaders come from motivating language in feedback coming from email instructions in which virtual team members have enough freedom to use creativity and generate ideas. Fan et al. (2014) had research findings that confirm members receiving direction giving instructions had generated more ideas when leaders used a demanding

feedback approach. Moreover, these researchers reported that members receiving email instructions containing more emphatic language content would exhibit higher creativity performance from the leaders encouraging and motivational feedback. The social implications are that virtual team leaders should apply guidance based on understanding and empathy.

Emergent Leadership in Virtual Teams

Charlier et al. (2016) broadly described emergent leadership as a process in which one or more persons have used an influence process in the pursuit of the group's or organization's objectives without having the formal authority or role of a leader. Charlier et al. also reported that the person that emerged as a leader did not have an established presence at the formation of the team. Han, Chae, Macko, Park, and Beyerlein (2017) reported findings that a relationship exists between communication abilities and emergent leadership. The characteristics of emergent leaders included high degrees of verbal and text-based communications ability. Al-Ani, Horspool, and Bligh (2011) described leadership emergence in terms of degrees of leadership distribution to teams based on needs. Leadership distribution is either assigned, shared, or emerges. Leadership success in engagement also depends on the type and degree of communication. Leaders also are aware that their effectiveness will depend on building team trust as a key part in team performance and success.

Misiolek and Heckman (2005) noted that emergent leaders would initiate and receive significantly more communications messages than non-leaders. Yoo and Alavi (2004) also reported similar findings in which emergent leaders sent significantly longer

email messages than messages by other non-leaders. Yoo and Alavi found that

technology-oriented messages by team members were significantly shorter. Moreover,

these emergent leaders had high levels of leader identification consensus within their

teams. The research findings from Charlier et al. (2016) indicated co-located members of

a virtual team also would rate each other higher in leadership emergence. Based on this

assumption, these researchers hypothesized that lower ratings of leadership emergence

would occur for highly dispersed members. Contrary to expectations, there was no

support for this hypothesis in the research findings. In fact, the results supported that

highly dispersed teams had higher incidences of members that would emerge to lead the

team. Ziek and Smulowitz (2014) reported findings in which high performing teams

exchanged more messages.

In their research study on the subject of empowering leadership in geographically

dispersed teams, Hill and Bartol (2016) found a positive and significant relationship

between virtual team–situational judgement (VT-SJ) and team member virtual

collaboration when empowerment of team leadership was high. The evidence supports

positive outcomes from empowering virtual team leaders in highly dispersed teams where

the situation requires decisive action. The study by Fausing, Jepp Jeppesen, Jonsson,

Lewandowski, and Bligh (2013) regarding a manufacturing company yielded mixed

results. Teams of task-oriented manufacturing workers with more autonomy did not have

higher team performance. On the other hand, the teams of knowledge workers with more

autonomy did have higher team performance. These differences in performance appear to

relate to the degree of employee empowerment. The most effective leadership occurs when using the right leadership style for the right situation (Fausing et al., 2013).

Two areas of behaviors include a social element where it is critical that team members get to know each other and build a trusting relationship and the other element is task competency (Fausing et al., 2013). A leader with a high task competency, as observed by followers, will earn their respect. This holds true as employees take responsibility of handling their own assignments. At the same time, they will expect both peers and leaders to manage their own tasks. In fact, leaders that empower subordinates to perform independently also expect the person to know the task, use tools skillfully, and competently finish their work. Alternatively, there are options to place new employees in a test environment where failures are an opportunity to learn without consequences. In project teams, it is common to try to match an experienced employee with new members ready to gain experience. This builds competent members and replacements for future teams (Fung, 2015).

The findings of the research revealed an insignificant relationship between shared leadership and team performance. Group maintenance behaviors of leaders involve maintaining morale, motivation, and communication. Fausing et al. (2013) reported a negative relationship between shared leadership and manufacturing team performance. In essence, group maintenance leadership is not effective in an environment that is highly focused on tasks rather than and sharing knowledge. For knowledge workers, shared leadership behaviors do have a positive effect.

Fausing, Joensson, Lewandowski, and Bligh (2015) described a shift in the focus of leadership from a top-down perspective from a single person to how leadership develops within a team and among team members. They reported that shared leadership represents group influences in a collective leadership with shared activity emerging among team members. In active distribution of leadership responsibilities and tasks, the influence processes are horizontal and mutual rather than vertical and unidirectional. This favorably compares with the research by Misiolek and Heckman (2005), who reported task leadership behaviors are for organizing, coordinating, and performing tasks as the primary work of the team. These researchers held the belief that prior to the development of shared leadership there is likely an empowering team leader and interdependence within the team (Han et al., 2018). Such a leader is quite important for providing encouragement and empowering team members to lead themselves and each other and to facilitate rotation of leadership in the team. Shared leadership operates as a simultaneous mutual influence process in the team with emergence of both official and unofficial leaders. Organizations will authorize some members to function in a leading role to help facilitate the influence over other individuals (Hoegl & Muethel, 2016). These researchers believed that team processes of sharing tasks and exerting mutual influences resulted in higher team output and performance.

Cogliser et al. (2012) described two types of leadership functions: (a) development, shaping team processes along with management, and (b) monitoring of team performance. These two leadership behaviors include managing social processes on the one hand and task completion on the other hand. Social processes relate to a

member's personality and their conscientiousness, agreeableness, and emotional stability. Task work related personal attributes are cognitive abilities, professional knowledge and skills that relate to performance.

Ferebee and Davis (2012) stated that the model of leadership for global virtual organizations is emergent leadership. Common leadership practices call for a leader to come from a group by distinguishing themselves. The advantage of this practice is that the person's action and influence can earn the respect of peers. Another skill for a leader within a group who leads by example is having the ability to influence others. Ferebee and Davis (2012) emphasized these characteristics to define an emergent leader as someone who influences the group's activities without having an assigned authority role. Successful leadership of virtual teams requires a range of complex behaviors to motivate team members, coordinate and monitor tasks, and encourage team cohesion. The result is higher performance in very challenging and complex environments. The theory that suits the working environment of virtual teams is the behavioral complexity theory (Ferebee & Davis, 2012).

Organizations that compete internationally have been utilizing virtual teams for productivity improvements, gaining knowledge, and transferring their best practices and procedures to geographically dispersed members (Pinjani & Palvia, 2013). Intel Corporation is a multinational technology company with wide-ranging products with product development teams and operations scattered around the globe. These teams rely heavily on computer-mediated communications (CMC) and rarely have face-to-face interactions (Lockwood, 2015). The teams use communications technology for task work

and teamwork. Task work is the individual team member's efforts towards the achievement of an assignment incorporated into team goals; while teamwork has a focus on shared behaviors members exhibit, the feelings and beliefs each person has, and what the team members must know to complete tasks. Tasks and teamwork combined are important to successful team performance (Lockwood, 2015).

Importance of Trust in Virtual Teams

Trust is the willingness a person has to place him or herself in a vulnerable position with the expectation another teammate's actions will not cause them harm (Crisp & Jarvenpaa, 2013). Trust is critical factor for team cohesion (Crisp & Jarvenpaa, 2013). High levels of trust positively impact team cohesiveness and performance. Cohesion is a shared bond that helps team members stay and want to work together. Individuals who feel no sense of cohesion to the team may likely lose their motivation and withdraw participation with the team (Salas et al., 2014). When virtual team size increases, more problems arise in communication and with team cohesion due to additional variables that the team must manage (Lu, 2015; Watanuki & Morales, 2016).

Lilian (2014) suggested that stiff competition and downsizing by organizations and the need to press decision-making authority to lower levels provided incentives to utilize virtual teams. Lilian also predicted that as virtual teams lacked face-to-face contact, the likely result would be a loss of trust and team cohesion. Paul, Drake, and Liang (2016) described the issue of virtual team trust as being very fragile and temporal. The granting of "swift" trust is necessary in order to commence a collaborative working relationship in the team and is temporary until co-workers demonstrate a capability over

time of being trusted (Jimenez et al., 2017; Marlow, Lacerenza, & Salas, 2017). Teams spread over great distances that have no prior history of working together require time to communicate and work interactively before they develop complete trust in each other.

In contrast to this research, Lowry, Zhang, Zhou, and Fu (2010) investigated trust development in culturally heterogeneous and homogeneous global virtual teams and found no trust development issues for both face-to-face and virtual teams. However, these researchers used student participants from China and the United states. In China, which is a collectivist society, individuals typically do not promote their own self-interests. It is common practice in Asian societies to give full support to the group once the majority of people have decided and have listened to all opinions voiced and the time has come to do was is for the greater good based on the majority decision. On the other hand, student participants in the United States act as individuals who will express their opinion and may compete to have the group follow their lead.

Virtual team members collaborate over distances by using computer-mediated communications to implement project work. Projects are a principal method employed by organizations to leverage higher efficiencies, cost savings, and performance leading to profitability (Fuller, Vician, & Brown, 2016). The quick assembly of virtual workers requires team members to swiftly trust and rely on each other. The placement of employees from different geographical origins leads to organizational expectations for team members to trust their co-workers even if they have not met face to face. This amounts to accepting a level of personal vulnerability to work with counterparts across great distances.

How members think, feel, and share information is a critical part of team cohesion as are trust, culture, language skills, and diversity (Wickramasinghe & Nandula, 2015). It is critical for team members to share knowledge, coordinate actions, and have trust in each other (Salas et al., 2014). Intel Corporation reported on using an internal virtual workforce of 1,200 employees with 70% of them collaborating with people in different time zones without meeting each other face-to-face (Fang, Kwok, & Schroeder, 2014).

The measured value of virtual teams in organizations is in the effectiveness of accomplishing their collaborative tasks. The nature of virtual teamwork is to communicate largely through electronic communication that lacks face-to-face discussions that builds trust, cohesive bonds, information sharing, and openness. Normally, it takes time to build trusting relationships. When they trust each other, team members will openly share and receive information (De Jong, Dirks, & Gillespie, 2016). The team's cohesion is the extent of cooperation in the members in behaviors to work together accomplishing tasks. The definition of the degree of team cohesion is in the overall tendency for the team to remain united together to pursue objectives.

Lu (2015) reported findings that confirmed trust and cohesion are two critical psychological and social factors with definite links to team member's satisfaction with their job and performance of the team. A high degree of cohesion means the group has a strong focus and commitment to reach a common goal. Daspit, Justice-Tillman, Boyd, and Mckee (2013) reported evidence that team members offering mutual support are likely to cooperate and share responsibility for reaching team goals. The social and tasks aspects cover motivation, team cohesion, trust, culture, language, communication, and

collaboration (Kramer, Shuffler, & Feitosa, 2017). Such aspects of socialization efforts are crucial to completing tasks.

In their case study, Crisp and Jarvenpaa (2013) used a survey instrument to collect open-ended data. One researcher interviewed all respondents with open-ended and closed questioning techniques. The strength of this study was to have interview questions to gain insights as to how virtual team members viewed the working conditions. One interviewed participant in the study mentioned feeling better when they had an opportunity to be co-located with a leader or with another team member because of informal hallway conversations and other face-to-face interactions. Adding to the strength of this study was that the participants came from an internationally, well-known Fortune 500 leading computer technology company.

Altschuller and Benbunan-Fich (2013) reported on the degree of difficulty that exists to build and foster trust between virtual team members in different geographical locations that largely communicate through technology. Altschuller and Benbunan-Fich examined the concept of presence when individuals in a virtual team use technology to communicate. The concept of presence in this study had to do with the usage of images such as graphical avatars, pictures, or objects to represent the virtual team members in communication in a work group. Conceptually, the idea was that the more life-like the image chosen appeared to be to a recipient, the higher the level of trust given to the person. The results of the study verified that the more "true to life" the image was in mutual electronic communication the more trusting the participants felt during their electronic communications. The weakness of the study was the use of self-reported

survey responses in a quantitative research method leading to potential low reliability.

Trust and cohesion are quicker to develop in a face-to-face personal interaction rather

than to work collaboratively over distances. Although there is a belief that Information

and Communications Technology (ICT) reduced the distance that separates individuals

and provided the convenience of sharing information over great distances, there is a new

problem posed by the lack of interpersonal relationships (Kauffmann & Carmi, 2014).

Effects of Distance on Virtual Teams

Espinosa, Nan, and Carmel (2015) described three critical dimensions of

geographic dispersion as spatial, temporal, or configurational. There is extensive research

on spatial dispersion as it relates to the distances between virtual team members as

measured from feet to miles. Spatial distances have strong negative effects on

spontaneous communications due to a lack of direct face-to-face discussions. Temporal

dispersion is associated with time zone differences and relates to virtual teamwork hours

in which widely dispersed teams may have workers that have to extend the workday to

coordinate tasks that require direct synchronous communication. Configurational

dispersion has to do with where team members are located and not the average distance

between them. Additionally, these researchers examined the impact between temporal

distance and team performance. They hypothesized that there is a positive relationship

between temporal distance and task completion speed and a negative relationship with

task product quality. They also assumed when controlling for temporal distance that

frequent communication has a positive effect on conveyance communication but turn

taking has an opposite negative effect on conveyance communication. In this quantitative

study, the findings did support that where there are more time zones between the teams they finish tasks quickly. At the same time, the quality of tasks was below par. The indications are that team members are conscientious about completing tasks but may not have communicated information or coordination that improves the quality of the work. Overall, the results indicate that temporal distance does not affect the performance as much as other variables. The indications are that higher levels of team interaction are important to higher quality performance outputs. The analysis showed significant associations between temporal distance and task completion speed and quality, however, the associations are less pronounced when measuring forms of communication (frequency and turn-taking) and when exchange of information behaviors are considered.

Prasad, DeRosa, and Beyerlein (2017) researched the impact of high isolation of team members and their performance in relation to doing group tasks. Configuration dispersion relates to when small numbers of team members are isolated and lack motivation to involve in group work. Their finding supported sites, balance, and isolation for a virtual team was associated with low performance. The findings did not support how increments in spatial and temporal dispersion for a virtual team associate with low performance. They believed teams would have frustrations with coordinating information and communicating across time zones. Using high quality communications, the virtual team did not have many frustrations related to the coordination of activities.

Al-Ani et al. (2011) reported multinational companies that have ongoing projects in different time zones and distances have challenges to the logistics of scheduling and coordinating tasks. A major challenge for the two distant locations is to use and follow

international standards for their technology projects (Klitmøller & Lauring, 2013). Team

members need high self-esteem and become fearless enough to admit mistakes, correct

them, and move on. Managing teams in different time zones is a challenge for

communications as it may be morning in one location and time to go home from work in

a location in another country. Alternatively, it might be a workday in one location and the

weekend at the other location (Barnwell et al., 2014). Virtual team members separated by

great distances and time zones have to work together to collaborate and cooperate to

accomplish schedules and tasks. In one location, team members may be going in to work

while in the other location the team members may be finishing their workday and are

ready to go home. In these situations, the team leader may need to use influence to have

the teams modify schedules by mutual arrangement and share temporary schedules that

accommodates tasks for the benefit of the project. When considering international

projects, the size of the team, location, and level of dispersion over distance, then the

cultural differences can become one of the most dominant of issues for virtual project

teams (Barnwell et al., 2014).

The distance between teams is more than a physical space but also a

psychological perception experienced and understood in different ways by the project

team. Psychic distance that "feels" close by two individuals working together does not

appear to have a significant impact on collaboration or cooperation (Siebdrat, Hoegl, &

Ernst, 2013). Klitmøller and Lauring (2016) reported that psychical distance has two

central elements that include a physical and psychological separation of individuals. For

the psychological factors, there is a mental processing of cultural, linguistic, and societal

differences. Nevertheless, high psychic distance and loss of communications do have

negative impacts on expectations that in turn impacts trust, satisfaction, and cooperation.

Leadership of virtual teams requires individuals that have knowledge of a variety of

behaviors that influence team members to be socially accepting, trustworthy,

collaborative, and share knowledge.

It is important that leaders maintain a trusting relationship whether teams are

working together in person or by coordinating tasks using computer-mediated

communications at a distance. Magnusson, Schuster, and Taras (2014) acknowledged that

psychic distance is predominantly a negative factor that impacts international business

organizations. In their recent research, they demonstrated that sometimes psychological

distance can have positive outcomes. The results of their study showed that highly

motivated managers directing highly motivated professional cross-functional team

members would increase efforts to ensure successful outcomes. The teams that have

relevant skills and have the capability to demonstrate cultural intelligence rise to the

occasion and succeed (Quisenberry, 2018).

Another critical issue with time zones and distance is how to generate innovative

ideas. Working mostly with technology leaves employees feeling isolated whereas in a

face-to-face brainstorm activity there is instant feedback, approval, and less chance to

have ideas misunderstood (Bosch-Sijtsema & Haapamäki, 2014). The non-verbal

feedback in the in-person meetings is not available in on-line communication. There is no

easy way to meet and share ideas. Although it may be inconvenient, leaders have to

discuss issues with teams separated by distances which requires a scheduled meeting

(Trautrims, Defee, & Farris, 2016). Time zone differences in which it is difficult to communicate freely does affect motivation in a negative way.

Organizations that have virtual teams in varying geographical locations have issues with temporal distance on how to manage a work schedule when there are time zone separations. At issue is how to schedule and accomplish tasks in collaboration between two or more virtual teams. On the other hand, there is a distinct advantage to have one team complete an 8-hour shift and hand-off to another project team and so on in continuous work shifts, which is often possible in technology projects. As one team completes their work on a database server, another team can come in and continue the project work on the same system. These efforts have the potential to reduce project times and potentially save the organization additional costs.

Cultural Impact on Virtual Teams

According to Klitmøller and Lauring (2013), recent research studies had neglected cultural and linguistic areas of virtual team collaboration. This is critical to understanding and improving team cohesion and knowledge-sharing processes in virtual team environments where team member's work and performance could improve through leadership. In virtual teams, the conflicts tend to be more severe, longer lasting, and difficult to resolve (Scott, 2013). Culture significantly affects the virtual team leader. Culture exists nationally and individually and in virtual teams. The culture of the company ranks higher than the virtual team member's national culture as the organization provides income covering the team member's family (Pinar et al., 2014).

Virtual team members from different cultural backgrounds bring different cultural assumptions for how to approach relationships, leadership, and decision-making all of which leads to interpersonal conflicts (Kirkman, Shapiro, Lu, & McGurrin, 2016). Language variations and use can factor in equality, comfort with expressing ideas, and level of trust. Moreover, multicultural teams can end up with one dominant culture leading to unequal power status that disrupts cohesion and full participation of team members (Zakaria, 2016).

If leaders do not take precautionary actions to encourage and motivate the team, there is an adverse impact on the knowledge sharing that is vital to team performance. In a virtual environment, the diversity of culture can lead to different levels of willingness to share knowledge. Verburg, Bosch-Sijtsema, and Vartiainen (2013) described the concept of discontinuity that is a gap or incoherency in work, task context, and team relations with others (or organization). Leaders must be aware of discontinuities that have negative effects on team tasks to ensure performance is optimal.

Liao (2017) reported that cultural dispersion or social distance in global virtual teams is common. Cultural dispersion adds to problems in virtual team communications. The cultural difference between virtual team members leads to reductions in the frequency of team communications. The result is poor coordination of effort in development projects (Yang, Kherbachi, Hong, & Shan, 2015). Nguyen-Duc, Cruzes, and Conradi (2015) confirmed the negative effects of cultural dispersion in global software development activities and suggested solutions to reduce or prevent barriers including

having face-to-face site visits, using real-time communications technologies, and promote the sharing of knowledge between virtual team members.

Klitmøller and Lauring (2013) studied virtual project teams from Denmark and India and found challenging problems with cultural diversity and language. All technology-based communications fall into a category of being lean media due to the absence of face-to-face and person-to-person interaction. Rich media communications on the other hand is more robust when people are face-to-face and are able to pick up non-verbal cues such as vocal inflections, facial responses, and body shifts (Ruppel, Gong, & Tworoger, 2013). Lean media from the use of telephones, computer email, and instant messages do not have the same robust information between individuals. These researchers argue the point that rich media communication such as from video conferencing technologies is best when sharing knowledge of a highly complex nature.

In the study by Klitmøller and Lauring (2013) and communications between virtual teams in Denmark and India, these researchers noted cultural and language differences that led to issues that extended project deadlines resulting in a loss of incentive pay for the teams. An examination of NVivo coded responses from each team resulted in findings that individuals from each team from each country had trouble understanding each other and in coordinating tasks. Using computer mediated communications worked well in terms that created and maintained work schedules. Unfortunately, this method of communication was not capable of relaying specific procedures necessary to operate complex machinery. The solution required remote team members to have direct visual access in order to see and understand the proper operation

of the equipment. The means to coordinate activities through smooth communications

often depends on the selection of the right tools by the virtual team (Weimann, Pollock,

Scott, & Brown, 2013).

Tools and Technologies of Virtual Teams

Virtual teams depend on using the correct computer mediated communications

tools, which has effects on the roles of the team. Weimann et al. (2013) classified four

dimensions of collaborative work technologies as (a) same time/same place (as

networked computers in a laboratory), (b) same time/different place (as chat, Skype,

conference phone, phone), (c) different time/same place (Bulletin boards); and (d)

different time/different place (as email or text messages). In terms of tools and

technology comparisons, two factors are critical, how frequently the communications

occur and whether the communication needs to be face-to-face. Frequent communication

benefits team identity, reduces conflicts due to distance, and builds trust. Newly formed

teams have more success when members initially meet face-to-face, which builds

friendships and team identity, and enhances individual and group performance.

Tools and technology are core elements that help virtual team's effectiveness as

measured by three criteria. Firstly, clients have more satisfaction with the quality,

quantity, and timeliness of the project based on the use of state of the art technologies in

the project. Secondly, the established social processes used to work interdependently

have enhanced member's capabilities to work together in the future. Lastly, the team's

contributions to the well-being of members learning new things added to their enjoyment

and satisfaction. Kayworth and Leidner (2002) determined that effective leaders that

regularly communicate, answer member questions, give feedback and directions, and approached team members in a cordial but assertive voice led to higher team performance. Sivunen and Valo (2006) researched virtual team's use of technology with emphasis on the choices available and utilized. The technology used included email, instant messaging, telephone, mobile phone, call-conference, video conference, and face-to-face. The findings supported four factors in choosing communications technology; accessibility, social distance, idea sharing, and informing. As virtual team members may be mobile, to reach them it may require a mobile communications device. Social distance is a factor influencing technology choice when a leader desires more or less social distance with a team member. They may choose using email as it provides time to send or read then follow with response. In instances of establishing weekly meetings or for project planning, the media selected is video or telephone conferencing. Usually there is a priority to have face-to-face meetings when the subject is high priority. This is best when there is a need for a social presence that is not easily duplicated using technology. Using technology to inform team members is a case for email for the simplicity of use and ability to save archives for historical reference. Weimann et al. (2013) provided support for these four factors of technology choice.

Wright (2015) detailed the role of technology in virtual teamwork with emphasis on overcoming the issues of time and distance through a combination of collaboration and communication. The highest form of social presence in working with others is to be face-to-face. Audio and video teleconferencing will have more social presence than an e-mail or voice mail. There is information richness in video conferencing due to the ability

to exchange facial expressions, body language, and the surroundings. One valued aspect of using technology tools is to be able to maintain historical records of decisions and actions saved as email threads. Audio conferences, unless recorded, or has a person taking notes, may not provide for a historical record.

Sivunen and Valo (2006) described eight communications methods available to virtual teams. Emails have a social distance in which they are easy to send short notes while also providing the sender and receiver with some time to think and respond. They also provide a historical record, give all team members information at the same time, or can forward to another if needed, and can easily give exact instructions to team members. Instant messaging makes it possible to quickly ask about minor problems, or, get an immediate reply to any question asked. Use of telephones can help to manage urgent tasks and can convey information quicker than typing. It also can clarify unclear instructions. Mobile phones are good for text messages of information from meetings. They are ideal to send text messages to individuals that are out of the office, Call-conferences are less expensive than video conferencing or travelling. They provide a means to work online in different countries and are useful for common planning and making decisions. Video conferencing is an excellent method to deal with numerous issues or problems needing a discussion.

Virtual Team Theoretical Backgrounds

Hooijberg et al. (1997) broadly classified leadership theories into three groups that are widely accepted that include traits, contingencies, and behavioral theories. Trait theories hold beliefs that align with the "born leader" thought. The general argument is

that effective leaders have some innate natural quality or characteristic to lead others. Kirkpatrick and Locke (1991) described the trait theory of leadership from early leadership studies in the 19th and 20th centuries asserting that inheritable leadership qualities came from probable well to do families in the upper class of society. The concept fits the idea that great men were born rather than made. These individuals have immense "drive" which is a characteristic trait of expending great effort towards achievement. These persons were highly ambitious, driven to get ahead and possess a great deal of energy to a point of being tenacious. They also are proactive in making choices and acting to lead change.

A drawback with the proactive and initiative to get things done is the potential for a manger to accomplish things alone which fails to develop a subordinate into being committed and responsible for the same goals. Leaders must do more than set an example, they also need to guide and develop others so they can accept leadership roles in the future. The insights from these researchers include the acceptance that leadership traits are only a precondition for leadership. The six core characteristics of effective leaders are drive, motivation, honesty and integrity, self-confidence, cognitive ability, and knowledge of the business (expertise). These are the essential key traits for those aspiring to become leaders (Shek, Chung, & Leung, 2015; Yukl, 1989) reported that leadership properties included individual traits, leader behavior patterns of interaction, role relationships, follower perceptions, influence over followers, influence over task goals, and influence on an organizations culture.

Zaccaro (2007) expressed critical opinions on trait theories on leadership with the inability to make clear distinctions between the traits of leadership and those of the followers. Many highly driven ambitious, energetic, and tenacious workers may not have desires to lead others. Additionally, trait theories of leadership do not appear to account for those leadership behaviors that vary depending on the situation. On occasion, there are recent studies that link personality attributes and traits to leadership effectiveness. Bird (1940) described leader traits in terms of accuracy in work, knowledge of human nature, and moral habits. Stogdill (1948) cited leadership traits of decisiveness in judgment, speech fluency, interpersonal skills, and administrative abilities that are qualities desirable in leadership. A point by Zaccaro (2007) that is of interest is that the focal point for understanding leadership is not just the multiple personal attributes of a leader but also how they work together to positively influence performance. Currently researchers are dismissive of trait theories of leadership as they are not applicable in explaining the behavioral effects in various situations. Yukl (1989) was critical of trait theories, which lack a means to measure or influence leadership behaviors directly. In addition, Yoo and Alavi (2004, p. 32) argued that trait theories have failed to identify specific sets of personal traits that consistently differentiate between effective leaders and those that are non-leaders.

Gaddis and Foster (2015) reported that 50% of managers will fail and that half of that number will end up fired. The commonly found characteristics of poor management include difficulties in building teams, delegating to subordinates, dealing with complex issues, and maintaining relationships. The defective personality traits discussed are

arrogance, volatility, and distrust. The findings as reported by subject matter experts indicated that the most important leadership characteristic for effective leadership is interpersonal skills.

Contingency Theory of Leadership

Contingency leadership theories include assumptions that one best style of leadership does not exist and that effective leadership depends on the fit between the actions leaders perform and what the situation requires at that time (Jawadi et al., 2013). The contingency theory had extensive work and study from the 1960's to the 1980's and has declined since. The decline in interest may be due to instances in which the actions of a leader are effective while at other times there is no noticeable impact. There have been efforts to expand on contingency theory models in efforts to predict leader effectiveness from a behavioral complexity theory perspective (Dinh et al., 2014; Van de Ven, Ganco, & Hinings, 2013).

Behavioral Complexity Theory of Leadership

The behavioral complexity theory satisfies three issues found in behavioral approaches to leadership. Firstly, it accounts for an appropriate leader role for every contingency. Secondly, there is an assumption that every follower is a subordinate. Thirdly, there is a need to have leaders in organizational settings to meet stakeholder expectations outside of the followers. The two critical parts to behavioral complexity include behavioral repertoires and behavioral differentiation. The repertoires are a range of behaviors a leader has acquired through training or experience that he or she utilizes for specific instances.

Organizational leadership development is a principle concern of companies of all types with focus on training potential leaders for current and future roles to manage individuals (Day et al., 2014). Leadership is about the processes of influencing others to the point they understand and commit to actions to carry out tasks. The endpoint is to facilitate persons towards a collective effort in accomplishing shared tasks (Yukl, 2009).

The behavioral theorist's view of leadership traditionally focused on actual leadership behaviors that are observable and useful for comparing leadership effectiveness. Research studies of the first half of the twentieth century had focused on the traits of leaders; however, results of these studies were inconsistent at best which was attributed to the numerous traits being studied and the difficulty to make comparisons across studies. The five personality traits of leaders include neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience which have relationships to both to leadership and leadership emergence at moderate levels (Aarons, Ehrhart, Farahnak, Sklar, & Horowitz, 2015). Cogliser et al. (2012) conducted research on five major leadership personality traits that include emotional stability, extraversion, agreeableness, consciousness, and openness to experience. The belief is that persons with emotional stability have higher levels of self-esteem and positive self-efficacy indicating good work habits and resilience to issues. This is a common trait found in successful leaders. Individuals with extraversion are outgoing, talkative, active, upbeat, and enjoy excitement and socializing. Extraversion is a personality trait favoring face-to-face co-located teams that enjoy working with people directly. Highly agreeable individuals are

cooperative, compassionate, trusting, and trustworthy. Being easy to get along with is a trait linked to transformational leadership.

The main instrument used by Cogliser et al. (2012) was the Virtual Team Competency Inventory (Topchyan & Zhang, 2014). The instrument measured team work-related and task work-related virtual team member attributes. This model is useful for combining attributes such as cognitive abilities, professional knowledge, skills, and tele-cooperation (cooperation in a virtual environment) that are useful in predicting potential and actual team performance. Person's with conscientiousness are cautious, hardworking, self-disciplined, and with a good sense of direction. These individuals are active supporters of a social and psychological climate of an effective team. Individuals with this personality trait are likely to emerge as leaders if the need arises as they can set direction and goals for the team.

An individual that has openness to experience is curious, imaginative and creative. Being innovative is a characteristic of transformational leadership but not associated with organizational outcomes. On a positive note in virtual teams with communications problems, this trait may be useful for creative thinking towards problem solving. In the research method, these researchers divided 328 undergraduate business students into 71 virtual teams with 3 – 5 members over a 12-week project. A Likert scale was useful in measuring the five personality traits. Areas of the findings indicated task-oriented or social-oriented support in team members. Team trustworthiness measurements went into an eight-point Likert Scale.

Class rank, computer self-efficacy, and work experience had positive impact relating to member contribution to performance. Academic self-efficacy had a negative impact. Agreeableness as a social effect positively relates to the social-oriented aspects of leader emergence as determined in the study. Findings for emotional stability did not relate significantly to social-oriented areas of leader emergence. Conscientiousness had significant and positive relationships to task-oriented leader emergence. Emotional stability did not relate to task-oriented leader emergence. Both work experience and computer self-efficacy were found to contribute to task-oriented leader emergence (Cogliser et al., 2012). Of the key factors in the study, task-oriented emergent leadership was determined as significant and positively associated to team performance. On the other hand, social-oriented emergent leadership did not relate to team performance but was significant and positively related to team trustworthiness. Moreover, task-oriented emergent leadership had no relationship to team trustworthiness.

There were positive and negative results from the study. In virtual teams that mostly do not have social contacts their personality trait of agreeableness is not a factor that will increase team performance. The same is true with emotional stability. However, conscientiousness in emergent leadership and team members does help team performance. In addition, emotional stability in virtual team members was not supportive in social or task-oriented emergent leadership that is a major part of the work environment of virtual teams as they communicate through technology. In a virtual team environment, it is clear that teammates will value task-oriented interrelationships to get things accomplished rather than to socialize on an individual basis. Overall, if all

members of the team communicate well, and earn measures of mutual trust, then group social-oriented aspects can be a positive for team performance.

The findings of this study indicate that social-oriented virtual team leader behavior may influence and convince virtual members their teammates are trustworthy. Of all the trait theory characteristics, only the predicted aggregate task-related emergent leadership that significantly influenced team performance in a positive way. In contrast, contingency leadership theorists assume that one best leadership style does not exist. The belief is that effective leadership depends on the fit between the things leaders do and what the situation requires at the time (Alessandri, Borgogni, Schaufeli, Caprara, & Consiglio, 2014; Kayworth & Leidner, 2002). In effect, there are some instances that what a leader does appear to work. However, at other times the same leadership behavior or action appears to have no effect. More recently, the unpredictability of effectiveness in leadership trait theories has led to dismissal in explaining leadership effectiveness in all situations (Muethel & Hoegl, 2013).

The behavioral complexity theory as presented by Hooijberg et al. (1997) satisfies three issues found in behavioral approaches to leadership. Firstly, it accounts for the explanation for specific and appropriate leader roles for every contingency. Secondly, there is an assumption every follower is a subordinate to a leader. Thirdly, there is a need to have leaders in organizational settings in order to meet stakeholder expectations outside of subordinates. The two critical parts to behavioral complexity include behavioral repertoires and behavioral differentiation. Stahl and de Luque (2014) reported that stakeholder's expectations of leader's behaviors are key motivations that influence

leadership to use a variety of behaviors in their repertoire to ensure effective performance from followers. Zhang, Waldman, Han, and Li (2014) reported that leaders that are capable of using various leadership roles had higher team performance gains than those managers that maintain using fewer types of leadership roles.

Leadership of virtual teams requires having a knowledge and ability to utilize a variety of influencing behaviors for motivation, improve team cohesion, increase trust, and raise the performance of the members. Research results have proven that building high quality interpersonal contacts through encouraging positive social relationships does improve the cohesion of the team in the same way that works in co-located teams that engaged in face-to-face interaction (Pinjani & Palvia, 2013). The behavioral complexity theory promotes that the achievement of effective leadership requires an ability to develop and use a repertoire of multiple and contradictory influential behaviors (Jawadi et al., 2013).

Methodology

Parry (1998) promoted a case for using grounded theory methods for a leadership research study based on four criteria. The principal reasoning is that leadership is a social process of using influence in the leading of team members. Another reason was the prevalent use and association of quantitative methods with psychology. A third reason was that change was a dominant theme in leadership studies. Change incidents take longer times to investigate and the appropriate research method would be grounded theory. And a fourth reason is that leadership research must have focus on all the variables impacting the social influence process. Grounded theory methods are ideal for

handling the collection, categorization, and constant comparison of relevant information for the study. Again, the process is not one of theory testing, but rather is a process of theory generation.

Parry (1998) also promoted the concept that leadership is about change and the ability to influence others. This includes motivating followers. These aspects relate to psychology that dominated leadership studies. Psychologists concentrated on leadership studies using quantitative methods and survey instruments. This is a practical method for measuring employee task related performance. Parry (1998) realized the potential of doing qualitative analysis from quantitative data. At issue was how to generate theory from quantitative data lacking descriptions. The solution is to use grounded theory methods on qualitative data from interviews of leaders. Parry (1998) viewed grounded theory as a valid form of research for organizations and leadership processes.

Conger (1998) reported that qualitative research studies related to leadership were limited but held belief the same belief as Parry (1998) in that qualitative studies can play an important role in leadership studies. The characteristics of qualitative methods for leadership studies include several levels of phenomena. There is a dynamic in leadership along with a symbolic component. Advantages include a high degree of immersion and there is a full exploration of individual leadership influences and changes in the environment. The researcher criticized quantitative methods for leadership studies due to being insufficient to thoroughly examine leadership characteristics, too much focus on a single level of analysis, and only measure a static point in time that misses details.

Sarker, Lau, and Sahay (2000) presented a way to adapt grounded theory methods for a process model of collaboration in a virtual team research study. The key features are to conduct the data analysis using an adapted open, axial, and selective coding method following Strauss and Corbin (1990). The objectives of the grounded theory procedures are to be true to the coding procedures using some modifications where the steps are too mechanistic or impractical. At the endpoint, they had a meta-theoretical framework from a synthesis of data, a symbolic interactionist perspective, and structuration theory.

Eastwood, Jalaludin, and Kemp (2014) reported on grounded theory research methods for leadership studies based on critical realism. Conceptually, critical realism holds the assumption that phenomena exist separately from the individual. This follows reasoning that leadership is not visible or solid. The logic is that an individual can only feel or observe the effects from a leader.

Eisenhardt, Graebner, and Sonenshein (2016) explained variances in processes and outcomes with emphasis on what is the underlying theoretical logic. A core value in the process is to have a truthful representation of the persons lived experience. This study approach is helpful for examining, identifying, and making sense of phenomena. And the interviewed informants are also given a voice. Inductive approaches have three areas in common. First, they all have a deep immersion in data overtime with all types of rich data from text, interviews, and various media. Second, using an inductive method means there is reliance on theoretical sampling with clarification of relationships and brings a deeper understanding of processes. Third, the data collection and gathering with memoing and real-time processes is a fit for an emerging understanding via analytical steps. Fusco et al

(2015) reported that in research where processes are not understood, along with the underlying causal relationships, then the research method should be grounded theory that is systematic, iterative, and capable of providing insights. As grounded theory is an objective, systematic, and rigorous examination of data through interviews, constant comparison of data, and coding of categories. These procedures allow for an emergent theory. The conclusion is to select and use a grounded theory approach.

Suddaby (2006) reported on the misconception that a researcher must begin a grounded theory research study without any prior knowledge of the topic of the study. The false belief is that prior knowledge of a topic for research would enter bias into the mind of the researcher that could wrongly affect how the study proceeds. A larger concern with not having prior knowledge of a topic is that without a baseline of understanding on a subject the researcher is likely to collect a mix of relevant data with lots of extraneous information. An overload of such data can lead to creating hypotheses and not properly use qualitative rigor in the research study.

In summary, prior research provides a logical and sound basis for the utilization of grounded theory methods for leadership studies and specifically the study of leadership in virtual teams. Allan (2003) provides a detailed process and information for taking text from interviews and other collected data and code the information for constant comparison and category building. And the researcher provided detailed linking categories for the development of an emerging theory. The information provides a way to better understand and conduct a grounded theory research project. Following the procedures presented provides the necessary steps for research success.

Summary and Conclusions

The major themes in the virtual team literature covered in this chapter include a description of virtual teams, cultures, time zones, distance, trust, leadership, theories, and methodology. These factors remain to be studied from an in-depth grounded theory research study an effort to understand the perceptions, attributes, and reasons why virtual team members in nonhierarchical organizations choose to emerge and what, how, if and why they do that positively impacts the team's performance.

Historically, studies in virtual team leadership focus on behaviors of s leader from a belief they have greater impact on team performance. For simplicity, a disproportionate number of these quantitative studies utilized students and short-term survey instruments with self-reported data of students that do not directly have job experience in project terms other than course assignments.

To fill the gap in information, the proposed study is to use a grounded theory approach that will use in-depth interviews of working professionals in a global environment. The eight elements of behavioral complexity theory will be part of the focus for the examination of emergent leadership of virtual teams that reflect a variety of leadership behavioral domains.

Chapter 3: Research Method

The purpose of this qualitative, grounded theory study was to develop a grounded theory of how leaders emerge in nonhierarchical virtual teams. Interviews with members of nonhierarchical teams whose leaders have emerged and led them to successful project completion, and interviews with their leaders, provided data for analysis of the factors involved in virtual team leadership emergence and for the development of a theory of emergent leadership in nonhierarchical virtual teams and its impact on team members and project success. The chapter begins with the research questions that guided the study followed by a discussion of my role as the researcher and a presentation of the central concepts and rationale for selecting a qualitative grounded theory approach.

Research Design and Rationale

The overarching research question was the following: How do leaders emerge in nonhierarchical virtual teams? The conceptual framework for the study was the behavioral complexity theory of leadership in which effective leaders use a range of complex behaviors to improve team performance. Constant comparison of data from semi structured interviews with a purposeful sample of 15 virtual team members enabled the building of a grounded theory of emergent leadership in nonhierarchical virtual teams. Grounded theory enables researchers to examine leadership behaviors from many angles for development into comprehensive explanations. Emergent leadership processes are new and needs rigorous investigation. The difference in conducting a grounded theory study is in the data collection and analysis. Analysis began with the initial data that provided concepts of what leaders do. I then proceeded to collect more data for analysis.

Categories formed a core of structures that offered a theoretical explanation. After that I

drafted memos for use in developing categories. Data collection and constant comparison

continued with more analysis. Additional interviews followed open-ended sampling

toward theoretical sampling that was refined from initial open-ended interviews. The goal

was to achieve theoretical saturation. The core of grounded theory is the procedural rigor

and process that informs all aspects of the research effort (Corbin & Strauss, 2015).

Other methods of qualitative research include narrative study methods. In this

methodology, one or two individuals would have told their story, providing an oral

history of becoming an emergent leader with the incidents, perspectives, and social

contexts that reflect their true-to-life experiences. However, narrative analysis would not

have included the perceptions of the individuals impacted by leadership behaviors.

Because leadership in a team environment involves interrelationships in a social setting,

the narrative research method would have presented in-depth information from one side

of the relationship. The missing information would have related to trustworthiness, ability

to coordinate tasks, and facilitation from leaders using encouragement (see Elo et al.,

2014). In addition, data related to the self-expression of employees being led and the

potential increases in worker performance due to leadership influences would have been

lost. Narrative studies are limited to the rich stories and experiences of a single individual

(Charmaz, 2014). A phenomenological study would have been an improvement on a

narrative study, as it would have facilitated the capturing of the common experiences of

several individuals, which was one goal for the study. The benefits would have included

obtaining descriptions of emergent leadership experiences from multiple individuals. A

phenomenological study would have been appropriate if the only objective was to identify the underlying themes from experiences of individuals in a virtual team. In a study involving five to seven group members, it is unlikely that all of the individuals would emerge as leaders of the group (Miles, Huberman, & Saldaña, 2014).

Few studies have addressed leadership emergence in virtual teams with grounded theory methods (Shollen & Brunner, 2016). The grounded theory method has been popular in both social and health sciences (Taylor & Francis, 2013). An ethnographic study involves collection of cultural data about a group or organization. This involves a third person point of view and objective reporting on individuals at a site based on personal observations (Klitmøller, Schneider, & Jonsen, 2015). Because virtual teams are located at different locations and communicate via technology, ethnography was not a feasible approach for this study. A case study method was considered because rich data from multiple sources would have provided great benefit. This method is a frequent choice by psychologists, lawyers, medical institutions, and political scientists due to the in-depth information that it generates (Charmaz, 2014). Case study methodologies are complex and require that individuals conducting research have highly developed skills gained from experience (Marshall, Cardon, Poddar, & Fontenot, 2013). Individuals conducting case study research who maintain their attention to detail and sustained efforts are able to gain in-depth knowledge of the phenomenon of the study.

The grounded theory approach enables researchers to examine leadership behaviors from many angles for development of comprehensive explanations. Emergent leadership processes are new and needs rigorous investigation. The difference in this

approach is the data collection and analysis. Data analysis and categorization begins with the initial data that provide concepts of what leaders do. The researcher continues to collect more data that he or she also analyzes. Categories form a core of structures that offers a theoretical explanation. Data collection and constant comparison continue with more analysis. Additional interviews follow open-ended sampling toward theoretical sampling that the researcher refines from initial open-ended interviews. The goal is to achieve theoretical saturation (Morse, 2015). The core of grounded theory is the procedural rigor and process that informs all aspects of the research effort (Corbin & Strauss, 2015).

Role of the Researcher

My role was to discover what processes lead to leadership emergence in virtual teams and how the processes impact team performance. The research process involved conducting interviews and analyzing the data to create insights into the phenomenon. The purpose of this study was to make sense of what is going on when a member of a virtual team emerges as a leader of the team. I had no direct or prior relationships with any of the participants, and I was not in a position of power with regard to the virtual team members in the study. Throughout the interviews with the participants, my goal was to remain neutral while asking questions to elicit information about participants' perceptions of leadership emergence. I received, recorded, and analyzed the data related to the experiences and perceptions of virtual team member interactions. I also wrote memos and notes during the data collection and coding, and conducted constant comparison that was recorded in the memos or notes. This process enhanced the quality of the research and

improved the quality of the output. Participants from virtual teams shared experiences that related to leadership emergence. Capturing that data and explaining how those experiences were related was critical to the study. Participation was voluntary, and no incentives were provided (see Jantunen & Gause, 2014).

Qualitative studies are beneficial when there are previous experiences as points of reference especially between the investigator and the participants (Merriam & Tisdell, 2016). The investigator maintains neutrality and avoids preconceptions or bias that may lead to wrong assumptions and conclusions (Eisenhardt et al., 2016). Questions posed during the study were clear and did not lead the participants toward a potential misinterpretation. Moreover, a strict professional attitude with high ethical standards was critical to prevent conflict of interests (see Elo et al., 2014).

Strauss and Corbin (1990) emphasized that qualitative research designs should involve the use of processes and procedures that have significance, theory observation, compatibility, generalizability, consistency, reproducibility, precision, and verification. The study results should provide useful information that adds knowledge on the subject. Following the recommendation of Yilmaz (2013), I developed a close relationship with the individuals under study to bring about a connectedness resulting in an increased quality of the findings. The observations and interpretations were compatible with the theory generated. Urquhart and Fernandez (2013) described theory building efforts that include ensuring that emerging ideas fit the data. Data analysis involves joint data collection and constant comparison so that every piece of data enriches an existing category (Eisenhardt, Graebner, & Sonenshein, 2016).

There was consistency in the data and results (see Elo et al., 2014). When researchers apply the same methods, they should come to the same conclusions. The individuals conducting a research project have a responsibility to design research procedures that are clear, consistent, and capable of duplication with consistency in the results (Charmaz, 2014).

Methodology

Participant Selection Logic

The individuals who make up global virtual teams implement decisions to meet the organization's strategy. These persons use communications technology (phones, e-mail, instant messenger, and video tele-conferencing) to plan, schedule, and coordinate tasks, and the use of technology is crucial to carrying out coordinated work tasks and overall team performance (Weimann et al., 2013). Programmers, database experts, systems engineers, and business analysts are some of the common experts recruited for virtual team projects (Charlier et al., 2016).

Qualitative research sampling strategies vary depending on the degree of complexity in the study. The goal is to collect data from participants to a point at which there is no observable new information for placement in categories. Saturation of data occurs when there is no new information provided from the participant interview as revealed from using constant comparison of new and existing data. When data saturation occurs, there is no longer a need to continue the collection and analysis process (Urquhart & Fernandez, 2013).

The strategy for this study was to use theoretical sampling with an inductive approach that starts with a deep immersion over a period of time. This is a rigorous process that requires collecting data (interviewing) from a sufficient number of participants to allow for construction of an emergent theory (Rowlands, Waddell, & McKenna, 2015). The number of participants interviewed (sampling) cannot be predetermined. That number is whatever is necessary to construct an emergent theory (Robinson, 2013). The participants in this study were virtual team members recruited, hired, or assigned to teams that did not have an assigned leader. Team members frequently followed a project plan provided by a project manager. Eventually, one or more team members emerged and received recognition as the leader (see Serban et al., 2015). Often recruiters find subject matter experts who work on temporary assignments in various global locations and coordinate tasks using computer-mediated communications technology (Pangil & Moi Chan, 2014). Potential subject matter experts for virtual teams include programmers, database experts, systems engineers, business analysts, and others knowledgeable of the work involved. Pinjani and Palvia (2013) conducted a study in which the average virtual team size was seven members with an average tenure of 5 months. The individuals excluded from the study were personnel in a support role, which included human resources personnel, middle or upper management, and external contractors not directly involved with the virtual team members. In this study the interviewees also reported that their teams which collaborated and used communications tools to share various tasks were highly productive and projects were always completed on time.

Instrumentation

There were three instruments used to collect data in this study, which included a standardized consent form. The form provided information to participants about the study, my name and e-mail, risks and benefits, and other information about privacy and confidentiality of the study. Consent was indicated by a signature from the participant and date signed. The second document was the participant screening instrument (see Appendix B) used for collecting demographic information about the participant, including gender, age, length of time working in virtual teams, role on the team, size of the organization, and how many members were in the team. The document also included a request for the participant's name and e-mail address for future contact if selected for an interview.

Strauss and Corbin (1990) noted that data collection and analysis are interrelated. For grounded theory interviews, it is essential not to include preconceived questions. The appropriate method is to create an open atmosphere of comfort with the participant. Engaging in a free and open discussion about how and what virtual team members do to solve their main problems was essential. Encouraging and express an acknowledgement with participants that they are more knowledgeable about their job and procedures is a good policy. Because the subject was leadership, my role was to allow participants to freely discuss the subject and to keep memos and notes to record their perspectives on the subject. The data collected are treated as raw data, according to Corbin and Strauss (1990). Theories are not built directly from the initial interview data. Typically, there are refinements of theory based on the latter stages of constant comparisons of the

information. The analysis of raw data leads to potential indicators of emerging

phenomena that receive a concept label. The basic unit of analysis in grounded theory is

concepts.

Although grounded theory follows an assumption that participants can describe

their behavior, the fact likely remains they may not fully conceptualize behaviors or

explain recurrent behavior patterns. The role of the researcher is to complete the task of

building a theory that emerges from the information. The use of a conference call service

was planned for mediating the interviews. Once the participant calls in the interviewer

begins with a request for permission to record the interview. After the participant gives

consent, then the interviewer would input a code, and then the conference call service

begins to record the call automatically. When the call ends the recording stops, the

interviewer can retrieve a digitally recorded file for transcription into text which is then

transferred into a Microsoft Excel spreadsheet (Miller, 2015).

Fusch and Ness (2015) reported that not reaching data saturation has a negative

impact on content validity. They firmly indicated that data saturation is necessary in order

to be able to replicate the study. There is no standardized number of participants to

interview. The critical stopping point for collecting data is when no new information,

themes, or codes have emerged from the collected data (Marshall et al., 2013). The

guideline for grounded theory research is to collect rich high-quality data that is

combined with thick high quantity data (Eisenhardt et al., 2016).

Procedures for Recruitment, Participation, and Data Collection

Participant recruitment will be through web searches, priority mail contacts to multinational United States technology corporations, and telephone contact. (Cummings, Larrivee, & Vega, 2015). These subject matter experts worked in corporate projects that were global in scope. Individuals work largely by using computer-mediated communications to contact team members in a virtual environment from various countries and time zones (Gilson et al., 2015). Virtual team size varies and typically ranges from 3 to 8 members (Hoegl & Muethel, 2016; Klitmøller & Lauring, 2013). These subject matter experts worked on corporate projects that were global in scope. Individuals largely work by using computer-mediated communications to contact team members in a virtual environment from various countries and time zones (Gilson et al., 2015). I will reduce risks to participants by ensuring the confidentiality of the information collected and only data that is relevant to the study.

The risks to the participants was reduced and managed by ensuring the adherence to ethical standards. The participants were protected from potential harm through maintaining their anonymity and confidentiality. Each individual was informed of the risks in advance and were provided informed consent forms for signature before each person was interviewed (Kalu, 2017). Participant forms and documents were numbered and a separate, original signed consent page was kept in a locked steel container and stored in a locked safety deposit box.

Team members need sufficient time to engage in working relationships to feel comfortable and trust each other (De Jong et al., 2016). This is especially true where

members have no prior experience working together (Haines, 2014). Team members use swift trust which in essence is to give immediate trust to co-workers while they verify through observation if their coworker can be trustworthy by their actions (Murthy, Rodriguez, & Lewis, 2013). Teams extend a full measure of trust only when they are comfortable with their peers which can take 3 to 4 weeks depending on how frequently they are in contact (Crisp & Jarvenpaa, 2013). The best options to collect accurate data from virtual team participants is when a trusting relationship has formed. A good estimate is roughly after team members have been together for approximately 4-6 weeks.

I sent to prospective subject matter experts the Walden University version consent form (see Appendix A). The form provided background information about the study, informs participants about risks and benefits of volunteering, and if compensation was offered, data confidentiality measures, the name and email of the researcher, and a statement of consent to participate with a required signature and date. The participants have an option stop or drop out of the study at any time.

The interview, conducted once, lasts between 30 to 60 minutes. The first interviews cover an entire team. Each interviewee supplies answers to semi-structured open-ended questions. They have an opportunity to identify themselves or if others on the team have exhibited leadership traits. The interviewees will have an opportunity to provide answers to more follow-up questions about their perspectives on leadership traits and characteristics related to potential identified emergent leader. Additional questions will be asked about their perceptions of successful leadership traits and how leaders impact team performance. One of the principle goals is to determine if those leadership

characteristics fit or relate to any of the eight behavioral complexity leadership

characteristics.

The collection of data from interviews will occur from access to a conference call

service. There is a monthly fee and variable cost arrangements that cover a two to three-

month duration depending on responses and scheduling. The coordination and scheduling

of interviews is by the use of email exchanges with prospective interviewees.

Interviewees will call a conference line and enter a password code then give their name

and after authentication the interviewer will greet the interviewee and request permission

to record the session. After verbal consent, the interviewer will dial a code which starts

the automatic recording provided as a service by the conferencing organization. Using

this service should make it easier to focus on the interview itself.

When the interviewing is complete, the interviewer can download the audio

recording and transcribe it into useable text into Microsoft Excel spreadsheet software.

Should there be a shortage of participants, a snowball method is the option to use in

which requests to earlier participants would be the method for recruiting additional

participants who meet the participant selection criteria (Charmaz, 2014). For quality

purposes an ongoing memoing method during the study helps provide information to

refer to through recording the thoughts and challenges of the investigator.

Data Analysis Plan

The data analysis plan for this qualitative study involves coding the collected data

from open-ended semi-structured interviews. There are four stages in data analysis:

preparation, constant comparison (coding; building categories), development of emergent

theory, and writing (finalization) (Charmaz, 2014). Preparation involves Institutional

Review Board training and forms submission, recruitment and consent forms to and from

participants, scheduling and recording interviews, data collection and transferred into

Microsoft Excel software. The constant comparison process continues through various

stages of coding methods used in building categories from the interview data. Open

coding methods that initially build categories of concepts to help organize data for easier

comparison and analysis. This method helps to provide data from interviews for building

concept "trees". The strategy for open coding methods is to collect and organize data into

categories until reaching a point of saturation in which no new categories emerge from

collected information. Maintaining supportive notes and memos are during the research

effort that relate to the content of data especially on the relationships or areas that

indicate a phenomenon of interest leads to conclusions that are defensible.

On completion of open coding, the next stage is axial coding, which shifts into a

higher level of concept abstraction. This higher level of abstraction is for creating the

Strauss paradigm model. Partington (2000) described the paradigm model as a

systemized cause-and-effect schema that a researcher uses to illustrate relationships

between categories and subcategories. The illustrated concepts become the building

blocks of a generated theory. This illustration of an emerging theory occurs during axial

and selective coding. The use of this procedure fits with questions that Miles, Huberman,

and Saldana (2014) posed:

Why is there variability in the data?

What specific conditions might have influenced the variability?

In what ways might this variability influence and affect other consequences and outcomes?

The next stage in the development of an emergent theory is to use axial or selective coding. Wolfswinkel, Furtmueller, and Wilderom (2013) reported that axial coding procedures requires a skillset that includes both depth and breadth in the analytical review of information. The axial coding process is then followed up with creative thinking, a generation of new ideas, and finally the development of an emerging theory.

The final stage in the data analysis plan entails the use of theoretical coding or sampling with the aim of generating a variety of angles and vantage points to grasp and understand fully the categories of collected data and their relationship to an emerging theory. This is used to find additional data sources based on remaining gaps in an emerging theory and to explore unsaturated concepts. (Stol, Ralph, & Fitzgerald, 2016; Urquhart & Fernandez, 2013).

The overarching research question(s) is:

How do leaders emerge in nonhierarchical virtual teams?

By asking open-ended semi-structured interview questions the interviewer may elicit relevant information related to the eight behavioral complexity traits of leadership (See the interview questions in Appendix C). For example, there are questions about innovative leader characteristics for those on the team that lead and encourage change, or, showing creativity and vision. This individual demonstrates openness to new ideas, or, shows initiative that gets things done. Another leadership trait for initiating change is the

broker whom not only initiates a needed change but also will focus on acquiring resources that make changes happen. A project team that loses a key member needs someone to replace the team member. There is a possibility that eventually someone on the team will rise up to suggest a replacement from a person they know. Alternatively, the interview questions will probe and investigate leadership traits for actions encouraging and facilitating effective completion of work. This also fits the role of a producer or director who clarifies or emphasizes goals.

Additional questions will lead to investigation of other behavioral complexity traits that include: activity planning and managing conflicts (coordinator), a person that provided information to the team on their performance (monitor), the individual that encourages participation, self-expression, and concern for others (facilitator), and lastly the person that helps others to develop skills or other areas of training (mentor).

In reviews of similar research on virtual teams, there did not appear to be explanations for discrepant cases. This could be a concern if the researcher does not design the interview questions to align with the research questions or the research problem. Testing the interview questions in a pilot study could ensure a higher reliability of responses that align with the research study. As we are working with virtual project teams that may be using English as a second language, published research places an emphasis on interviews where adjustments by the interviewer include using slow but directed clear speech as appropriate for better participant comprehension.

Issues of Trustworthiness

Credibility

Cho and Lee (2014) described enhancing the credibility of grounded theory research by triangulation, which is essentially the use of multiple sources of data, perspectives, and sites. Using a variety of data sources from observation, interviews, and document materials and using participant's thick and rich descriptions and information, enables a researcher to increase the confidence in the reliability of the data and the results of the study. In addition, credible research starts with conducting the investigation in an ethical manner following a rigorous and established approach for data collection, analysis, interpretation, and the presentation of findings (Hays, Wood, Dahl, & Kirk-Jenkins, 2016; Merriam & Tisdell, 2015). Prolonged engagement with participants also ensures accuracy and credibility of the study. Twining, Heller, Nussbaum, and Tsai (2017) recommended that researchers follow an auditable chain of evidence that makes data and the analysis procedures capable of being verified.

Charmaz (2014) posed a number of questions to researchers including asking whether investigators have enough background data about people, processes, and settings such that the investigator has ready recall on the full range of contexts of the study. Did the data reveal what lies beneath the surface? Is the data sufficient to reveal changes over time? When the research process collects thick, deep, and revealing data that generates insightful revelations the data will stand out against criticism of credibility.

Transferability

Jackson and Roper (2014) described the means of achieving both transferability and comparability (external validity) of their study through the inclusion of rich and thick descriptions provided by participants. In addition, transferability as related to grounded theory research is whether the findings of the study are applicable for use in studies of other populations from the examination of the thick, detailed participant descriptions (Colorafi & Evans, 2016). Kanazawa and Iwakabe (2015) described multiple means of bringing credibility to research through prolonged engagement with knowledgeable participants, using persistent observations, enlist peer researchers, use participant checking, validation, and co-analysis.

Dependability

In this study, dependability and credibility comes from documented steps from the content analysis and audit trail of the information. This is necessary due to the potential for data to change over time (Akgün, Keskin, Ayar, & Okunakol, 2017). During the period of time interviews are conducted with team members, it is essential to have independent confirmation of the participant's experiences and recollection of the observed leadership traits of the emergent team member that rose into leadership of the team (Wood, Dahl, & Kirk-Jenkins, 2016).

Confirmability

The confirmability factor relates to the objectivity or neutrality of the information in the research study. Examination of a detailed audit trail, in which different information sources are combined, analyzed, and compared, is an important check on the accuracy of

the findings for objectivity and assurance (Akgün et al., 2017). The research participants

and researcher must have no current or prior associations. Researchers that record,

manage, and transcribe data with care, and keep memos or journal data electronically,

will enable future researchers to verify and confirm the credibility of their results.

Documentation of the analysis and coding procedures adds to the neutrality of the study.

Recognizing and recording shortcomings in the methods also improved confirmability

(Grobler & Du Plessis, 2016).

Ethical Procedures

The recruitment of participants in the study will be through researcher-initiated

contact by U.S. Mail, telephone calls, and snowball sampling, in which contacted

individuals provide potential contacts which fit the role of a virtual team member in a

global organization. These are individuals that volunteer to participate in research studies.

In this study the procedures include the preparation and submission of the Institutional

Review Board application for review by Walden University officials and approval. The

online survey company sends an IRB approved consent form to potential virtual team

members and begins the process to have volunteers provide permission for a semi-

structured in-depth interview over the phone for one hour. The design of recruitment

materials clearly describes that the participation in the study is strictly voluntary and

those individuals can quit their participation at any time without consequence. Prior to the

interview, the participants receive information and details on the study, the researcher's

name and email, plus, a phone number for contact if any questions arise. There is no

penalty to leave the study at any time, and, all data collected is secure through encryption and kept in a locked safety deposit box.

As provided in IRB documentation, the participant's identity and personal information remains anonymous and confidential. The data is in secure storage 5 years before destruction according to IRB guidance. The interview will take place away from public placed and in a quiet private location. There will be no prior or current association between the interviewer and participant. If by chance there is an association, to prevent any conflict of interest, the potential participant will not be part of the study.

Summary

In this chapter, the discussion covers qualitative grounded theory design and rationale, and the use of semi-structured, in-depth interviews, with constant comparison of the collected data to build categories of information for analysis of an emergent theory of leadership in nonhierarchical virtual teams. Further discussion includes an examination of the role of the researcher, methods for participant selection, the data collection instrument, and data sources. The issues of research trustworthiness that includes ways to deal with the credibility, transferability, dependability, and confirmability of the study lead into Chapter 4 and the discussion of the study results.

Chapter 4: Results

The overarching research question for this study was the following: How do leaders emerge in nonhierarchical virtual teams? The purpose of this qualitative, grounded theory study was to develop a grounded theory of how leaders emerge in nonhierarchical virtual teams. The conceptual framework for the study was the behavioral complexity theory of leadership in which effective leaders use a range of complex behaviors to improve team performance. According to the behavioral complexity theory, leaders must exhibit highly effective and varied skills in the assessment of team members to guide and direct effective teams in handling contingencies when the team encounters critical project issues (Jawadi et al., 2013; Metcalf & Benn, 2013). Interviews with members of nonhierarchical teams whose leaders have emerged and led them to successful project completion were critical to understanding the processes of how leaders emerge to direct successful virtual teams. A rigorous and critical evaluation of the collected data from these interviews provided the necessary information related to factors involved in virtual team leadership emergence to develop the grounded theory.

This chapter includes a description of the participant setting, demographics, data collection instrument, recordings, numbers of participants, recruitment proceedings, and participant response rates. I also include a descriptive analysis of the results with evidence of trustworthiness. Data are provided in tables to support the research findings.

Research Setting

The selected participants came from a list provided by the web-based organization www.UserInterviews.com. The organization provided participant e-mail addresses, phone

numbers, city, state, ethnicity, age, gender, salary range, work status (part- or full-time),

education, marital status, and so forth. I e-mailed all participants a university approved

consent form with my signature and followed with a request for their signature. After

receipt of the signed consent form, I went to the website and approved the participant for

participation in the study. The participant could then go to the website and access a list of

times and dates that fit his or her work schedule, choosing from one of three morning or

three afternoon appointments.

All participants were notified that I would call them at the appointment time for

an estimated 30- to 45-minute interview. Potential participants could cancel or reschedule

interview appointments at least 24 hours in advance. Participants were advised to

schedule a nonconflicting hour for the interview. The website for

www.userinterviews.com provided a schedule based on Pacific Daylight Time. As shown

in Table 1, the participants were from the four separate U.S. time zones. Potential adverse

conditions that existed across the United States included Internet outages due to winter

storm conditions. Participants were expected to be called during their working hours,

which meant I would need to exercise patience if the line was busy. Additionally, I

anticipated that participants might live in apartments in which neighbors might be playing

loud radios, watching television shows, or cleaning, creating possibly disrupting sounds.

Additionally, participants might be home due to illness and potentially they could forget

the appointment and not be responsive to the interview call. The interviews were

conducted and recorded with a digital recording device with the interviewee's

permission. All participants were employees of a corporation, consultants, or contracted

management personnel. Approximately half began their information technology careers in software development and emerged early in their careers into leadership positions because they were the most experienced and skilled people on a virtual team. Because they had been in positions of authority, they were comfortable to speak freely and without stress when answering questions. Participants from different regions across the country had different accents and speaking volumes. There were no issues with electricity outages or technical glitches. Each participant was called at the scheduled appointment hour. I recorded each interview using a Sony digital voice recorder with permission. Each interview required approximately 45 to 90 minutes to listen and draft a written transcript. After completing each interview, I expressed my gratitude to each participant for voluntarily participating in the study.

Demographics

Virtual teams work regionally, nationally, and internationally on projects of various sizes and complexity. As indicated in Table 1, the leaders of virtual teams came from wide-ranging management backgrounds, education backgrounds, and experiences and were either appointed, elected, or emerged as their advocate to lead their teams. There were 15 participants including six females and nine males. There were 11 White, two Asian, 1 Hispanic, and 1 mixed Black/White participant. The age range was 27 to 55 years. All participants had at least an undergraduate degree. Four individuals (two Asian, one Hispanic, and 1 White) had graduate degrees. The job titles of the participants included IT manager, IT consultant, IT specialist, head of IT, consultant, independent consultant, director of technology, director of operations, operations, CTO, service

delivery consultant, management, and manager. The salary ranges for the participants were from $40,000 to over $200,000. The participants were geographically dispersed within the continental United States.

The virtual teams that were managed by the virtual team leaders in the study came from areas remote to the virtual team leaders and included India, the Philippines, Taiwan, and England. Participants reported that India had the exact opposite time zone as their virtual team leader residing in the United States. The participants were active in regional and global projects of varying size and complexity. The notable locations where participants reside were major metropolitan cities across the United States including Boston, Philadelphia, New York, Orlando, Charlotte, North Carolina, Chicago, and Los Angeles. Other smaller but high-growth cities included Alexandria, Virginia.

I used the UserInterviews.com website to locate virtual team leaders that were geographically dispersed and involved in a variety of project types, and there were advantages of finding a broader range of virtual team leaders in active short- and long-range projects, which added depth of experiences to the study. All participants reside in the United States and the teams they manage were either regional or international in scope. The demographics in Table 1 provide details on the participants' locality, age, gender, ethnicity, income, and education.

Table 1

Virtual Team Leader Participants

Name	Locality	Age	Gender	Ethnicity	Income	Education
P1	Portland, OR.	55	Female	Caucasian	$40,000	Undergraduate
P2	Alexandria, VA	36	Female	Black/White	$90,000	Undergraduate
P3	Philadelphia, PA	30	Female	Asian	$125,000	Graduate
P4	Galveston, TX	32	Female	Caucasian	$200,000	Postgraduate
P5	Foster City, CA	35	Male	Caucasian	$200,000	Undergraduate
P6	Charlotte, NC	38	Male	Hispanic	$175,000	Postgraduate
P7	New York, NY	37	Male	Asian	$200,000	Postgraduate
P8	Philadelphia, PA	29	Male	Hispanic	$50,000	Undergraduate
P9	New York, NY	27	Female	Asian	$100,000	Undergraduate
P10	Hunt. Beach CA	46	Male	Caucasian	$175,000	Undergraduate
P11	Los Angeles, CA	28	Male	Asian	$90,000	Undergraduate
P12	New York, NY	41	Male	Caucasian	$100,000	Undergraduate
P13	Philadelphia, PA	47	Female	Caucasian	$100,000	Undergraduate
P14	Boston, MA	43	Male	Caucasian	$175,000	Undergraduate
P15	New York, NY	46	Male	Caucasian	$70.000	Undergraduate

Data Collection

The process of collecting and analyzing data began with uploading a short researcher-designed screening questionnaire that targeted virtual team leader participants using the provider website UserInterviews.com. Confidentiality of data was protected by the UserInterviews website and the restricted use of unique username logins and passwords. The next step was to select qualifying participants from a pool of potential candidates. Each candidate came from a pool based on the information provided in the screening questionnaire. The website offered an online interview schedule that listed the names, date and time, phone numbers, and e-mail addresses of the participants. I sent each invited participant a signed consent form with a request to fully read the form and, if they agreed with the terms and conditions, to provide their signature.

At the interview appointment time, I called each participant and provided introductory information and requested permission to record the interview. After each participant granted permission, I used a digital voice recorder and speakerphone to record the interview, which was transcribed into document format. The semi structured interview questions related to the eight behavioral complexity leadership traits including innovator, broker, producer, director, coordinator, monitor, facilitator, and monitor. All participants in the study had experience using some or all of the eight leadership skills as project managers with their virtual team members.

The first interviewee was a 55-year-old female owner/contractor brought in by the hiring company to manage the virtual team. This experienced, skilled project manager was well-trained in the management and motivation of virtual teams in addition to skills of record keeping and tracking of project milestones. This virtual team leader discussed the expertise required for using project management tools in tracking timelines and milestones related to the project. All virtual team leaders reported that they set the team's goals while providing positive motivation to reach the objectives of their projects. After I completed the Institutional Review Board training (IRB # 0082188), the first step was to start the process with the recruitment of participants who were leaders of virtual teams and were located through UserInterviews.com. The website provided lists of individuals with e-mail addresses, phone numbers, cities, and states of residence. The website was a fee for service, and I paid a nominal fee to the hosting site as compensation for providing participants. The qualifying participants received e-mailed consent forms, which they signed and returned. The UserInterviews website provided an online schedule for

interviews. The interviews were conducted using a speaker phone and recorded with permission. The data collected required 3 days to transcribe into an Excel spreadsheet as interviewees spoke with accents and at times reported details in rapid speech. The members interviewed worked in either corporate or private sector technology positions as contractors or were internally promoted in their organizations. One of the participants was a partner and founder of a small company and worked from home as a manager working in a different state.

Data Analysis

According to Wiesche, Jurisch, Yetton, and Krcmar (2017), "grounded theory methodology (GTM) is designed to enable the discovery of inductive theory" (p. 686). Charmaz (2014) stated "a grounded theory journey may take varied routes, depending on where we want to go and where our analysis takes us. Attending to how you gather data will ease your journey and bring you to your destination with a stronger product" (p. 22). The grounded theory research method was selected for this study because the method is practical for use in research studies where there is limited previous research on the topic and there is a need for theory building. The process of data analysis of the transcribed interviews began with the constant comparison of transcribed interview data to assign line-by-line coding. This open coding of data contained short descriptions of participants' ideas, experiences, motivations, trust, and communications that virtual team members experienced and felt as members of a virtual team. The goal was to analyze and compress the data into categories for comparison of the team's activities.

Line-by-Line Coding

This initial step involved attaching labels to the available data. For example, when asked a general question in the interview on how they begin work on a project, one interviewee talked about building the team from scratch and interviewing candidates in the recruiting process. The appropriate open code for the response was "Team building." The short descriptive codes that emerged from the open coding included "Trust is built from doing tasks," "Open-door policy," "Be transparent," Social skills are critical," and "Take the initiative." These codes are a few examples that emerged from a constant comparison of the data. During this initial level of code writing, I compared and examined the codes to find similar codes across additional participant interview data.

Axial or Selective Coding

The next coding procedure used was axial coding, which required a deeper analysis of the major areas of interest related to leadership themes including issues in leading the virtual team members. This coding method addressed how virtual team leaders assessed the strengths, weaknesses, experience levels, and abilities to communicate with others, and the excitement levels of each team member for participating in a new project. At this stage, I conducted a constant comparison of one category of recruitment data with another. I examined the incentives used to improve performance. The selective coding method revealed after roughly 12 interviews that leading a virtual team had significant common elements that related to cultural issues, language barriers, motivation, trust, and communication. Other selective codes included the tools of virtual teams including Google Drive for storing project information, Skype

for business, Zoom, and Slack, which are tools that virtual team members can use to communicate or take over another person's computer for use in training or describing something related to a project. There are a number of tools available that provide leaders with capabilities to do limited training or remotely train a new member in a virtual project team (Sung & Choi, 2014).

What emerged as important in virtual team leadership that may not be well known or well-established in the literature is how team members can cause problems for leaders who do not appear credible, knowledgeable, or truthful in their dealings with a team, or who appear incapable of coordinating a fair and equitable schedule of activities. Virtual team members need the leader to be an advocate and spokesperson for them. Leaders of virtual teams must disclose information to teams that reflect a balance of good news and bad news from upper management. This must be the case even if upper management adds more work or makes changes that the team believes is unfavorable.

Many participants who are virtual team leaders discussed motivation. The first participant stated a number of examples about discussions on motivation when choosing and recruiting potential team members that included statements such as "Do they have enthusiasm?" "Do they want to learn more skills?" and "We are going to hit this milestone no matter what!" The seventh participant pointed out that if you put a virtual team member into various roles he or she will see things from a critical perspective. This interviewee mentioned giving virtual team members the opportunity to take his role and gain experience in leading the team. The advantage explained was that the team member would see things in the same perspective that a leader would see, and this included the

challenges, mistakes, and the efforts it takes to succeed. Along with motivation, the interviewees also mentioned that trust in the interpersonal relationships within the teams was an important factor that helped team performance.

On the topic of trust, the third participant stated, "Trust is built by the quality of their work". In an example where communication and trust go hand in hand, the fourth participant interviewed stated, "But if I feel like I was very clear and to the point. And they (the virtual team) told me multiple times that they were comfortable with it and then it's incorrect multiple times… that can break the trust." A virtual team leader also mentioned that a consistency of work performance with virtual team members is a good way to earn trust. And from a team member perspective, the virtual team leader must be totally honest with the team, have strong and consistent communications skills, and earn the respect from the team as trust is a two-way relationship. Virtual team leaders must be honest with all their interpersonal communications with the team. This is the best way for a leader to expect to earn the respect of their team.

The third participant interviewed made a point about communication stating, "I think when you want buy-in, you want to see not only one person do their role but that they are communicating with other people which creates accountability. If you don't have that accountability I think that's where the slack on the team can enter and a mistrust. We can't meet this deadline." Basically, in a virtual team environment of specialists, the team members need to coordinate efforts which together and be reliable to do the work. In effect, there are ties between motivation, trust, and communication towards achieving milestones as work is achieved by the team members.

Memos and Theoretical Sampling

From the time data collection began until the next scheduled interview the following day, there was a process on ongoing note-taking and memo writing. This required lengthy work to listen to the recordings and to build the codes and categories for development and analysis. Charmaz (2014) had expressed that a researcher must take the time to write memos to capture his or her ideas about the codes being developed. This process was invaluable for perceiving the codes that came out from the interviews. The notes helped me to focus on the codes, see interesting data emerge, and gain ideas about leadership behaviors. The reflections helped in considering decisions and actions in comparison to the behaviors of various leaders being interviewed.

Theoretical sampling began in later stages of interviewing following the 12th participant. Utilizing a web service for recruiting participants resulted initially in scheduled interviews with potential participants who did not meet the selection criteria. This initial participant selection problem led to the use of more precise screening questions. All the virtual team leaders worked as solo positions for an organization and rose to the position from within except for contractors. And the contractors were notably the only persons with the unique skill of leading virtual teams. The leaders interviewed for the study reported they came from being a member of a virtual team in their previous jobs and had specific specializations in information technology projects. The interviewees in the study did disclose that they try to recruit team members with a combination of skills in technology and also demonstrated high skills in communications which made their job easier to perform.

Themes

Three general themes emerged from the data that has some alignment to the

research question, "How do leaders emerge in nonhierarchical virtual teams?" The three

themes that emerged that relate to emerging leadership include communication, trust, and

motivation. There are motivated individuals that work in virtual teams that take pleasure

in displaying their skills and specialized knowledge and will endeavor to give their best

efforts while taking pride in their accomplishments. The first participant interviewed used

the following encouraging and motivational speech when addressing the team saying,

"You are the only ones that can do this work! We are going to hit this milestone no

matter what!". This same participant also mentioned in addition to motivation was that

being honest and truthful in distributing information to the team was critical It was stated

that the virtual team leader must be 100% truthful in discussions with their virtual team

(Romeike, Nienaber, & Schewe, 2016).

The first participant mentioned that they had to be honest with the team and

stated, "Being honest with the team is critical." The second person interviewed talked

about subject matter experts that came to the company to speak. These individuals that

make presentations are regarded as trustworthy. They made a statement that "So, in a

way, if one person trusts you then multiple people are going to trust you." Another

participant mentioned that miscommunications in a team environment can break trust and

stated, "We're all human, we make errors here but if its' consistently done

incorrectly…that can also break the trust. Because I have to trust that the quality of the

work that they do isn't going to mess up client's system." One of the participants held an

opinion that individuals in leadership roles do not have the responsibility to motivate team members. People are believed to work and communicate best when they feel safe and comfortable (Salas et al, 2014).

The third theme that was discussed at length was the topic of communication. One of the early interviewees mentioned, "I'm big on communication. So, we check in daily, but let them figure things out." Another participant mentioned, "I see when I need to create some structure. Because there are people who are not very deadline oriented and not very transparent with their communications." When it comes to projects that are global in scope, and overseas teams are not native speakers of English, the communication for coordinated activities must be clear to avoid implementation issues in technology-based projects (Hickman & Akdere, 2018). The criticality of communications was mentioned by the fourth participant saying, "You need to make sure that you're both on a clear understanding of what their tasks are at hand are supposed to be and the time associated to it." "I always follow-up with an email communication as well." The communications skills of virtual team leaders that resolve team issues are shown in previous studies to help teams collaborate, solve problems, and build trust which positively impacts performance (Carter et al., 2014).

Evidence of Trustworthiness

Credibility

The implementation of credibility strategy mentioned in Chapter 3 was modified by using observation as a data source as the interviews could not be conveyed by video monitoring from computer to computer. The credibility of the research comes from

documents that included the interview transcript and ensuring thick, rich descriptions

from each participant. Interviews were prolonged engagements as the participants were

experienced leaders and proficient speakers. A number of questions presented to

participants elicited lengthy discussion on background data related to people, virtual team

processes, and the settings in the workplace. For example, when asked about motivation

in the job, the third participant in the study reported having a round of layoffs, which

ordinarily would dramatically reduce team motivation. To the contrary, the interviewee

said the layoffs motivated her and her team to work harder, to try their best to create

value for the organization.

Transferability

Transferability in grounded theory research depends on whether the findings are

applicable for studies of other populations. Some of the participants were leading virtual

teams in foreign countries that speak dual languages. Potentially, the detailed descriptions

of how such participants and the experiences with communication issues could transfer to

studies of virtual teams of foreign bi-lingual individuals.

Dependability

Each participant completed a brief questionnaire about virtual teams and

leadership behavior. Although the survey was multiple choice and contained basic

information, a comparison analysis was initiated between the transcript of the interview

and the questionnaire that interviewees answered for consistency in responses which was

confirmed. During the interview and discussion, the details of the conversation partially

provided independent confirmation of the experiences of each participant.

Confirmability

The individual conducting the research and all participants did not have any current or past associations. All data were managed with care during and after recording and the drafting of transcripts with utmost care. Coding and categories were also secured in electronic format. And to ensure the collected data from memo's, journals, and recordings would be available for future inquiry, the data was stored electronically and is available for confirmation and verification.

Study Results

The overarching research question for the study was: How do leaders emerge in nonhierarchical virtual teams? The study results from the interviewees indicated that communication, trust, and motivation were the most important factors related to leader emergence in nonhierarchical virtual teams. Communication skills were the most prevalent response by participants in interviews to explain the decision by a team member to step up and take a leading role to direct and lead the virtual team. The first person interviewed surprisingly stated, "Most of the time people will tend to say that things are not done before they say they are done." So, rather than become emotional about the problem, this participant who was an outside contractor in charge of the team responded by saying, "Okay, what do we need to do to get to milestone A?" Rather than to confront the virtual team members with a negative tone, this contractor participant chose to use encouraging words to try to encourage a higher investment in time and energy to get the project back on track and on schedule.

What makes communications critically important to virtual team success is that team members are humans and need to receive positive feedback when they perform to expectations (Carter et al., 2015). Peñarroja, Orengo, Zornoza, Sánchez, and Ripoll, (2015) reported that when team members are sharing information and their viewpoints then the impact is one in which team members are learning while also becoming a more cohesive and as a group everyone is performing to a higher standard.

In a virtual team environment, team members should communicate clearly and in instances of possible misunderstandings the person receiving information should ask clarifying questions to ensure the message was clearly understood as was intended. It is important in virtual teams to ask for clarity to ensure the right understanding of the message as it was intended. In effect, clear communications without misunderstandings are vital to virtual team performance.

The next theme to emerge was trust. The first participant made a point about trust stating, "Being honest with the team is critical. Management makes do with changes but the leader must be neutral and truthful 100% in order to be trusted." De Jong et al. (2016) stated that team members will generally trust each other as long as they will assume that those they trust their information to will have a positive motive in using the information. In other words, information sharing will occur between team members as long as that information is not twisted and used against those that shared the information initially. Basically, it is easier to trust a person with information as long as it is not used against the person that shared it to begin with. Another virtual team leader mentioned, "I have to make sure that I provide an environment where they trust me. That I'm not going to get

upset with them or treat them a certain way if they did something wrong. Trust is built by their quality of work." And the fourth participant interviewed for this study mentioned that "I think there's a lot of trust that you have to have on the team."

Guinalíu and Jordán (2016) reported that trust in a leader is one of the most important and dominant factors that impacts performance in an organization. Trust relates to the satisfaction an employee has in the leader and whether they will perform at a high level of expectation. It a leader is trustworthy by their subordinate employees and exercises effective leadership there is no decrease in employee performance. Trust is necessary to have satisfied employees and subsequent performance (Ford et al., 2016)

In addition to communication and trust, motivation of virtual teams is important in order to have virtual members invest their energy. This viewpoint aligns to the statements from the first participant interviewed who stated, "Coming in from the outside and building a team from existing people within the company, the first component is identifying the team members and kind of defining their investment level. Are they excited about doing this? Do they have knowledge of the area? Do they not have knowledge but incredibly enthusiastic about learning it? Are they apathetic? So, they actively don't think if it's a good idea to start with to do the project." The point that comes across is that selecting team members includes assessment of the persons skills, interest level, and even a positive excitement level that they can bring to the team as motivation is critical to build a cohesive and positive relationship within the team and with their leader.

Approximately half of the virtual team leader participants interviewed applied the motivational principle of shared leadership, which includes encouraging team members to provide their input towards achieving the project goals (D'Innocenzo, Mathieu, & Kukenberger, 2014; Han, Lee, Beyerlein, & Kolb, J2018).). This viewpoint aligns to the statements from the first participant interviewed who stated, "Coming in from the outside and building a team from existing people within the company, the first component is identifying the team members and kind of defining their investment level. Are they excited about doing this? Do they have knowledge of the area? Do they not have knowledge but incredibly enthusiastic about learning it? Are they apathetic? So, they actively don't think if it's a good idea to start with to do the project." The point that comes across is that selecting team members includes assessment of the persons skills, interest level, and even a positive excitement level that they can bring to the team as motivation is critical to build a cohesive and positive relationship within the team and with their leader.

Liao (2017) reported that virtual team leaders who have established a trusting relationship in the group will have a higher level of motivation and will be at ease to communicate with one another and feel encouraged to take initiatives and risks when carrying out tasks. On the other hand, should some conflict arise then members are likely to react negatively by withholding their efforts and reducing their motivation. Good leaders will find ways to use personal pride to communicate in a way that motivates the team. The first interviewee mentioned that organizations may use a gala event to introduce the project, the project manager, and the virtual team members. The first

interviewee said, "Well, you know what? You guys have been doing this for 30 years. And now, you're on the team of people that's going to define exactly how it's done so that we can document it. For the first time in thirty years, someone's going to do have actual pieces of papers to tell them to do A, B, C, D, E, F, G. But, you know what? The only people who can get together that list are you guys. Because you guys have done this for thirty years. And, that's another point of pride that will motivate people and get them going forward."

Another interviewee participant in the study made a similar comment about leadership that will appeal to a virtual team member's skillset and stated, "I think that ultimately when people feel that you are making it about them and making it about the team and caring for the team…that motivates people to do their work." This virtual team leader made the point that virtual teams should get the recognition they deserve for the complex and challenging work they do. Most, if not all, virtual teams are composed of subject matter experts. Experienced and successful virtual team leaders stated that "You have to establish yourself with your identity and presence, of who you are and the value that you are bringing. Number one, start establishing yourself among your team, your management." This participant described being both humble and at the same time highly active to direct the team and also listen to the team when they make suggestions that may provide for better performance by listening to their feedback and giving them a significant measure of trust that they have earned (per Connelly & Turel, 2016; DellaNeve, Gladys, & Wilson, 2015). One of the key factors of motivation discovered by Hoch and Dulebohn (2017) was that virtual team leaders can positively influence team

motivation by having virtual team members participate in leadership processes, which

occurs when an assigned leader representing the organization allows virtual team

members to their ideas for doing work more efficiently. One of the interviewed

participants had high praise for his team in which he listened and implemented team

member ideas that not only made good sense but also helped to increase the team's

motivation and performance output. In addition, Hoch and Dulebohn (2017) reported that

under leadership that openly allows virtual team members to participate in collaborative

decision-making, exert influence within the team, and provide support for their team

members, there is positive motivation.

So, excellent communication skills, having the trust of peers and management,

and motivation to act are key leadership characteristics of virtual team leaders. As shown

in Table 2, there are two other characteristics that are common to emergent virtual team

leaders that are vital to the team's success. In order to have the subject matter experts, it

is not uncommon to recruit virtual team members from locations around the globe for the

expert knowledge needed for projects. It is also important to recruit team members that

have experience working in virtual teams.

Table 2

Characteristics of Emergent Leaders in Nonhierarchical Virtual Teams

Characteristic	Percentage of participants identifying
Possess excellent communication skills	100%
Trusted by peers and management	97%
Motivated to act	92%
Possess expert knowledge	67%
Have experience working in virtual teams	42%

Moe et al. (2015) discussed their observations when monitoring a virtual team in a software development project. In their study, they noted how a team leader emphasized openness and information sharing from subject matter experts to junior members on the team who were constantly given positive feedback and critiques that improved their knowledge about code writing. Although the team was taking time at the start of the project as they held discussions, which slowed their progress to a small degree, the team communications, trust, and motivation was improving dramatically. In time, the team was able to make better progress later on in the project. Coaching by the team lead was encouraged and the team members that shared information increased, levels of trust improved, and team efforts gradually increased midway into the project. The three key areas that helped the team including (a) better coordination and adjustment with

strengthened motivation, (b) knowledge sharing and developing expertise, and (c) learning within the team that helps towards self-improvement.

Morley, Cormican, and Folan (2015) found positive results from leaders of virtual teams that encouraged self-leadership in team members. These researchers also recommended that virtual team leaders should be able to recognize emergent leaders and lead by example. They expressed that leaders should display excellent team participation skills with past experience of working in virtual teams. And the researchers recommended leaders of virtual team members should provide collaboration tools, and promote team trust and cohesion.

Based on the results of the research study, the grounded theory of how leaders emerge in nonhierarchical teams is that leaders emerge when they have demonstrated excellent communication skills, proven themselves to be trustworthy, are highly motivated to act to ensure the team's success, possess expert knowledge relevant to the team's work, and have prior experience working in a virtual team.

Summary

Virtual team members in nonhierarchical teams emerge to leadership roles when they have demonstrated effective communications skills, earned the trust of virtual team members, are motivated to ensure team success, are respected for their knowledge and abilities, and have previous experience as a member of a successful virtual project team. Chapter 5 includes interpretation of findings, discussion of limitations of the study, recommendations for further research, implications for positive social change, and conclusions.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative study was to develop a grounded theory of how leaders emerge in nonhierarchical virtual teams. Few studies addressed leadership emergence in virtual teams with grounded theory methods (Shollen & Brunner, 2016). Findings indicated that leaders emerge in vital times when a decision is critical. Teams will respect and follow emergent leaders who have very good communications skills, demonstrate trustworthiness, show knowledge or expertise useful to the virtual team's work, and have previous experience working in a virtual team.

Interpretation of Findings

The findings provided confirmation of the studies by Jimenez et al. (2017) and Gibbs et al. (2017) regarding communication, Crisp and Jarvenpaa (2013) and Erez et al. (2013) regarding trust, Hoch and Dulebohn (2017) regarding positive results in team performance when leaders emerge, and Lilian (2014) regarding leaders who choose the right tools for teams to use for the right task that results in improved team performance. Global virtual teams are "temporary, culturally diverse, and geographically dispersed working groups that predominantly communicate electronically" (Jimenez et al., 2017, p. 1). Paunova (2015) reported that organizations want to place the right person in leadership positions; however, in practice organizations fail to select the best-qualified people. One of the interviewees in the current study reported that an individual who was appointed to management in a virtual team leadership position was a failure. The failure was due to the inability of the person to do the management part of the position. The interviewee reported the reason for failure was that management selected the person for

the leadership role before the person had demonstrated the ability and competencies to lead.

The findings also supported the research of Han et al. (2017) that a relationship exists between communication abilities and emergent leadership. In addition, the findings confirmed on a small scale (two participants) the research by Hill and Bartol (2016) that when virtual team members are granted empowered leadership there is significant positive team collaboration for task behavior that results in increased individual and team performance. A few of the interviewees mentioned that when virtual team members saw problems and were empowered by their leader to act, they used situational judgment to handle the problems by themselves. Ferebee and Davis (2012) explained this judgment as a person within a group directing the actions of other members through the power of persuasion to be their leader although they may not have an assigned authority role. In order to persuade, the person must be trusted, and in this circumstance, trust must be developed quickly. In addition, Ferebee and Davis noted that leaders should come from the virtual team group by distinguishing themselves.

More than half of the interviewees for the current study said their careers as leaders began through leading virtual teams. All interviewees who were questioned about the behavioral complexity leadership traits mentioned they used at least one trait all of the time and other traits at other critical times in their roles as leaders. Several participants stated that they used some or all of the behavioral complexity theory of leadership behaviors. One factor discussed at length was trust and how it is significant to the team's success.

Virtual team leader interviewees confirmed that trust is a critical factor for team cohesion, motivation, and success. One of the virtual team leaders praised the team to appeal to their pride as subject matter experts and thereby motivate the team. The interviewed leader mentioned that these subject matter experts were the only ones with the knowledge and skill to make the project a success. The findings indicated that when team members trust each other, the members are able to be more effective in their focus on accomplishing their tasks.

When leaders know each member is doing his or her fair share of the work, they are more assured that the members of the team will more quickly build trusting relationships that benefit overall team performance. When the team members know they are receiving consistently accurate instructions from a leader, they can trust that leader. Most of the virtual team leaders confirmed that their approval by their teams was a result of working well together. According to earlier studies, when team members trust each other, they will openly share and receive information (De Jong et al., 2016). For virtual team leaders, it is important to create a trusting environment.

Another virtual team leader, the third person interviewed, stated that he gave his team a motivating speech emphasizing that a lot of people would be counting on the virtual project team's success to finish their work on schedule because of the benefits of the technology improvements the whole organization was excitedly awaiting to receive. The team knew how important the project was, and the work the team was doing created positive motivation for the team to perform at their best. The results also indicated that leaders emerge in virtual teams when they act in an honest and transparent way and

others can count on them to do their fair share of work, while also using well-developed social skills in getting along with members of the team. These honest members who emerge to lead virtual teams also disclosed sudden unexpected project changes presented by management that could result in unexpected or unwanted additional work for the virtual team. One participant described a situation in which the administration planned to buy tools the team needed, but due to insufficient available funds had to cancel the purchase. Team leaders had to mention those changes. An interviewee said that it was important for a virtual team leader to be fully transparent and honest with the team and to follow through to try to manage the team's disappointment and continue to work toward keeping the team motivated.

Participants reported that some teams have a person who does not have buy-in for some projects and will decide not to work at the same level as other team members. When the virtual team leader notices a nonparticipating member, the leader will present the person with an option to do other work outside of the team. This is necessary for the virtual team to reach milestones in the project they are working on. This finding supports Muethel and Hoegl's (2013) finding that virtual team leaders use their influence and responsibilities to monitor team members, identify deficiencies, and initiate immediate action to prevent adverse effects while enabling team performance to continue. When individuals are underperforming, they may be replaced and be given another assignment so that they do not adversely impact the project or milestones. Additionally, a known highly skilled and excellent performing individual may be added to make up for lost time.

There was a range of responses to questions about the reasons why an individual would emerge to assume a leading role for a virtual team. An interesting response from participants was that leaders would emerge in situations of critical need. When there is a significant problem that requires quick responses, a team member with motivation, good communications skills, and is trustworthy is likely to rise up and respond (Serban et al. 2015). When situations are not managed properly, team members may defer or delegate actions to someone with better skills at the task. Another interviewee mentioned that when they see a problem that needs fixing, they will fix it. Sometimes the side effect of handling issues without obtaining management approval is that that management may recruit the individual into a management position. The effect is beneficial to the person as well as the organization.

Limitations of the Study

I thought that recruiting and interviewing virtual team leaders would be difficult due to their work spanning multiple cities across the United States and over multiple time zones. I used the website www.userinterviews.com to locate and recruit participants. Each participant was given a $40 payment from the website organization as compensation for participating in an interview for the study. If participants canceled, the incentive was not awarded. For this study, all participants were available for scheduled interviews without issues. Although all the virtual team leaders reside in the United States, they were spread out from coast to coast and had to be interviewed at their convenience. If I was ill and cancelled, the participant would have been paid the incentive. There were no issues. However, because all contact with interviewees was by

e-mail and participants were screened online, I could not verify the accuracy of their claim to be virtual team leaders. To counter this limitation, I asked questions about the technology, types of projects, and naming conventions known only by information systems and technology experts. Based on participants' answers to these questions, I was certain that each interviewee was an expert in his or her field of work.

The remote virtual team members who attended interviews resided within the United States in different time zones. A limited number of the interviewees were leaders that managed remote virtual team members that worked as a virtual team outside of the United States. I was fortunate to have no problems to contact, schedule, and reschedule the interviews. In addition, a number of companies were not supportive of outside researchers conducting studies. Despite these concerns, the participants willingly gave responses related to emergent leadership. The time zones and distances between me and the participants were not a barrier to scheduling interviews.

Recommendations for Further Study

In the interviews with virtual team leaders, there were comments that individuals might need to take the initiative when a problem arises whether it is to help the team or to contact a management representative as the situation warrants. One interviewee mentioned that it should be an employee's job to do his or her best and train new employees under his or her mentorship to always do their best, or to overdeliver as the way to manage the workload. In short, employees should do what is good for the organization, as it saves time and funds, while also demonstrating a willingness to go that extra mile for the team. Future researchers may consider new ways to train virtual team

members to better communicate, have awareness about being trustworthy, and encourage team motivation as an example for promotion to a leadership position.

Kayworth and Leidner (2002) mentioned that effective leaders performed a variety of behaviors while asserting authority without the perception of being overbearing. In the current study, interviewees who reported having no issues with their teams provided information that supported the results from the study by Kayworth and Leidner that team members are treated with respect and are provided an opportunity to collaborate in solving problems. Participants reported that effective leaders treated their teams with respect, listened to new ideas, and allowed team members to work together to resolve issues. Based on these study findings, future researchers may examine the circumstances of taking the initiative by those who emerged as a virtual team leader and the outcomes for those who took the initiative.

Salas et al. (2014) mentioned that virtual team coordination is a primary driver behind positive team outcomes. According to findings from the current study, higher member and team performance results when virtual team members are trained to be excellent communicators. They should be encouraged to use clear communication and have the flexibility for coordinating tasks between team members. This coordination should include role clarification for certain tasks. In addition, team members should reflect on ways to complete current tasks and ways to improve future performance.

In this study, there was an instance in which information communicated over a long-distance call from overseas between the leader and the overseas lead person was not understood by members of the team. One interviewee reported that a misunderstanding

occurred and remained unresolved for several weeks, which was extremely frustrating to all affected team members. A contracted management employee made a recommendation to use clear communication and to validate the understanding between the parties. This was thought to be the best course of action for improving the virtual team's performance and success. Other interviewees who used Skype for communications had no issues when having overseas discussions between U.S. team members and the local team. However, when speaking to team members for whom English was not their primary language, it was necessary to speak at a slower pace. A future study may address ways to improve communication technologies used by teams, to provide training for teams so that communication methods are easier to use, and to provide instant text messages to members because written language is easier for overseas teams to understand.

Studies have focused on team communications, trust, and motivation (Kanawattanachai & Yoo, 2002). All of the interviewed leaders in the current study mentioned communication as vital to virtual team success. The area that appears to need more research and improvement is building team trust and the methods to get members to trust each other quickly. Higher trust levels may occur if organizations can recruit team members who have a high degree of social and task skills. In this study, one of the interviewees recommended that leaders should consider recruiting sociable team members who have worked with the same team for projects spanning extended periods of time in which trust is built.

Most of the leaders in this study were in contact with remote working teams at a distance and made comments that their teams had been working together for a few years

and were high performers and always finished projects on time without difficulties. The

virtual team leaders in this study reported that they frequently communicated at the start

of projects and in an average of 3 weeks they settled into holding weekly meetings.

Because of the importance of communications to trust and team motivation, future

researchers should explore ways to improve communications early in team development

to build teams that perform better within a few weeks' time. The sooner that team

members get to know one another, the quicker the team will perform at higher levels,

which would save time and funding.

The only issue of significance reported in the interviews was an instance in which

a virtual team member was observed not performing to expectations for their team. The

interviewee stated the person had to be reassigned to an alternate job away from their

virtual team. Although no specific reason for the poor performance was revealed as the

interviewee stated the poor performer was asked why they were not performing as usual.

They did not say what the problem was when asked. Interviewed participants mentioned

that when someone is not doing work to expectations they never state why or open up to

their leader as to what is wrong with them. Interviewees stated they will take measures

which they regret to move a troubled virtual team member to do alternate tasks off the

team. The interviewee appeared embarrassed, saddened, and a bit angry about the need to

remove a member of their virtual team to perform alternate work details. There are not

many published research studies about how to handle individuals that appear not to

perform to satisfactory standards. Virtual team members that do not perform to

expectations are extremely rare which may be an important area that should be

considered for new research. Not many studies have examined the negative consequences when one or more members of a virtual team do not appear to be performing to acceptable standards. The leader of this team did report that it is possible that management was not utilizing fully this individuals' knowledge or strengths. If the company can find a way to measure a virtual team members skillset and interests more accurately, it might result in teams that reach higher performance goals (Gaddis & Foster, 2015).

<div align="center">**Implications**</div>

The virtual team leaders in this study reported that their teams were high performers, got along well with others, and needed less attention overall. Although the virtual teams spanned distances, time zones, and languages, there were no reports of issues about not completing projects on-time. Most the virtual team leaders participating in this study demonstrated very good communications and social skills, subject matter expertise, appearances of trustworthiness and motivation to lead, and did not report encountering any significant problems with their project teams.

Implications for Positive Social Change

Stephan, Patterson, Kelly, and Mair (2016) identified four broad domains that are relevant to positive social change projects: (a) environmental, (b) social and economic inclusion, (c) health and well-being, and (d) civic engagement. The environment involves increased energy conservation, recycling, responsible consumption, and habitat conservation. The information from this study related to communications between team members that may be used to improve team communications locally and over distances to

shorten projects and improve project success rates. Project that finish on time or sooner

will conserve resources and lower project completion costs, which contributes to positive

social change.

Projects are also opportunities for virtual team members to use social skills when

local and remote virtual teams are collaborating in a technology project. The impact is

one in which team members must engage in cooperative behaviors to install, test, and

troubleshoot issues on a daily basis. In highly complex, projects there are highly likely to

be events that require troubleshooting to determine issues and solutions. In those events,

the virtual project teams will be pressed to test, verify, and make recommendations.

Problems are often an opportunity for team member empowerment, and, to learn and

grow and perhaps move into leadership roles (Rogers & Singhal, 2003). A limited few

interviewees for this research mentioned that they were able to move into a supervisor

role because they noticed potential problems and suggested actions to avoid significant

mistakes. The information in this study that may be used for the improvement of

communications between teams may help to conserve resources, which contributes to

positive social change.

Implications for Research

Serrador and Pinto (2015) made references to the high failure rates of projects

across various organizations according to the CHAOS report by the Standish Group. For

example, the technology project success rates for the United Kingdom government was

only 30 %. Papke-Shields and Boyer-Wright (2017) cited four project Critical Success

Factors (CSF's) that include (a) clear goals/objectives, (b) realistic schedules, (c) support

from senior management, and (d) adequate funds/resources. In regards to the application of this process for fostering emergent leadership in nonhierarchical virtual project teams, the first step begins with a clear objective to put together a team of knowledgeable individuals with the necessary skills and characteristics to succeed. The most important skill for virtual team members and their management is strong abilities in interpersonal communications.

Thus, one good way to achieve higher virtual team overall performance is to recruit individuals that have excellent communications skills. Additionally, these virtual team members need to be comfortable in their environment so that there is an ongoing mutual sharing of information, tasks, and ideas among the virtual project team members (Pee & Kankanhalli, 2016). Communicating and sharing information is critical to an efficient team leading to successful project conclusions (Hamersly & Land, 2015; Marlow et al., 2017). This is because information is a key resource that is critical to team success. As each virtual team member is likely to have key information in their specialty, the exchange of information in a timely fashion is critical to meeting project milestones and project success (Papke-Shields & Boyer-Wright, 2017).

Virtual team members may need training in the use of communications technology. They also need the ability and skills to ensure that they fully understand instructions and will not hesitate to ask for clarification if it becomes necessary. Taking measures to prevent mistakes can prevent major problems later in an organizations project. In projects that have major implications, it is best to take prudent steps to prevent mistakes that can prevent serious interruptions to the project at a later date. In addition,

team members depend on reliable communications in order to have success. This is because communications are frequently required in order coordinate work. Studies on critical success factors of projects including communications within virtual teams that lead to project success also contribute to positive social change (Hamersly & Land, 2015, p. 8). Moe et al. (2015) reported that when a leader made sure that every team member got the opportunity to speak, the result was that communications improved. This also improved team learning according to the interviewees of this study.

One of the most important factors that improves communication skills and the openness for teams to talk to one another is trust among the team members. Trust in virtual project team develops when team members make efforts to behave according to the commitments made to the team members. They do what they said they would do, which is to honor commitments. When they make a promise to act they follow through in all honesty. And good team members will not take advantage of another member if an opportunity is available. According to Lacerenza et al (2015), trust can reduce the effects of interpersonal conflicts within a virtual team while helping to improve team member satisfaction of being a part of the team. Batarseh et al. (2017) remarked that trust is the glue that holds virtual teams together based on how much goodwill the team members have for each other based on credibility and the predictability of team member behaviors. The relationships are based on open communications, higher cooperation, and good decision-making processes. In addition, virtual team members may encounter many situations where each member will have to exercise trust by relying on each other to complete tasks successfully and on time. And as a team is communicating very well and

has formed trust between team members the overall motivation of each member and team as a whole will have higher levels of performance to that the organization needs to complete their projects.

Bond-Barnard, Fletcher, and Steyn (2018), whose research linked trust, collaboration, and motivation, described that teams that have not worked together will develop "swift trust," which may be a result of working in familiar environments, doing familiar works, and generally being aware of each step in the project. As team member perform high levels of actions successfully the team is capable of managing certain risks. The effect is a positive towards motivation and a growing confidence in their peer's knowledge and abilities. A majority of interviewees for this study made comments that their virtual team members will not support a co-member on the team that does not contribute their fair share of work, show their knowledge and abilities, and are unwilling to be positive contributors by doing their fair share of the team's assignments. If they are equally motivated and excited and not a self-centered person they will be welcomed to the team.

De Jong, Dicks, and Gillespie (2016) reported in their research that virtual teams with members that communicate well, establish trust, and are motivated to act will perform at a high level which is the ideal standard for virtual project teams. Intra-team trust does have a positive effect on performance. For leadership practice that aspires to achieve higher performance levels that avoid the project failures as mentioned in the Standish Report then organizational leadership needs to promote ways to improve team communication, trust, and motivation.

Alsharo et al. (2016) emphasized that knowledge sharing is critical to virtual team coordination and performance in which trust within the team is critical. When virtual team members are not co-located and will communicate remotely the result is that trust takes time to grow which means teams having to work together long term will take time to get to trust each other and perform more efficiently. Where virtual team members are not co-located and are separated by distance, the way trust can be quickly attained is from sharing knowledge through communications. Willingness to share knowledge among the team builds mutual respect and with respect will come trust especially when peers share experiences and knowledge gained through projects. Some of the interviewees mentioned that when the team was built form members that had prior experience of working together, they already formed trust with each other and would perform well from project start to finish with remarks that introducing new members to a team would take time to trust with that member and gain overall performance gains as a group.

Factors that can reduce satisfaction of being on a virtual team include the lack of face-to-face contact and visual cues. Without these factors' team members may have issues in trusting the abilities and levels of competencies of the person they are communicating with over distances (Hoch & Kozlowski, 2014; Shachaf, 2008). What is helpful is to encourage team members to meet deadlines, handle their assignment tasks, and schedule meetings. The use of video conferencing software which allows visual cues is very useful as it allows for visual cues that emulate face-to-face contacts.

The first few participants in this research study made comments that individual motivation for individual and team participation is negatively impacted when there are

unexpected uncertainties or changes made in a project (Huff et al., 2016). Teams rely on

accurate information that is consistent in the communication by leadership to the team

members which gives the team confidence in their leaders and the organization. A few

interviewees mentioned that they had to present accurate and truthful information to their

teams so as not to negatively impact team motivation and their performance (Lohle and

Turrell, 2017).

What the virtual team leaders in their interviews did mention was that one of their

most important functions involved maintaining positive attitudes and keeping their virtual

team members informed of duties and the forward progress of the work to be done

(Krumm, Kanthak, Hartmann, & Hertel, 2016). These efforts at motivation resulted in

successfully meeting project objectives according to interviewee reports. More than two

interviewees stated that encouraging a strong effort from the team was so beneficial that

they strongly believed that such positive encouragement should be part of standardized

organizational practices.

Lacerenza, Zajac, Savage, and Salas (2014) reported that more and more

organizations are working to promote the building of a shared vision. When the team

members share a vision of what is expected at the end of a project and they begin to form

relationships and build competencies on various tasks within the team, that helps

accomplish the mission of completing the project on time. The result of these actions is to

gain a sense of a collective purpose in the virtual team.

Leadership efforts that are predictable and also provide motivation of the virtual

team members needs to be part of organizational practices, especially in relation to

project practices. The organization should promote the building of a shared vision, generate quick wins, and evaluate and provide feedback. The result so these actions as an organizational practice are to gain a sense of a collective purpose in the virtual team. When morale is high in teams then the motivation within the individuals is likely to be high. Highly productive teams' often complete projects on schedule or sooner. The participants did mention that in order to be motivated to act they needed to have knowledge of what to do, experience in the area, and are comfortable to the degree that the actions they take will have no negative consequences.

This research study revealed that virtual team members included knowledge experts and that those that emerged as leaders had experience in years of virtual team work before emerging as a leader of a virtual team. The participants in their interviews chose not to provide crucial details as to the length of time they had in a virtual team member before they emerged as a leader. This may be due to a focus on their current duties, or, some other reason. These two areas need further research to determine the impact of virtual team members whom made decisions to emerge as virtual team leaders.

The methodological, theoretical, or empirical implications of the study relies on the information provided in participant responses and the efforts of asking accurate questions to elicit data from knowledgeable participants who posted their backgrounds on the website used in this research study. The objective for this study sought to obtain accurate information from the recent experiences of interviewed volunteer participants. The research relied heavily on the past memories and experiences as recalled by the participants. I made every reasonable effort to ask clear questions and obtained

participant permission to record and use their information for the study. As I too have years of experience in the information technology field, I have some ability to discern fact from fiction in the stories captured in the interviews. I believe that the information provided is, in general, quite accurate and on target.

Implications for Practice

The five necessary skill areas for emergent nonhierarchical virtual team leaders identified in the study were communications, trustworthiness, motivation to act, knowledge or expertise, and experience working in a virtual team. In practice, it is common that virtual team members are likely to have very good communications skills as interviewees stated this skill was critical in their decisions to emerge as leaders. This skill also enabled team members to trust their virtual team leader. In practice, organizations should find ways to monitor and promote members that have gained through experience the advanced skills to communicate, as this is beneficial for future leadership positions. This is a leadership skill that is necessary to monitor, track, and record the work of team members. And teams that add new members with less experience should add training, as needed, which can lead to members having confidence to talk over distances and share their knowledge and experiences, which is a critical skill that was mentioned in interviews (Malhotra, Majchrzak, & Rosen (2007).

<div align="center">

Conclusions

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The examination of virtual team leadership emergence information for this research study is based on actual experiences of virtual team leaders who emerged to lead their teams. All participants live and work in the United States and lead global virtual

teams. Interviewees stated that leaders will emerge when there are time constraints and other pressures to perform exist. The study findings, that communication skills, trust, motivation, expert knowledge, and experience working in virtual teams are critical components in leading nonhierarchical virtual teams, confirming prior research findings by Boies, Fiset, and Gill (2015). Additionally, the study data suggest that virtual team leaders must have the skills to set goals, direction, and advocate for a virtual team. And they must have high credibility based on knowledge, social skills, and task skills so that they have earned respect. Without these factors, it is doubtful the individual would emerge as a virtual team leader. One factor that was not reported in the literature about virtual team emergent leaders is the willingness to take the initiative. This occurs when a person sees a problem and fixes it, rather than reporting the problem and waiting for someone else to fix it. The characteristics described in this concluding paragraph separate individuals that are ready to emerge as leaders of nonhierarchical teams from those who are not.

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Appendix A: Participant Screening Instrument

1. What is your gender?   Male ☐   Female ☐

2. What is your age? (Select one)

    18-25 ☐   26-30 ☐   31-35 ☐   36-40 ☐   41-45 ☐
    46-50 ☐   51-55 ☐   56-60 ☐   61-65 ☐

3. Do you currently work as a member of a virtual team?
    Yes ☐   No ☐

4. What is your ethnicity?
    African American ☐ Asian ☐   Caucasian ☐ Hispanic/Latino ☐

    Native American ☐ Pacific Islander ☐ Other _____

5. What is your highest level of education?   _____

6. How long have you been working in virtual teams? (Select one)

    Less than 1 year   ☐
    Less than 2 years   ☐
    Less than 3 years   ☐
    Less than 4 years   ☐
    Less than 5 years   ☐
    More than 5 years   ☐

7. What is/was your role when working with virtual team?

    Virtual team member   ☐
    Assigned virtual team leader ☐
    Manager, virtual team   ☐
    Other (Specify role)   _____

8. What is/was the size of the organization where you worked as a virtual team member?

_____

9. How many members were in the virtual team?   _____

10. In case you are selected for the interview stage, please provide your name and email address to schedule an interview.

Name: _____

Email Address: _____

Appendix B: Interview Questions

- Your name.   _____

- Date and your local time of the interview.   _____

Central Research Question:

How do leaders emerge in nonhierarchical virtual teams?

Interview Questions:

1. Please describe the knowledge, skills, and abilities you believe are essential for being an effective nonhierarchical virtual team leader.

2. What behaviors have you observed in team members who emerged as the team leader that were beneficial to individual and team performance in a nonhierarchical virtual team?

3. Please describe as best you can what would prompt a team member to assume a leadership role in a nonhierarchical virtual team without an assigned leader.

4. Have you thought about leading such a team? Why? Why not?

5. What other aspects, if any, of how leaders emerge in nonhierarchical virtual teams have we yet to discuss?

Thank you for your participation.