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Factors Affecting the Productivity and Satisfaction of Virtual Workers

Teresa Peoples
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Walden University

College of Management and Technology

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Teresa M. Peoples

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Walden University
2021

Abstract

Factors Affecting the Productivity and Satisfaction of Virtual Workers

by

Teresa M. Peoples

MS, University of Phoenix, 2003

BA, Florida Metropolitan University, 1993

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Applied Management and Decision Sciences

Walden University

May 2021

Abstract

Advancements in technology have ushered in new digital enterprises, shifting the trend from a conventional workforce to a virtual workforce and giving rise to new challenges for managers. However, the factors affecting virtual worker productivity and job satisfaction are not well known. The purpose of this study was to identify these factors and determine what managers can do to enhance them. The theoretical foundation for this study included sociotechnical theory and content theory as they relate to the motivation and communication needs of the virtual workforce. This qualitative phenomenological study was an exploration of factors that affect virtual workers' productivity and job satisfaction based on analysis of data collected in face-to-face interviews with 5 virtual workers and 5 managers of virtual workers at least 18 years of age who worked full-time from a virtual home office in the United States and communicated through information and communication technology. Using the constant comparative method, data were collected and analyzed from interviews with purposeful samples of virtual workers and managers of virtual workers. Both virtual workers and managers of virtual workers tended to view the factors that affect productivity and job satisfaction similarly: Working virtually benefits virtual workers and employers, having a flexible work schedule enables employees to lower work-related costs and maintain a healthier work-life balance, and employers benefit from the improved productivity of the virtual workforce and a wider talent pool and save on workplace-related costs. The study results could bring about positive social change by helping managers implement ways to enhance the productivity and satisfaction of virtual workers, a fast-growing component of the modern workforce.

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Dedication

To God, be the glory for all you have done in my life. I dedicate this study to my family, those still here, my mother, Willie Pearl, my sister, Tanisha, and my brother's, Darryl, Isaac, and Joseph. Also, including my nieces Sophia, Senia, and Tatiana and nephews Darryl Jr, Derek, and Travis. Those family members that have gone on, my great Aunt Mary Williams, who taught me that I could be and do anything. My middle sister, Yolanda Denise Flower, and middle brother Larry Eugene Peoples, you both left us too soon. Family, thank you for your long-suffering with me through this educational journey.

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Chapter 1: Introduction to the Study

The popularity of the virtual workforce has grown at a significant rate since the turn of the 21st century (Chu, 2015; Montesi, 2014; Nyaanga et al., 2013). Other terms for a virtual workforce include global workforce, distributed team, virtual worker or team, or geographically dispersed team (Pride et al., 2014). For the purpose of this study, the term *virtual worker* refers to geographically dispersed employees and team members working for an organization, business unit, or department relying exclusively on information and communication technology (ICT) to communicate (Pride et al., 2014; Zivick, 2012). Such virtual workers consist of individuals, groups of employees, or subcontractors who function as a team on common projects around the globe, across space and time. As a result of the advancements in technology, people have the technological capability to work across time and distance (Duarte & Snyder, 2006).

Information technology (IT) has changed how companies conduct business today (Schall et al., 2013). The traditional face-to-face (F2F) office environment regarding the employer and employee relationship has changed. The advances in ICT have brought on significant changes and reshaped the office environment, especially regarding virtual time zones and distance, allowing employees to work virtually (Martin & Ottemann, 2016).

Though the benefits of a virtual workforce are significant, such an innovation is not without challenges (Jackson et al., 2012). Managers may find it challenging to keep virtual workers motivated, and employees may find it challenging to stay motivated working in an isolated and detached virtual environment. The virtual environment can

also hinder an employee's opportunities for participation in activities that are normal in traditional office interactions—activities like physically attending meetings and F2F contact, such as chatting around the water cooler and coffee area, or taking personal breaks and walks (Jansen et al., 2017). Some employees thrive in environments where they can interact with other employees, but virtual workers live and work all around the world. Consequently, it is critical for leadership to understand the importance of building a thriving organizational culture within a virtual workforce that supports employees who are geographically and culturally apart (Lojeski & Reilly, 2010).

Companies must continue to look beyond their brick-and-mortar corporate walls and consider the virtual workforce (Martin & Ottemann, 2016). Having the opportunity to recruit, hire, and retain the best workers from around the world with no geographical barriers offers a competitive advantage for proper global partnerships. Companies decide to go global for various reasons, such as developing a broader consumer base to improve profits. A global marketplace demands global companies. Therefore, it is essential that companies upgrade their products, services, and technology to extend their business value (Au & Marks, 2012; Zivick, 2012). The advances in technology have given customers the power to demand both products and service support that are adaptive, flexible, and integrated (Hoefling, 2003).

Technology has revolutionized today's work environment. Previously, the work environment consisted of office-based employees working in close physical proximity, often in community cubes, with close or onsite supervision. In contrast, in the virtual workforce environment, the *office* is network-based, using video conferencing with

virtual supervision. The virtual workforce is a reality that is becoming common across industries as technology continues to evolve. The tradition of employees moving closer to their office workspace has quickly become a thing of the past; instead, the work moves towards the employees. As more companies transition from a traditional work environment to the virtual team or virtual worker, the perception of the virtual work environment will continue to shift concepts about how companies function today and in the future (Martin & Ottemann, 2016). For example, with over half the world's population on lockdown due to COVID-19, many companies have had to adopt a work-from-home policy (Cucinotta & Vanelli, 2020). However, when working within a virtual workforce environment, employees may find physical distance to be an obstacle. In fact, it can be challenging for virtual workers to understand the organization's goals, values, and culture. This study highlights the need for organizations to build trustworthy relations between team members and leadership. Common goals can build feelings of interdependency to physical distance being less of an impediment when employees are aligned (Lojeski & Reilly, 2010). The significance of job satisfaction for the virtual worker is a sense of inclusion, involvement, and connection regarding team members and the organization (Pangil & Chan, 2014).

Background of the Study

With the advancements in ICT and the Internet in the workplace, both small and large organizations have the ability to compete on a global scale, revolutionizing the business world (Madlock, 2012). Because of the continued advances in ICT, businesses realize the benefits of cost savings and improvements in productivity by leveraging the

technological progression of high-speed communications (Lojeski & Reilly, 2008). Through computers, email, and smartphones, employees can work from virtually anywhere in the world (Soukup, 2015). Advances in ICT and the global workforce can benefit a business in many ways, such as the elimination of corporate brick-and-mortar infrastructure across the organizations; consequently, businesses would need less real estate as they move toward the virtual workforce (Lojeski & Reilly, 2008).

Although the advent of the virtual worker is a relatively new phenomenon, it has rapidly been expanding across the business industries (Lojeski & Reilly, 2010). Virtual workers are individuals who do not physically work at the office with co-workers or management. Typically, a virtual worker works from home and leverages technology to facilitate communications.

The globalization of work has opened up the opportunity to virtual teams, and organizations have responded by supplementing their traditional team structures with a virtual workforce (Au & Marks, 2012; Hanif & Yunfei, 2013). The ability to work virtually has rapidly increased an organization's ability to develop a globalized diverse cultural team, which, in turn, positions an organization with a more extensive talent pool of professionals to draw from (Mockaitis et al., 2012).

As the virtual worker has transformed the traditional brick-and-mortar organization structure to that of a virtual workforce, management's role of the virtual workforce is still evolving. This study may add to the existing body of knowledge on virtual management communication in a way that researchers can use to expand the literature on the topic.

Problem Statement

Advances in ICT have allowed the virtual worker to work from anywhere around the globe, with virtual teams becoming more common (Pride et al., 2014). However, virtual workers feel isolated and disconnected due to their lack of F2F interactions and a need to belong (Baumeister & Leary, 1995), which can lead to job dissatisfaction and a drop in productivity (Greer & Payne, 2014; Madlock, 2012). Thus, the emergence of new technology has created various management and leadership challenges for those who operate based on the traditional F2F management paradigm. Further research into this subject may fill a gap in the research and provide an advanced understanding of the relationship between job satisfaction and management challenges of the virtual workforce (Lilian, 2014).

Purpose of the Study

The purpose of this qualitative study was to determine the factors affecting the productivity and satisfaction of members of the virtual workforce and to identify ways in which employees and managers can enhance the productivity and satisfaction of virtual workers. The findings from this study may help management make more informed decisions regarding the development of strategies to motivate and communicate with isolated virtual workers.

Research Questions

The research questions that guided the study were:

1. What factors affect the productivity of virtual workers, and how can they be enhanced?

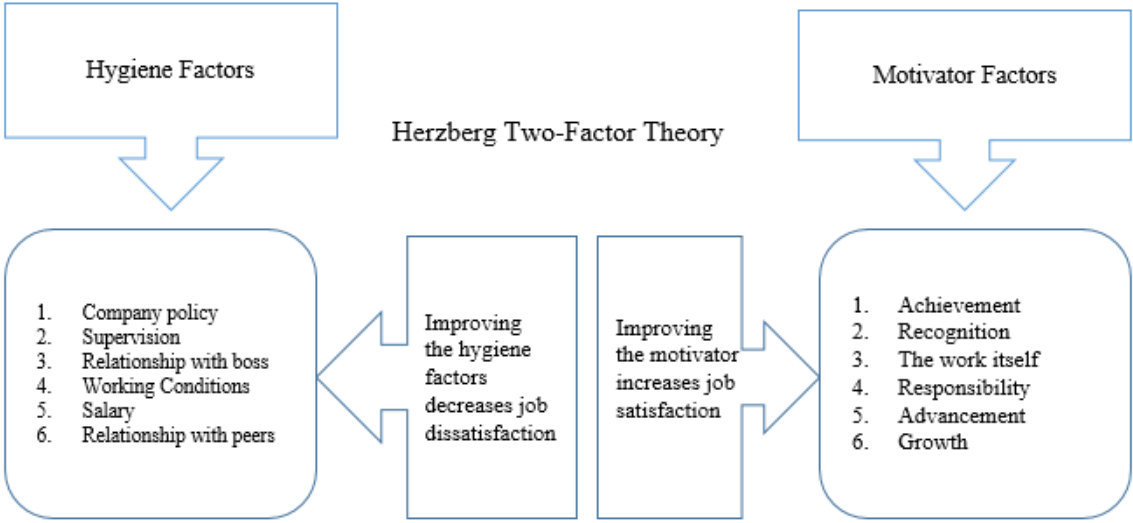
2. What factors affect the job satisfaction of virtual workers, and how can they be enhanced?

Conceptual Framework

Herzberg’s (1966) motivation-hygiene theory is the predominant conceptual framework that supported this research study. The theory states that, within the context of understanding motivation among employees, two sets of factors (hygiene factors and motivator factors) affect job satisfaction and dissatisfaction (Herzberg et al., 1959).

Figure 1

Herzberg’s Two-Factor Theory



Additionally, there are two supporting theories used to examine the research factors in this study. The sociotechnical systems (STS) theory is a perspective of the impact of technology in the organization (Trist, 1981; Trist et al., 1963; Trist & Bamforth, 1951). In the context of Herzberg’s (1966) motivation-hygiene theory, sociotechnical theory focuses on integrating people and technology. The sociotechnical

approach combines people and technology; it emphasizes the interactions of people and technology working within an organization (Shin, 2014). The STS design seeks to improve the overall performance and working quality of an organization while nurturing the human social and technology of change within the environment (Dhondt et al., 2014).

The content theory of motivation, often referred to as needs theory, focuses on satisfying employee motivation and personal needs. In the context of Herzberg's (1966) motivation-hygiene theory, the content theory explains the factors behind individuals' motivations by identifying what satisfies their needs and desires and by establishing the aims that they pursue to satisfy these desires. In recent years, a work–life balance has made for happier employees because their home life and work life were in sync, which means their needs were satisfied. Work conflicts or demotivation may arise when an employee's family responsibilities (work–life balance) interfere with their work duties (Nohe et al., 2014). Further discussion on how these theories support the study appears in Chapter 2.

Nature of the Study

This qualitative study involved the use of a phenomenological design to determine what factors affect the productivity and satisfaction of virtual workers and how such factors can be enhanced. A qualitative phenomenological approach was used to gather in-depth information from the virtual workers' and managers' perspectives of working in a virtual environment. Face-to-face interviews consisted of predefined open-ended interview questions. The alternative data collection methods considered included focus groups and an online bulletin board. However, the former would preclude the

collection of in-depth data from each participant, and the latter would not allow capturing of non-verbal responses. The sample consisted of five virtual workers and five managers of virtual workers. I selected the study participants using purposeful sampling and referral sampling (Gentles et al., 2015).

The data collection process involved (a) selecting participants; (b) arranging, conducting, and recording the interviews; and (c) analyzing the data, all in an unbiased manner. The measures used to protect the rights of study participants during the data collection and analysis process included (a) explaining the study relevance and presenting each with an informed consent form, (b) remaining impartial during the interviews, and (c) applying the phenomenological process objectively to enable a theory of the factors affecting the performance and satisfaction of virtual workers to emerge from the data.

A phenomenological design was chosen because it (a) guided the data collection and analysis process, which involved using the constant comparative method to become familiar with the data and search for patterns and themes and (b) enabled the development of a set of factors that help explain the phenomenon of how working in a virtual environment affects employee job performance and satisfaction. I asked the virtual workers and managers of virtual workers who participate in the study to validate the findings using the member checking process.

Definitions

The terms and words used throughout this study may appear repeatedly and are often interchangeable; therefore, it is necessary to define the terms and words in the context of this study. It is important to note that these definitions are for the sole purpose

of this study. No other claims are made regarding the use of these definitions for any other purpose.

Brick and mortar: Traditional physical office building where employees meet to perform daily operational functions of the company (Hoefling, 2003).

Employee motivations: What motivates one employee will differ for another employee; likewise, what satisfies one employee will also differ for another employee (Herzberg, 1966; Hoefling, 2003; Maslow, 1954; McGregor, 1960).

Information and communication technology (ICT): The digital communications that allow organizations and employees to share information and communicate digitally (Verma, 2005).

Isolation: A concept where virtual workers lack personal interactions (Davis & Cates, 2013)

Job satisfaction: Employees' feelings about their jobs and the emotional impact it has on their behavior (Locke, 1976).

Professional isolation: The feelings of a virtual worker when detached from the social relations at work, informal learning and mentoring (Cooper & Kurland, 2002).

Theories of motivation: Various leading theories of motivation with different views as to what motivates workers (Herzberg, 1966; Maslow, 1954; McGregor, 1960).

Virtual employee: An employee who works remotely from a home office (Lojeski & Reilly, 2010).

Virtual teams: Employees and managers who operate across space, time, and organizational boundaries using IT to achieve organizational objectives (McShane & Von Glinow, 2014).

Virtual workers: Employees whose primary work location is their home office (Lojeski & Reilly, 2010). For the purpose of this study, the term *virtual worker* refers to geographically dispersed employees and team members working for an organization, business unit, or department relying exclusively on ICT to communicate (Pride et al., 2014; Zivick, 2012). Such virtual workers consist of individuals, groups of employees, or subcontractors who function as a team on common projects around the globe, across space and time.

Virtual workforce: Employees whose workplace is not physically or collocated in the same place or geographic boundaries. Employees interact via communication and technology. Virtual workforce is also known as a distributed team, virtual team or geographically dispersed team and global workforce (Lojeski & Reilly, 2010). Other terms for a virtual workforce include global workforce, distributed team, virtual worker or team, or geographically dispersed team (Pride et al., 2014).

Virtual workforce environment: Remote employees who work and interact with one another in a collaborative environment regardless of where they live in the world (Lojeski & Reilly, 2010).

Work–life balance: A concept of achieving a balance between a personal lifestyle of career and family (Ghosh et al., 2013).

Assumptions

Assumptions are necessary to reduce the influence of bias or prejudice in research. Different approaches are used in research depending on the subject matter, so the researcher makes assumptions and considers the worldviews and theoretical frameworks that shape a qualitative study (Festinger & Katz, 1966). The design of this study included several assumptions. The first assumption was that participants would answer questions truthfully because of the data collection's anonymous and voluntary nature. The second assumption was that virtual workers and managers rarely meet F2F. Virtual workers are geographically dispersed employees, working full time from their home office or other remote location (Boyer O'Leary et al., 2014; McShane & Von Glinow, 2014; Symons & Stenzel, 2007). Working virtually allows employees to complete work from a home office, which they had previously performed at an office. The third assumption was that virtual team members communicate through IT using the IT equipment they need to accomplish their daily job duties. The final assumption was that respondents would not have an ulterior motive in shaping their responses to the research questions.

Scope and Delimitations

The scope of this research study is bound in several ways. The first delimitation is that the research sample consisted of 10 virtual workers within the United States to reach data saturation (Elo et al., 2014). The sampling frame for the study was F2F interviews to allow the virtual workers and managers the opportunity to explore their experiences and perceptions in detail. The second delimitation is that the study involved exploring factors

affecting the virtual workforce, such as feelings of isolation and lack of communication, as well as the factors affecting virtual managers, such as motivating employees, determining the best leadership style to manage virtual teams, and discovering the most effective communication styles in the virtual environment. This study included the perception of analysis of the virtual workers and managers in a virtual environment, not the perspectives of traditional employees and managers in a traditional office setting. The final delimitation of the study included data collection demographic analysis such as age, work history, and nationality, and education. The research study boundaries included virtual workers' motivation, job satisfaction, and managers of virtual workers' effective communication. Excluded boundaries included employees working within a traditional organization co-located with their management.

Limitations

A number of things limited this study: (a) F2F interviews are time-consuming in terms of travel time, data gathering, and time for analysis (Charmaz, 2014); (b) the number of virtual workers and managers willing to participate; and (c) the inherent nature of the qualitative study and whether the information gathered is an accurate reflection of the participants' lived experiences. Additionally, any lack of honesty and sincerity of the participants may affect the results of the study. Further, phenomenology guided the data collection and analysis process, which involved using the constant comparative method. The constant comparative method helped to explain how working in a virtual environment affects employee job performance and satisfaction. I asked the virtual

workers and managers of virtual workers who participated in the study to validate the findings resulting from the triangulation of information.

Significance of the Study

The significance of this study lies in defining the potential management challenges affecting virtual workers' job satisfaction. One such challenge is the connectivity paradox (Lojeski & Reilly, 2010), which refers to how people in virtual environments with unlimited technology (connected) around them often perceive themselves to be distant (disconnected) from the other team members. Leaders who lack effectiveness cannot motivate or inspire their employees or create sustainable value for the organization (Lojeski & Reilly, 2010). Therefore, a goal of leadership within a virtual team environment is engagement; to keep a virtual team informed and aligned with the organization, continuous communication is necessary (Inabinett & Ballaro, 2014; Iyer & Israel, 2012).

Technology will continue to become imperative in a globally connected world as companies find ways to compete (Deans, 2009). Virtual work continues to grow with globalization, offering an advantage for businesses to reach new markets (Bansal, 2013; Kotter, 1996; Watson-Manheim et al., 2012). The continuous growth of the virtual workforce presents companies with growth opportunities in new markets and employees' job satisfaction and flexibility. However, management and leadership face the challenge of accepting change and driving change (Kotter, 1996). Managers succeed in bringing out the best in their employees by:

- Developing a cohesive team that jointly owns critical management issues

- Dealing with difficult problems head-on and making core decisions through consensus
- Encouraging healthy competition against objective standards of excellence
- Being decisive leaders while encouraging input from team members
- Managing daily procedures, adapting to change and maintaining a vision of the future. (Bradford & Cohen, 1997)

The findings of this study offer significant contributions to the virtual workforce literature, particularly regarding management styles and the knowledge use of ICT in the globalized virtual economy.

Significance to Practice

Advances in ICT have given way to a paradigm shift in the global workforce. The demands of a competitive global market have forced many organizations to be open to change and adopt new methodologies to production and organization (Nwokocha & Iheriohanma, 2012). As a result, organizations face challenges with regard to recruitment, development, and training, and employee retention (Hofaidhllaoui & Chhinzer, 2014; Rehman, 2012).

Significance of Theory

A company's most valuable asset is its workforce. With the rise of the virtual workforce, many companies have devoted time and energy to identifying and developing new employee retention strategies (Belbin et al., 2012; James & Mathew, 2012).

Employee retention issues are evolving as the most critical challenge for most companies (Nwokocha & Iheriohanma, 2012). The more employees are engaged, the less likely they

are to leave (Beaudry et al., 2014; Wiley, 2010). Organizations that inspire employee confidence, effectively communicate and motivate, and keep employees engaged are more likely to retain their current employees. This study may fill a gap in the literature and contribute to business and organizational practices by equipping management and organizations with the knowledge, understanding, and essentials of the virtual workforce.

Significance to Social Change

The application of this study's results could bring about positive social change in management's functional roles and responsibilities via effective communications, leadership styles, and job satisfaction. The findings could provide management with information that will help them to develop strategies to increase job satisfaction, employee motivation, and the processes and procedures for management success in a virtual environment.

Summary and Transition

Chapter 1 included an analysis of the inspiration for the study and the virtual workforce. Managing a virtual workforce requires a different management style. When managed properly, a virtual workforce offers real benefits to the company and employees. Management's role is about their integrated network of expertise, experience, and collaboration with the team (Hoefling, 2003). To better support virtual teams, managers who work with virtual workers should think of competencies, not location or organization. The failure of management to address the challenges affecting the virtual worker, such as the feelings of remoteness and lack of communication, could potentially affect productivity and the company's bottom line. Chapter 1 also contained a brief

explanation of the study, the problem statement, and purpose, the significance, the nature, and the theoretical framework, research questions, as well as the terms, assumptions, scope, delimitations, and limitations.

Chapter 2 includes a review of the literature that explains the essential concepts of the study, the virtual workforce, and the challenges of management, and employee motivation, and job satisfaction. Chapter 2 also includes a description of the motivational and communications needs of the virtual worker and insights into the importance of ICT to virtual workers.

Chapter 2: Literature Review

The virtual workforce has become more prevalent in the United States with more technological advances in computers and the Internet. In 2015, The U.S. Census Bureau named the second week of October as National Work from Home Day. The idea behind the work from home day is to encourage employers whose jobs allow them to work from home more flexibility. There are approximately 155 million civilian workers in the United States, of which 5.3% work from home at least 1 day per week. In 2018, The U.S. Census Bureau (2020) conducted the American Community Survey and estimated that 5.0% males and 5.5% females worked from home as compared to the 2016 survey, where 4.8% males and 5.4% females worked from home. There is a slight increase between the 2-year survey of 0.2% for males and 0.1% for females, showing the virtual workforce is steadily growing. Despite this slight increase, a review of the literature reveals a lack of information on the factors that affect job satisfaction and productivity of the home-based virtual worker. This study involved an examination of the relationship between the virtual worker, ICT, and job satisfaction as well as identify management challenges in the virtual workforce. Chapter 2 contains an analysis of the current research studies and paradigms on organizational culture and change, job satisfaction, motivation, and technology, and leadership challenges that inform an understanding of the virtual workforce.

Literature Search Strategy

The primary sources for the literature review included peer-reviewed and scholarly journals, which comprised the bulk of the research for a comprehensive examination of the academic research literature. The secondary sources included books,

federal government reports, and professional websites using the Google search engine to access Google Scholar, Books, and Chrome. The search strategy consisted of selecting journal articles found via the Walden University Library search engines and databases, including Sage Publications, ProQuest, Ovid, IEEE, EBSCOhost, Science Direct, Business Source Premier, and ERIC. Database searches included the following keywords and phrases: *virtual workforce, virtual worker, virtual employee, virtual team, virtual organization, telecommuting, information communication technology, global workforce, distributed team, geographically dispersed team, geographically dispersed employees, job satisfaction, motivation, leadership style, socio-technical, sociotechnical, and isolation, and professional isolation, and Maslow's hierarchy of needs theory, and work-life balance*. The original database searches utilizing these keywords or phrases provided approximately 150 journal articles. The number of articles included in this study is 245.

Search limitations and exclusion filters included English language peer-reviewed journal publications and materials. The publication date ranges are primarily within the last 5 years, January 1, 2014 to December 31, 2018, and a search concentration primarily within the United States and several international publications as well within the IT, education, business, accounting, and communication industries. The review also excluded research within the medical and social services industries as well as any current research underway that is not available in the mentioned publication material or the English language yet.

Conceptual Framework

The conceptual frameworks for this study included STS theory and Content Theory, which were used to define the motivation and communication needs of the virtual worker. The advent of the Internet and innovations in telecommunications technologies increasingly facilitate the virtual workforce. The primary connection between many businesses and their virtual workforce is through computers and telecommunication technologies across the state and around the world. Globalization allows for the availability of many goods and services, products, and technologies as well as for the exchange of knowledge. With advancements in technological telecommunication infrastructures among corporate organizations, the virtual workforce is becoming the norm (DellaNeve & Gladys, 2015).

Though a challenge for companies is raising performance and productivity, ICT in disperse teams can generate more performance and productivity, which helps shape the joint optimization concept, a fundamental design in STS (Molleman & Broekhuis, 2001). Sociotechnical optimization moderates the relationship between distance and effectiveness. Job design influences performance in virtual team environments, and joint optimization requires the needs of workers and the work to align with current technology (Cummings, 1978; Viraldo & Shafaat, 2013). Joint optimization usage is both human and technical, which is a system factor for work teams to complete a significant piece of work (Cramton & Webber, 2005). As such, teams would have a voice in the decision-making opportunities concerning factors affecting job satisfaction, learning new skills and as well as interactions with others. A well-defined job design is an essential factor to consider

when assigning work to virtual teams, which would make the job satisfying and interesting and can lead to an increase in performance and productivity (Cramton & Webber, 2005).

STS theory refers to an organization's approach to the connections between the employees and the ICT used in the work environment (Trist, 1981). STS involves the consideration of the social factors among employees, as well as of the technical aspects of the organization's business goals and objects in trying to align them strategically. The significance of STS theory is that it brings the organizational and human (social) elements together with the technical systems because the two are interrelated (Trist, 1981). Studies on embedded systems have also recognized that just because employees and technology systems are interrelated does not necessarily mean they are aligned effectively (Markus & Mentzer, 2014). The sociotechnical interactions of employees and technology systems are an essential reflection of understanding the organization (Amble, 2013).

The social and technical elements of a virtual team determine how to optimize performance in the team and the organization. The use of technology to facilitate the greater effectiveness of communication and the sharing of tasks and performance through teamwork is essential for a successful sociotechnical system (Cramton & Webber, 2005). Therefore, management should create a joint optimization of technical performance and the social aspects of the work that people perform (Cramton & Webber, 2005). The focus is on how management exploits technology to encourage higher productivity while also creating a satisfactory work environment (Cramton & Webber, 2005). While a successful

sociotechnical system emerges, the system must work to create a higher quality of work lives to motivate the performance of the workforce, making content theory an essential accompaniment to the conceptual framework of this study.

Content theory motivation or needs theory takes into consideration basic human needs. Motivation is a set of drivers that stimulate a person's willingness to do something and how much effort that person would put forth (Reeve, 2016). Content theory motivation involves understanding the influences that motivate people. Content theory is the conglomeration of several different theories related to the motivation of behavior and the needs of individuals. In an organization, such theories explain why some employee motivators lose efficacy over time, whereas others become more effective.

Two important content theories are existence, relatedness, and growth (ERG) theory and Herzberg's motivation-hygiene theory. ERG theory suggests that an essential element that people seek in their work relationship is existence. The ability to survive is something gained from steady income via work; socialization in the workplace also motivates workers. Relatedness is another critical element of motivation, as socialization can drive people to perform better for themselves and the people around them. Growth is the point in motivation where people feel that they are becoming better through the work they do. For workers in virtual teams, the design of the team and how they do work can enhance the existence, relatedness, and growth that workers feel through the job they do (Korzynski, 2013). Herzberg's motivation-hygiene theory, on the other hand, describes two factors that drive performance and satisfaction: motivators are intrinsic factors, which drive the performance of an individual and make them satisfied with their work.

These factors include work elements such as challenging work, responsibility, opportunity, achievement, and personal growth. Hygienic factors are elements such as pay, job security, and fringe benefits, and insurance, and vacations (Herzberg, 1968).

In this study, the sociotechnical nature of virtual team design is considered a foundation for determining virtual worker factors of productivity and satisfaction are affected. Joint optimization supports greater worker performance, while the design of team communication and social elements affects content elements, thereby affecting satisfaction. At the same time, joint optimization influences satisfaction as the design of work would bring workers together, whereas motivation and hygienic factors will influence a worker's productivity. STS and content theory also explain how social interaction and the hierarchy of the workplace can create an efficient performance.

The current understanding of the sociotechnical nature of work is different from the seminal work on sociotechnical theory in that current investigations typically focus on knowledge workers working in professional services rather than workers in low-skill positions like the coalminers (Trist & Bamforth, 1951). Many studies on the sociotechnical environment will focus on workers in self-regulated work teams or mass customization assembly lines; however, there is a lack of investigation regarding how content theories of motivation are connected with sociotechnical study in regard to exploring the productivity and satisfaction work in virtual teams from a qualitative phenomenological perspective. The following synthesis of the current literature on the topic exposes this gap as well as the need for an investigation related to it. This synthesis of the literature concludes with a discussion of sociotechnical and content theories of

motivation in virtual work and the need to fill this gap. The synthesis of the literature that follows describes the current work environment, how virtual work fits into it, what virtual work is, and how it is that virtual work affects productivity and satisfaction.

Literature Review

Changes in Work

Jobs are becoming more virtual, which allow employees to work from anywhere and anytime. Since the late 1990s, there have been continuous changes in work performance due to a number of influences that included, but are not limited to, increasing competition in the marketplace, the advances in IT, and the growing forces of globalization (Ergu & Peng, 2014). This rapid growth of ICT, specifically the Internet, computer software, and multimedia devices, has driven changes in work performance across the globe (Ergu & Peng, 2014).

The development of ICT, along with the influences of the virtual workforce, has given many organizations more opportunities to compete globally. Such technological advances have revolutionized the business world (Krom, 2015). In reality, ICT has changed business practices with the usage of computers, email, and collaborative interfaces, which allow employees to work from virtually anywhere in the world. For companies to survive in this fast-paced technological new world, companies need to re-evaluate their business model for new tool usage, organizational cultures, and environments, giving companies the ability and flexibility to attract and retain the workers who are vital to the organization's growth (Arsovski, 2013).

Information and Communication Technologies

ICT has altered the work structure across industries and created new business opportunities (Krom, 2015). Technology not only influences how people conduct business, but it has also changed when, where, and how people perform work. It has given companies open access to participation and knowledge learning and sharing within their organization and among other organizations (Arsovski, 2013). ICT removes the physical barriers of distance, time, and space, increasing globalization as it has brought the global community closer than ever before (Marabelli et al., 2013). Technological advances have also created an opportunity for people to work virtually (Marabelli et al., 2013). For instance, the Internet has enabled electronic communications to be accessible to everyone with the proper electronic equipment, at any time, anywhere in the world, and on any scale.

The Internet emerged in the late 1980s as a popular medium for communicating information, collecting information, and disseminating information (Yang, 2008). The Internet influences the way people communicate (email, instant message, twitter), shop (online electronic retail), and educate (online eLearning). It also influences banking practices via business-to-consumer e-commerce between companies as well as consumers and social networks (LinkedIn, Facebook). It has also changed business-to-business e-commerce between companies and work performance in a virtual office (Gupta, 2014; Ninck, 2013).

Internet use exploded in the United States at the same time that manufacturing growth began to increase (Litan & Rivlin, 2001). Many U.S. companies invested heavily

in IT to acquire an Internet component in the mid-1990s (Litan & Rivlin, 2001). The Internet growth was due in large part to the invention of a suite of technologies, including the hypertext transfer protocol (HTTP) protocols and HTML programming language and the first Internet browser applications. HTTP is the Internet foundation data communication, whereas HTML is used in libraries to create web pages and is nonlinear and cyclic (meaning no beginning and no end). Both of these components created the multimedia better known as the World Wide Web on top of the pre-existing Internet data transmission protocols. The Internet now almost entirely dominates other networking technologies. As a result, a business IT investment in the United States has become increasingly skewed toward continuous purchases of hardware, software, and networks that are Internet-enabled (Cui, 2016). The continued growth of the Internet could provide substantial benefits such as significant cost savings, productivity improvement, and industry growth over time (Litan & Rivlin, 2001).

IT changed the way people conduct business, as technology affects almost every aspect of business (Cui, 2016). Information technology organizations once consisted of very expensive computers, networks, and data processing capabilities. But perceptions change daily—what was a good investment yesterday is a financial burden today (Colbert et al., 2016). As technology has changed with the times, so has the way companies conduct business. Advances in technology have changed many aspects of the way many businesses operate, such as a virtual workforce. Technology is a fundamental component in determining business strategy (Berisha-Shaqiri, 2015). The Internet enables businesses to reach beyond the traditional brick-and-mortar store; e-commerce (electronic

communications) allows businesses to be available anytime and anyplace, 24 hours a day, 365 days of the year. As the Internet continues to extend into other markets, consumers and users find more competitors, possibly lowering costs and sharing information with other organizations (Lavassani et al., 2014). Consumers have extensive selections to choose from, and more choices can mean better options and better prices (Duch-Brown et al., 2017). The Internet and other types of IT have also opened opportunities to smaller firms, freelancing, and independent contracting, increasing fluidity in the number and types of partnerships explored by the average firm, and giving rise to the virtual factory (Litan & Rivlin, 2001). The impact of the Internet of things could enhance an industry's effectiveness and efficiency by leveraging and expanding the market size by improving the industry's position (Porter, 2008). ICT has also made it possible for employees to work from home; working virtual is not a new phenomenon as telecommuting has been growing since 1972 when Jack Niles coined the term (Allen et al., 2015).

As with every innovation, there is a risk with the reward, and when it comes to the Internet, the risk is the security of the computer and network. A client-server network architect was adequate when data were primarily text, and client diversity meant distinguishing whether the client connects from a computer, Mac, or another computer device. However, like networking, technology has changed, and delivery data have become richer, not to mention that the clients who receive the data have become more diverse. Internet security architect has evolved to cope with vast changes in IT (Jadhav, 2014; Vacca, 2007).

Globalization

Globalization offers companies the possibility of finding new ways to innovate and grow, by expanding their products and services around the world. In the Boston Consulting Group Innovation 2015 survey of 1500 senior executives representing the major industries and in several different countries, 79% ranked innovation as a top priority for their company (Ringel et al., 2015). Globalization is the conduit that connects businesses with manufacturers and services around the world. Globalization is the process that integrates companies and people around the world; it is the modern e-commerce driver of international trade and is supported by ICT. The increase in trade of goods and services gives many companies a competitive advantage. An increase in globalization allows for more trade options across industries (Turcotte & Ball, 2013).

Targowski (2014) stated that advances in technology over the past decades have had a significant impact on world trade. Globalization is not new; companies have been providing 24/7/365 customer support for years. The *follow the sun* model developed for large companies with multiple offices and team members in different time zones and countries ensures the work continues and provides around-the-clock customer support. (Espinosa et al., 2015).

Teleworking

Although telecommuting is very popular in many organizations, it presents unique challenges for workers and managers (Dahlstrom, 2013). In the Staples 2014 third annual telecommuting survey, 71% of telecommuters said telecommuting was very important when considering a new job ("Staples survey shows telecommuting offers edge to

companies looking to recruit talent," 2014). In this same survey, 74% of telecommuters cited the number one reason for telecommuting as achieving a better work-life balance. Other top reasons included saving on transportation (69%) and green benefits (47%). Of the employees surveyed, 88% believed telecommuting is a win-win for both themselves and their companies, and the employers agreed. Of the employers surveyed, 68% reported that their employees were happier and 33% reported less absenteeism when employees are telecommuting. Nyaanga et al. (2013) stated that U.S. companies favoring telecommuting allowed 55% of their employees to work at home occasionally, and another 33% of employees were allowed to work at home or off-site on a regular basis.

Teleworking or telecommuting allows employees to telecommute from home 1 or 2 days of the week or a few days during the month. Teleworking benefits the employee by allowing a flexible schedule and the employer by boosting productivity, morale, and cost savings (Caillier, 2012). Teleworking has grown at a considerable rate since the 1996 Clean Air Act, which brought awareness concerning the reduction of carbon dioxide and pollution and the conservation of fuel (Mahler, 2012). Telecommuting is part of a more significant effort as a solution to traffic congestion, air pollution, and petroleum use caused by single-car commuting to and from the workplace. The 1996 Clean Air Act encouraged companies with 100 or more employees to use other creative ways for employees to work by carpooling, using public transportation, shortening the workweek, and telecommuting (Mahler, 2012).

In 2000, the Teleworker Exchange (Public Law 106-346 section (§) 359) was signed into law (*Telework & emergency preparedness*, 2000). It states that each federal

executive agency must establish a telework policy for eligible employees to telework, yet maintain performance standards. The federal agencies were required to have telework policies in place for 100 percent of the eligible federal workforce by 2005 (*Telework & emergency preparedness*, 2000). In 2010, the Telework Enhancement Act of 2010 (Public Law 111-9; The Act) was signed into law by President Barak Obama on December 9, 2010, which increased federal employees' opportunities to telework (Mahler, 2012). The Act has four goals:

- Foster Continuity of Operations Plan (COOP) during an emergency
- reduce costs
- Promote work-life balance by allowing eligible employees to telework
- Increase employment opportunities for persons with disabilities to work from home

In 2012, the Office of Personnel Management reported to Congress concerning the telework implementation progress and problems, noting that 90 participating federal agencies cited technology as the second-most significant barrier to telework followed by managerial resistance (Brown et al., 2016).

Environmental Benefits

The U.S. General Service Administration (GSA) Administrator cited the benefits of teleworking on the environment. President Barak Obama signed the Telework Enhancement Act of 2010 into law on December 9, 2010, identifying the benefits to teleworking:

- Foster continuity of service during an emergency,

- Reduce cost
- Promote work-life balance
- Increase employment opportunities for persons with disabilities (Brown et al., 2016).

The advances in communication technologies have drastically changed the way employees work. In this modern age of technology, many companies rely on communication technology, such as email, instant messaging, and web conferencing, and real-time collaboration tools. Employers are replacing traditional employees working at the corporate office with virtual teams or virtual workers, as more companies striving for a competitive edge more are becoming champions of a virtual workforce (Boughzala & de Vreede, 2015). Although similar to teleworking, the virtual worker does not work a couple of days of the week from home; instead, the virtual worker works full-time from home. The virtual worker is characterized by working across time and space and relies on the sole use of technology to communicate with the organization.

Virtual Workforce

Advances in ICT innovations such as high-speed Internet, wireless fidelity (WiFi), and voice over Internet protocol (VOIP) have enabled a shift in the industry that connects entities reliably and quickly (Comu et al., 2013). As more companies move from manufacturing products to a service work environment, these industries are creating jobs that are more dynamic, complex and global, helping to usher in an era of the virtual worker (Chu, 2015; Franks & Oliver, 2012; Richards & Bilgin, 2012).

The virtual workforce is a different way for organizations to obtain and retain skilled workers. The traditional worker commutes to the office; communicates for the most part via F2F, phone, email, and web meetings, works in a corporate or local offices; stays for eight hours; and then commutes home. In contrast, the virtual worker commutes to his/her home office, about 15 steps or fewer, but still uses the same technology as traditional employees, such as phone, email, and web meeting, and instant message and works for eight hours.

The opportunity for employees to work from home in many companies has increased competition, cultural diversity, and globalization (Kahai et al., 2012; Li & Wei, 2014). As the advances in IT continue to increase, the demand for a highly-skilled global workforce will follow (Nyaanga et al., 2013). Employees perform many businesses' daily duties outside the traditional office spaces, as businesses look to cut costs, stay competitive and retain talented workers; having a virtual workforce gives a business more options (Milovanovic et al., 2016; Montesi, 2014). The virtual workforce allows organizations access to qualified employees regardless of their location.

Virtual Teams

Virtual teams are a reality, and all indications are that technology-mediated communications will continue to become prevalent in the future (Gilson et al., 2015). Technology teams with distributed membership can take advantage of communication tools rather than arrange F2F meetings, which can be time-consuming and make it difficult for workers to share vital information. Prior studies of teams utilizing computer-mediated communication tools have found that such teams will have stronger production

and quality of ideas (Jarvenpaa et al., 1988; Magnusson et al., 2014; Marett & George, 2013). The rapid speed of the global economy and the potential advantages of offshoring work to team members across the world have created the potential to gain advantages in the competitive landscape of enterprise through the utilization of communication tools. Research has not yet adequately studied team performance where a significant amount of communication between workers happens through using ICT tools to understand the impact of different types of leadership on team performance and the job satisfaction of team members.

Defining Virtual Teams

Organizations are continually seeking new ways to gain a competitive edge; many are turning to virtual workers. An advantage of using virtual workers is a cost saving to the company, as virtual workers are off-site, companies save on office space, equipment, and utility costs (Kankanhalli et al., 2006). The virtual workforce has fundamentally changed the way organizations strategically plan and grow. The geographical shift of dispersed employees is a crucial benefit that provides organizational flexibility in a competitive global market (Chung & Jackson, 2013). Virtual teams, which are not limited to time zones or geographical locations, are capable of overcoming the traditional office, cultural, and economic boundaries (Foster, 2010; Gupta, 2014). DeRosa et al. (2004) suggested that “virtual team members should find it most difficult to trust others when they are interacting through communication media that are most distinct from F2F communication” (p. 225). They further suggested that, if workers had learned to trust via the previous use of different media, then they may find it easier to develop trust.

The concept of the virtual team has no clear acceptable definition, although many researchers consider virtual teams as individuals spread across different time zones, who work and communicate using ICT (Smite et al., 2014).

Issues in Virtual Teams

While it is apparent, there is a need for and a capability of implementing virtual team use in organizations. An inability to supervise and control workers in virtual teams has been determined to be a common contributing factor of why half of the virtual teams fail to meet strategic and operational objectives (Jimenez et al., 2017). Scott and Wildman (2015) suggested that the role of leadership and technology requirements are among the essential factors to examine for determining potential risks. The role of leadership further explored in a study on virtual team leadership in the U.S. Air Force. This study investigated the perceptions of team members as relating to operation, leadership, and collaboration, determining that virtual teams face unique leadership challenges, which require a designated leader who acts as a facilitator and uses an appropriate leadership style (Minkin, 2012). Paik et al. (2019) suggested that self-leading teamwork is appropriate in jobs where there is a high degree of autonomy. Zaccaro (1990) determined that the influence of the job design factor of autonomy is SuperLeadership, a leadership style which encourages self-leadership on performance in virtual teams, which can potentially grant validity to this claim.

Virtual Team Outcomes

Kirkman et al. (2004) found that team performance measures concerning process improvement and customer satisfaction in virtual teams were positively related to team

empowerment and that frequent F2F meetings can increase the strength of the relationship between team empowerment and process improvement. Greater media richness, however, has also been found to have a positive influence on trust and performance in virtual teams (Burgoon et al., 2002). Burgoon et al. (2002) found that F2F communication was easier to perceive than mediated communication, and text-based communication resulted in greater competence. Gallupe et al. (1992) suggested that the removal of nonverbal cues increased attention to the information transmitted. Brainstorming productivity is higher in virtual teams than in traditional F2F teams.

Vegt et al. (2000) found a positive relationship between job complexity, individual-level task interdependence, and job and team satisfaction. Previous team experience is an influencer regarding how a team member may collaborate and contribute to future teamwork (Hackman, 1992). If a team member was not satisfied with a prior experience, the team member would be likely to withdraw and not perform well in future team projects. Trust has a positive relationship with job satisfaction in virtual teams (Morris et al., 2002). Researchers studying virtual teams have determined that job satisfaction relies in part on both the task and composition of the team (Cappel & Windsor, 2000).

Corporate Advantages

Corporations can benefit in many ways from offering virtual work options to their employees. One significant benefit of having a virtual workforce is saving money. A virtual workforce is cheaper than the traditional workforce because the company spends less on corporate overhead, which means savings can fund other projects or go back into

the company. Companies no longer face issues of distance or location; they can hire people from literally all over the world, which means not being limited by the local application pool (Dissanayake et al., 2015; Kosonen et al., 2014).

Two other vital advantages are employee retention and improved job satisfaction. Gully and Phillips (2016) noted that, while digital solutions to employment issues such as virtual teams may facilitate greater recruitment, selection, and retention, turning the digital solution into an advantage requires management to focus on the needs of the virtual worker. The researchers indicated that employee retention requires that virtual workers should value the autonomy and disconnectedness from the traditional work environment. Leadership should also focus on developing workers to be self-leaders so that they may take responsibility for their tasks, rather than depending on a supervisor or project manager to manage their time and performance for them.

Just as it is possible to improve employee retention and satisfaction, the use of virtual teams may also improve job performance. Serrat (2017) discussed the role of virtual teams in performing organizational tasks and how they support performance. Serrat (2017) noted that, while workers may come from different locations and cultures, the vital success of virtual teamwork is a clarity of purpose and an understanding of what is important to communicate. This makes virtual team performance a knowledge issue, whereby knowledge sharing is a crucial benefit if managed effectively. Gibbs et al. (2017) investigated the use of virtual teams and their implications on organizational knowledge sharing. Gibbs et al. (2017) found that the use of ICT as a communication tool facilitated the sharing of knowledge. One key element was the sharing of tacit knowledge

through the virtual space, through tracking worker task completion and following up with workers on the ways they approach their work.

Virtual teams can also be a way for the disabled to get to work, in part because the virtual work environment can more effectively accommodate workers with health problems and disabilities. It also can accommodate workers who may have trouble traveling because of the weather (Kennedy, 2014). The use of virtual work also decreases absenteeism because of the flexible nature of the work environment. Kennedy (2014) noted that strong project management and leadership resulting in the development of strong group cohesion could mitigate absenteeism in virtual teams. There is, though, a limitation to this benefit. If workers become disengaged or do not manage their time well, absenteeism can become a problem because the virtual workplace can free a worker from having to justify time not spent on a task. Guinalíu and Jordán (2016) determined that, when a worker has poor leadership and sub-optimal task-technology fit, one implication could be lack of performance and absenteeism.

Corporate Disadvantages

There are, however, some potential disadvantages to consider when deciding whether to invest in a virtual workforce. As with the traditional workforce, social interaction is essential; it is especially imperative with a virtual workforce. The lack of communications is often more challenging with virtual teams, which can also make it more difficult for teams to collaborate and work together (Biron & Boon, 2013). Management should set ground rules for team interactions by establishing communication expectations. The capital outlay for a virtual workforce is high. Some

costs included the design of virtual work policy, guidelines, training, and evaluation. There is also I.T. equipment and support costs, as well as the security of data transmissions. Wieland and Wolf (2016) noted that, while virtual teams do have a cost saving in the long-term for organizations, they may have a significant initial cost. An organization must consider how to manage a virtual team and how long they will have this form of organization in place before making the final decision on implementation.

Employee Advantages

The option of virtual work can resolve many problems for employees, especially for those who are looking for a change in their daily commute and desire flexibility. Because of these needs, more employees are looking for employment opportunities whereby they can work from home. Companies have an opportunity to hire talented employees who might not otherwise be able or willing to relocate to work.

For the employees, virtual employment allows for a better work-life balance to spend time with the family (Khan & Agha, 2013; Krishnakumar & Choudhury, 2014). Effective management of the work-life balance is essential for virtual workers. When virtual workers effectively balance their work and life, they are less likely to suffer from conditions such as burnout or becoming disengaged due to overwork (Pangil & Moi Chan, 2014). Workers who do not balance their work and life may eventually become frustrated with the work environment and seek other opportunities.

There are also financial benefits that come from working in a virtual environment, as it saves both time and commuting costs (Purvanova, 2014). Workers can also schedule their days around their work. Workers can save money, which contributes to the worker's

financial benefits. Workers in virtual workplaces also have higher job satisfaction (Meier et al., 2017). Workers in a virtual work environment are more likely to have fewer interruptions and more personal productivity while working in a quiet environment.

Employee Disadvantages

Traditional employees have the advantage of F2F communication with co-workers on a daily basis, whereas the lack of F2F communications can affect virtual workers, as all their communications are via the phone or within the virtual environment, making it difficult to build trust and relationships with their co-workers (Altschuller & Benbunan-fich, 2013; Baralou & McInnes, 2013). Employees who have feelings of isolation are often are less engaged with the team; this is perceived as the absence of management support (Fernandez & Rajan, 2015).

One fundamental problem is poor management of work-life balance. The worker could feel as though he or she is always working. Workers can also develop a workaholic attitude, which would contribute to eventual burnout. Workers could also develop feelings of isolation. Workers who poorly manage their workspace could also experience distractions. Workers are also not in the office; hence, they have less visibility and political power.

Management Challenges

ICT and the Internet have changed the way the people work and communicate; in doing so, it has also changed the way leadership manages employees. The virtual workforce is becoming an industry standard, as more companies are adopting the practice. Koles and Nagy (2014) suggested that managing virtual workers can be

challenging and requires a different management style than what is used with traditional employees. The traditional F2F communication method is not an option when managing a virtual workforce. Management of the virtual workforce can face new complex challenges such as those concerning time, distance, and communication, and team cohesion, collaboration, and cultural diversity (Kligler, 2017). Despite the challenges, management's role is to create a healthy work environment, while motivating virtual workers and leading a satisfied functioning workforce (Falekkos, 2015).

Employees do not need or want a manager who excessively scrutinizes their work and continually checks; such micromanaging behavior is annoying and can be demotivating (Foss & Klein, 2014). Managers of virtual workers that micro-manage do not trust their employees and probably will not be successful in managing them. Therefore, effective management is critical to an employee's motivation and job satisfaction. Rasouli et al. (2014) an employee's trust in management is a crucial factor.

One of the essential dynamics of a successful organization along with effective leadership is the ability to create a vision (Gockel et al., 2013). Bradford and Cohen (1997) stated that vision is more challenging to internalize than to articulate, as it requires the combined efforts of everyone, including leaders. As with traditional employees, management must define and establish policy, procedures, roles, and responsibilities (Paterson et al., 2014). Management must also ensure that everyone understands their responsibilities and expectations. Management must address the concerns of their virtual workforce (Pinar et al., 2014). With every employee's concerns or actions, management should counter with a reaction for the team, thereby addressing the team member's needs.

It is crucial that management keep the team on track and maintain transparent and open communications with their virtual team. As Benrazavi and Silong (2013) noted, a lack of communication and collaboration between leaders and their teams would lead to dissatisfaction, which changes into a lack of motivation.

Another virtual team challenge for management is keeping team members inspired and motivated, as being away from the office can mean out of sight, out of mind. The use of technology plays a critical role in the virtual team, and management has several options to choose from, such as teleconferencing or video conferencing. Such tools allow for audio and visual interaction between team members and management. ICT allows for virtual workers and management to stay connected continuously (Boyer O'Leary et al., 2014; Simons et al., 2014).

A business's IT environment must continuously change to maintain its competitive edge (Lichy et al., 2014). In the current era of rapid technological innovations, domestic and international outsourcing, and mergers and acquisitions, and the constant pressure to gain market share, and the ever-changing personality of the workforce, businesses are under enormous pressure to achieve the next level of technology. Kotter (1996) noted that, whenever a business gives up before the job completion, critical momentum is lost and regression will follow.

Management's failure to sustain significant change can recur despite an organization's commitment to resources (Senge et al., 1999). The realigning of resources and the redistribution of capital can be challenging during the transformation process. Organizational change management could address this by adopting best practice

standards to assist with the integration of new company vision (Kuipers et al., 2014; van der Voet et al., 2016).

In today's business environment, change is inevitable; it is complex and constant. Organizational change is more sudden and frequent than ever before. Kotter (1996) argued that for businesses to remain competitive in a rapidly changing global world, businesses must change. Restructuring, downsizing, new technology, and mergers and acquisitions are all factors that contribute to a company's market position, environment, and business risk. An organizational change initiative is a risk for any business pursuing change, as its success will depend on the way the organization approaches the change. The theories about why change fails are numerous, including everything from employees' resistance to change and to the failure of senior leadership to communicate, motivate employees, define the change strategy, and drive the change. All of these and other factors can contribute to the failure of a change initiative. However, the most critical factor is the employees. Businesses, organizations, and management must include continuous plans for the adaptation of ICT innovation transformation for competitive advantage in the globalized world, where every industry is striving to survive (Berisha-Shaqiri, 2015).

Employee Challenges

In organizations, the virtual force is different from the traditional F2F workforce in many aspects from the time zone, collaboration, and communication. These challenges are significant and can be frustrating and demotivating for the employee (Comu et al., 2013). Some virtual workers find it difficult to disengage from work; they work longer

hours because they have no boundaries between work and home life (Brown et al., 2016). On the opposite side, some virtual workers find it hard to stay engaged and focus on their daily work, because they are at home, and home life can sometimes spill over into work time. Management must ensure that virtual team members understand how to balance their work-life and establish boundaries and keep engaging them in the organization changes. Employee engagement involves a psychological connection that an employee feels towards his or her organization, which often influences behavior and job performance (Biggs et al., 2014). The following section included some possible challenges to the virtual worker.

Job Satisfaction

Job satisfaction is a subject that is widely researched; it has an essential role in many theorists' models concerning an individual's attitude and behavior. Job satisfaction is complex and multifaceted, so there are numerous of theories that try to explain an employee's job characteristics aspects as to what may or may not influence the level of satisfaction towards the job (Brown et al., 2014; Gulistan & Clapp-Smith, 2014). Spector (1997) defined job satisfaction as what employees like (satisfaction) or dislike (dissatisfaction) about their jobs. Locke (1976) stated that job satisfaction is a positive expressive state in which workers are content with their jobs. The advent of remote and virtual work opportunities over traditional workplace settings has increased employees working motivation, job satisfaction, and productivity (Caillier, 2012; Laihonon et al., 2012). There has been much discussion among theorists on the topics of employee motivation and job satisfaction. A shared theory amongst theorists is that an employee's

motivation influences their job satisfaction (Cao et al., 2013). Other theories included Maslow's (1954) Hierarchy of Needs, McGregor's (1960) Theory X and Y, and Herzberg's (1968) Two-Factor (Motivator-Hygiene) Theory. Also included are Alderfer (1972) existence, relatedness, and growth (ERG) theory, Edwards (1954) decision-making theory, Vroom's (1964) expectancy theory, and Lewin (1935) theory of personality.

Motivational Theories

Many theorists have offered models of employee motivation, providing reasons why employees want to work hard and efficiently in the workplace or not. The works of leading theorists, such as Herzberg, McGregor, and Maslow, may offer insight into the phenomenon (Herzberg et al., 1959).

Herzberg's Motivators and Hygiene Theory

Herzberg's theory of motivators and hygiene factors concerns the need to prevent employees from being demotivated, and the hygiene factor will provide an environment to motivate people. Herzberg's motivation theory involves what people basically do at work; motivators included job interest, achievement, recognition, growth or advancement. The hygiene factors, such as company policy, supervision, working conditions, and salary, are basic needs, which, when not met, can cause employee dissatisfaction. Although meeting these needs does not necessarily make an employee satisfied, it does prevent him or her from becoming dissatisfied. The second is the motivators, when resolved, does make an employee satisfied (Herzberg et al., 1959).

These motivators (achievement, recognition, the work itself, responsibility, and advancement) enrich an employee's job. Herzberg's motivators (satisfiers) are associated with long-term positive effects on job performance. Herzberg's hygiene factors produce short-term changes in attitude and job performance by decreasing job dissatisfaction, which can quickly revert to the previous level (Frimpong & Wilson, 2013; Herzberg, 1966).

Before applying these theories, leadership should understand the level of the team's individual circumstances to develop an environment that motivates them and provide an overall approach that reinforces the desired motivation. To this end, what employees consider to be basic physiological needs is a starting point, whether it is their family, a house, or even a car; it will be different for all employees.

McGregor's Theory X and Y

In Theory X and Y, McGregor (1960) described how humans are motivated and ways for management and leadership to apply motivating concepts. McGregor (1960) defined two models about human nature: (a) Theory X, which represents the traditional view of management, and (b) Theory Y, which represents the newer attitudes in organizational psychology. Theory X employees are lazy, dislike work, try to avoid it, have no ambition, want no responsibility, prefer to be followers than leaders, are self-centered and do not care about organizational goals. Moreover, they resist change, are gullible, and are not particularly intelligent. McGregor stated that management must threaten, bribe, direct, or punish employees to get them to work.

In contrast, Theory Y employees are willing to work hard to achieve goals they understand and are self-directed to meet work objectives if committed to them. They seek responsibility, are ready to learn and grow professionally, and are committed to goals with rewards in place that addresses higher needs. In addition, Theory Y employees are creative and ingenious and are usually, trustworthy, and dependable. Management must encourage and help employees to achieve their potential (McGregor, 1960).

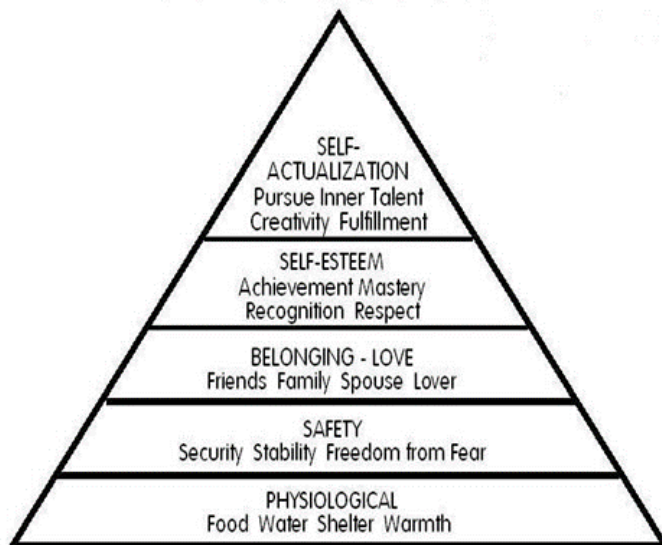
Maslow's Hierarchy of Needs Theory

In 1954, Maslow introduced the Hierarchy of Needs Theory in his book *Motivation and Personality*. Maslow's Hierarchy of Needs Theory asserts that employees can be productive when their work goals align with their higher-level needs. Maslow's theory holds that a hierarchy of needs motivates people: (a) physiological, (b) safety, (c) love, (d) esteem, and (e) self-actualization. The needs must be satisfied before a person can act unselfishly; Maslow calls physiological, safety, love, and esteem the deficiency needs: as long as a person is motivated to satisfy these needs, he or she is growing and moving towards self-actualization. The physiological needs are the basic needs such as food, water, and air, as well as sleep, shelter, and warmth. Safety needs have to do with one's individual safety and security, including job security. The need for belongingness is the desire to belong to groups such as clubs, workgroups, and religious groups, and family, and bands, and troops, and gangs, and units. There are two types of esteems: (1) how we feel about ourselves (self-esteem) and (2) how others feel about us. The need for self-actualization is personal growth and development; the need to work hard and reach their full life potential (Maslow, 1954).

Maslow's theory suggests that human motivation is a function of individual needs. People who need fulfilling at a particular set of needs are not likely to be motivated in an environment that fulfills only needs at lower levels. Conversely, people are also unlikely to be motivated in an environment that fulfills their needs at a higher level while their lower level needs have not yet been fulfilled. The basis of Maslow's hierarchy of needs theory is the concept that a person cannot recognize or pursue a higher need in the hierarchy until first satisfying the current need. Maslow (1954) humans need stimulating in a specific sequence in that the next higher need becomes more pressing than the others are. The following is an illustration of Maslow's hierarchy of needs theory.

Figure 1

Maslow's Hierarchy of Needs Theory



1. Physiological: hunger, thirst, and shelter
2. Safety: security and protection from physical and promotional harm
3. Social: affection, belongingness, acceptance, and friendship
4. Esteem: as self-respect, achievement, status, and recognition
5. Self-actualization: growth, achieving one's potential, and self-fulfillment

According to the pyramid, the physiological needs (food and shelter) are more important than safety needs (security and protection). Once a person has met the basic physiological needs, he or she will pursue to fulfill the next immediate need, continuing to self-actualization (self-fulfillment). Unlike McGregor (1960), Maslow (1954) found that people committed to their jobs are self-motivated and self-regulating and want more involvement in their workplace. Such needs involve the following concepts:

- Needs of achievement: The drive to surpass, to achieve in relation standards, to strive to succeed;
- Needs of power: The need to make others behave in a way that they would not have behaved otherwise; and
- Needs of belonging or affiliation: The desire for friendly and close interpersonal relationships.

Sir Isaac Newton's Three Laws of Motion, although three physical laws that form the basis for classical mechanics, can be seen as relating to this notion (Lee, 2010):

1. Every object state of uniform motion tends to remain in that state of motion unless an external force applies to it.

- People resist change: they will not change unless they have a reason to do so.
2. The direction of the force and the acceleration vector is the same.
- People's desires and interests decide their success.
3. For every action is an equal and opposite reaction.
- People's actions have an equal or opposite reaction effect.

Lee (2010) indicated an interpretation of Newton's first law: a rigid employee will remain stationary or unchanged in the current position. Newton's second law indicates that an employee will change if pushed or pulled, as it associates with an employee's job motivation or attitude toward work. Newton's third law stresses that motivation in the workplace is an effort to satisfy employee needs. Thompson et al. (2013) indicated that such excitement could help leadership and management define an employee's job attitudes. Organizations affect the behavior of employees and employees affect the

organization. For optimal effectiveness, management must first communicate the strategic business goals to employees and then align employees in the right job. When employees work in the wrong job function, they are set up for failure, which is the beginning of low employee morale. Employee successes are their good performance in the workplace. No one wants to lack confidence in his or her ability to perform a job to the best of his or her abilities. Having high employee motivation is essential to employee success in the workplace. Lee (2010) indicated another aspect of Newton's concept is the demotivator: leadership must identify the causes that demotivate employees. Such causes could be anything from job boredom, feelings of unfairness, or work environment; whatever the demotivator, it will continue to be a barrier for employees until leadership has dealt with it and removed it.

Employees in an IT environment need something positive to keep them working. In most cases, employee salary is enough to keep him or her working for the business. However, sometimes, just working for a salary is not enough; sometimes, employees need something more satisfying. Sankey and Machin (2014) indicated that some employees need other motivation for them to work for a company or organization; something positive must be present at the company to keep the employee coming back day after day. If an employee lacks motivation, then that employee's quality of work may deteriorate.

In terms of the motivational concept and needs satisfaction level, management must perform a balancing act to offset an employee's deterioration of work. There are unsatisfied needs, which could result from employees not being happy with the work they

are doing or their environment, which could cause tension in the workplace for that employee or others around them. Management must identify the drivers of the unsatisfied need that is causing tension to the employee. The employee must perform a behavior check to ensure he or she is not the cause of the unsatisfied needs and tension.

Management and the employee must ensure that the organizational goal and performance align with employee needs. Once these needs are met, then the employee will have his or her needs satisfied and tension reduced. Finally, management and the employee will reassess employee needs to ensure alignment with the organization.

Motivations and Needs Satisfaction

Herzberg (1966) proposed two theories about job factors affecting employees' attitudes toward their work environment. The first concerns hygiene factors, such as company policy, supervision, working conditions, and salary. These are basic needs, which, when not met, can cause employees to be dissatisfied. Although addressing these needs does not necessarily make an employee satisfied, it can prevent the employee from becoming dissatisfied. The second motivator, when resolved, does meet employee-satisfying needs. These motivators (achievement, recognition, the work itself, responsibility, and advancement) are an enrichment to an employee's job.

Employee Motivators

Since the 1950s, there have been many significant developments in the field of employee (human) behavior and motivation in the workplace, such as Herzberg's Motivation-Hygiene Theory, Maslow's Hierarchy of Needs Theory and McGregor's Theory X and Y. For instance, Herzberg's Hygiene Factor indicates that money can

motivate an individual's performance; however, the impact on performance is typically temporary. For an employee, money is a reward incentive; it can be a reason for an employee to stay or leave their current company. Money can also be a deal-breaker, meaning a reason for an employee not to accept employment with a company (Anik et al., 2013). Employees work for a salary and perform well in their job by achieving target goals and objects to receive the agreed-upon compensation. Money is critical because it allows an employee to purchase the goods and services required for their families and themselves; as a result, money satisfies their needs for creature comforts. Also, money gives recognition by way of valuing the employee in the organization (Damij et al., 2015).

Money is a parameter to assess an employee's performance, thereby allowing the employers to compare the employee against other employees on that same level. It is also fair to say that the amount of money he or she receives can satisfy an employee's professional status and personal goals. Consequently, money is a motivator in the workplace, but it is not the most important one (Lozowski, 2014; Stynen et al., 2014). As Goel (2012) noted, money can motivate some employees only to an extent.

Some behavioral theorists, such as Herzberg, McGregor, and Maslow, do not consider money alone as an important motivator. According to these theorists, techniques such as professional development, innovation, and creativity; participation in decision-making; company benefits; job enrichment; new technologies; work-life balance; and flexible time-off are better motivators (Shultz, 2014). If asked the question of whether money alone can motivate employees, the answer can be both yes and no. It all depends

on an employee's needs and conditions, because money may motivate some people under some circumstances to a certain extent, but will not motivate all people under all circumstances.

Clemons and Kroth (2011) argued that when it comes to employee motivation, there is no difference between motivating virtual workers and motivating the traditional worker. No matter the employee's location, it is conceivable that most employees like an acknowledgment of an excellent job. Employees can and will become demotivated when there is no acknowledgment for work, when they are in a toxic work environment, and when employees do not have the tools to get their job done. Managers need to spend more time building the right motivational environment. He et al. (2014) stated that the level at which an employee engages within the organization is a significant predictor of how well that employee will perform his or her work. Sathyapriya et al. (2012) indicated that for organizations to obtain a competitive advantage, organizational vision, leadership, and motivation and change are essential factors for the facilitation of learning among employees in the organization.

The function of managers is to support and motivate their employees; managers must know and understand their employees to motivate them (Moorer, 2014). Managers need to understand that what motivates or satisfies one employee will differ for another employee (Hoefling, 2003; Lasrado et al., 2015).

Job Design

Job design is a significant influencer of many aspects of the organization. Prior researchers have identified links between the job design factor of autonomy and

managerial behaviors of leadership in teamwork (Parker & Wall, 1998). Paik et al. (2019) suggested that when workers work with higher levels of autonomy, the approach of the manager should move from external management to self-management, to a self-leading approach. Parker and Wall (1998) stated that teams with a greater amount of autonomy will need to self-supervise. Instead of having a manager monitoring the team, the team will have an individual who will report to a manager that this manager will maintain the position of leader. However, the role will change to the leader empowering workers. It appears that SuperLeadership could potentially have a significant relationship with worker autonomy. Further, Piccolo and Colquitt (2006) identified a relationship between the leader-follower relationship and job characteristics with regard to worker behaviors on the job. My study may add to the body of knowledge by examining the role of SuperLeader-follower interactions. A significant driver of this study in terms of examining job design is that autonomy is a common feature in virtual teams.

Original work on job design goes back to the development of scientific management by Fredrick W. Taylor in the early twentieth century (McKenna, 2006). The basis of scientific management is the idea of designing work that others can do simply, efficiently, and effectively, using such extrinsic motivators as cash as a primary motivation for performance. The scientific management approach dominated the workplace during the twentieth century; however, in the middle part of the century, a new movement began to take shape in the study of work design. This new approach was called Human Relations, and it dealt with designing a work environment which supported the worker in a much more holistic fashion than scientific management.

McKenna (2006) indicated that job design draws heavily on motivation theory. The scientific management approach relied on simply giving workers a paycheck to encourage them to work. However, many other dimensions of work may serve as motivators. Herzberg noted that there are two sets of factors which can potentially motivate the worker, intrinsic and extrinsic in nature, and they depend on how management approaches the employee and the employee's job design. While extrinsic motivators are things such as bonuses, pay, and supervision, intrinsic motivators are job elements such as a worker's achievement, recognition, growth, responsibility, promotions, and the work itself (Herzberg, 1968).

The Sociotechnical Design of Virtual Teams and Worker Productivity and Satisfaction in Virtual Work

The design of virtual work contributes to unique sociotechnical factors that can contribute to the productivity and satisfaction of workers. Since the seminal work by Trist and Bamforth (1951) on the topic of work design and how it may have unintended consequences beyond the scope of efficient work processes, job design has been a relevant research topic for scholars and practitioners. Many researchers have addressed productivity and satisfaction in virtual teams; however, there is a paucity of a qualitative investigation into the topic from the standpoint of the sociotechnical design of work. Currently, the number of computer-mediated communication technologies available for management is making the virtual environment attractive (Fain & Kline, 2013); however, it is becoming increasingly important to understand their role in terms of how they influence productivity and the satisfaction of workers. A synthesis of current literature on

the topic is evidence that the virtual work environment has both unique results and implications for traditional research. Investigations on the topic of virtual worker satisfaction and productivity from a qualitative perspective could contribute new knowledge and a framework for synthesizing previous studies.

In research comparing virtual work to the traditional F2F project team (Scott-Young, 2013) found that virtual teams can have superior performance in comparison to teams in a traditional work setting. While tools related to virtual teams can increase the naturalness of media, management must select the tools effectively (Fain & Kline, 2013). Fain and Kline (2013) found that, in a comparison of construction project teams, virtual teams outperformed traditional teams in terms of cost and speed, as well as matching the same levels of operability. While Danzfuss (2013) found an insignificant difference between productivity among virtual teams than in traditional teams, and that virtual teams do experience greater variance. Moreover, virtual team members were found to be just as satisfied as workers in a traditional team (Danzfuss, 2013). Therefore, the findings support the use of virtual teams over traditional teams.

Danzfuss (2013) noted that there is a limited amount of qualitative research investigating the use of virtual teams, and that future research should take a qualitative approach to understand virtual teams. Danzfuss (2013) also suggested that the project manager in virtual teams must fill a role where they act as a technical gatekeeper and ambassador, meaning that the project manager must be a facilitator of technology in the way workers productively and satisfactorily achieve tasks. Utilizing a sociotechnical

approach in qualitative research could contribute a stronger understanding of the role that technology plays in virtual teams.

The basis for virtual work is a sociotechnical framework whereby task-technology fit and the communication between workers and supervision are the key factors driving productivity and satisfaction of the worker. Beyerlein et al. (2015) reviewed literature related to virtual teams, describing them as teams tied together by the use of computer-mediated communication technologies, which eliminate many of the barriers created by the elements of distance on virtual teams. Likewise, Scott-Young (2013) noted that computer-mediated communication technologies are capable of matching or enhancing the productivity of virtual workers. The technical solution to the problems created by different types of distance also creates a different type of foundation for socialization, meaning that understanding a virtual team requires the use of a sociotechnical approach. Geographic, temporal, and organizational structure distances make communication difficult, making it difficult for supervision to influence the motivation of these workers. Scott-Young (2013) noted that there is a lack of research related to the best practices for overcoming distance to maximize performance; however, the technologies utilized should create strong relationships, cohesion between group members and trust, while facilitating communication, coordination, and team optimization.

Kim et al. (2016) investigated the problem of proficiency-congruency from the standpoint of virtual team design and performance in online gaming. In their investigation, Kim et al. (2016) sought to understand the difficulties of matching people with the tasks for which they are most skilled and able to perform in the virtual

environment as well as the implications that design will have on performance. The results found that teams wherein team members negotiated their roles rather than assigned roles by a leader were more successful. The team demonstrated higher levels of performance and greater team congruency. Team players would select their role based on proficiency and their congruency with a role. From a sociotechnical viewpoint, the negotiation that these people would engage in with regard to task fit was associated with the way that sociotechnical teams successfully work.

Beyerlein et al. (2015) noted that the growth of technologies and worker familiarity with these technologies supports how people make these decisions; therefore, it is possible that the virtual team is consistent in gaming as well. A distributed leadership model works better in the teams wherein workers' autonomy and responsibility related to the successful completion of tasks. Beyerlein et al. (2015) noted that the research did not investigate such factors as social relationships in how well it works to motivate players. This study is evidence that sociotechnical factors affect performance; however, further research into the role of motivators in the virtual setting is needed.

The factors affecting the performance of the virtual team have been the focus of multiple studies (Beyerlein et al., 2015; Kim et al., 2016; Scott-Young, 2013). Dreyer (2015) investigated this issue, concluding that the factors affecting virtual team performance included how tasks in the virtual team are designed. They also included the type of technologies utilized, and the communication tools utilized by the team, and the role of the project manager as a leader in these teams. In addition, Dreyer (2015) also noted that future research should investigate the influence of technology on the manner in

which team management leads the team and the impact that this has on performance. However, Dreyer (2015) did not indicate that this should be done from a content theory approach. This research is useful in understanding the evidence that performance in virtual teams is in part, reliant on the design features of the team and the technologies which support it. Furthermore, there are still gaps with regard to understanding the role of motivators as nested in the sociotechnical nature of the team.

Bordia (2017) noted technology selection in virtual teams as being an important element for management to consider. The technologies used in virtual teams create the framework by which communication and collaboration happen, as base for the team to achieve the goals set forth. Just as technology creates the framework, the nature of the communication performed over the virtual network will form the basis of social interaction. Transformational social interaction can have a strong impact on worker productivity and satisfaction. The research supports the idea of creating joint optimization in the virtual team whereby technology optimizes performance while facilitating effective communication between members of the work where workers are able to understand their work and role in the team more effectively. The conclusion of this research supports the current study as evidence that it is important to understand how productivity and satisfaction created in a virtual work environment via a sociotechnical theoretical framework.

De Bruyn (2014) offered a sociotechnical understanding of virtual work and virtual teams via a qualitative case study, applying content analysis to collected data. De Bruyn (2014) found that effective virtual team productivity optimized through the design

of the system and infrastructure of the team, where knowledge-seeking is the focus and workers are able to collaborate effectively. While management of the team should focus on maintaining effective communication lines using technology, leadership in these teams should focus on the development of the relationships between workers with their peers, management, and the organization as a whole. While De Bruyn (2014) did not utilize or allude to the usefulness of a sociotechnical approach, the findings indicated a sociotechnical singularity in the design of virtual teams. De Bruyn (2014) noted that human networking facilitated through communication technology is a key to effective team performance and that management should consider the role that technologies will play in the virtual team system.

A technical feature often overlooked in research is the role that organizational structure will play in the performance of the virtual team. Organizational structure is a key element for understanding work teams, specifically virtual teams, as an element of the virtual team that can create distance and supports the nature of communication in the virtual environment. Danzfuss (2013) stated the role of organizational structure and the impact that it has on the performance of virtual teams found that there was no statistically significant difference in the performance of virtual teams and traditional teams. However, Danzfuss (2013) found that there was a greater degree of variance in virtual team performance. The findings are inconsistent with the findings of Scott-Young (2013) who found that virtual teams perform better than traditional teams. Scott-Young (2013) interpreted the finding to be evidence that, while virtual teams can perform just the same as traditional teams, there are factors in virtual teams that make them more sensitive with

regard to performance variance. Scott-Young (2013) did not speculate on what the factors affecting virtual teams were.

Content Theories of Motivation and Worker Productivity and Satisfaction in Virtual Work

The nature of how virtual work is conducted leads to the content theory of motivation, with implications regarding the productivity and satisfaction of workers. Workers in a virtual environment are distributed based on multiple dimensions of distance; consequently, barriers to communication emerge that do not exist with the traditional F2F work environment. Research related to these theories of motivation in the virtual workplace have indicated a relationship between them and satisfaction and productivity; however, a limitation regarding the understanding of what these studies mean reveals a paucity of qualitative investigation. Further, most studies based on understanding content theories of motivation in virtual teams are conceptual in nature, relying on previous research on traditional workspaces. The synthesis of this literature leads to the conclusion that content theories of motivation can contribute to an effective theoretical framework in the investigation of worker productivity and satisfaction in virtual work.

Wint (2015) investigated the motivation orientation preferences of workers in traditional and virtual work environments. In a quantitative, survey-based investigation, Wint found differences in the intrinsic and extrinsic motivators of workers, depending on whether they are working in a traditional or virtual environment. Wint examined the impact of Herzberg's two-factor theory of motivation, via intrinsic and extrinsic

motivators of workers, concluding that intrinsic motivation is a stronger driver for performance in the virtual environment than in the traditional environment. This evidence supports the novelty of the virtual worker as there is a need to understand the ways that intrinsic motivation can be encouraged to develop stronger productivity and job satisfaction in the virtual environment.

Steenkamp (2014) also investigated the relationship between motivation and communication in virtual work, finding that, while virtual workers will typically have a high level of expertise related to the use of communication technologies. However, the workers may not have the communication skills to use them effectively. Steenkamp concluded that, for effective motivation to come from appropriate task-technology fit, it is important that workers understand how to communicate with one another. This is because workers become motivators for one another via the communication that they share. The outcome is that supervisors of virtual teams should set the tone and model for workers' communication behaviors that they believe would facilitate motivation.

Beecham (2014) discussed the role of motivation in the context of needs. The conceptual examination of the virtual team environment focused on a description of how virtual team supervisors could give the most effective guidance and leadership to teams in terms of being well-motivated. Steenkamp (2014) stated that leadership is a crucial contributor to the successful motivation of a virtual team. Beecham (2014) noted that it is important that workers feel motivated for turning work in on time, meeting deadlines, and producing higher quality work. Beecham noted that Maslow's hierarchy of needs is a key tool for understanding the way to motivate workers. Beecham conceded that some of the

lower-order elements of the hierarchy should not be a problem because most workers in virtual teams are knowledge workers with a rewarding salary and an education. The higher-order factors are especially challenging because workers in virtual teams may become alienated from the workplace. Beecham (2014) management should create a personality-job fit in the design of the workplace.

Ding (2014) explored leadership in a global virtual workplace to understand how leaders motivate workers in distributed workforces. Ding (2014) investigated the problem through interviews, finding that teamwork, strong communication, and a global outlook are essential elements. However, Ding (2014) implied that Maslow's hierarchy of needs may play an essential role in the motivation of virtual workers, which would require intercultural awareness and the building of a social network and relationship with workers where it is possible to facilitate self-actualization and create a perception of belonging and love. Steenkamp (2014) indicated that the leader of the virtual team should facilitate the development of this relationship. Ding (2014) noted that the global workplace could be a difficult place for the development and maintenance of these feelings; however, cultural sensitivity and transformational leadership are ways of overcoming obstacles. A limitation of this study is that, while the author noted that managers could use Maslow's perspective to motivate workers to perform better and feel satisfied, the author does not touch on the role of technology in this relationship. Further study is necessary to understand how technology can help to create the joint optimization needed to obtain high levels of productivity and satisfaction. The currently proposed research could achieve this goal.

Korzynski (2013) noted that the new working environment poses new problems with regard to employee motivation, and these new problems are deeply rooted in the reliance on new technologies. Korzynski (2013) conceptualized motivation in the new working environment as being affected by a number of social and technological changes taking place which disrupt the homeostasis of work. Technological, generational and organizational changes each have a distinct impact on the nature of employee motivation in the new workplace, whereby employees must adjust to the knowledge economy. While organizations are attempting to adapt to rapid technological change, the manner in which employees are motivated remains a challenge. Korzynski noted that there is a generational difference regarding the effectiveness of the use of technology to communicate, and this difference informs the use of strategies based on motivating theories such as the hierarchy of needs and ERG theory to encourage productivity and satisfaction. For instance, millennials are more likely to experience motivation from strategies based on these tools than other generations; hence, it is becoming increasingly important to understand the use of content theories of motivation as the basis of creating productivity and satisfaction among virtual teams.

These findings support a conceptual model developed by Dube and Marnewick (2016) in which motivation and social interaction are critical to successful virtual team performance. Dube and Marnewick (2016) identified motivation as being a key for performance, identifying elements of the team such as the ability to communicate with one another and praise and feedback from leadership as critical elements. The synthesized literature on virtual team performance, concluding that, while there is no one

single factor that will affect performance, motivation and the use of those technologies that facilitate performance are keys to productivity. In addition to the role of the structural and peer elements of the virtual team, the leader of the team is also a significant contributor to effective motivation in the virtual team (Dube & Marnewick, 2016).

Sinani (2016) investigated the role of participative leadership as an influencer of job satisfaction in virtual teams, concluding that participative leadership increased job satisfaction and contributed to the higher work quality. Sinani (2016) implied that this was because participative leadership approaches are a way that the leadership of a virtual team can facilitate the growth and self-actualization of team members.

However, Beyerlein et al. (2015) concluded that a distributed model of leadership leads to stronger satisfaction and productivity. It could imply that distributed leadership, whereby workers participate in horizontal communication that motivates, could be optimal in the virtual team format. The differences between the conclusions in such studies indicated the need for further investigation of the topic of motivation in virtual teams and its relation to job satisfaction and productivity.

In terms of the role of leadership and motivation, Lawter et al. (2015) investigated the use of theory X and Y and the impact it has on job performance. The researchers used a robust framework for investigating this relationship, concluding that, in virtual teams, job performance affects whether a theory X or theory Y approach. This study highlights the role of the supervisor as a critical contributor to the perception of motivation; leadership in virtual teams, both from the standpoint of other team members and the supervisors themselves, is a key to effective team performance.

Kauffmann and Carmi (2014) noted that the use of the right technologies is necessary to maintain trust, motivation, and worker satisfaction in the virtual team. Kauffmann and Carmi (2014) also noted that, while communication technologies are essential for the task-oriented factors of the team, they also support socialization, and, through a selection of the right technologies, it is possible to gain the most from leadership. Kauffmann and Carmi (2014) noted that technologies that make workers feel most comfortable communicating are necessary to optimize motivation. While rich communication technologies will facilitate natural communication such as F2F communication, the use of less rich communication could be acceptable to other workers if there is a language barrier or if a worker prefers a paper trail. Technology can be a part of the framework of motivation, and it is the role of management to understand how to align these factors. This current study will contribute to the development of knowledge related to the correct mix of technologies.

Summary and Conclusions

Among the constantly shifting challenges of an IT environment, the ability to manage such change effectively gives an organization a competitive advantage. Any change initiative that does not connect to the organization's values, beliefs, and behaviors may not be successful. Therefore, any significant organizational change initiative must firmly synchronize with the overall organizational goals and cultural environment for it to be successful. Change is about leadership, leading employees to change their thoughts, habits, and norms. While processes and procedures help, and application tools are indispensable in an IT environment, it is ultimately the organizational culture that binds

the organization together. One of the most normal human instincts is to resist change even when the change is designed to be beneficial to the whole organization. Leadership and management must be vigilant regarding how to introduce change within the organization. Any change initiative itself is a powerful motivator or demotivator and is essential to the success or failure of the change.

Advances in IT change the way people work, how companies conduct business, and how people interact with each other and live. Innovations in ICT and the Internet have expanded the possibilities of the global marketplace allows businesses to grow and innovate across the world. ICT and the Internet have created a global marketplace that has no geographical boundary.

For some years now, the growing trend of many companies has been to discover new ways of gaining a more significant market share. To accomplish these objectives, companies have turned to the virtual workforce as a means of reaching customers in the global marketplace. The virtual workforce shift has allowed companies to introduce diverse skills and knowledge into their organization, a strategically useful innovation when working with global customers. Companies can maximize their global presence while lowering overhead business costs such as travel, real estate, and relocation. The virtual workforce is a different paradigm as compared to the traditionally formed organizational environment, management, team culture, and team performance measurements. The virtual workforce offers many benefits and along with those benefits come considerable challenges. One such challenge is the need for effective global leaders

to lead the virtual workforce. This study is necessary to gain insight into what makes global leaders' roles and responsibilities different from the traditional leaders.

Chapter 3 included the methodology and research approach for this study, as well as an identification of the research design, research sampling, and method of data collections, and the method used for data analysis.

Chapter 3: Research Method

Advances in ICT have allowed the virtual worker to work from anywhere around the globe. Virtual teams are becoming commonplace in organizations and businesses today (Pride et al., 2014); hence, there is a need to overcome the factors affecting virtual workers and to identify significant causes. Researchers have suggested the problem is that the virtual worker feels isolated due to a lack of F2F interactions, which can lead to job dissatisfaction, and ultimately a drop in productivity (Madlock, 2012). Baumeister and Leary (1995) stated that the virtual worker's feeling of disconnectedness is due to a need to belong. Senge (2006) noted that communication is crucial in promoting dialog sessions between the virtual worker, management, and the organization. The emergence of new technologies within business organizations has created various management and leadership challenges for the traditional management paradigm. Further research into this subject may fill a gap in the research literature and provide an advanced understanding of the relationship between job satisfaction and the management challenges presented by the virtual workforce (Lilian, 2014). The purpose of this study is to determine these factors by exploring the lived experiences of the virtual workforce through a sociotechnical system and two-factor theory framework.

This chapter contains a discussion of the research problem and the purpose of the study. Secondly, the chapter contains an explanation of the researcher's role, the rationale for selecting the qualitative method over quantitative and mixed methods, and the interview process and research instrument. Finally, the chapter concludes with a

description of the process of collecting and analyzing the data as well as a strategy to ensure the credibility, transferability, dependability, and confirmability of the study.

Research Design and Rationale

The phenomenological approach applies Herzberg's (1966) motivation-hygiene theory, which is the theoretical framework that guides and supports the research study. Herzberg's theory indicated that job satisfaction and dissatisfaction affect two different sets of factors when attempting to understand motivation among virtual workers. These two factors affect how motivated or satisfied an employee is at work hygiene factors and motivator factors (Herzberg et al., 1959).

Phenomenology is a qualitative research method selected for this study. Qualitative research is generally used to understand and explain human behavior (Merriam & Tisdell, 2016). This qualitative study seeks to discover the human experiences of the virtual worker and manager. Merriam and Tisdell's (2016) qualitative research seeks to understand human behavior and interaction in unique situations as part of a particular context.

Leedy and Ormrod (2005) noted that qualitative research comprises several research approaches that are different from others. However, all the qualitative approaches have two commonalities, a focus on phenomena that occur in a natural environment for the real-world experiences, and in-depth study of the phenomena. McLeod (2001) stated that the objective of qualitative research's primary aim is to provide an in-depth understanding of a phenomenon.

The research questions that guided this study were:

1. What factors affect the productivity of virtual workers, and how can they be enhanced?
2. What factors affect the job satisfaction of virtual workers, and how can they be enhanced?

In addition to phenomenology, other possible qualitative research methods are ethnography, grounded theory, and case study. While each of these designs might have added substantially to the research, the phenomenological methodology was the best design for the study. Ethnographic research deals with an in-depth qualitative investigation of a group that shares a common culture, which is not the case in this study. Grounded theory is applicable when theories currently documented in the literature fail to adequately explain the phenomenon observed (Leedy & Ormrod, 2005) which is not the case in this study. Case study research involves the study of a bounded system, such as a person, group, or organization, which is not the case in this study.

Role of the Researcher

Lincoln and Guba (1985) introduced the concept of the researcher's role as the human instrument to emphasize the importance of the naturalistic inquiry process. Sanjari et al. (2014) saw the role of the researcher as an instrument of data collection. Sanjari et al. (2014) stated that the researcher's role in a qualitative phenomenological study is the transformation of data about participants' lived experiences. It means that the qualitative researcher is the human instrument for data collection and analysis.

Sutton and Austin (2015) described the researcher's primary responsibility as safeguarding participants and their data; as such, research involves asking personal

questions in an attempt to access participants' thoughts and feelings. The characteristics of a naturalistic inquiry help a researcher to conduct the data collection in the natural setting and not a laboratory. The naturalistic inquiry focuses the research on how people behave in their natural setting while engaging in life experiences. The researcher will use such data collection methods as interviews, observations, and recording and reflexivity field notes. During the data collection process, the researcher will engage bracketing for any personal biases to ensure the validity of the information. Chan et al. (2013) and Tufford and Newman (2012) stated that bracketing is the method researchers use to mitigate the potential effects of preconceived assumptions about the research topic. A researcher explains the process and participants' roles, including any assumptions and biases, as well as any expectations and experiences of the researcher's ability to conduct the study. The researcher then asks in-depth, probing questions and listen to participant responses.

Anney (2014) indicated that purposeful sampling is a technique that focuses on the population of interest, selecting individuals who can answer the research questions. As such, purposeful sampling allows the researcher more in-depth findings than other sampling methods. Suen et al. (2014) observed that purposeful sampling uses a strategy of selecting participants based on the study purpose and the expectation that each participant will help further the study. In qualitative methodology, purposeful sampling is the most common means of sampling (Gentles et al., 2015).

Methodology

A research study is a systematic process of collecting and analyzing data information to increase the understanding of the phenomenon that researchers are concerned about or interested in (Leedy & Ormrod, 2005). Otani (2017) stated that research is the process of collecting and analyzing information to increase a researcher's understanding of a subject or topic. Research methods used in scientific research contribute to the body of knowledge, helping to improve the practice, research methods, and tool instruments, and devices used in the information sciences and IT.

This qualitative phenomenological study involves an examination of the factors affecting the virtual workforce, such as feelings of isolation and lack of communication. Management issues in the virtual environment included keeping teams motivated, determining the best leadership style to manage global and virtual teams, and discovering the most effective communication styles in the virtual environment. This study will involve capturing the perceptions of virtual workers' and managers' working in a virtual environment, which may be different from employees working in a traditional office setting.

Participant Selection Logic

The population for this study included individuals from various types of jobs and industries in the United States. The participants will come from different ethnicities, races, and genders, and educational backgrounds. Participation in the study will be open to virtual workers and managers who work full-time from their home office. I will select

participants by contacting known virtual workers and then ask those participants to suggest other participants who qualify.

For this qualitative phenomenological study, participants will come from the target population of virtual workers based on purposeful sampling. Robinson (2014) stated that purposeful sampling in qualitative research focuses on the selection and identification of the phenomenon of interest. van Hoeven et al. (2015) indicated that purposeful sample participants are easier to recruit over some of the other sampling strategies because the selection is based on the target population. Valerio et al. (2016) observed that snowball sampling, also known as chain-referral sampling, is when a participant recruits other participants. Researchers use snowball sampling to identify potential participants who are difficult to locate. If it is necessary to reach saturation of participants, a researcher will use the snowball sampling technique as an alternative. The snowball sampling technique consists of recruiting qualified participants through the referral process (Palinkas et al., 2015). This method helps researchers find and recruit hard to reach participants that may otherwise be reachable.

The eligibility criterion for participants in this study is that they must be virtual workers. A virtual worker is an individual who works from a home office full-time, does not travel for company business, and communicates through ICT. The sample for this study included 5 virtual workers and 5 virtual managers. Leedy and Ormrod (2005) stated that in qualitative research, a typical sample size for qualitative studies is between 5 and 25.

The selection of participants was by word of mouth referral, using the purposeful sampling and referral sampling strategies. Participants were virtual worker employees and managers who work from a home office using ICT to communicate with other employees and management. The technique of purposeful sampling is to identify and select individuals that are knowledgeable about the phenomenon of interest. Purposeful sampling is a standard sampling strategy; participants were selected by pre-selected criteria established on the research question (Gentles et al., 2015; Leedy & Ormrod, 2005). Therefore, the qualitative phenomenological sample size was 5 virtual workers and 5 virtual managers. As van Rijnsoever (2017) noted, saturation is the point at which sampling more data no longer provides additional insight.

Instrumentation

Semi-structured interviews will be the basis of data collection, with a list of questions related to the research questions to understand the phenomenon from the perspective of workers and managers. This qualitative study instrumentation included semi-structured, in-depth interview questions. The semi-structured interview will explore the views, experiences, and motivations, and beliefs of individual participants to achieve a deeper understanding of the phenomenon. A semi-structured interview is a useful approach to data collection, whereby the researcher is able to ask follow-up questions to gain insight by allowing participants the freedom to express their experiences and views. A semi-structured interview consists of the researcher developing open-ended questions tailored to the participant's lived experiences and knowledge. Such questions allow the researcher to explore, solicit, and obtain detailed answers from the participants. The

researcher will record the interviews to capture the participants' answers and transcribe them for analysis.

The open-ended semi-structured questions are shaped from the research questions as to what factors affect the virtual worker and factors affecting the manager. I will use a recorder to capture the interview responses from the participants and will use the Google Chrome web browser Application Programming Interface (API) as a backup recorder to capture the participant's voice to text. As the participant speaks, the API records everything spoken into the web browser. I will use a Microsoft Surface Book Laptop running Google Chrome web browser API and a mobile hotspot Internet access for data collection of the open-ended, semi-structured questions.

Microsoft Office Excel is a powerful and versatile business software tool available on the market (Ose, 2016). It is a powerful tool to do qualitative analysis, from statistical analysis to many other kinds of complex record managing analyses. Microsoft Excel is the software of choice for keeping study data organized and structured. Microsoft Excel spreadsheets can format data using different colors, bolds, and italics, to differentiate between columns and bring the most critical data to attention. Microsoft Excel is excellent for data entry and to store the data. Excel manipulates data by sorting, categorizing, and organizing files. While Excel is ideal for analyzing in-depth complex numerical data, it is also suitable for sorting and producing high-quality charts (Malone & Coyne, 2016; Souza & Souza, 2016). I will use Microsoft Excel 2013 to create spreadsheets for data collection, capturing and analyzing and displaying the demographics and ICT questionnaires data.

Procedures for Recruitment, Participation, and Data Collection

The eligibility requirements for participants in the study are they must be at least 18 years of age, are virtual workers who work full-time from a virtual home office, and communicate through ICT. If a referred participant is interested in participating in the study, I will initially contact the potential participant by phone to obtain their email address and assess their eligibility to participate in the study. For the second contact, an email to all participants explaining the objectives of the study and invites them to schedule a formal F2F interview. For the third contact, after the participants schedule an agreed upon date, time, and location for their F2F interview, participants receive via email detailed documentation about the study. The documentation will consist of (a) formal introductions and an explanation of the purpose of the study, (b) the eligibility requirements for the study, (c) estimated time to complete the study, (d) potential risks to participants, (e) participants' rights during and after the study, (f) participants' consent form, and (g) the study's potential benefits to others.

The data-collection process in this qualitative study included interviews and taking field notes (Sutton & Austin, 2015). The interviews were F2F and over the telephone, lasting 45 minutes to an hour. I record the interviews with the participant's permission and discuss the findings of each interview with the participants to ensure the accuracy of the data (Elo et al., 2014). On the day of the interview, I reviewed the emailed documentation with the participants and collected the signed consent form. After the participant agreed to participate in the study, the interview process began.

Rowley (2014) stated that there are advantages and disadvantages of using questionnaires for data collection. An advantage of a questionnaire is that it allows participants to answer questions without any manipulation of the responses by the researcher. A disadvantage of a questionnaire is that it lacks flexibility because of its structured nature which does not allow the participant an opportunity to provide his or her thoughts. As such, the data collection strategy used was in-depth interviews. Semi-structured in-depth questions solicit information about the participant's job satisfaction, social interaction, and career advancement. The open-ended questions (shown in Appendix A and Appendix B) allowed the participants to include more details, such as their feelings and experiences of working virtually. Open-ended questions gave the participants the opportunity to answer in their own words and gave the researcher the chance to elicit more information. If a participant refused to participate or withdraw early, I asked the participant their reason for early withdrawal and noted the information for evaluation and reporting purposes. None of the participants withdrew from the study.

Data Analysis Plan

I used a Microsoft Excel spreadsheet for data collection and analysis of the study. Microsoft Excel is a current application that is part of the Microsoft Office suite. Excel is a known application; therefore, there was no steep learning curve to using this application. I used Excel for data entry, organization, and manipulation, and presentation of the data. Malone and Coyne (2016) stated that the research question, type of study, and availability of the software tool might influence the researcher's selection of a software data analysis tool.

Data Collection and Analysis Steps

The data analysis will involve coding the data by applying the constant comparative method (Gentles et al., 2016; Roulston, 2014) as described in Table 1. Merriam and Tisdell (2016) indicated that the constant comparative method is a widely used form of data analysis for all kinds of qualitative studies. The comparison process consists of comparing newly collected data to previously collected data; this is a continuous process as theories are formed or confirmed resulting from the analysis.

Table 1

Steps in the Data Analysis Process

Step 1	Interview Participant 1. Record, transcribe, code, and analyze the interview data.
Step 2	Interview Participant 2. Record, transcribe, code, and analyze the interview data.
Step 3	Create a composite of the tentative factors identified from the two interviews.
Step 4	Interview Participant 3. Record, transcribe, code, and analyze the interview data.
Step 5	Compare the factors identified from the third interview to the composite of the first two interviews. Create a new composite consisting of the factors identified in the first three interviews.
Step 6	Interview Participant 4. Repeat the process described above.
Steps 7 to N	Continue interviewing, analyzing, and comparing until data saturation occurs

Note: Data saturation occurs when the data from additional interviews does alter the previously identified list of major themes.

Issues of Trustworthiness

Credibility

Because of the inherent nature of qualitative research, it is often seen as lacking rigor and being subject to researcher bias (Hadi & José Closs, 2016; Morse, 2015). Some methodologists pose such criticism arguing that quantitative and qualitative approaches are fundamentally different in their ability to ensure the reliability and validity of the data findings (Hadi & José Closs, 2016). Connelly (2016) stated that the trustworthiness of qualitative research is crucial to the integrity of the findings. Ang et al. (2016) explained that trustworthiness is not about the reader agreeing with the researcher, but understanding how the researcher arrived at the findings. Because of such subjectivity of qualitative research, various strategies, such as member checking, reflexivity, and bracketing, help to establish credibility (Cope, 2014).

Member checking allows the participants an opportunity to review and approve the interpretation of the data (Birt et al., 2016; Reilly, 2013). Hadi and Jose Closs (2016) referred to member checking as respondent validation and described it as an opportunity to ensure credibility by allowing participants to check their given data responses. I will member check the data with participants during data collection and after the data compilation.

Darawsheh (2014) stated that reflexivity guides the research by limiting the researcher's bias and the subjectivity of the research. Because researchers are close to the study, the importance of reflectivity, transparency, and trustworthiness should be a focus (Morse, 2015; Rae & Green, 2016; Shaw, 2016).

Bracketing is a method researchers use to mitigate the potential effects of preconceived assumptions about the research topic (Chan et al., 2013; Tufford & Newman, 2012). In phenomenological research, the practice allows the researcher to examine any assumptions or biases about the study. Merriam and Tisdell (2016) noted that a researcher self-brackets prior beliefs about an interest in the phenomenon, so as not to interfere with the structure of the phenomenon.

Transferability

In qualitative research, transferability is also external validity (Morse, 2015). Transferability is achieved through various thick data types such as artifacts, participant interviews, and analysis of personal space, and field observations. The researcher must provide data details for others interested in transferring the findings to other individuals or different contexts (Morse, 2015).

Dependability

Dependability is the reliability and validation process in a qualitative study (Cuthbert & Moules, 2014). Researchers should plan for the use of dependability audit trails, which requires the safekeeping of any documentation, changes in interview questions, and selection of participant details (Pitney & Parker, 2009). The triangulation of other data sources is a method to achieve dependability (Ravitch & Carl, 2015).

Confirmability

In qualitative research, confirmability is achieved when the researcher can demonstrate credibility, dependability, and transferability (Morse, 2015). Confirmability is validated by establishing research strategies as an audit trail. The researcher can

document the procedure and perform rechecks to confirm the evidence that supports the researcher's objective through documentation review.

Ethical Procedures

A petition was requested and approved by Walden University's Institutional Review Board (IRB) for approval to conduct research by submitting the standard application for research ethics review (Academicguides.walden.edu, 2017). The IRB's role is to ensure the ethical protection of the research participants. IRB procedures are in place to protect individuals who participate in research studies. These procedures are the basis of institutional ethics, which establish three overarching scientific norms that govern all research involving humans (Vanclay et al., 2013):

1. Respect for persons – treating the participants anonymously by not revealing their identity in the study;
2. Beneficence – treating each participant fairly by not taking risks; and
3. Justice – requiring the researcher to explain risks and benefits related to the study.

I considered the scope and methodology and defined the appropriate steps to take to ensure the confidentiality and ethical considerations of the participants. A benefit of this research study is that it may uncover gaps in the literature.

Participation in the study is voluntary and participants can withdraw at any time from the study. Participants in the study will receive verbal and written information concerning the objectives and content of the study. Data collection and analysis will be anonymous, with no identifying information collected. A coding system is established to

protect the privacy of participants. The coding system will not contain the participant's contact information or any direct identifiers that would lead back to them. I explained the coding system to the participants to inform them that only I would have access and knowledge of the information. I used code identifiers to replace the participant's information. I did not release a participant's research data or share it with anyone (Thorogood et al., 2014).

I stored the participant data temporarily on a personal laptop until the completion of the data collection. The data will reside on a personal network drive for analysis upon completion of the analysis, encryption, and storage of participants' data. In qualitative research, the allotted time to keep participant's data is 5 years after publication, which includes contact information, and transcripts, and email correspondences. After 5 years, I will destroy all participants' data.

Summary

Chapter 3 included a discussion of the rationale of the design, methodology, research problem, and purpose of this study. There was a discussion of my role and responsibility as the researcher, the human instrument in collecting and analyzing data. Chapter 3 also contained a discussion of the participants in the study, sample size, target population, and criteria for participating in the study, as well as a discussion of the interview procedure and the research questions that guided the study.

In addition, a discussion of the ethical protection protocol design and implementation included the rights and welfare of the study participants, a description of the process of collecting and analyzing the data, and methods employed to ensure the

credibility, transferability, dependability, and confirmability of the study were also included. Chapter 4 will consist of a report of the study findings based on the application of the research method described in Chapter 3.

Chapter 4: Results

In Chapter 4, I present the analysis and findings (themes) of data collected from five virtual workers and five managers of virtual workers. The participants were over the age of 18 and shared their personal experiences of working virtual and managing virtual workers. The results of this phenomenological methodology were to determine what affects the productivity and job satisfaction of virtual workers based on factors identified from the analysis of data collected in face-to-face and telephone interviews with participants. The purpose of this qualitative study was to determine the factors affecting the productivity and job satisfaction of members of the virtual workforce and to identify ways in which employees and managers can enhance the productivity and job satisfaction of virtual workers. The research focus for this phenomenological study was on determining the factors affecting the virtual worker by exploring their lived experiences.

This chapter also included a discussion of how the analysis conducted was consistent with the phenomenological methodology and how the analysis ties back to the research questions. Additionally, this chapter included the research setting of the interviews and the demographics of participants, and the data collection and data analysis and results.

The research questions that guided the study are:

1. What factors affect the productivity of virtual workers, and how can they be enhanced?
2. What factors affect the job satisfaction of virtual workers, and how can they be enhanced?

Research Setting

The interviews conducted for this study were primarily by telephone, with two face-to-face interviews. Each of the F2F interviews took place outside of the home office in different locations, one with the manager of a virtual worker in the back of a café in a quiet area after the morning breakfast rush. The second face-to-face interview was with a virtual worker at the local library in a conference room. Each participant chose the interview location because it was close to their home and afforded the privacy needed. The telephone interviews were at various times, either in the mornings or in the afternoon. There were no direct conditions that influenced the participants. However, there were unspoken influences that the virtual workers did not want to discuss; for example, overall, the virtual workers did not want to complain or make negative comments about their company despite being assured their responses are anonymous and confidential. I felt the virtual worker participants did not feel empowered to be candid about their experiences. Premeaux and Bedeian (2003) stated that some employees are cautious when it comes to speaking up in the workplace because they fear retaliation; therefore, they sometimes remain silent about needed changes. Unler (2019) indicated that employees are more likely to speak up when they feel the support and trustworthiness of management.

Demographics

The interview participants consisted of two groups: virtual workers and managers of virtual workers. The participants were over the age of 18; there were nine females and one male. Finding participants willing to be in the study was challenging. Using snowball

sampling, I was able to recruit more eligible female manager participants than male participants. The one male participant of the female co-worker met the eligibility criteria and wanted to participate. The participants marital status was either divorced or married; their level of education varied widely. The participant's years of working virtual were similar; the number of years with their current organization varied as well as their years of experience within the current position. The majority of the participants resided in the same state as their company; the state of residence between the two groups varied.

Virtual Workers

All of the virtual worker participants were females who work virtually from home. The age range of the virtual workers varied; the majority of the virtual workers, three were between the ages of 36 – 45 and two were age 56 and older. The martial status of the virtual workers varied; four were married and one was divorced. The education level of the virtual workers was wide-ranging. One had a doctorate, two had some level of college, one had a bachelor's, and one had a master's degree. Of the virtual workers, four had been working virtually for 1–5 years, while one had been working virtually for 6–10 years. The number of years the virtual workers had been with their current organization was wide-ranging. Of the five participants, three had been with their organization 1 – 5 years, one had been with the organization 6–10 years, and one had been with the organization for over 10 years. The number of years the virtual workers had experience in their current position varied. Of the virtual workers, three had 1–5 years experience, and two had 6–10 years experience. All the participants work for companies

located in Florida. But only three of the five participants live in Florida. One participant lives in New Jersey, and another participant lives in Georgia.

Managers of Virtual Workers

Four of the five managers of the virtual workers were females; all worked virtually from home full-time. Three of the managers of the virtual workers were between the ages of 36–45, one was between 26–35, and one was between 46–55. Four of the virtual workers were married, and one was divorced. Two of the managers of the virtual workers had a bachelors's degree, and three had a master's degree. The number of years the managers of the virtual workers had been with their current organization varied. Of the five participants, three had been with their organization for 6–10 years, and two had been with their organization for over 10 years. The number of years the managers of the virtual workers had experience in their current position varied widely. Of the managers, two had 1–5 years experience, two had 6–10 years experience, and one had over 10 years of experience. Of the managers, four live in the same state as their company, while one does not reside in the state of their company. Four managers stated their company is in Florida, while one manager stated their company was in New York. All five of the managers live in the state of Florida.

Data Collection

I recruited 10 participants using purposeful and referral sampling strategies, and all 10 participated in the study. Nine were females and one male, of which five females were virtual workers, and four females and one male were managers of virtual workers. The data collection was anonymous, and I did not collect any identifying information that

could be linked back to the participants. Each participant has a code associated with their name; for example, Participant 1VW is the first virtual worker participant that I interviewed. Using the same coding process, the first manager participant that I interviewed was coded Participant 1MV. Two face-to-face interviews were conducted outside of the home office, one of a virtual worker and the other was a manager of a virtual worker. I conducted the two face-to-face interviews in two different locations; one was in a café setting in a quiet area after the morning breakfast rush. The second face-to-face was at the local library in a conference room. Each participant chose the interview location because it was close to their homes and afforded the privacy needed. On average, the interviews lasted 45 minutes to an hour, with the face-to-face interviews taking much longer than an hour. I interviewed each participant at one time.

I did not encounter any uncommon circumstances during the data collection process, and I did not deviate from the data collection plan described in Chapter 3. A change I made was to use two descriptive codes for each of the participant groups. In Chapter 3, Table 1 shows the data analysis steps using Participant 1, Participant 2, and so forth. I continued with this pattern through all 7 steps. Once I started the data collection process, I realized there needed to be more distinction between the two groups; therefore, the code for Participant 1VW is the first virtual worker, and Participant 1MV is the first manager of a virtual worker. During the data collection process, I used the built-in voice recorder application on my Microsoft Surface Book Laptop to record the interviews, which also stored the pseudo named recordings for each participant, and track the collected data. In addition, I used the Google Chrome web browser Application

Programming Interface (API) to back up, record, and transcribe the participant's voice to text. While the participants were speaking, the API recorded their spoken words into the web browser.

Rosenthal (2016) stated that since there is no do-over with an in-depth interview; therefore, it is critical to consider how to record the interview data. After transcription of the data in the web browser, I copied and pasted the text into Microsoft Word for the face-to-face interviewee participants to review. For the phone interviewed participants, I reviewed and summarized the transcription, and had them acknowledge the interview data. Member checking allowed the participant to verify the essence extracted from the transcribed text. I was prepared but did not need to use Microsoft Skype in the interview process because most of the participants did not have it installed or did not use this application. There were only two face-to-face interviews; I took field notes to observe the participant's facial expressions and body language, noting their reactions to each of the in-depth research questions. Rosenthal (2016) stated that field notes taking can be distracting to the participant during the interview and should keep minimized. I bracketed my personal preconceptions and views by not interjecting any personal thoughts during the interview.

Data Analysis

The data analysis process for this qualitative study consisted of six steps. I used Microsoft Excel spreadsheets to help me collect, organize, and analyze the data. In this study, as previously mentioned, there were two groups, (a) virtual workers and (b) managers of virtual workers. The virtual workers and the managers of virtual workers did

not work together. All the virtual workers were from different companies. The managers of virtual workers varied, three were from different companies, and two were from the same company and work in different departments and lived in different states. I analyzed the data from each group separately. I used the constant comparative method to compare newly collected data to previously collected data; this is a continuous process as themes form, and I confirmed the analysis results. The steps in the data analysis process for each were:

1. Interview Participant 1: record, transcribe, member check, code, and analyze the interview data.
2. Interview Participant 2: record, transcribe, member check, code, and analyze the interview data.
3. Create a composite of the potential themes identified from the two interviews ranked on the basis of the percentage of total participants who mentioned the potential theme.
4. Interview Participant 3: record, transcribe, member check, code, and analyze the interview data.
5. Combine the factors identified from the third interview with those in the composite of the first two interviews to create a new composite consisting of potential themes identified in the first three interviews.
6. Continue interviewing, analyzing, and comparing until data saturation occurs, which is when adding data from new interviews does not alter the potential themes at the top of the composite list. For this study, data saturation

occurred with the third interview, but I conducted two more interviews to validate the data saturation.

Evidence of Trustworthiness

Credibility

I used member checks, reflexivity field notes and triangulation to establish credibility with the artifacts after the interviews; the participants were able to review their interview transcripts for correctness.

Transferability

In this study, I achieved transferability with thick data artifacts, participant interviews, and field observations. The participant interviews produced themes, which can reproduce to transfer the findings.

Dependability

The audit trail documentation provides triangulation of artifacts, interview documentation, and field notes, and I will keep these documents in a safe place. If needed, these documents are available for audit.

Confirmability

Confirmability refers to the researcher's biases, my strategy to control biases was the use of the reflective journal to recheck, validate, and establish documentation review.

Study Results

Virtual Workers

For the virtual workers, there were two research questions (RQ1 and RQ2) and four interview questions (IQ1, IQ2, IQ3, IQ4), and five female participants, who

discussed their personal lived experiences as a virtual worker. Tables 2 through 5 contain the themes identified from the analysis of the data provided by these virtual workers. The themes listed in the tables are not in any particular order.

Table 2

Research Question 1 (RQ1) – Interview Question 1 (IQ1) – Themes for Virtual Workers

RQ1: What factors affect the productivity of virtual workers, and how can they be enhanced?

IQ1: What factors affect your productivity as a virtual worker?

Themes	Percentage	Impact
Computer Technical Issues	100%	Negative
Internet Issues	100%	Negative
Weather Issues	100%	Negative
Family Issues	100%	Negative
Isolation	100%	Negative
No work distractions	100%	Positive
No driving to work	100%	Positive
Flexibility	100%	Positive

Each of the five participants (i.e., 5 of 5, 100%) separately identified the eight themes listed in Table 2 as factors that affect their productivity as virtual works. There is no significance to the order of the themes. Note that the negative and positive themes are listed together.

Theme 1, computer technical issues, refers to the loss of productivity that occurs when virtual workers have issues with their computers and do not have resident IT technicians to help them recover, as they would if they were in an office environment.

Theme 2, Internet issues, refers to the loss of productivity experienced when the Internet

is down, and virtual workers cannot access the company's applications or files. Theme 3 weather issues, refers to the loss of productivity caused when virtual workers have to shut down their computers and wait for the weather to clear up, which is not a problem in an office environment. Theme 4, family issues, refers to family-related distractions that lower their productivity, which they would not face if working in an office. Theme 5, isolation, refers to the loss of productivity that occurs when virtual workers feel isolated or lonely as a result of being disconnected from the office.

Theme 6, no work distractions, refers to the increase in productivity that virtual workers experience by being able to focus better because there are no office distractions. Theme 7, no driving to work, refers to the increase in productivity that virtual workers experience because they do not have to commute to work. Finally, Theme 8, flexibility, refers to the increase in productivity that virtual workers experience because they have a flexible schedule.

Table 3

Research Question 1 (RQ1) – Interview Question 2 (IQ2) – Themes for Virtual Workers

RQ1: What factors affect the productivity of virtual workers, and how can they be enhanced?

IQ2: What can your organization do to enhance your productivity as a virtual worker?

Themes	Percentage
Communicate more	100%
Provide more training	40%
Provide more support	40%

Each of the virtual workers who participated in the study had ideas for what companies could do to make them more productive, but only three of these ideas were shared by other participants. Theme 1, more management communication, was mentioned by each of the five participants as being a way to improve their productivity. Two of the five participants mentioned that Theme 2, provide more skills and new product training, and Theme 3, provide more support (e.g., IT), would also enhance their productivity.

Table 4

Research Question 2 (RQ2) – Interview Question 3 (IQ3) – Themes for Virtual Workers

RQ2: What factors affect the job satisfaction of virtual workers, and how can they be enhanced?

IQ3: What factors affect your job satisfaction as a virtual worker?

Themes	Percentage
Distractions	100%
Level of Flexibility	100%
Computer and Internet issues	100%
Power outages, weather	100%
Workload related stress	40%

Each of the five participants separately identified the first four themes listed in Table 2 (i.e., distractions, level of work schedule flexibility, computer/Internet issues, and power outages/weather) as factors that affect their job satisfaction as virtual workers. In addition, two participants mentioned the higher workloads and related stress of working virtually as a factor affecting their satisfaction as virtual workers.

Table 5*Research Question 2 (RQ2) – Interview Question 4 (IQ4) – Themes for Virtual Workers*

RQ2: What factors affect the job satisfaction of virtual workers, and how can they be enhanced?

IQ4: What can your organization do to enhance your job satisfaction as a virtual worker?

Themes	Percentage
Having set hours	100%
Isolation	40%

Regarding Theme 1, having set hours, all five participants stated that their organizations could enhance their job satisfaction by having set workings hours, as they find themselves working more hours than they did in the office. Regarding Theme 2, isolation, two participants stated that as virtual workers, they felt left out because they were not party to the usual office communications. If managers established ways to enhance the two-way communication between virtual and office workers, the job satisfaction of the virtual workers would increase.

Managers of Virtual Workers

In this study for the managers of virtual workers, there were two research questions (RQ1 and RQ2) and two interview questions (IQ1, IQ3), and four female participants and one male participant who discussed their personal lived experiences of managing virtual workers. Tables 6 and 7 contain the themes identified from the analysis of the data provided by the managers (of virtual workers) who participated in the study.

Table 6

Research Question 1 (RQ1) – Interview Question 1 (IQ1) – Themes for Managers

RQ1: What factors affect the productivity of virtual workers, and how can they be enhanced?

IQ1: What factors affect the productivity of your virtual workers?

Themes	Percentage
Ability to use Technology	100%
Technical/Internet issues	100%
Weather	100%
Family Distractions	100%
Poor Communications	100%
Self-motivation, Independence	100%
Ability to stay on task	100%

Each of the five managers participating in the study separately identified the seven themes listed in Table 6 as factors that affect the productivity of virtual works.

Table 7

Research Question 2 (RQ2) – Interview Question 3 (IQ3) – Themes for Managers

RQ2: What factors affect the job satisfaction of virtual workers, and how can they be enhanced?

IQ3: What factors affect the job satisfaction of your virtual workers?

Themes	Percentage
Flexibility	100%
Isolation - not having F2F contact	100%
Ability to grow career while working from home	100%
Feeling of being part of a team - community	100%
Don't have to dress up for work	100%
Do not have to use vacation time when sick or sick child	100%
Not having to drive, no traffic	100%

Each of the five managers participating in the study separately identified the seven themes listed in Table 7 as factors that affect the job satisfaction of virtual works.

Triangulation of Virtual Worker and Manager Findings

Comparing the findings for virtual workers (Tables 2 and 4) indicates that they tend to see factors that affect productivity and job satisfaction as interconnected. The same is true for managers of virtual workers (Tables 6 and 7) but to a lesser extent. Hence, the comparison of virtual worker findings to those for managers of virtual workers is better made based on the composite view shown in Table 8. In Table 8, the themes that emerged as affecting the productivity and/or satisfaction of virtual workers based on the perceptions of virtual workers (Tables 2 and 4) are in one column. In

another, are the themes that emerged as affecting their productivity and/or satisfaction of virtual workers based on the perceptions of managers of virtual workers (Tables 6 and 7).

Table 8

Factors Affecting Virtual Worker Productivity and Job Satisfaction – Workers vs. Managers

Virtual Workers	Managers of Virtual Workers	Manager Perceived Perks
Computer Technical Issues	Ability to use Technology	Ability to grow career while working from home
Internet Issues	Technical/Internet issues	Feeling of being part of a team - community
Weather Issues	Weather	Don't have to dress up for work
Family Issues/Distractions	Family Distractions	Do not have to use vacation time when sick or sick child
No work distractions	Ability to stay on task	Self-motivation, Independence
Isolation	Isolation - not having F2F contact	
Flexibility	Flexibility	
No driving to work	Not having to drive, no traffic	
Workload related stress		

As shown in Table 8, there is quite a bit of similarity between the factors identified by virtual workers and the managers of virtual workers. In addition to the similarities, the managers of virtual workers mentioned other factors that the virtual workers did not mention. Also, the managers felt they could improve improve their communication with virtual workers. These perks benefit the virtual workers financially,

empowering them and giving them a sense of belonging that affects their productivity/satisfaction.

Summary

The design of this phenomenological qualitative study was to examine the lived experiences of virtual workers and managers of virtual workers. The 10 participants in this study worked virtually. Five were virtual workers and five were managers of virtual workers at the time of this study. The semi-structured interview questions were to assure openness and empowerment of the participants regarding their lived experiences of their productivity and job satisfaction while working virtually. The findings for virtual workers and managers of virtual workers regarding the primary factors that affect virtual worker productivity and satisfaction were quite similar. In Chapter 5, I discuss the findings of the study as they relate to the study limitations, recommendations for further research, and implications for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative phenomenological study was to determine the factors affecting the productivity and satisfaction of members of the virtual workforce and to identify ways in which employees and managers can enhance the productivity and satisfaction of virtual workers. The reason for conducting a phenomenological study was to determine what factors affect the productivity and satisfaction of virtual workers and how such factors can be enhanced based on the analysis of data collected in F2F interviews with the sample participants. The virtual workers' interviews consisted of two research questions and four interview questions asked of five female participants, who discussed their personal lived experiences as a virtual worker. The managers of virtual workers' interviews consisted of two research questions and two interview questions asked of four female participants and one male participant who discussed their personal lived experiences of managing virtual workers. The findings for both virtual workers and managers of virtual workers indicate that they tend to see factors that affect productivity and job satisfaction as interconnected.

Interpretation of Findings

The opportunity for an employee to work virtually over traditional workplace settings has increased the employee's motivation to work and enhanced their job satisfaction and productivity (Caillier, 2012; Laihonen, Jääskeläinen, Lönnqvist, & Ruostela, 2012). Working virtually allows employees and employers to enjoy the benefits of flexibility in the workplace. Such flexibility removes the office distractions and stress of commuting to work. It gives employees more quality time to spend with their families,

which improves job satisfaction and enhances productivity. The ability to work virtually is a job perk. Employees satisfied with their jobs are less likely to leave (Belbin et al., 2012). In addition, work flexibility allows companies to expand the talent pool by offering work from home options to attract and retain employees. Working in a demanding global marketplace, the virtual worker allows employers to enhance productivity by recruiting, training, and retaining better-talented employees, without regard to where they live (Rehman, 2012).

The findings revealed a significant overlap between the perspectives of virtual workers and managers of virtual workers regarding factors that affect productivity and job satisfaction. Overall, the findings indicate that the virtual worker's job satisfaction and productivity are enhanced by working virtually.

Virtual Workers

The study findings indicated that the factors that affect the productivity of virtual workers, and how to enhance them (RQ1) depend on virtual workers being able to perform their job despite the challenge imposed by distance. As shown in Table 2, because the traditional office environment is not accessible to virtual workers, technical and Internet issues affect productivity when the virtual worker cannot access the organization's network. An enhancement would be a 24x7 technical support helpdesk that virtual workers could call for technical support at any time. Slow Internet speed and poor connectivity are issues virtual workers experience when not working at the office. An enhancement would be having enough capacity on the organization's network for virtual workers to connect securely from home. Also, in Table 2, although not usually a

challenge for employees working in the office, bad weather stops productivity for the virtual worker. Family issues are a distraction that could hinder a virtual worker's productivity. An enhancement is to have set boundaries for family members, such as a closed-door indicating the virtual worker is working, or set office hours to avoid being disturbed during certain hours (Morrison-Smith & Ruiz, 2020). Isolation issues affect virtual workers' productivity when they feel lonely. Although various software tools, email, and video conferencing are available to conduct regular meetings, virtual workers still lack instant access to the water cooler conversations in a physical office environment. An enhancement would be for management to have regularly-scheduled interactions with the team to promote more open conversations (Morrison-Smith & Ruiz, 2020). As shown in Table 2, Themes 6, 7, and 8, no work distractions, no driving to work, and flexibility increase virtual workers' productivity.

As shown in Table 3, because the traditional office environment is not accessible to virtual workers, communication is challenging. The lack of F2F communications in a virtual workforce affects productivity when the virtual worker finds it difficult to communicate with team members (Greer & Payne, 2014). As stated above, management could have regularly scheduled team interactions to prompt open communications. Although not unanimously agreed upon, as shown in Table 3, providing more training and more support could enhance understanding of the job and worker productivity. Also, if management supported them more, virtual workers could be more productive in doing their job.

With regard to the research question, what factors affect virtual workers' job satisfaction, and how to enhance them (RQ2), many employees view working virtually as a job benefit; they choose to work virtually to be more productive. Virtual workers choose to work remote for better work-life balance, more flexible schedules, and reduce workplace distractions, and to avoid the daily commute and family care responsibilities. Two participants mentioned workload related stress as job dissatisfaction. One downside to virtual work is that some employees could work more than 8 hours if there are no set hours; employees can feel always connected. An enhancement could include having set hours or working to a schedule.

As shown in Table 2, computer and Internet issues and power outages, and weather affect productivity when the virtual worker cannot work, which affects their job satisfaction. In Table 5, as previously mentioned, having set hours keeps virtual workers from working more than 8 hours or feeling like they are always working. An enhancement is having set work hours to eliminate workload-related stress, which should help virtual employees balance their time and workload.

Managers of Virtual Workers

Regarding how to enhance virtual worker productivity (RQ1), the managers answered that employees should have basic computer hardware and software skills to work from home (Theme 1). An employee needs to understand the technology they have and the ability to use the technology. An enhancement is hiring employees that currently have basic computer hardware and software skills. In addition, provide training to

validate that employees have basic computer skills and train them on all the applications needed to perform their job.

Themes 2 – 4, as previously mentioned in Table 2, regarding *technical/Internet issues, weather, and family distractions*, management felt the same as the virtual workers. Therefore, the enhancements would be a 24x7 technical support helpdesk that virtual workers can call for technical support at any time of day. As shown in Table 2, the weather is usually a challenge for both office employees and virtual workers. An enhancement for family distractions is for employees to have set boundaries.

Theme 5, *poor communications*. The managers agreed that the theme is an issue. Similar to Table 3, the virtual workers cited management needs to communicate more. Management felt the theme, poor communications, can be enhanced by communicating with employees in writing, listening, and regularly scheduled meetings.

Themes 6 and 7, *self-motivation, independence, and the ability to stay on task*. These themes are essential for virtual workers. Although these themes seem similar, virtual workers' ability to stay focused becomes more challenging when working from home. An enhancement could be for management to set tasks, priorities, and goals.

Research question 2: What factors affect the job satisfaction of virtual workers, and how can they be enhanced? Themes 1 and 2, as previously mentioned in Table 2, *flexibility and isolation*, the managers of the virtual workers felt the same as the virtual workers. Therefore, the enhancements could be similar; regarding flexibility, the virtual worker could modify their schedule when needed. Regarding the feeling of isolation,

management could communicate more with virtual workers by having regularly scheduled meetings.

Theme 3, *the ability to grow a career while working from home*. The managers felt that working would not negatively impact an employee's development or career. An enhancement would be for management to ensure employees that working from does not affect their career goals. Management could help employees look for opportunities to develop and group their careers.

Theme 4, *feeling of being part of a team – community*. As previously mentioned in Table 2, virtual workers can feel isolated or left out of the group. The managers of virtual workers felt the same as the virtual workers. An enhancement would be to keep employees engaged and communicate regularly.

Theme 5, *don't have to dress up for work*. As previously mentioned in Table 2, having the flexibility to work from home eliminates the need for virtual workers to dress up for work. Virtual workers benefit from the savings of not having to purchase new clothes for work.

Theme 6, *do not have to use vacation time when sick or sick child*. As previously mentioned in Table 2, flexibility management, the managers felt the same as the virtual workers. Having the flexibility not to use vacation days for sick days is a plus. Therefore, the enhancement could be similar; the virtual workers can modify their schedule to take care of sick family members as needed and save their vacation days for vacation time.

Theme 7, *not having to drive, no traffic*. As previously mentioned in Table 2, having the flexibility to work from home eliminates the daily commute and stress of

driving to work. Virtual workers benefit from the savings of less vehicle maintenance and upkeep.

Limitations of the Study

F2F interviews were the primary method of data collection; some participants' schedules limited their availability before work or after work. I worked with the participants to reschedule the interview date and time that worked best for them. Another limitation was the location of the interviews; some participants changed locations to one that worked best with their needs. I was understanding of their needs and was able to make the location change and interview the participants. A limitation of F2F interviews is time-consuming and can be costly for the researcher from time spent traveling and data gathering. During the interview, I relied on the participants to be honest, open, and truthful about their lived experiences as a virtual worker or manager of virtual workers. An advantage of F2F interviews is that the researcher can ask in-depth and probing questions.

Telephone interviews were the other method used for data collection. Two of the virtual worker participants lived out of state; therefore, telephone interviews were the better choice. A few of the other participants also chose telephone interviews either before work or after work as it was convenient for them and did not take away their work or family time. A telephone interview limitation was keeping the participant focused on the question; some of the interviewees would talk about other concerns; I would refer to the current question to keep their focus to answer the question. Another limitation of telephone interviews is not being able to observe the interviewees' behavior and body

language. Also, I noticed that the majority of the telephone interviews were shorter than the F2F interviews.

The sample size was another limitation to the study interviews; there were a limited number of virtual workers and managers that were willing to participate in the study. Using referral sampling, I was able to recruit qualified participants from the other participants. A couple of virtual workers and managers recommended their co-workers for the study. I contacted the potential participants and invited them to participate in the study; most agreed to participate, and some declined to participate.

Finally, the experience of the researcher functioning as the instrument and analyzer of the data is limited to how familiar the research is with the data. Also, researcher bias was a potential limitation to the research study. The researcher was able to control this limitation by bracketing any personal biases about the research topic to ensure the validity of the information.

Recommendations

In this section, I discuss some of the areas that future researchers could address concerning the virtual worker. In addition to phenomenology qualitative research, future research could focus on other qualitative research methods ethnography, ground theory, and case study to re-evaluate and expand the conceptual framework for developing their research design.

Virtual workers and managers of virtual workers are not a new concept as working virtual has been steadily growing in the United States. Having a virtual workforce during the COVID-19 pandemic has helped many companies survive. Future

research could examine the impact of COVID-19 on traditional companies that had to adopt a work-from-home policy. Each of the other qualitative research methods could substantially contribute to the concept of the design of the research to help expand upon the future of the virtual worker.

For example, a future researcher using the ethnographic research method, which deals with an in-depth qualitative investigation of a group that shares a common culture. Future research could examine the culture of virtual managers versus that of the traditional manager to compare any differences in cultural behavior. In the literature, research has shown that virtual workers are more productive than traditional workers. However, there was not as much research about the managers of virtual workers, which plays a critical part in the virtual team.

Also, a future researcher could approach the study using grounded theory, which applies to currently documented theories in the literature that fails to adequately explain the phenomenon observed (Leedy & Ormrod, 2005). A grounded theory methodology could help researchers conduct natural observations to discover new insights that can lead to the development of new concepts of social behavior of virtual workers. A future researcher could discover the concept behind how the virtual worker phenomenon came about. The researcher could focus on the social behaviors of virtual workers to enhance their communications and collaboration while working from home, which could improve an employee's productivity and job satisfaction. With the advances in technology, there is a wide variety of collaboration tools for virtual workers, which could allow them to connect with teammates and the office as if they were working in the same room (Savu,

2019). Companies can provide their virtual workers with many types of virtual communications tools, such as email, instant messages, and video conferencing, and social networking and project and team collaboration tools, virtual whiteboard tools, and file storage collaboration tools. Virtual communication tools can help bridge the communication and collaboration gap with effective business communication tools. Video conferencing tools allow remote team members to have face-to-face conversations, screen sharing, and instant messaging. Project and collaboration tools allow team members to conduct team building activities, share knowledge, and new information, which increases the virtual team's effectiveness and productivity (Savu, 2019).

Additionally, a future researcher could approach the study using case study research, which involves the study of a bounded system, such as a group or organization. For example, a researcher could interview virtual workers and managers of virtual workers. Researchers could analyze how working virtually affects the virtual workers' communication with leadership and what they could do to improve it in ways that would enhance their productivity and job satisfaction.

Another approach for future research would be to examine the demographic information of the participants. As a nation, ethnicity and gender contribute to all business industries. Diversity in the workplace helps businesses compete in global markets. Today, the traditional workforce is more diverse than ever before due to countries sharing knowledge through globalization. Future researchers could investigate the effect of demographics on the productivity and job satisfaction of virtual workers and managers of virtual workers. For example, a future researcher could examine in-depth the

role that age and gender play in the job satisfaction of the virtual workers and managers of virtual workers. This current study included limitations in regards to age; all participants were 18 years and older. All of the virtual worker participants were female, and only one manager of virtual workers was male. Future research could investigate the impact of age and gender in the virtual workforce if the participants were all men or even a combination of both men and women.

Finally, this study only included virtual workers and managers of virtual workers on the east coast in the United States. With an increase in virtual workers rising rapidly, the idea of global workers becoming the standard in a matter of time, making it appropriate for future researchers to examine in-depth the dynamics of virtual workers across the United States. Future researchers could also do an in-depth examination of virtual workers in other countries. International virtual workers and managers of virtual workers' cultures could differ from the virtual workers and managers of virtual workers culture in the United States (Tenzer & Pudelko, 2016). An in-depth examination could review their attitudes about work and the factors affecting their productivity and job satisfaction, and determine how to improve the factors affecting them.

Implications

Information technology has transformed the business industry. Technology today is an essential part of the workforce since the IT age. Technology has changed the workplace environment; technology has become an indispensable part of a business and everyday life. Nearly every industry requires some knowledge of technology using computers and software. Technology is used in many functions every day across all

industries. No matter the size of the company, technology has a significant impact and many benefits. The advances in technology enable employees to work more efficiently and effectively.

A significant social change in technology is that the Internet has transcended local and global boundaries and touches all walks of life and business industries. The Internet allows society and companies to overcome the challenges of distance and connect anywhere globally with an Internet connection. Companies depend on technology as a necessity to be sustained and competitive. As a result, the virtual workforce has helped businesses overcome geography challenges and respond to market changes quickly and reduce operating costs.

The future of work is not the traditional workplace; commuting to a 9 – 5 job, working in a cubical with a thirty-minute lunch, and driving home through rush hour traffic, is no longer the norm. The advancements in technological telecommunication infrastructures among corporate organizations and the virtual workforce are becoming the new workplace (DellaNeve & Gladys, 2015). As technology has changed with the times, so has the way companies conduct business (Schall, Zollmann, & Reitmayr, 2013). The evolving mobility tools of technology are the solution between the organization and the virtual workforce. Organizations can recruit, train, and retain a virtual workforce, just as they can a traditional workforce. With technology, physical distance and time zones are no longer a limitation for the organizations. Some benefits of working with a virtual workforce, organizations could limit the overhead cost of physical brick and mortar office space. With a virtual workforce, organizations can reduce traveling costs between

sites. Organizations can hire top talent employees regardless of where they live, which allows an organization to enhance its employee resources by selecting better-talented employees (Morrison-Smith & Ruiz, 2020). As organizations find new ways to conduct business globally with a virtual workforce, they will also find new challenges in managing a virtual workforce.

In traditional teams, everyone is local in the same office space with a manager on site. Traditional teams commute to the office, communicate F2F with co-workers and use technology, smartphones, email, and web meetings. Also, traditional teams work in corporate or local offices, work for eight hours at the office, and then commute home. In virtual teams, everyone works from a dispersed environment with a virtual manager. Virtual teams communicate using technology, smartphones, email, and web meetings. In essence, both employee teams are similar yet different. Traditional teams can have F2F meetings with fellow employees on-site, while virtual teams must use technology to connect with fellow employees. Like traditional teams, managers must spend time with virtual employees to them engaged and motivated.

A common misconception about employees leaving one job for another job is compensation, which is not always the primary reason for some employees. Compensation is critical to the employee because it allows an employee to meet their personal needs of purchasing goods and services required for themselves and their families. Many employees leave one job for another job to find meaning in their work as they want job satisfaction. Employees want meaningful experiences in their jobs. Virtual employees want the flexibility of working from the comfort of their home with their

family. Virtual employees are happier and less stressed; they do not have to experience sitting in rush hour traffic. The virtual employees are more productive than traditional employees because they can focus better as they do not have the office distractions of water cooler conversations and noise. Virtual employees work 100% from home; they save time and money because they do not commute to work. Virtual employees may have a more flexible work schedule as compared to traditional employees. Working from home may give some virtual employees opportunities to take care of personal things and family as they can resume work later.

Conclusions

Although the virtual workforce is different from the traditional workforce, it offers many benefits as well as many challenges. Virtual workers are more satisfied employees, and have more flexibility and work-life balance. Management benefits included lower overhead costs and the ability to hire better-talented employees without regard to time or distances. Managers must take a proactive role in addressing the virtual workforce's challenges for everyone to benefit from the technology advantages.

References

- Academicguides.walden.edu. (2017). *Academic guides: Research ethics & compliance: Welcome from the IRB*. <http://academicguides.waldenu.edu/researchcenter/orec>
- Alderfer, C. P. (1972). *Existence, relatedness, and growth*. Free Press.
- Allen, T. D., Golden, T. D., & Shockley, K. M. (2015). How effective is telecommuting? Assessing the status of our scientific findings. *Psychological Science in the Public Interest*, 16(2), 40-68. <https://doi.org/10.1177/1529100615593273>
- Altschuller, S., & Benbunan-fich, R. (2013). The pursuit of trust in ad hoc virtual teams: How much electronic portrayal is too much? *European Journal of Information Systems*, 22(6), 619-636. <https://doi.org/10.1057/ejis.2012.39>
- Amble, N. (2013). Autonomy and control when working with humans-a reflection on sociotechnical concepts. *Nordic Journal of Working Life Studies*, 3(4), 45-62. <http://www1.svt.ntnu.no/nsajournals/?p=125>
- Ang, C. K., Embi, M. A., & Yunus, M. M. (2016). Enhancing the quality of the findings of a longitudinal case study: Reviewing trustworthiness via ATLAS.ti. *The Qualitative Report*, 21(10), 1855-1867. <http://nsuworks.nova.edu/tqr/>
- Anik, L., Akin, L. B., Norton, M. I., Dunn, E. W., & Quoidbach, J. (2013). Prosocial bonuses increase employee satisfaction and team performance. *PLoS One*, 8(9), e75509. <https://doi.org/10.1371/journal.pone.0075509>
- Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. <http://hdl.handle.net>

- Arsovski, Z. (2013). Determinants of the implementation of information and communication technologies in clusters of enterprises. *Ekonomski Horizonti*, 15(2), 107-123. <https://doi.org/10.5937/ekonhor1302103A>
- Au, Y., & Marks, A. (2012). Virtual teams are literally and metaphorically invisible. *Employee Relations*, 34(3), 271-287. <https://doi.org/10.1108/01425451211217707>
- Bansal, A. (2013). Implications of corporate social responsibility: Towards a sustainable business. *International Journal of Management Research and Reviews*, 3(9), 3524-3535. [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1468-2370](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1468-2370)
- Baralou, E., & McInnes, P. (2013). Emotions and the spatialisation of social relations in text-based computer-mediated communication [Article]. *New Technology, Work & Employment*, 28(2), 160-175. <https://doi.org/10.1111/ntwe.12012>
- Baumeister, R., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497-529. <https://doi.org/10.1037/0033-2909>
- Beaudry, C., Aguir, M., Laflamme, J., & Deschênes, A.-A. (2014). Retention of highly skilled workers in science and technology: Distant regional employers' point of view. *Journal of Arts and Humanities*, 3(4), 7-15. <https://doi.org/10.18533/journal.v3i4.417>
- Beecham, S. (2014). Motivating software engineers working in virtual teams across the globe. In G. Ruhe & C. Wohlin (Eds.), *Software project management in a changing world* (pp. 247-273). Springer. https://doi.org/10.1007/978-3-642-55035-5_10

- Belbin, C., Erwee, R., & Wiesner, R. (2012). Employee perceptions of workforce retention strategies in a health system. *Journal of Management and Organization*, 18(5), 742-760. <https://www.anzam.org/publications/jmo/>
- Benrazavi, S. R., & Silong, A. D. (2013). Employees job satisfaction and its influence on willingness to work in teams. *Journal of Management Policy and Practice*, 14(1), 127-140. <http://jmppnet.com/>
- Berisha-Shaqiri, A. (2015). Business initiative for creating competitive advantage through information technology. *Romanian Review of Social Sciences*(8), 30-34. <http://rrss.univnt.ro/>
- Beyerlein, M., Prasad, A., Cordas, J., & Brunese, P. (2015). *Virtual project teams in the psychology and management of project teams*. University Press.
- Biggs, A., Brough, P., & Barbour, J. P. (2014). Strategic alignment with organizational priorities and work engagement: A multi-wave analysis [Article]. *Journal of Organizational Behavior*, 35(3), 301-317. <https://doi.org/10.1002/job.1866>
- Biron, M., & Boon, C. (2013). Performance and turnover intentions: A social exchange perspective. *Journal of Managerial Psychology*, 28(5), 511-531. <https://doi.org/10.1108/JMP-09-2011-0054>
- Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking. *Qualitative Health Research*, 26(13), 1802-1811. <https://doi.org/10.1177/1049732316654870>

- Bordia, N. (2017). *Role of technology selection in supporting collaboration and communication in globally distributed virtual teams*
<http://hdl.handle.net/1773/38545>
- Boughzala, I., & de Vreede, G.-J. (2015). Evaluating team collaboration quality: The development and field application of a collaboration maturity model [Article]. *Journal of Management Information Systems*, 32(3), 129-157.
<https://doi.org/10.1080/07421222.2015.1095042>
- Boyer O'Leary, M., Wilson, J. M., & Metiu, A. (2014). Beyond being there: The symbolic role of communication and identification in perceptions of proximity to geographically dispersed colleagues [Article]. *MIS Quarterly*, 38(4), 1219-A1217.
<http://misq.org/>
- Bradford, D. L., & Cohen, A. R. (1997). *Managing for excellence: The guide to developing high performance in contemporary organizations*. John Wiley & Sons.
- Brown, C., Smith, P., Arduengo, N., & Taylor, M. (2016). Trusting telework in the federal government [Article]. *The Qualitative Report*, 21(1), 87-101.
<http://tqr.nova.edu/>
- Brown, G., Pierce, J. L., & Crossley, C. (2014). Toward an understanding of the development of ownership feelings [Article]. *Journal of Organizational Behavior*, 35(3), 318-338. <https://doi.org/10.1002/job.1869>
- Burgoon, J. K., Bonito, J. A., Ramirez, A., Dunbar, N. E., Kam, K., & Fischer, J. (2002). Testing the interactivity principle: Effects of mediation, propinquity, and verbal

- and nonverbal modalities in interpersonal interaction. *Journal of Communication*, 52(3), 657-677. <https://doi.org/10.1111/j.1460-2466.2002.tb02567.x>
- Caillier, J. G. (2012). The impact of teleworking on work motivation in a U.S. federal government agency. *The American Review of Public Administration*, 42(4), 461-480. <https://doi.org/10.1177/0275074011409394>
- Cao, H., Jiang, J., Oh, L.-B., Li, H., Liao, X., & Chen, Z. (2013). A Maslow's hierarchy of needs analysis of social networking services continuance. *Journal of Service Management*, 24(2), 170-190. <https://doi.org/10.1108/09564231311323953>
- Cappel, J. J., & Windsor, J. C. (2000). Ethical decision making: A comparison of computer-supported and face-to-face groups. *Journal of Business Ethics*, 28(2), 95-107. <https://doi.org/10.1023/a:100634482535>
- Chan, Z. C., Fung, Y., & Chien, W. (2013). Bracketing in phenomenology: Only undertaken in the data collection and analysis process. *The Qualitative Report*, 18(30), 1-9. <http://nsuworks.nova.edu/>
- Charmaz, K. (2014). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage.
- Chu, P. (2015). All the world's an office ... What are the risks? *Professional Safety*, 60(9), 20. <http://www.asse.org/professional-safety/>
- Chung, Y., & Jackson, S. E. (2013). The internal and external networks of knowledge-intensive teams: The role of task routineness. *Journal of Management*, 39(2), 442-468. <https://doi.org/10.1177/0149206310394186>

- Clemons, D., & Kroth, M. (2011). *Managing the mobile workforce: Leading building and sustaining virtual teams*. McGraw-Hill.
- Colbert, A., Yee, N., & George, G. (2016). The digital workforce and the workplace of the future. *Academy of Management Journal*, 59(3), 731-739.
<https://doi.org/10.5465/amj.2016.4003>
- Comu, S., Iorio, J., Taylor, J. E., & Dossick, C. S. (2013). Quantifying the impact of facilitation on transactive memory system formation in global virtual project networks [Article]. *Journal of Construction Engineering & Management*, 139(3), 294-303. [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0000610](https://doi.org/10.1061/(ASCE)CO.1943-7862.0000610)
- Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing*, 25(6), 435-436. <http://www.medsurnursing.net/cgi-bin/WebObjects/MSNJournal.woa>
- Cooper, C. D., & Kurland, N. B. (2002). Telecommuting, professional isolation, and employee development in public and private organizations. *Journal of Organizational Behavior*, 23(4), 511-532. <https://doi.org/10.1002/job.145>
- Cope, D. G. (2014). Methods and meanings: Credibility and trustworthiness of qualitative research. *Oncol Nurs Forum*, 41(1), 89-91. <https://doi.org/10.1188/14.ONF.89-91>
- Cramton, C., & Webber, S. (2005). Relationships among geographic dispersion, team processes, and effectiveness in software development work teams. *Journal of Business Research*, 58(6), 758-765. <https://doi.org/10.1016/j.jbusres.2003.10.006>
- Cucinotta, D., & Vanelli, M. (2020). WHO Declares COVID-19 a Pandemic. *Acta Bio Medica Atenei Parmensis*, 91(1), 157-160.
<https://doi.org/10.23750/abm.v91i1.9397>

- Cui, X. (2016). The Internet of things. In *Ethical ripples of creativity and innovation*. Palgrave Macmillan UK. https://doi.org/10.1057/9781137505545_7
- Cummings, T. G. (1978). Self-regulating work groups: A socio-technical synthesis. *Academy of Management. The Academy of Management Review (pre-1986)*, 3(3), 625-634. <https://doi.org/10.5465/amr.1978.4305900>
- Cuthbert, C. A. M. N. R. N. N. P. A., & Moules, N. R. N. P. (2014). The application of qualitative research findings to oncology nursing practice. *Oncology Nursing Forum*, 41(6), 683-685. <https://doi.org/10.1188/14.ONF.683-685>
- Dahlstrom, T. R. (2013). Telecommuting and leadership style. *Public Personnel Management*, 42(3), 438-451. <https://doi.org/10.1177/0091026013495731>
- Damij, N., Levnajic, Z., Skrt, V. R., & Suklan, J. (2015). What motivates us for work? Intricate web of factors beyond money and prestige. *PLoS One*, 10(7). <https://doi.org/10.1371/journal.pone.0132641>
- Danzfuss, T. W. (2013). *The impact of organizational structure on the performance of virtual teams* University of Pretoria, Pretoria, South Africa]. <https://repository.up.ac.za/>
- Darawsheh, W. (2014). Reflexivity in research: Promoting rigour, reliability and validity in qualitative research. *International Journal Of Therapy & Rehabilitation*, 21(12), 560-568. <https://doi.org/10.12968/ijtr.2014.21.12.560>
- Davis, R., & Cates, S. (2013). The dark side of working in a virtual world: An investigation of the relationship between workplace isolation and engagement

among teleworkers. *Journal of Human Resource and Sustainability Studies*, 1(02), 9. <https://doi.org/10.4236/jhrss.2013.12002>

De Bruyn, A. J. (2014). *A framework for best practices in the functioning of effective virtual teams in organisations within the technology industry of South Africa* [Unpublished doctoral dissertation, University of South Africa, Pretoria, South Africa]. <http://uir.unisa.ac.za>

Deans, P. C. (2009). *Social software and web 2.0 technology trends*. Information Science Reference.

DellaNeve, J. R., & Gladys, A. (2015). You can't rivet an airplane in your pajamas: An activity theory perspective of virtual work, culture and technology. *International Journal of Arts & Sciences*, 8(4), 283-292. <https://www.internationaljournal.org>

DeRosa, D. M., Hantula, D. A., Kock, N., & D'Arcy, J. (2004). Trust and leadership in virtual teamwork: A media naturalness perspective. *Human Resource Management*, 43(2-3), 219-232. <https://doi.org/10.1002/hrm.20016>

Dhondt, S., Pot, D. F., & Kraan, O. K. (2014). The importance of organizational level decision latitude for well-being and organizational commitment. *Team Performance Management*, 20(7/8), 307. <https://doi.org/10.1108/TPM-03-2014-0025>

Ding, H. (2014). Virtual global leadership model: Exploratory research of leadership. *World Journal of Social Sciences*, 4(1), 94 – 106. <http://www.sciedupress.com>

Dissanayake, I., Zhang, J., & Gu, B. (2015). Task division for team success in crowdsourcing contests: Resource allocation and alignment effects [Article].

Journal of Management Information Systems, 32(2), 8-39.

<https://doi.org/10.1080/07421222.2015.1068604>

Dreyer, E. (2015). *Factors and influences of effective virtual team performance*

[Stellenbosch University]. Stellenbosch, South Africa. <http://scholar.sun.ac.za/>

Duarte, D. L., & Snyder, N. T. (2006). *Mastering virtual teams: Strategies, tools, and techniques that succeed* (3rd ed.). Wiley.

Dube, S., & Marnewick, C. (2016). A conceptual model to improve performance in virtual teams. *SA Journal of Information Management*, 18(1), 1-10.

<https://doi.org/10.4102/sajim.v18i1.674>

Duch-Brown, N., Grzybowski, L., Romahn, A., & Verboven, F. (2017). The impact of online sales on consumers and firms. Evidence from consumer electronics.

International Journal of Industrial Organization, 52, 30-62.

<https://doi.org/10.1016/j.ijindorg.2017.01.009>

Edwards, W. (1954). The theory of decision making. *Psychological Bulletin*, 51(4), 380-417. <https://doi.org/10.1037/h0053870>

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis. *SAGE Open*, 4(1), 2158244014522633.

<https://doi.org/10.1177/2158244014522633>

Ergu, D., & Peng, Y. (2014). A framework for SaaS software packages evaluation and selection with virtual team and BOCR of analytic network process [Article].

Journal of Supercomputing, 67(1), 219-238. <https://doi.org/10.1007/s11227-013-0995-7>

- Espinosa, J. A., Nan, N., & Carmel, E. (2015). Temporal distance, communication patterns, and task performance in teams [Article]. *Journal of Management Information Systems*, 32(1), 151-191.
<https://doi.org/10.1080/07421222.2015.1029390>
- Fain, N., & Kline, M. (2013). The dynamics of multicultural NPD teams in virtual environments [journal article]. *International Journal of Technology and Design Education*, 23(2), 273-288. <https://doi.org/10.1007/s10798-011-9178-0>
- Falekkos, A. (2015). The new high performance manager. *Accountancy SA*, 60.
<http://www.accountancysa.org.za/wordpress/issues/>
- Fernandez, P. C., & Rajan, A. P. (2015). Is it important to have pride and a sense of belonging to the organization one works in? *International Journal of Management Research and Reviews*, 5(8), 629-635. [https://doi.org/10.1111/\(ISSN\)1468-2370](https://doi.org/10.1111/(ISSN)1468-2370)
- Festinger, L., & Katz, D. (1966). *Research methods in the behavioral sciences*. Dryden Press.
- Foss, N. J., & Klein, P. G. (2014). Why managers still matter. *MIT Sloan Management Review*, 56(1), 73-80. <https://sloanreview.mit.edu/>
- Foster, M. K. (2010). *Assessing degree of virtuality and its impact on team effectiveness*. Morgan State University.
- Franks, P. C., & Oliver, G. C. (2012). Experiential learning and international collaboration opportunities: Virtual internships. *Library Review*, 61(4), 272-285.
<https://doi.org/10.1108/00242531211267572>

- Frimpong, K., & Wilson, A. (2013). Relative importance of satisfaction dimensions on service performance. *Journal of Service Management*, 24(4), 401-419.
<https://doi.org/10.1108/JOSM-07-2012-0151>
- Gallupe, R. B., Dennis, A. R., Cooper, W. H., Valacich, J. S., Bastianutti, L. M., & Nunamaker, J. F. (1992). Electronic brainstorming and group size. *The Academy of Management Journal*, 35(2), 350-369. <https://doi.org/10.2307/256377>
- Gentles, S. J., Charles, C., Nicholas, D. B., Ploeg, J., & McKibbin, K. A. (2016). Reviewing the research methods literature: Principles and strategies illustrated by a systematic overview of sampling in qualitative research. *Syst Rev*, 5(1), 172.
<https://doi.org/10.1186/s13643-016-0343-0>
- Gentles, S. J., Charles, C., Ploeg, J., & McKibbin, K. A. (2015). Sampling in qualitative research: Insights from an overview of the methods literature. *The Qualitative Report*, 20(11), 1772-1789. <http://nsuworks.nova.edu/tqr/>
- Ghosh, P., Satyawadi, R., Jagdamba Prasad, J., & Mohd, S. (2013). Who stays with you? Factors predicting employees' intention to stay. *International Journal of Organizational Analysis*, 21(3), 288-312. <https://doi.org/10.1108/IJOA-Sep-2011-0511>
- Gibbs, J., Sivunen, A., & Boyraz, M. (2017). Investigating the impacts of team type and design on virtual team processes. *Human Resource Management Review*, 27(4), 590-603. <https://doi.org/10.1016/j.hrmr.2016.12.006>

- Gilson, L. L., Maynard, M. T., Young, N. C. J., Vartiainen, M., & Hakonen, M. (2015). Virtual teams research: 10 years, 10 themes, and 10 opportunities. *Journal of Management*, 41(5), 1313-1337. <https://doi.org/10.1177/0149206314559946>
- Gockel, C., Robertson, R., & Brauner, E. (2013). Trust your teammates or bosses? Differential effects of trust on transactive memory, job satisfaction, and performance. *Employee Relations*, 35(2), 222-242. <https://doi.org/10.1108/01425451311287880>
- Goel, D. (2012). *Performance appraisal and compensation management: A modern approach*. PHI Learning Private Limited.
- Greer, T. W., & Payne, S. C. (2014). Overcoming telework challenges: Outcomes of successful telework strategies. *The Psychologist-Manager Journal*, 17(2), 87. <https://doi.org/10.1037/mgr0000014>
- Grewal, D., Motyka, S., & Levy, M. (2018). The evolution and future of retailing and retailing education. *Journal of Marketing Education*, 40(1), 85-93. <https://doi.org/10.1177/0273475318755838>
- Guinalíu, M., & Jordán, P. (2016). Building trust in the leader of virtual work teams. *Spanish Journal of Marketing - ESIC*, 20(1), 58-70. <https://doi.org/10.1016/j.reimke.2016.01.003>
- Gulistan, Y. D., & Clapp-Smith, R. (2014). Metacognition, cultural psychological capital and motivational cultural intelligence. *Cross Cultural Management*, 21(4), 386. <https://doi.org/10.1108/CCM-07-2012-0055>

- Gully, S., & Phillips, J. (2016). Global recruiting. In H. Goldstein, E. Pulakos, J. Passmore, & C. Semedo (Eds.), *The Wiley Blackwell handbook of the psychology of recruitment, selection, and retention*. John Wiley & Sons.
- Gupta, A. (2014). E-commerce: Role of e-commerce in today's business. *International Journal of Computing and Corporate Research*, 4(1).
<http://www.ijccr.com/research>
- Hackman, J. R. (1992). Group influences on individuals in organizations. In M. D. Dunnette & L. M. Hough (Eds.). In *Handbook of industrial and organizational psychology* (pp. 199-267). Consulting Psychologists Press.
- Hadi, M. A., & Jose Closs, S. (2016). Ensuring rigour and trustworthiness of qualitative research in clinical pharmacy. *International Journal of Clinical Pharmacy*, 38(3), 641-646. <https://doi.org/10.1007/s11096-015-0237-6>
- Hadi, M. A., & José Closs, S. (2016). Ensuring rigour and trustworthiness of qualitative research in clinical pharmacy. *International Journal of Clinical Pharmacy*, 38(3), 641-646. <https://doi.org/10.1007/s11096-015-0237-6>
- Hanif, M. I., & Yunfei, S. (2013). The role of talent management and HR generic strategies for talent retention. *African Journal of Business Management*, 7(29), 2827-2835. <https://doi.org/10.1016/j.jvb.2011.10.010>
- He, H., Zhu, W., & Zheng, X. (2014). Procedural justice and employee engagement: Roles of organizational identification and moral identity centrality. *Journal of Business Ethics*, 122(4), 681-695. <https://doi.org/10.1007/s10551-013-1774-3>
- Herzberg, F. (1966). *Work and the nature of man*. World Publish.

- Herzberg, F. (1968). One more time: How do you motivate employees? *Harvard business review*, 46, 53-62. <https://hbr.org>
- Herzberg, F., Mausner, B., & Synderman, B. (1959). *The motivation to work* (2nd ed.). Wiley.
- Hoefling, T. (2003). *Working virtually: Managing people for successful virtual teams and organizations*. Stylus Publishing.
- Hofaidhllaoui, M., & Chhinzer, N. (2014). The relationship between satisfaction and turnover intentions for knowledge workers. *Engineering Management Journal*, 26(2), 3-9. <https://asem.org/EMJ>
- Inabinett, J. M. C. P. A. C. C., & Ballaro, J. M. (2014). Developing an organization by predicting employee retention by matching corporate culture with employee's values: A correlation study. *Organization Development Journal*, 32(1), 55-74. <https://doi.org/10.1108/10878570810902095>
- Iyer, S., & Israel, D. (2012). Structural equation modeling for testing the impact of organization communication satisfaction on employee engagement. *South Asian Journal of Management*, 19(1), 51-81. <http://www.sajm-amdisa.org/>
- Jackson, S. E., Schuler, R. S., & Werner, S. (2012). *Human resource management* (11th ed.). Cengage.
- Jadhav, N. (2014). Internet of things the next frontier of a networked community. *Telecom Business Review*, 7(1), 33-38. <http://www.publishingindia.com/tbr/>
- James, L., & Mathew, L. (2012). Employee retention strategies: IT industry. *SCMS Journal of Indian Management*, 9(3), 79-87. <https://www.scms.edu.in/journal>

- Jansen, G., Akkerman, A., & Vandaele, K. (2017). Undermining mobilization? The effect of job flexibility and job instability on the willingness to strike. *Economic and Industrial Democracy*, 38(1), 99-117. <https://doi.org/10.1177/0143831X14559782>
- Jarvenpaa, S. L., Rao, V. S., & Huber, G. P. (1988). Computer support for meetings of groups working on unstructured problems: A field experiment. *MIS Quarterly*, 12(4), 645-665. <http://www.misq.org/>
- Jimenez, A., Boehe, D. M., Taras, V., & Caprar, D. V. (2017). Working across boundaries: Current and future perspectives on global virtual teams. *Journal of International Management*, 23(4), 341-349. <https://doi.org/10.1016/j.intman.2017.05.001>
- Kahai, S. S., Huang, R., & Jestice, R. J. (2012). Interaction effect of leadership and communication media on feedback positivity in virtual teams. *Group & Organization Management*, 37(6), 716. <https://doi.org/10.1177/1059601112462061>
- Kankanhalli, A., Tan, B. C. Y., & Wei, K.-K. (2006). Conflict and performance in global virtual teams. *Journal of Management Information Systems*, 23(3), 237-274. <https://doi.org/10.2753/MIS0742-1222230309>
- Kauffmann, D., & Carmi, G. (2014). How team leaders can use ict to improve trust among virtual teams to increase collaboration? *International Journal of Engineering and Innovative Technology*, 3(9). <https://www.semanticscholar.org/>
- Kennedy, K. N. (2014). *The relationship between constructive conflict management (CCM) and productivity in virtual teams*. <https://pqdtopen.proquest.com>

- Khan, S. A., & Agha, K. (2013). Dynamics of the work life balance at the firm level: issues and challenges. *Journal of Management Policy and Practice*, 14(4), 103-114. <http://jmppnet.com/>
- Kim, J., Keegan, B. C., Park, S., & Oh, A. (2016). The proficiency-congruency dilemma: Virtual team design and performance in multiplayer online games. Proceedings of the 2016 CHI conference on human factors in computing systems.
- Kirkman, B. L., Rosen, B., Tesluk, P. E., & Gibson, C. B. (2004). The impact of team empowerment on virtual team performance: The moderating role of face-to-face interaction. *The Academy of Management Journal*, 47(2), 175-192. <https://doi.org/10.2307/20159571>
- Kligler, B. (2017). Leading a virtual team. *Explore: The Journal of Science and Healing*, 13(4), 277-278. <https://doi.org/10.1016/j.explore.2017.04.016>
- Koles, B., & Nagy, P. (2014). Individual and professional development in the digital age: Towards a conceptual model of virtual worlds for organizations. *Management Research Review*, 37(3), 288-307. <https://doi.org/10.1108/MRR-10-2012-0225>
- Korzynski, P. (2013). Employee motivation in new working environment. *International Journal Of Academic Research*, 5(5), 144-188. <https://doi.org/10.7813/2075-4124.2013/5-5/B.28>
- Kosonen, M., Gan, C., Vanhala, M., & Blomqvist, K. (2014). User motivation and knowledge sharing in idea crowdsourcing [Article]. *International Journal of Innovation Management*, 18(5), 1. <https://doi.org/10.1142/S1363919614500315>
- Kotter, J. P. (1996). *Leading change*. Harvard Business School Press.

- Krishnakumar, S., & Choudhury, J. (2014). Understanding the nuances of work-life balance. *Review of HRM*, 3, 81-92. <http://mdrf.org.in/>
- Krom, I. (2015). Global online entrepreneurship and the impact of innovation on brands. *Emerging Markets Journal*, 5(2), 90-101. <https://doi.org/10.5195/emaj.2015.90>
- Kuipers, B. S., Higgs, M., Kickert, W., Tummers, L., Grandia, J., & Van Der Voet, J. (2014). The management of change in public organizations: A literature review. *Public Administration*, 92(1), 1-20. <https://doi.org/10.1111/padm.12040>
- Laihonen, H., Jääskeläinen, A., Lönnqvist, A., & Ruostela, J. (2012). Measuring the productivity impacts of new ways of working. *Journal of Facilities Management*, 10(2), 102-113. <https://doi.org/10.1108/14725961211218749>
- Lasrado, F., Arif, M., & Rizvi, A. (2015). The determinants for sustainability of an employee suggestion system. *The International Journal of Quality & Reliability Management*, 32(2), 182. <https://doi.org/10.1108/IJQRM-02-2013-0035>
- Lavassani, K. M., Movahedi, B., & Parry, G. (2014). Broadband internet adoption challenge: An investigation of broadband utilization in the United States. *Transforming Government: People, Process and Policy*, 8(4), 620-644. <https://doi.org/10.1108/TG-11-2013-0050>
- Lawter, L., Kopelman, R. E., & Prottas, D. J. (2015). McGregor's theory X/Y and job performance: A multilevel, multi-source analysis. *Journal of Managerial Psychology*, 27(1-4), 84-101. <http://digitalcommons.sacredheart.edu>

- Lee, H. P. (2010). Newton's laws and a dynamic force-field analogy for analyzing organizational changes. *International Journal of Mechanical Engineering Education*, 38(4), 277-285. <https://journals.sagepub.com/home/ijj>
- Leedy, P. D., & Ormrod, J. E. (2005). *Practical research: Planning and design* (8th ed.). Pearson Merrill Prentice Hall.
- Lewin, K. (1935). *A dynamic theory of personality*. McGraw-Hill.
- Li, G., & Wei, M. (2014). Everything-as-a-service platform for on-demand virtual enterprises. *Information Systems Frontiers*, 16(3), 435-452. <https://doi.org/10.1007/s10796-012-9351-3>
- Lichy, J., Khvatova, T., & Pon, K. (2014). Engaging in digital technology: One size fits all? *The Journal of Management Development*, 33(7), 638. <https://doi.org/10.1108/JMD-12-2012-0153>
- Lilian, S. C. (2014). Virtual teams: Opportunities and challenges for e-leaders. *Procedia-Social and Behavioral Sciences*, 110, 1251-1261. <https://doi.org/10.1016/j.sbspro.2013.12.972>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
- Litan, R., & Rivlin, A. (2001). *The economic payoff from the internet revolution*. Brookings Institution Press.
- Locke, E. A. (1976). *The nature and causes of job satisfaction* (I. M. D. Dunnette, Ed.). Rand McNally.

- Lojeski, K. S., & Reilly, R. R. (2008). *Uniting the virtual workforce: Transforming leadership and innovation in the globally integrated enterprise*. John Wiley & Sons.
- Lojeski, K. S., & Reilly, R. R. (2010). *Leading the virtual workforce: How great leaders transform organizations in the 21st century*. John Wiley & Sons.
- Lozowski, D. (2014). Finding job satisfaction. *Chemical Engineering*, 121(7), 5.
<http://www.sciencedirect.com/science/journal/13858947/278?sdc=1>
- Madlock, P. E. (2012). The influence of supervisors leadership style on telecommuters. *Journal of Business Strategies*, 29(1), 1-24.
<http://www.emeraldinsight.com/loi/jbs>
- Magnusson, P., Schuster, A., & Taras, V. (2014). A process-based explanation of the psychic distance paradox: Evidence from global virtual teams [journal article]. *Management International Review*, 54(3), 283-306.
<https://doi.org/10.1007/s11575-014-0208-5>
- Mahler, J. (2012). The telework divide: Managerial and personnel challenges of telework. *Review of Public Personnel Administration*, 32(4), 407-418.
<https://doi.org/10.1177/0734371x12458127>
- Malone, H. E., & Coyne, I. (2016). A review of software applications and non-software approaches in JAN. *Journal of Advanced Nursing*, n/a-n/a.
<https://doi.org/10.1111/jan.13150>
- Marabelli, M., Rajola, F., Frigerio, C., & Newell, S. (2013). Managing knowledge in large-scale virtual projects: a community-based approach. *International Journal*

of Managing Projects in Business, 6(2), 310-331.

<https://doi.org/10.1108/17538371311319043>

Marett, K., & George, J. F. (2013). Barriers to deceiving other group members in virtual settings [journal article]. *Group Decision and Negotiation*, 22(1), 89-115.

<https://doi.org/10.1007/s10726-012-9297-3>

Markus, M. L., & Mentzer, K. (2014). Foresight for a responsible future with ICT.

Information Systems Frontiers, 16(3), 353-368. <https://doi.org/10.1007/s10796-013-9479-9>

Martin, T. N., & Ottemann, R. (2016). Generational workforce demographic trends and total organizational rewards which might attract and retain different generational employees. *Journal of Behavioral and Applied Management*, 16(2), 1160.

<https://jbam.scholasticahq.com/>

Maslow, A. (1954). *Motivation and personality*. Harper.

McGregor, D. (1960). *The human side of enterprise*. McGraw-Hill.

McKenna, C. D. (2006). *The World's Newest Profession: Management Consulting in the Twentieth Century*. Cambridge University Press.

<https://books.google.com/books?id=9SJKYmkfvt8C>

McLeod, J. (2001). *Qualitative research in counselling and psychotherapy*. Sage.

McShane, S. L., & Von Glinow, M. A. (2014). *Organizational behavior: Emerging knowledge, global reality* (7th ed.). McGraw-Hill/Irwin.

- Meier, H., Smith, D., & Porter, T. (2017). Global virtual teams for accounting millennials. *Journal for Research in Business Education*, 58(1), 48-60.
<https://www.questia.com/>
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.
- Milovanovic, G., Milovanovic, S., & Spasic, T. (2016). The role of contemporary web technologies in supply chain management. *Ekonomika*, 62(1), 43-57.
<https://doi.org/10.5937/ekonomika1601043M>
- Minkin, S. J. (2012). Virtual team leadership and implementation in the US Air Force. *International Journal of Networking and Virtual Organisations*, 10(2), 169-186.
<https://doi.org/10.1504/IJNVO.2012.045733>
- Mockaitis, A. I., Rose, E. L., & Zettinig, P. (2012). The power of individual cultural values in global virtual teams. *International Journal of Cross Cultural Management*, 12(2), 193–210. <https://doi.org/10.1177/1470595812439868>
- Molleman, E., & Broekhuis, M. (2001). Sociotechnical systems: Towards an organizational learning approach. *Journal of Engineering and Technology Management*, 18(3), 271-294. [https://doi.org/10.1016/S0923-4748\(01\)00038-8](https://doi.org/10.1016/S0923-4748(01)00038-8)
- Montesi, A. S. (2014). Life in the fast lane: Navigating the new world order - the global workplace. *The Journal of Human Resource and Adult Learning*, 10(2), 41.
<http://www.hraljournal.com/>
- Moorer, C. (2014). The teach method: An interactive approach for teaching the needs-based theories of motivation. *Journal of College Teaching & Learning (Online)*,

11(1), 9. <https://www.cluteinstitute.com/journals/journal-of-college-teaching-learning-tlc/>

Morris, S. A., Marshall, T. E., & Rainer, R. K. (2002). Impact of user satisfaction and trust on virtual team members. *Information Resources Management Journal*, 15(2), 22-30. <https://doi.org/10.4018/irmj.2002040103>

Morrison-Smith, S., & Ruiz, J. (2020). Challenges and barriers in virtual teams: A literature review. *SN Applied Sciences*, 2(6), 1096. <https://doi.org/10.1007/s42452-020-2801-5>

Morse, J. (2015). Critical analysis for determining rigor in qualitative inquiry. *Qualitative Health Research*, 25, 1212-1222. <https://doi.org/10.1177/1049732315588501>

Ninck, A. (2013). Teaching and learning for innovation. *Interdisciplinary Studies Journal*, 2(3), 9-19. <https://www.laurea.fi/en/research-development-and-innovations/publications>

Nohe, C., Michel, A., & Sonntag, K. (2014). Family-work conflict and job performance: A diary study of boundary conditions and mechanisms [Article]. *Journal of Organizational Behavior*, 35(3), 339-357. <https://doi.org/10.1002/job.1878>

Nwokocha, I., & Iheriohanma, E. B. J. (2012). Emerging trends in employee retention strategies in a globalizing economy: Nigeria in focus. *Asian Social Science*, 8(10), 198-207. <https://doi.org/10.5539/ass.v8n10p198>

Nyaanga, S., Ehiobuche, C., & Ampadu-Nyarkoh, K. (2013). Virtual organization: A strategic management option for business in developing countries. *International Journal of Arts & Sciences*, 6(2), 469-499. <https://www.internationaljournal.org/>

- Ose, S. O. (2016). Using excel and word to structure qualitative data. *Journal of Applied Social Science, 10*(2), 147-162. <https://doi.org/doi:10.1177/1936724416664948>
- Otani, T. (2017). What Is Qualitative Research? *Yakugaku Zasshi, 137*(6), 653-658. <https://doi.org/10.1248/yakushi.16-00224-1>
- Paik, Y., Seo, M.-G., & Jin, S. (2019). Affective information processing in self-managing teams: The role of emotional intelligence. *The Journal of Applied Behavioral Science, 0*(0), 0021886319832013. <https://doi.org/10.1177/0021886319832013>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research [journal article]. *Administration and Policy in Mental Health and Mental Health Services Research, 42*(5), 533-544. <https://doi.org/10.1007/s10488-013-0528-y>
- Pangil, F., & Chan, J. M. (2014). The mediating effect of knowledge sharing on the relationship between trust and virtual team effectiveness. *Journal of Knowledge Management, 18*(1), 92-106. <https://doi.org/10.1108/JKM-09-2013-0341>
- Parker, S., & Wall, T. (1998). Modern manufacturing and the work design agenda. In *Advanced Topics in Organizational Behavior: . In Job and work design: Organizing work to promote well-being and effectiveness* (pp. 57-83). Sage. <https://doi.org/10.4135/9781452231518.n5>
- Paterson, T. A., Luthans, F., & Jeung, W. (2014). Thriving at work: Impact of psychological capital and supervisor support [Article]. *Journal of Organizational Behavior, 35*(3), 434-446. <https://doi.org/10.1002/job.1907>

- Piccolo, R., & Colquitt, J. (2006). Transformational leadership and job behaviors: The mediating role of core job characteristics. *Academy of Management Journal*, 49, 327-340. <https://doi.org/10.5465/AMJ.2006.20786079>
- Pinar, T., Zehir, C., Kitapçı, H., & Tanriverdi, H. (2014). The relationships between leadership behaviors team learning and performance among the virtual teams. *International Business Research*, 7(5), 68-79. <https://doi.org/10.5539/ibr.v7n5p68>
- Pitney, W., & Parker, J. (2009). *Qualitative research in physical activity and the health profession*. Human Kinetics.
- Porter, M. E. (2008). The five competitive forces that shape strategy *Harvard business review*, 86(1), 79-93. <https://hbr.org>
- Premeaux, S. F., & Bedeian, A. G. (2003). Breaking the silence: The moderating effects of self-monitoring in predicting speaking up in the workplace. *Journal of Management Studies*, 40(6), 1537-1562. <https://doi.org/10.1111/1467-6486.00390>
- Pride, W. M., Hughes, R. J., & Kapoor, J. R. (2014). *Foundations of business* (4th ed.). Cengage Learning.
- Purvanova, R. K. (2014). Face-to-face versus virtual teams: What have we really learned? *The Psychologist Manager Journal*, 17(1), 2-29. <https://doi.org/10.1037/mgr0000009>
- Rae, J., & Green, B. (2016). Portraying reflexivity in health services research. *Qualitative Health Research*, 26(11), 1543-1549. <https://doi.org/10.1177/1049732316634046>
- Rasouli, R., Rashidi, M., & Hamidi, M. (2014). A model for the relationship between work attitudes and beliefs of knowledge workers with their turnover intention.

Periodica Polytechnica. Social and Management Sciences, 22(2), 149-155.

<https://doi.org/10.3311/PPso.7626>

Ravitch, S. M., & Carl, N. M. (2015). *Qualitative research: Bridging the conceptual, theoretical, and methodological*. Sage.

Reeve, J. (2016). A grand theory of motivation: Why not? [journal article]. *Motivation and Emotion*, 40(1), 31-35. <https://doi.org/10.1007/s11031-015-9538-2>

Rehman, S. (2012). A study of public sector organizations with respect to recruitment, job satisfaction and retention. *Global Business and Management Research*, 4(1), 76-88. <http://www.gbmr.ioksp.com/>

Reilly, R. C. (2013). Found poems, member checking and crises of representation. *The Qualitative Report*, 18(15), 1-18. <http://nsuworks.nova.edu/tqr/>

Richards, D., & Bilgin, A. (2012). Cross-cultural study into ICT student attitudes and behaviours concerning teams and project work. *Multicultural Education & Technology Journal*, 6(1), 18-35. <https://doi.org/10.1108/17504971211216292>

Ringel, M., Taylor, A., & Zablitz, H. (2015). *Innovation in 2015*. <https://www.bcg.com>

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, 11(1), 25-41. <https://doi.org/10.1080/14780887.2013.801543>

Rosenthal, M. (2016). Qualitative research methods: Why, when, and how to conduct interviews and focus groups in pharmacy research. *Currents in Pharmacy Teaching and Learning*, 8, 509-516. <https://doi.org/10.1016/J.CPTL.2016.03.021>

Roulston, K. (2014). In *The Sage handbook of qualitative data analysis*. Sage.

- Rowley, J. (2014). Designing and using research questionnaires. *Management Research Review*, 37(3), 308-330. <https://doi.org/10.1108/MRR-02-2013-0027>
- Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014). Ethical challenges of researchers in qualitative studies: The necessity to develop a specific guideline. *Journal of Medical Ethics and History of Medicine*, 7, 14. <http://www.ncbi.nlm.nih.gov>
- Sankey, K. S., & Machin, M. A. (2014). Employee participation in non-mandatory professional development - the role of core proactive motivation processes [Article]. *International Journal of Training & Development*, 18(4), 241-255. <https://doi.org/10.1111/ijtd.12036>
- Sathyapriya, P., Prabhakaran, A., Gopinath, M., & Abraham, D. M. (2012). Organizational learning and its inter-linkages: Determining the impact on employee behavior. *South Asian Journal of Management*, 19(3), 50-67. <http://www.sajm-amdisa.org/>
- Savu, I. (2019). Amplifying performance in virtual teams optimizing communication strategies. *Res. & Sci. Today*, 17, 112. <http://www.rstjournal.com>
- Schall, G., Zollmann, S., & Reitmayr, G. (2013). Smart Vidente: Advances in mobile augmented reality for interactive visualization of underground infrastructure. *Personal and Ubiquitous Computing*, 17(7), 1533-1549. <https://doi.org/10.1007/s00779-012-0599-x>

- Scott-Young, C. M. (2013). *A workplace comparison of virtual and face-to-face project teams: Functioning, practices and performance* [University of South Australia]. Adelaide, Australia. <https://www.anzam.org>
- Scott, C. P. R., & Wildman, J. L. (2015). Culture, communication, and conflict: A review of the global virtual team literature. In J. L. Wildman & R. L. Griffith (Eds.), *Leading global teams: Translating multidisciplinary science to practice* (pp. 13-32). Springer. https://doi.org/10.1007/978-1-4939-2050-1_2
- Senge, P., Kleiner, A., Roberts, C., Ross, R., Roth, G., & Smith, B. (1999). *The dance of change: The challenges to sustaining momentum in learning organizations*. Doubleday.
- Senge, P. M. (2006). *The fifth discipline: The art and practice of the learning organization*. Doubleday.
- Serrat, O. (2017). *Managing virtual teams*. Springer. https://doi.org/https://doi.org/10.1007/978-981-10-0983-9_68
- Shaw, J. A. (2016). Reflexivity and the "acting subject": Conceptualizing the unit of analysis in qualitative health research. *Qual Health Res*, 26(13), 1735-1744. <https://doi.org/10.1177/1049732316657813>
- Shin, D. (2014). A socio-technical framework for Internet-of-things design: A human-centered design for the Internet of things. *Telematics and Informatics*, 31(4), 519-531. <https://doi.org/10.1016/j.tele.2014.02.003>

- Shultz, T. (2014). Evaluating moral issues in motivation theories: Lessons from marketing and advertising practices. *Employee Responsibilities and Rights Journal*, 26(1), 1-20. <https://doi.org/10.1007/s10672-013-9230-1>
- Simons, L. P., Hampe, J. F., & Guldemon, N. A. (2014). ICT supported healthy lifestyle interventions: Design lessons. *Electronic Markets*, 24(3), 179-192. <https://doi.org/10.1007/s12525-014-0157-7>
- Sinani, F. (2016). *The effects of participative leadership practices on job satisfaction for highly skilled virtual teams* <https://scholarworks.waldenu.edu>
- Smite, D., Kuhrmann, M., & Keil, P. (2014). Virtual teams [Article]. *IEEE Software*, 31(6), 41-46. <https://doi.org/10.1109/MS.2014.149>
- Soukup, P. A. S. J. (2015). Smartphones. *Communication Research Trends*, 34(4), 3-39. <http://csc.scu.edu/trends/>
- Souza, D. N., & Souza, F. N. (2016). Application of software in qualitative research. *Rev Gaucha Enferm*, 37(3), e67901. <https://doi.org/10.1590/1983-1447.2016.03.67901>
- Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes, and consequences*. Sage.
- Staples survey shows telecommuting offers edge to companies looking to recruit talent.* (2014). <http://investor.staples.com/phoenix.zhtml?c=96244&p=irol-newsArticle&ID=1936154>

- Steenkamp, D. H. (2014). *Project teams: The relationship between motivation and communication as experienced by it and business members*
<https://pqdtopen.proquest.com>
- Stynen, D., Forrier, A., & Sels, L. (2014). The relationship between motivation to work and workers' pay flexibility: The moderation of age. *Career Development International*, 19(2), 183-203. <https://doi.org/10.1108/CDI-04-2013-0041>
- Suen, L.-J. W., Huang, H.-M., & Lee, H.-H. (2014). A comparison of convenience sampling and purposive sampling. *Hu Li Za Zhi*, 61(3), 105-111.
<https://www.ncbi.nlm.nih.gov/labs/journals/hu-li-za-zhi/>
- Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian Journal of Hospital Pharmacy*, 68(3), 226-231.
<http://www.ncbi.nlm.nih.gov>
- Symons, J., & Stenzel, C. (2007). Virtually borderless: An examination of culture in virtual teaming. *Journal of General Management*, 32(3), 1-17.
<http://www.braybrooke.co.uk/JournalofGeneralManagement/tabid/56/Default.asp>
- x
- Targowski, A. (2014). From globalization waves to global civilization. *Comparative Civilizations Review*, 70(7), 73-89. <http://www.scholarsarchive.byu.edu>
- Telework & emergency preparedness*. (2000). <https://www.opm.gov/policy-data-oversight/pandemic-information/work-hiring-arrangements/telework-guidance/telework-emergency-preparedness/>

- Tenzer, H., & Pudelko, M. (2016). Media choice in multilingual virtual teams. *Journal of International Business Studies*, 47. <https://doi.org/10.1057/jibs.2016.13>
- Thompson, P. B., Shanley, M., & McWilliams, A. (2013). Ownership culture and strategic adaptability *Journal of Business Strategies*, 30(2), 145-179. <https://www.questia.com/library/p578/journal-of-business-strategies>
- Thorogood, A., Joly, Y., Knoppers, B. M., Nilsson, T., Metrakos, P., Lazaris, A., & Salman, A. (2014). An implementation framework for the feedback of individual research results and incidental findings in research [journal article]. *BMC Medical Ethics*, 15(1), 88. <https://doi.org/10.1186/1472-6939-15-88>
- Trist, E. (1981). *The evolution of socio-technical systems: A conceptual framework and an action research program*. Ontario Quality of Working Life Centre.
- Trist, E., Higgin, G., Murray, H., & Pollock, A. B. (1963). *Organisational choice*. Tavistock Publications.
- Trist, E. L., & Bamforth, K. W. (1951). Some social and psychological consequences of the longwall method of coal-getting: An examination of the psychological situation and defences of a work group in relation to the social structure and technological content of the work system. *Human Relations*, 4(1), 3-38. <https://doi.org/10.1177/001872675100400101>
- Tufford, L., & Newman, P. (2012). Bracketing in qualitative research. *Qualitative Social Work*, 11(1), 80-96. <https://doi.org/10.1177/1473325010368316>

- Turcotte, J. F., & Ball, M. L. (2013). All Transportation is local: Mobile-digital-networked-technologies and networked orientations. *Transfers*, 3(1), 119-139.
<https://doi.org/10.3167/tranS.2013.030109>
- Unler, E. (2019). Individual and managerial predictors of the different forms of employee voice. *Journal of Management Development*, 38(7), 582-603.
<https://doi.org/10.1108/JMD-02-2019-0049>
- Vacca, J. R. (2007). *Practical internet security*. Springer.
- Valerio, M. A., Rodriguez, N., Winkler, P., Lopez, J., Dennison, M., & Yuanyuan Liangrbara, J. T. (2016). Comparing two sampling methods to engage hard-to-reach communities in research priority setting. *BMC Medical Research Methodology*, 16. <https://doi.org/10.1186/s12874-016-0242-z>
- van der Voet, J., Kuipers, B., & Groeneveld, S. (2016). Implementing change in public organizations: The relationship between leadership and affective commitment to change in a public sector context. *Public Management Review*, 18(6), 842-865.
<https://doi.org/10.1080/14719037.2015.1045020>
- van Hoeven, L. R., Janssen, M. P., Roes, K. C. B., & Koffijberg, H. (2015). Aiming for a representative sample: Simulating random versus purposive strategies for hospital selection. *BMC Medical Research Methodology*, 15.
<https://doi.org/10.1186/s12874-015-0089-8>
- van Rijnsoever, F. J. (2017). (I Can't Get No) saturation: A simulation and guidelines for sample sizes in qualitative research. *PLoS One*, 12(7).
<https://doi.org/10.1371/journal.pone.0181689>

- Vanclay, F., Baines, J. T., & Taylor, C. N. (2013). Principles for ethical research involving humans: Ethical professional practice in impact assessment part I. *Impact Assessment and Project Appraisal*, 31(4), 243-253.
<https://doi.org/10.1080/14615517.2013.850307>
- Vegt, G. V. D., Emans, B., & Vliert, E. V. D. (2000). Team members' affective responses to patterns of intragroup interdependence and job complexity. *Journal of Management*, 26(4), 633-655. <https://doi.org/10.1177/014920630002600403>
- Verma, R. (2005). *Distance education in technological age*. Anmol.
- Viraldo, J., & Shafaat, A. (2013). Technology and free media content in post-secondary engineering education. *IIE Annual Conference. Proceedings*, 483-492.
<http://www.proceedings.com>
- Watson-Manheim, M. B., Chudoba, K. M., & Crowston, K. (2012). Perceived discontinuities and constructed continuities in virtual work [Article]. *Information Systems Journal*, 22(1), 29-52. <https://doi.org/10.1111/j.1365-2575.2011.00371.x>
- Wieland, S., & Wolf, J. (2016). *Virtual teams: Contemporary theory and practice of organizations*. Ibidem Press.
- Wiley, J. W. (2010). The impact of effective leadership of employee engagement. *Employment Relations Today*, 37(2), 47 - 52. <https://doi.org/10.1002/ert.20297>
- Wint, S. H. (2015). *Comparison of motivational orientation preferences of traditional and virtual workplace employees* [Capella University].
<https://pqdtopen.proquest.com>

- Work from home*. (2020). <https://www.census.gov/library/audio/profile-america/profileeven/profile-even-04.html>
- Yang, K. (2008). *Voice of the customer: Capture and analysis*. McGraw-Hill.
- Zaccaro, S. J. (1990). SuperLeadership: Leading others to lead themselves. *The Executive*, 4(4), 107-109. <https://doi.org/10.5465/ame.1990.4277221>
- Zivick, J. (2012). Mapping global virtual team leadership actions to organizational roles [Journal]. *The Business Review*, 19(2), 18-25. <http://www.jaabc.com/>

Appendix A: Interview Questions for Virtual Workers

First, I will ask demographic questions to understand the characteristics of the participants.

1. What is your gender?
 - Female
 - Male
2. What is your age range?
 - 18 – 25
 - 26 – 35
 - 36 – 45
 - 46 – 55
 - 56 and older
 - Prefer not to answer
3. What is your marital status?
 - Single
 - Married
 - Divorced
 - Separated
 - Prefer not to answer
4. What is the highest level of education you have completed?
 - Some high school
 - High school diploma or GED
 - Some college
 - Trade or vocational school
 - Bachelor's degree
 - Master's degree
 - Doctorate degree
 - Prefer not to answer
5. How long have you been working virtually
 - Less than a year
 - 1 – 5 years
 - 6 – 10 years
 - Over 10 years
6. How long have been with your current organization?
 - Less than a year

- 1 – 5 years
- 6 – 10 years
- Over 10 years

7. How many years of experience do you have in your current position?

- Less than a year
- 1 – 5 years
- 6 – 10 years
- Over 10 years

8. Is your company in the same state where you reside?

- No
- Yes

9. In what state is your company located? _____

10. In what state do you live? _____

Second, I will ask four interview questions based directly on the study research questions.

1. What factors affect your productivity as a virtual worker?
2. What can your organization do to enhance your productivity as a virtual worker?
3. What factors affect your job satisfaction as a virtual worker?
4. What can your organization do to enhance your job satisfaction as a virtual worker?

Third, I will ask probing questions of the participants if necessary to enlist additional responses to each question to provide rich and thick data for the purpose of analysis.

Appendix B: Interview Questions for Managers of Virtual Workers

First, I will ask demographic questions to understand the characteristics of the participants.

1. What is your gender?
 - Female
 - Male
2. What is your age range?
 - 18 – 25
 - 26 – 35
 - 36 – 45
 - 46 – 55
 - 56 and older
 - Prefer not to answer
3. How long have been with your current organization?
 - Less than a year
 - 1 – 5 years
 - 6 – 10 years
 - 11 – 20 years
 - Over 20 years
4. How many years of experience do you have in your current position?
 - Less than a year
 - 1 – 5 years
 - 6 – 10 years
 - Over 10 years
5. How many years of experience do you have managing virtual workers?
 - Less than a year
 - 1 – 5 years
 - 6 – 10 years
 - Over 10 years
6. Is your company in the same state where you reside?
 - No
 - Yes
7. In what state is your company located? _____

8. In what state do you live? _____

Second, I will ask four interview questions based directly on the study research questions.

1. What factors affect the productivity of your virtual workers?
2. What can you or your organization do to enhance the productivity of your virtual workers?
3. What factors affect the job satisfaction of your virtual workers?
4. What can you or your organization do to enhance the job satisfaction of your virtual workers?

Third, I will ask probing questions of the participants if necessary to enlist additional responses to each question to provide rich and thick data for the purpose of analysis.