Walden Dissertations and Doctoral Studies

2015

The Perceptions of Managers Relating to Subordinate Productivity in Virtual Work Arrangements

Frank Melvin
Walden University

Walden University

College of Management and Technology

This is to certify that the doctoral dissertation by

Frank Melvin

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Carol Wells, Committee Chairperson, Management Faculty
Dr. Judith Forbes, Committee Member, Management Faculty
Dr. Howard Schechter, University Reviewer, Management Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2015

Abstract

The Perceptions of Managers Relating to Subordinate Productivity in

Virtual Work Arrangements

by

Frank Melvin

MA, Webster University, 1986

BS, Grambling State University, 1978

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Management

Walden University

August 2015

Abstract

Some managers tend to resist virtual work and find it challenging to manage the productivity of subordinates working virtually. This phenomenological study examined managers' perceptions of subordinate productivity in virtual work arrangements. Adaptive structuration theory and McGregor's X and Y theory guided this study. The primary research questions focused on the managers' perceptions of worker productivity in virtual work arrangements and the related challenges. Data collection included semistructured interviews with 40 business managers responsible for overseeing the productivity of virtual workers. The study was conducted in the Atlanta, Georgia metropolitan area. Utilizing the Stevick–Colaizzi–Keen method of data analysis, 3 primary themes emerged: (a) subordinate productivity was not negatively affected by the use of virtual work arrangements, (b) virtual work arrangements posed challenges for managers responsible for overseeing virtual worker productivity with the lack of face–to–face interaction identified as the most significant, and (c) there was managerial support for the use of virtual work arrangements. Social change implications, given the findings, include an increased awareness of worker productivity in virtual work arrangements, which could lead to increased opportunities for individuals to work in a virtual setting. The increase in virtual work arrangements benefits society by reducing fuel consumption, road congestion, and related pollutants. Organizational leaders can use the findings from the study to develop business strategies to sustain virtual worker productivity and address the related challenges to improve the quality of life for managers of virtual workers.

The Perceptions of Managers Relating to Subordinate Productivity in

Virtual Work Arrangements

by

Frank Melvin

MA, Webster University, 1986

BS, Grambling State University, 1978

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Management

Walden University

August 2015

Acknowledgments

I would first like to thank my Heavenly Father for all he has done for me throughout this amazing journey. He has given me strength and perseverance to stay focused and motivated. I would like to thank the Walden University faculty and staff, specifically Dr. Carol Wells, my committee chairperson, for the motivation and that added push needed to accomplish the task. I also want to thank Dr. Judith Forbes, my committee member, for her valuable insight in helping me to complete my dissertation, and Dr. Howard Schechter, my university research reviewer.

I also want to recognize Lisa, my very near and dearest special friend who kept me engaged, determined, entrenched, driven and focused during my dissertation journey.

Table of Contents

iii

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Technological advancements and the information society have dramatically changed the world and the workplace (Forgacs, 2010). In the past, the concept of workers using machines to calculate, document, and transmit information instantaneously was something fabricated for science fiction movies, books, and short stories (Martin & MacDonnell, 2012). Today, technology not only affords workers the ability to transmit information instantaneously, but also allows employees to work in a virtual context, independent of traditional work locations.

Virtual work arrangements provide opportunities for employees to complete assigned tasks outside of the organization's physical boundaries, frequently aided by information and computer–based technology (Caillier, 2012; Scholefield & Peel, 2009). Virtual work arrangements are an integral component of business operations for many organizations. Advancements in computer–based technologies have facilitated increased Internet connections and applications. When integrated with wireless technologies and the portability of computer equipment such as laptops and tablets, technology has increased the feasibility of individuals utilizing virtual work arrangements. In some cases, the economic and social issues affecting our society have necessitated the increased use of virtual work arrangements.

The literature review revealed numerous benefits for virtual work arrangements. Nevertheless, the implementation of virtual work arrangements has been more sluggish than the rate predicted by scholars and business experts (Bailey & Kurland, 2002; Martin & MacDonnell, 2012; Pyoria, 2011; Scholefield & Peel, 2009). According to Hynes

(2012), technology does not always deliver the success that the technologists and developers optimistically predicted.

Managerial resistance to virtual work has hindered the adoption and implementation of virtual work arrangements (Lister & Harnish, 2011; Mekonnen, 2013; Overmyer, 2011; Pyoria, 2011; Weisberg & Porell, 2011). A major downside for managers of virtual work arrangements is that, because employees are out of sight (Lautsch & Kossek, 2011), managers cannot physically observe subordinates at work. Some managers believe that the lack of on–site observation hampers insight into employee productivity and performance (Lautsch & Kossek, 2011; Raiborn & Butler, 2009; Weisberg & Porell, 2011). Additionally, some managers perceive less power and control over workers in virtual placements (Eversole, Venneberg, & Crowder, 2012; Pyoria, 2011).

To assist the successful implementation of virtual work arrangements, managers must believe that virtual work is beneficial for the organization and not just the employee. Martin and MacDonnell (2012) asserted that a solid business case for virtual work arrangements has not been adequately formulated. The existing ambiguity about whether the virtual work design is advantageous for organizations leaves some managers reluctant to support it. Productivity is a key area of concern for organizations contemplating the implementation of virtual work policies (Martin & MacDonnell, 2012; Scholefield & Peel, 2009). Thus, a business case for virtual work arrangements must address the productivity of virtual workers. Building a powerful case for virtual work could reduce a manager's resistance to virtual work policies.

The potential growth in virtual work emphasizes the social importance of understanding how a virtual work arrangement influences subordinate productivity. This study of virtual work arrangements analyzed management support for virtual work from a productivity standpoint. The information and findings gained from this study will provide increased knowledge that addresses worker productivity in virtual work arrangements. The results could reduce management's resistance or skepticism about the use of virtual work arrangements.

Through a qualitative phenomenological study, I examined subordinate productivity in virtual work arrangements through the eyes of managers. Chapter 1 discusses the background of the study, the rationale for conducting the study (the problem statement), and the purpose of the study. The research questions, conceptual framework for the study, and research approach (the nature of the survey) are also discussed. Finally, I present key definitions for clarification of terminology, along with discussions about the assumptions, limitations, and the significance of the study.

Background of the Problem

Telework, telecommuting, work–from–home initiatives, distributed work arrangements, flexible work arrangements, and remote work are common terms used to describe virtual work arrangements. Telework is most frequently used interchangeably with telecommuting and virtual work (Morganson, Major, Oborn, Verive, & Heelan, 2010; Sardeshmukh, Sharma & Golden, 2012). In this discussion, I used all terms interchangeably to mean virtual work arrangements.

The use of virtual work arrangements continues to gain momentum (Golden, 2009; Lautsch & Kossek, 2011). Hines (2009) argued that, by the years 2020 to 2025, commuting to work in the traditional sense will become outmoded, and the operations of a large portion of the work force will occur outside traditional offices. Despite the growth in virtual work arrangements, management resistance to employees to work off–site in a virtual work setting remains a factor in both the public and private sectors (Overmyer, 2011).

In reference to the public sector, Snyder (2012) maintained that many federal leaders have hampered efforts to implement virtual work arrangements. The opposition stems from a misconception that virtual work arrangements are largely advantageous to employees rather than organizations (Snyder, 2012; Weisberg & Porell, 2011). A 2013 report by the U.S. Office of Personnel Management (OPM) indicated that, as of 2012, management resistance remained a factor at the federal level.

Because maintaining employee productivity is a central concern for managers in all work environments, conducting further research on virtual work and subordinate productivity will provide benefits for organizations considering a virtual work design. A large number of researchers studying virtual work have concentrated on the individual level of employee–associated outcomes. The outcomes have included employee job satisfaction, employee isolation, and employee work–life balance (Bailey & Kurland, 2002; Martin & MacDonnell, 2012). The saturation of studies in the stated areas supports the need for additional studies that examine organization–related outcomes such as productivity in virtual work arrangements.

Morganson et al. (2010) asserted that virtual work merits research attention. A search of the literature published from 2009 through 2014 revealed a lack of empirical research on employee productivity in virtual work arrangements. In particular, there remains a dearth of research from a manager's perspective of subordinate productivity in virtual work arrangements. This lack of literature creates an opportunity to expand the research in this area. I conducted this study to understand the effects that a virtual setting has on worker productivity to benefit the business community and to address the gap in the literature on this topic.

Problem Statement

Advancements in technology have facilitated increased opportunities for organizations to implement virtual work arrangements (Scholefield & Peel, 2009). Yet despite the benefits of such arrangements, management resistance to virtual work persists. The opposition has stemmed from managers who have a need for power and control (Eversole et al., 2012; Pyoria, 2011) and who desire the visual oversight of workers (Lautsch & Kossek, 2011) to ensure productivity levels remain unimpaired. Martin and MacDonnell (2012) theorized that the perceptions of managers are central when organizations plan to adopt telework arrangements.

The general business problem is that managers' lack of understanding of the benefits of virtual work arrangement in relation to employee productivity continues to create resistance to virtual work. The specific problem is to understand managers' fears and challenges related to sustaining the productivity levels of virtual workers. Golden and Fromen (2011) maintained that, given the increase in the use of virtual work

arrangements, it was surprising that existing research had centered mostly on employees who do not hold management or supervisory oversight responsibilities. To address the gap in the literature on virtual work conducted at the management level, I explicitly focused on individuals with managerial oversight of virtual workers.

Purpose of the Study

The purpose of this qualitative, phenomenological study was to explore managerial perspectives of subordinate productivity in virtual work arrangements. Specifically, I sought to determine if managers perceived that a virtual work environment had an adverse effect on the productivity of virtual workers. I further explored the challenges that managers experience in overseeing the productivity of virtual workers. The secondary aim of the study was to contribute to the existing literature on the topic of virtual work in conjunction with subordinate productivity.

This qualitative study probed the phenomenon of virtual work to provide insight and understanding of the lived experiences of managers in virtual work arrangements. Semistructured interviews with 40 managers who had direct managerial oversight of virtual workers provided the data collected for this study. The results of the research may influence social change by offering fuller comprehension of the managerial perspectives of virtual work as they relate to subordinate productivity. The information obtained from this exploration may increase the acceptance and use of virtual work arrangements. Increased acceptance of virtual work could expand the opportunities for individuals to work from home or other remote locations.

Research Questions

The research questions for this phenomenological study included three open–ended questions and three subquestions. The use of open–ended questions allowed study participants to elaborate on the factors linking subordinate productivity and the virtual workplace. The research questions were as follows**:**

- What is your perception of subordinate productivity in virtual work arrangements?

    Subquestion: Specifically, what positive or negative effects do you perceive are related to subordinate productivity?

    Subquestion: How are your virtual employees more or less productive than workers in a traditional work setting?

    Subquestion: How do you measure subordinate productivity?

- From a managerial perspective, what challenges do you face managing the productivity of your subordinates in virtual work arrangements?

    Subquestion: How do you perceive this differs from the challenges faced in traditional office settings?

    Subquestion: How would you best describe your leadership style?

- What are your attitudes and perceptions toward virtual work arrangements?

    Subquestion: What learned experiences and or values contributed to your perceptions or opinions about virtual work arrangements?

Nature of the Study

This study utilized a qualitative, phenomenological approach to gather data on the experiences of managers who supervise virtual workers. A phenomenological paradigm allows naturalistic inquiry to facilitate a richer understanding of human experiences in context–specific settings (Patton, 2002). I conducted this investigation to determine managers' perceptions of subordinate productivity in virtual work arrangements. I also examined the challenges managers encountered in overseeing the productivity of subordinates in virtual work arrangements.

Data for this research were obtained through semistructured interviews conducted with 40 business managers who supervised virtual subordinates in the fields of human resources, accounting, finance, information technology, and other business areas. The recruitment criteria were managers who supervised two or more virtual workers and had at least one year of experience managing both virtual workers and traditional workers. The qualitative approach allowed me to derive patterns from the participants' responses to the open–ended research questions. The data analysis involved the use of a hand–coding approach to search for themes and patterns in the participants' responses.

I conducted this study to gain insight of subordinate productivity in a virtual workplace from the perspective of managers. I found the results helpful when supporting or refuting the assumptions that this type of work design negatively influences subordinate productivity. I selected the phenomenological approach because using this method helped to capture the managers' perceptions of subordinate productivity related to working in a virtual setting. A quantitative approach was not suitable for conducting

the research because that method necessitates the use of statistical measures, which is limited in discovering viewpoints and understanding experiences of individuals. A quantitative study generally involves larger sample sizes that are often randomly selected, which is not a function of conducting the exploration (Patton, 2002).

Conceptual Framework

Adaptive structuration theory (AST) and McGregor's (1960) Theory x and theory y provided the conceptual framework for this inquiry. AST is a work design theory applicable to most work situations where technology has produced an organizational change (Torraco, 2005). In the context of this discussion, the change involves the modification of the traditional office setting to incorporate virtual work arrangements. DeSanctis and Poole (1994) asserted that AST provides a framework for examining organizational change that occurs because of the implementation and use of advanced technologies. The adaptation of technology by organizations is a major component in bringing forth organizational change (Torraco, 2005).

AST examines organizational change from two perspectives. First, it considers the structures that support the advanced technologies. Second, it considers the structures that influence human actions when individuals use and interact with advanced technologies. *The structures* here relate to the rules and resources that facilitate an understanding of the surroundings in which employees work. Structures influence human activity found within organizations (Furumo & Melcher, 2006). Researchers who have embraced AST believe that the related effects of advancements in technology are influenced by the functions of

the technologies, together with precisely how people use such technology (Torraco, 2005).

AST emphasizes the relationship between two kinds of structures, intended and actual. The purpose of such structures is to furnish a deeper knowledge of the processes that technology–driven advancements apply and of the related effects that advanced technologies have on organizations (Torraco, 2005). Two recent studies included AST as the conceptual framework: Bhattacherjee and Harris (2009) studied individual adaptation of technology and Harmer and Pauleen (2010) studied Australian offroaders (remote workers). The literature review in Chapter 2 includes additional discussion of both AST studies.

The phenomenon of virtual work arrangements has steadily increased, largely because of innovative technology. Organizations that choose to operate in virtual contexts must successfully connect people with technology to achieve the desired organizational results. Many organizations that adopt a virtual work arrangement revolutionize how the organizations operate and communicate and how workers interact with each other. AST provides insight into the changes resulting from virtual work to an organization's normal work structure, which necessitates the formation of new rules, policies, and procedures.

Another theory relevant to the study is McGregor's (1960) theory x and theory y. The two theories provides insight into the elements that contribute to management resistance to virtual work arrangements from a human behavior perspective. McGregor's theory x and theory y present contrasting assumptions of human conduct in the workplace (Russ, 2013). Managers who support theory x assumptions believe that (a) workers avoid

work, (b) employees lack direction, and (c) subordinates need to be controlled. Another assumption of theory x is that, in order for workers to put forth the necessary efforts to accomplish organizational outcomes, managers must manipulate, threaten, or penalize employees. Conversely, managers who support the assumptions of theory y believe that employees (a) do not avoid work, (b) are motivated to work, (c) want to establish positive relationships with superiors, and (d) have a desire to be involved in work decisions (Russ, 2013). McGregor's theory x is useful in discerning the difficulties that some managers experience when supervising virtual workers.

The research questions for this study were designed to capture the managers' perceptions of subordinate productivity and the challenges of managing subordinates under this work design. One of the research questions further captures the managers' overall views of virtual work. The purpose of such questions was to determine whether managers resist virtual work from a work design perspective or from a human behavior perspective. In Chapter 2, I provide additional discussion of AST and McGregor's theory x and theory y as applied to this study.

Definition of Terms

In the study, I used terms that hold various meanings. Therefore, I have defined the meaning of the following terms as used in the context of this exploration.

Adaptive structuration theory: According to DeSanctis and Poole (1994), AST provides a framework for analyzing the organizational changes that occur as a result of the implementation and exercise of innovative technologies.

Flexible work arrangements (FWAs): FWAs generally permit flexibility in terms of where the employees' work duties are completed or when work is completed (Allen et al., 2013).

Productivity: Productivity is the ratio of inputs to outputs. It measures the efficiency and effectiveness of changing inputs into outputs based on the customer or end user's needs (Parker, Waller, & Xu, 2012).

Telework: This generally involves working outside the traditional workplace and communicating using telecommunications or computer–based technology (Bailey & Kurland, 2002). Teleworkers may work from home or from remote or satellite locations or may work in the field. The workers remain connected with the organization using information and computer–based technologies.

Virtual work arrangement: This work model provides opportunities for employees to complete assigned tasks or work responsibilities outside of the physical boundaries of the organization, frequently aided by information and computer–based technology (Scholefield & Peel, 2009).

Assumptions, Limitations, and Delimitations

Assumptions

I made various assumptions in this study. One assumption of this research was that the composition and characteristics of virtual work arrangements were consistent among the participants. An additional assumption was that each participant provided honest responses to each inquiry and participants' responses were free from bias. I assumed that, by inviting participants from several business management fields, the data

provided would be more useful and diverse. Another assumption was that the participants

provided a suitable assessment of the factors that related to subordinate productivity in a

virtual work arrangement.

Limitations

The findings from this study represent only the views of the study participants.

This exploration concentrated on the perceptions of 40 middle level managers who had

oversight responsibilities for virtual worker productivity. Researcher bias also could have

been a factor as I work as a manager in a virtual work arrangement. An additional

limitation resulted from the use of a small, purposeful sample of participants instead of a

random sample. The purposive sampling method provided the type of results required to

understand the lived experiences of the participants. In an attempt to reduce or moderate

the limitations of this research, I incorporated a number of strategies, including

credibility, transferability, dependability, and confirmability. These four strategies are

used to gauge validity in qualitative studies (Coast & Horrocks, 2010).

Scope and Delimitations

This study consisted of participants with experience managing the productivity of

virtual workers. The participants managed two or more workers in virtual work

arrangements. The scope of this research centered on the Atlanta, Georgia metropolitan

area. Management resistance to virtual work is often cited in the literature as a significant

obstacle to the adoption of virtual work arrangements (Martin & MacDonnell, 2012;

Pyoria, 2011). A delimitation of this study was that it focused mainly on subordinate

productivity, although other issues or factors may cause managers to resist virtual work arrangements.

In addition, this investigation focused only on the managers' perspectives on subordinate productivity and not the perspectives of the virtual workers. The major reason for this limitation is that a thorough search of research studies conducted in the past 5 years revealed a significant gap in research on virtual work arrangements from managers' perspectives. This study did not focus on generational or gender issues that may have influenced the managers' acceptance of virtual work arrangements. Due to the lack of random sampling, the generalizability of the findings of this study was limited. The results of this research may be transferable to other managers supervising virtual workers.

Significance of the Study

Contribution to Business Practice

This study is significant for business practice because it provides information on managers' perspectives on subordinate productivity in virtual work arrangements and the related challenges managers experience in overseeing the productivity of virtual workers. A plethora of available research on virtual work arrangements has centered on the virtual worker (Golden & Fromen, 2011; Lautsch, Kossek, & Eaton, 2009; Martin & MacDonnell, 2012). Golden and Fromen asserted that existing research has focused primarily on individuals and not on those responsible for management or supervisory oversight of virtual workers. Virtual work arrangements are of practical concern and worthy of the attention of researchers (Morganson et al., 2010). However, empirical–

based research that has specifically explored the productivity of virtual workers remains limited.

Mahler (2012) postulated that understanding and gaining insight into managers' concerns about telework and the related number of under–recognized drawbacks are imperative in finding solutions to the management and personnel challenges that occur with this work design. Martin and MacDonnell (2012) highlighted that productivity is one of the top concerns for organizations, along with retention, organizational commitment, and performance. Therefore, managers must understand how operating in a virtual context relates to subordinate productivity and the challenges that a virtual work design presents.

Significance for Social Change

This study contributes to positive social change by advancing knowledge regarding virtual work arrangements. Specifically, this research helps to explain the perspectives of managers regarding subordinate productivity in virtual work arrangements. Additionally, this investigation offers insights into the challenges of managing the productivity of virtual workers. Business leaders and managers can benefit from the research findings when developing training and strategies for alleviating the productivity concerns that managers have for subordinates working in a virtual context. If sufficient evidence exists and proves that virtual workers are as productive or potentially as productive as office–based workers are, the results could reduce management resistance to the virtual work design.

Summary and Transition

Organizations are not adopting virtual work arrangements as scholars had envisioned (MacDonnell & Martin, 2012; Scholefield & Peel, 2009), and one of the causes commonly cited is management resistance to this work design (Snyder, 2012; U.S. Office of Personnel Management, 2013). Some managers are concerned that employees who are not physically present and visible to the manager may not be fully productive without face–to–face managerial oversight (Raiborn & Butler, 2009; Shriberg, 2009; Weisberg & Porell, 2011). To address managers' concerns, the primary goal of conducting this study was to support or refute assumptions that a virtual work design negatively influences subordinate productivity from a manager's perspective.

In this chapter, I have introduced the focus of the study and provided background information, a problem statement, purpose statement, conceptual framework, and research questions that formed the basis for study. I discussed the nature of the study, definitions of key terms, assumptions, limitations, and the significance of the research.

Chapter 2 includes a discussion of the literature and prior studies related to virtual work arrangements and management resistance. I also provide information to support the gap in the literature on virtual work arrangements in relation to subordinate productivity. In Chapter 3, I outline the methodology, including the research design and rationale for the research. I highlight the role of the researcher, participant selection process, data collection and analysis process, issues of trustworthiness, ethical issues, and concerns related to this investigation. In Chapter 4, I describe the results and findings of the study. In Chapter 5, I discuss the interpretations of the findings, recommendations for

action, implications for social change, and recommendations for future studies on virtual

work arrangements.

Chapter 2: Literature Review

In this study, I explored managerial perspectives of subordinate productivity in virtual work arrangements to gain insight into the managerial resistance this work design tends to produce. Mayo, Pastor, Gomez–Mejia, and Cruz, (2009) postulated that because technology no longer presents barriers to virtual work arrangements, the attitudes of managers may be a significant factor in the decision–making process regarding the adoption of virtual work. Managers often oppose the virtual work design out of concerns for maintaining employee productivity (Scholefield & Peel, 2009; Weisberg & Porell, 2011) and for issues related to power and control (Eversole et al., 2012; Pyoria, 2011). I focused on the phenomenon of virtual work to capture managers' perceptions of subordinate productivity in virtual work arrangements. Specifically, I sought to defend or refute managerial concerns or assumptions that a virtual work environment has adverse results on employee productivity.

The literature review was conducted to develop an understanding of subordinate productivity in virtual work arrangements and to develop an understanding of managerial resistance to virtual work arrangements. This chapter includes an analysis of seminal literature pertaining to virtual work arrangements with an emphasis on subordinate productivity. The first part of this chapter provides a review of the literature on virtual work arrangements. The review explores the history of virtual work arrangements, the benefits and disadvantages of virtual work arrangements, the source of managerial resistance to virtual work arrangements, and the leadership requirements and challenges

of leading workers in virtual work arrangements. I also discuss several virtual work studies that have explored the productivity of virtual workers.

In the second section of this chapter, I review the literature associated with the conceptual framework used for the study. The theories include AST and McGregor's theory x and theory y. In the final section of this chapter, I present information related to the gap in the literature on virtual work arrangements and subordinate productivity. I provide information on how this study addresses the gap.

Literature Search Strategy

This literature review incorporates specific factors that contribute to managerial resistance to virtual work arrangements, the productivity of virtual workers, and the role of leadership in virtual environments. The literature search included academic books, journals and articles, telework associations, and government documents. The primary sources for the literature review were peer–reviewed academic journals. Databases and search engines used to find applicable literature included, but were not limited to, ABI/Inform, Business Source Complete, Emerald Management Journals, ProQuest Central, Google Scholar, and Sage Premier.

The key terms employed to search for applicable literature included *virtual work arrangements, telework, telecommuting, flexible work arrangements, distributed work arrangements, remote work, productivity, managerial resistance, and virtual leadership.* To gather insight on the phenomenon of virtual work, I searched for articles on virtual work arrangements in relation to management resistance, subordinate productivity, and virtual leadership. The literature search encompassed information related to AST and

McGregor's theory x and theory y to understand the factors that affect human behavior in the workplace.

Virtual work arrangements include any work routinely performed outside of an organization's physical boundary using computer–based information technology. The use of such technology facilitates task completion and interaction with supervisors, coworkers, and others outside of the organization. Literature and reports on virtual work arrangements often use the term *telework, telecommuting, flexible work arrangements, distributed work arrangements*, or *remote work arrangements*. I used the terms interchangeably throughout the study.

Respected writers and scholars have researched virtual work from a diversity of positions. The search for literature on virtual work arrangements included several management and business databases previously mentioned. A search of existing literature revealed that from 2009 to the present, there was very little literature on the productivity of virtual workers. Numerous studies have been conducted on virtual work in relation to employee–related outcomes (Lautsch et al., 2009; Martin & MacDonnell, 2012), but not on organization–related outcomes such as employee productivity. Primarily, existing studies have concentrated on individuals without managerial or supervisory responsibility over virtual workers (Golden &Fromen, 2011). To address the gap in the literature, I used this phenomenological study to focus on the managers' perceptions of subordinate productivity in virtual work arrangements.

Origins of Virtual Work

Advancements in technology have enabled many organizations to operate in a virtual context and to adopt virtual work policies. Telework, telecommuting, remote work, and virtual work environments are not new concepts or ideas for businesses. Leonardi, Treem, and Jackson (2010) maintained that early forms of information computer technology (ICT), such as telegraphs and telephones, have enabled remote work arrangements for over a century. Leonardi et al. stated that interest in off–site work arrangements emerged in the United States during the 1970s. This allowed knowledge–intensive workers to perform work responsibilities remotely by using ICTs.

The migration of U.S. workers to the suburbs in the 1970s resulted in an increased demand by employers to allow employees to work away from the physical boundaries of the traditional office setting. Rising fuel prices and energy costs during that period further contributed to the formation of the new work model (Caillier, 2013). The concept of flexible work arrangements was termed *telecommuting* by Nilles in the 1970s (Nilles, 2014). Nilles conducted early research on telecommuting and the cost savings to the U.S. economy resulting from reduced commuting (Pyoria, 2011). It was surmised that telework centers and similar programs would alleviate the problems caused by road congestion.

Although early research on telecommuting explored the potential economic advantages provided to individuals, organizations, and society, the telework model was touted as a means to increase employee productivity by minimizing workplace distractions (Bourne & Forman, 2014). In the private sector, telework began to evolve

and become a viable solution for large numbers of individuals and organizations during

the 1970s (Gálvez, Martínez, & Pérez, 2011). Telework was viewed as a means to reduce

city road congestions, create new employment prospects for the disabled and other

disadvantaged members of society, increase employee productivity, reduce personnel

related costs, and improve the quality of work life for employees by increasing job

satisfaction and reducing stress (Gálvez et al., 2011).

Telework did not fully materialize for U.S. federal government workers until the

1990s. During this period, Congress passed legislation that mandated the use of telework

practices in federal agencies (Caillier, 2013). Despite the perceived economic and

environmental benefits, the use of the telework model failed to evolve as business

scholars had anticipated (Martin & MacDonnell, 2012; Pyoria, 2011).

Descriptions of Virtual Work Arrangements

Telecommuting and *telework* are two common terms used to describe virtual work

arrangements in early research and practice. Some organizations and scholars still use the

terms today. Nilles et al. (1976) defined *telecommuting* as information industry workers

performing work "using communications and computer technologies at locations much

closer to their homes" (p. 81). Since Nilles's first definition of *telecommuting*, many

authors and scholars have defined and described the term in varying fashions.

Hunton and Norman (2010) described *teleworkers* as employees "who,

periodically, regularly, or exclusively perform work for their employers from home or

another remote location that is equipped with the appropriate computer–based technology

to transfer work to the central organization" (p. 67). Nyaanga, Ehiobuche, and Ampadu–

Nyarkoh (2013) simply described, "telecommuting as working from home part–time or full–time for an employer and communicating with the corporate office through telecommunication and other information technologies" (p. 470).

Today, many federal and state agencies use virtual work arrangements. In federal telework programs, according to Overmyer (2011), the terms "*telework* and *teleworking* include a work flexibility arrangement under which employees perform the duties of their position, and other authorized activities, from an approved worksite other than the location from which the employee would otherwise work" (p. 8).

Virtual Workers

According to Greer and Payne (2014), 23% of the U.S. workforce performed some or all of assigned work duties virtually in 2012. The number of workers with a bachelor's degree or higher was even larger at 38%. Lister and Harnish (2011) contended at that time, the typical U.S. telecommuter was 49 years old, college educated, and worked in a salaried, nonunion position. The telecommuting professionals earned approximately $58,000 annually, and worked for organizations that had 100 or more employees. Lister and Harnish found that the majority of the teleworkers held management, professional sales, or office positions.

Lister and Harnish (2011) stated that approximately 316,000 disabled employees used telework as an accommodation afforded by the Americans with Disabilities Act. Nonhourly (salary) employees were more likely to work from home on a regular basis than are hourly (nonsalary) employees. More than 75% of employees who worked off–site in telework–type arrangements earned over $65,000 per year. Nonunion companies

were more likely to offer telework options than union counterparts, and larger companies were more likely to offer telecommuting options than smaller organizations (Lister & Harnish). According to Coenen and Kok (2014), senior managers and administrative workers were the most likely professionals to utilize telework arrangements.

Benefits of Virtual Work

The implementation of virtual work arrangement has increased in recent years because many organizations and individuals have recognized the benefits for the individual, the organization, and society. This section will separately assess the benefits associated with each group.

Benefits of Virtual Work for the Organization

Improved productivity is a major organizational benefit of the virtual work model (Cisco Systems, 2009; Day & Burbach, 2011; Lari, 2012; Martin & MacDonnell, 2012; Mekonnen, 2013; Nydegger & Nydegger, 2010; Overmyer, 2011; Pearce II, 2009; Robertson & Vink, 2012; Snyder, 2012; Weisberg & Porell, 2011; Ye, 2012). A study conducted by Stanford University researchers involved teleworkers in the call center of a Chinese travel firm (Bloom et al., 2012). The results confirmed increased productivity for virtual workers because of teleworking. Another study by Cisco Systems (2009) that involved approximately 2,000 teleworkers also found increased productivity resulting from the use of telework (Overmyer, 2011). These two studies and several others that examined the productivity of virtual workers are reviewed in this chapter.

Other organizational benefits provided by virtual work arrangements include:

- increased opportunities for employees to work off–site when unforeseen events threaten business operations (Colbert, 2011; Greer & Payne, 2014; Jaakson & Kallaste, 2010; Overmyer, 2011),

- increased ability for organizations to compete in global markets (Mukherjee, Lahiri, Mukherjee, & Billing, 2012),

- reduced space requirements and space–related costs (Day & Burbach, 2011; Green & Roberts, 2010; Greer & Payne, 2014; Nydegger & Nydegger, 2010; Ye, 2012),

- increased employee retention and reduced employee turnover (Jaakson & Kallaste, 2010; Stavrou, & Kilaniotis, 2010),

- increased talent pool of potential applicants and experts worldwide for recruitment (Baard & Thomas, 2010; Bernardino, Roglio, & Del Corso, 2012; Offstein, Morwick, & Koskinen, 2010; Raiborn & Butler, 2009; Roy, 2012; Ye, 2012), and

- expanded employment opportunities for individuals with disabilities (Day & Burbach, 2011; Offstein et al., 2010; Robertson & Vink, 2012).

In many states, an untapped part of the workforce is not able to drive, so virtual work arrangements can help such individuals obtain employment.

Benefits of Virtual Work for Individuals

Numerous researchers have concluded that many employee–related benefits are associated with virtual work arrangements. The employee–related benefits include:

- improved work–life balance (Baard & Thomas, 2010; Hilbrecht, Shaw, Johnson, & Andrey, 2013; Maruyama, Hopkinson, & James, 2009; Redman, Snape, & Ashurst, 2009),

- increased autonomy (Robertson & Vink, 2012; Sardeshmukh et al., 2012),

- reduced absenteeism (Green & Roberts, 2010; Overmyer, 2011),

- fewer distractions (Baard & Thomas, 2010; Fonner & Roloff, 2010),

- increased employee job satisfaction levels (Kelliher & Anderson, 2010; Lautsch & Kossek, 2011; U.S. Office of Personnel Management, 2013),

- increased employee morale (Caillier, 2012),

- greater work flexibility (Tremblay & Laurence, 2012),

- positive effect on employees' well–being (Hayman, 2010), and

- reduced employee work commute, which is a plus for employees in large metro areas (Green & Roberts, 2010; Offstein et al., 2010).

Benefits of Virtual Work for Society

Virtual work arrangements are advantageous to society by providing

- increased demand for ICT equipment necessary to work in a virtual work environment (Overmyer, 2011),

- better work accommodation for disabled workers (Robertson, Schleifer, & Huang, 2012; Robertson & Vink, 2012),

- increased employment opportunities for individuals unable to commute to a traditional work site, such as parents of young children, the aged, and the disabled (Fuhr & Pociask, 2011, Gálvez et al., 2011),

- increased employment opportunities for workers in rural settings (Caillier, 2012; Fuhr & Pociask, 2011), and

- reduced road congestion (Lari, 2012; Offstein, 2010), decreased fuel consumption, and lowered environmental pollutants (Caillier, 2012; Fuhr & Pociask, 2011; Overmyer, 2011).

Lari (2012) published results from a telecommuting study conducted with Minnesota's eWorkPlace, a program supported through the Urban Partnership Agreement Program. The U.S. Department of Transportation initiated the program to reduce road congestion in metropolitan areas. The department administered the eWorkPlace program, which included 48 employers who encouraged over 4,000 employees to use flexible work schedules in the metropolitan Twin Cities area to reduce congestion during peak period commuting. The purpose of the eWorkplace study was to determine if teleworking achieved the goals of reducing employee–related travel and boosting employee productivity (Lari, 2012).

Based on the results of the study, Lari (2012) indicated that telecommuting positively reduced peak–period trips and lessened the total vehicle miles traveled. These factors were beneficial to employees, organizations, and society. The reduction in employee–related travel resulted in less congestion during peak periods. Such reduction had a positive effect on large metropolitan areas where employees often experience travel delays due to road congestion. The decrease in travel miles also provided a cost–saving benefit to employees by reducing auto maintenance and fuel expenses.

Lari's (2012) findings from the study also revealed that the telecommuters experienced a positive increase in productivity levels, which was attributed to the employees' having more time available to work. The increased productivity realized from telecommuting was viewed as a positive benefit for employers (Lari, 2012). Other employer–related benefits included increased employee retention and employee morale. The increase in employee retention and morale had a positive effect on employee productivity (Lari, 2012).

Disadvantages of Virtual Work

Although the advantages of virtual work are clearly delineated in literature, it is important to outline the disadvantages of this work design. There are several disadvantages to virtual work arrangements for the individual, the organization, and society. This next section will examine the disadvantages of virtual work associated with each group.

Disadvantages of Virtual Work for Individuals

The disadvantages associated with virtual work and individuals include:

- feelings of isolation (Baard & Thomas, 2010; Bartel, Wrzesniewski, & Wiesenfeld, 2012; Mulki, Bardhi, Lassk, & Nanavaty–Dahl, 2009; Wheatley, 2012),

- a lack of face–to–face contact or interaction with managers and coworkers (Greer & Payne 2014; Lee & Hong, 2011),

- reduced opportunities for work collaborations, employee networking (Spinuzzi, 2012), and the building of social relationships (Pyoria, 2011),

- potentially fewer promotions, including smaller pay increases (Elsbach & Cable, 2012),

- potential career stagnation (Wheatley, 2012),

- adverse effects on the employees' well–being such as life satisfaction and work engagement (Fiksenbaum, 2014), and

- health and safety risks related to the work environment such as furnishings and lighting for example (Jaakson & Kallaste, 2010).

More importantly for employees, virtual work blurs or erodes the lines between the employee's home and work life (Diaz, Chiaburu, Zimmerman, & Boswell, 2012; Fonner & Stache, 2012; Hecht & Allen, 2009; Lee & Hong, 2011; Moser & Axtell, 2013; Ojala, Nätti, & Anttila, 2014; Spinuzzi, 2012; Wheatly, 2012). Some employees tend to work more, not less, in virtual work arrangements, because traditional work boundaries become blurred and less defined (Pyoria, 2011). Pyoria (2011) maintained that, at best, virtual work arrangements provide employees with greater flexibility to adjust their work schedules. Pyoria contended that, in a worst–case scenario, working from home emulates a feeling of imprisonment with no escape, even when people are sleeping.

Mulki et al. (2009) highlighted the importance of attaining the right work–life balance for virtual workers. A lack of balance between an employee's work and home life may introduce compromise, affecting the employee's work performance. Mulki et al. cited several reasons that virtual work models inhibit work–life balance. First, unlike a traditional work setting, there is the absence of work boundaries such as start and end times in virtual work environments. Secondly, there is a heavy reliance on technology,

which influences the effectiveness of communication between virtual workers and others

due to a lack of contextual cues and norms. Lastly, remote work environments presents

psychological demands as employees attempt to make up for the lack of visibility and a

lack of role clarity (Mulki et al., 2009). Virtual workers want to be certain that managers

acknowledge their efforts.

Disadvantages of Virtual Work for the Organization

There are several disadvantages of virtual work arrangements for the organization

including:

- reduced oversight of employees (Green & Roberts, 2010),

- a lack of in–person face–to–face communication with virtual workers (Dahlstrom, 2013; Purvanova & Bono, 2009),

- increased challenges for building trust with virtual workers (Crisp & Jarvenpaa, 2013),

- difficulty transferring knowledge (Taskin & Bridoux, 2010),

- difficulty ensuring data security (Overmyer, 2011; Peters & Heusinkveld, 2010; Pyoria, 2011),

- increased work–related liabilities (Genova, 2010),

- distractions in the employee's work location or an improper work environment (Wilton, Páez, & Scott, 2011),

- nonsuitable work environment for all employees (O'Neill, Hambley, Greidanus, MacDonnell, & Kline, 2009),

- difficulty in effective virtual team development (Mukherjee et al., 2012), and

- a decrease in informal conversations that reduces the ability for team members to build work friendships (Nunamaker, Reinig, & Briggs, 2009).

Disadvantages of Virtual Work for Society

The disadvantages of virtual work arrangements for society include:

- the possible lack of enforcement of labor laws designed to protect employees at work, such laws include the Fair Labor Standards Act, Occupational Safety and Health Act, and worker compensation laws (Calvasina, Calvasina, & Calvasina, 2012; Genova, 2010; Guiler & Kelly, 2009);

- issues with state tax laws that govern payroll taxes (Calvasina et al., 2012), such as which state has tax jurisdiction over virtual workers; and

- frequently required updates of ICT equipment that facilitates virtual work arrangements as well as the negative effects to the environment of the manufacturing, operation, and disposal of technological devices (Williams, 2011).

The benefits and disadvantages of virtual work arrangements for individuals, organizations, and for society are clear. Exactly how teleworkers or managers perceive virtual work arrangements is a different concern. A study conducted by Greer and Payne (2014) assessed the concrete and distinct challenges of telework as perceived by teleworkers and their respective supervisors.

A Study of Virtual Work and Perceived Challenges

In an empirically–based telework study, Greer and Payne (2014) explored the challenges that telework arrangements presented to managers and teleworking employees of a Big Four accounting firm. The determinations of the study resulted from qualitative

and quantitative data gathered from 86 virtual workers and their respective supervisors. The study participants assessed the perceived challenges encountered in telework arrangements.

The qualitative section of Greer and Payne's (2014) study posed one question to the supervisors and a different question to the teleworkers. Supervisors were asked to describe the ways that teleworking detracted from the effectiveness of the team. The survey question addressed the challenges associated with telework as perceived by managers of teleworkers. Based on the responses from 58 supervisors, Greer and Payne formed six themes to describe the telework challenges identified by teleworking supervisors. The themes are:

- a lack of face–to–face communication,

- interdependency of teamwork (i.e., how well synergy, cohesion, and camaraderie can maintain the team's effectiveness),

- managing and monitoring virtual employee performance,

- nontelework issues such as when nonteleworkers display feelings of jealousy for the teleworkers' work arrangement,

- distractions found in the home environment, and

- lack of work–associated resources such as work files or technological equipment not available to employees working off–site.

In contrast, the question Greer and Payne (2014) asked of the teleworkers was, "Some people believe there are significant issues with teleworking. Please comment on ways you've found to overcome challenges and have made the teleworking arrangement

successful" (p. 96). The purpose of this research question was to identify strategies to address the telework challenges perceived by teleworkers. Based on the results of the study, the teleworkers outlined several strategies to address the challenges encountered in telework arrangements. The top five strategies identified by the teleworkers in the study were ensuring:

- maintenance of the required technological equipment and infrastructure that facilitates connectivity and task completion, accessibility of teleworkers via technology so that coworkers and clients receive timely responses,

- timely communication with teleworkers and supervisors about work expectations and progress,

- whether teleworkers' physical environment was conducive to the employee's ability to work from home, and

- teleworkers have the necessary work mindset and behavior for focusing and operating from home. Teleworkers should establish work and home boundaries that clearly separate work life from home life (Greer & Payne).

The information gained from Greer and Payne's (2014) study highlighted both the supervisors' and teleworkers' perceptions of the challenges related to telecommuting. Unlike Greer and Payne, I explored only the managers' perceptions of virtual work and focused primarily on subordinate productivity. A secondary focus of this study specifically centered on the managers' perceptions of the challenges endured while maintaining the productivity of subordinates working in a virtual context.

Drivers of Virtual Work Arrangements

Organizations benefit from encouraging workers to collaborate across time and space (Long & Meglich, 2013). Today, virtual work arrangements are feasible for large numbers of employees and employers as technology now supports the performance of an increased number of job responsibilities from alternate locations. Some organizations have implemented virtual work arrangements as a convenience measure for employees (Maruyama & Tietze, 2012) and to comply with government legislation. Economic factors and business continuity efforts have also boosted the implementation of virtual work arrangements.

Government Legislation

Several government legislative measures such as the Americans with Disabilities Act (ADA) of 1990 have increased the utilization of virtual work arrangements. Under the ADA, organizations must make reasonable accommodations for disabled workers. Virtual work arrangements offer increased opportunities for physically challenged individuals to work off–site. This workplace flexibility allows organizations to comply with ADA legislation (Caillier, 2012; Raiborn & Butler, 2009).

There have been significant strides in technology since the passage of the ADA (Sullenger, 2007). Technological advancements and increases in the availability of Internet services have changed the way society communicates and how businesses operate. Technological innovations in speech recognition technology, screen readers, and closed captioning tools have greatly improved the daily lives of individuals with disabilities and enhanced employment opportunities. The ADA and related regulations

did not explicitly express that an employer must offer virtual work arrangements as a way of providing reasonable accommodation. However, the Equal Employment Opportunity Commission (EEOC) does recognize virtual work arrangements as a form of reasonable accommodation for disabled workers (Sullenger, 2007).

Telework became more feasible for federal workers with the passage of the Telework Enhancement Act of 2010, signed into law by President Obama in December 2010 (Mahler, 2012). The Telework Act is considered a milestone in the history of federal telework, allowing for greater flexibility in managing the federal workforce through telework programs. The implementation of telework was a strategic move for many federal agencies. Federal telework initiatives provide useful strategies for the business continuity of vital governmental functions during times of crisis and emergency situations (U.S. Office of Personnel Management, 2011). The strategies help reduce transit costs and improve the work–life balance for federal workers by allowing employees an increased opportunity to meet work and family obligations (U.S. Office of Personnel Management, 2011).

Caillier (2012) highlighted that the federal government has taken the lead in all work sectors (public and private) in extending telework options to employees. One federal agency that successfully incorporated a virtual work program is the U.S. Patent and Trademark Office (USPTO), which implemented the first telework program in 1997 with 18 attorneys. Based on the success of the telework program, the number of USPTO teleworkers increased to include 5,500 full– and part–time trademark employees working from home (Overmyer, 2011). This became the foundation for the expansion of

teleworking initiatives for numerous agencies within the federal government (Overmyer, 2011).

Employee Needs

Managing work and family responsibilities has fueled many employees' desires to work outside of the traditional confines of the office. Moon and Roh (2010) contended that family–friendly employment policies are necessary due to the diversity of the workforce, which includes dual–earner families, single parents, senior workers, and middle–aged workers caring for elderly parents. An essential element for employees for managing work and nonwork responsibilities exists in some form of flexible work systems, such as virtual work arrangements (Allen et al., 2013).

Mustafa and Gold (2013) asserted that family–friendly policies allow many workers to alter temporal boundaries such as the 8 a.m. to 5 p.m. regular workdays often found in traditional work settings. The use of temporal boundaries denotes the beginning and the conclusion of the workday, and often dictates when breaks occur during work hours. Employees with altered temporal boundaries vary the time available for both family and coworkers (Mustafa & Gold, 2013). Such scheduling flexibility afforded by virtual work arrangements enables virtual workers to attain a better work–life balance (Lauzun, Morganson, Major, & Green, 2010).

Maruyama et al. (2009) published the results of a work–life study involving 1,566 British teleworkers. The study revealed that 74% of the participating teleworkers rated work–life balance as *good* or *very good*. Over 80% of the participants reported that choosing when and where to work provided high levels of job satisfaction. Based on

these findings, the researchers suggested that allowing teleworkers the flexibility to allocate time between the workplace and family activities is a significant ingredient for successful telework arrangements and employee job satisfaction.

Surprisingly, the U.S. Armed Forces have also implemented family–friendly, work–life programs. Nearly a decade ago, the U.S. Department of Defense (DoD) authorized the use of telework programs for military members and civilian DoD employees for increasing the completion of official work duties. The Navy identified three priorities when guiding work–family initiatives: parenting priorities, flexibility, and balance. These priorities now include telework and a compressed work week (MacDermid–Wadsworth & Southwel1, 2011).

Addressing employee needs may have facilitated an increased interest and utilization of virtual work arrangements, but working in a virtual context may blur the lines between work and home for the employee. The blurred lines can lead to work–life conflict for virtual workers (Diaz et al., 2012; Fonner & Stache, 2012; Hecht & Allen, 2009; Lee & Hong, 2011; Moser & Axtell, 2013; Ojala et al., 2014; Spinuzzi, 2012; Wheatley, 2012). Greenhaus and Allen (2011) described work–life conflict as a conflict that "occurs when role pressures of work and family are mutually incompatible such that participation in one role is made more difficult by participation in the other role" (p. 166). When minimal work–family conflict is present, individuals are achieving work–life balance (Thomas, 2014).

According to Fenner and Renn (2010), the extent of work–life conflict depends on how efficiently the teleworkers manage home and work boundaries. Several

researchers examined alternate work arrangements such as telework in relation to work–

life balance (Julien, Somerville, & Culp, 2012). The research yielded mixed results. As

an example, Julien et al. examined three alternate work arrangements that included

compressed work weeks, flextime, and telework. The goal was to determine if any of the

three alternate work arrangements reduced work–life conflict. Sixty public sector

organizations were involved in the study. The researchers speculated that the function of

alternative work arrangements improved the employee's ability to manage schedules to

fulfill employment, household, and personal needs. The three hypotheses tested by Julien

et al. were:

Ha_1: Employees who work flextime will report greater ability to balance personal,

family, and work needs than employees who work a regular 9–5 workday (p. 175).

Ha_2: Employees who work compressed work weeks will report greater ability to

balance personal, family, and work needs than employees who work a regular Monday–

Friday work week (p. 175).

Ha_3: Employees who telework will report greater ability to balance personal,

family, and work needs than employees who work on–site at their employer (p. 175).

Julien et al.'s (2012) results indicated that a compressed work week lessened

work–life conflict. The results of the study did not confirm or validate the hypotheses

concerning either flextime or telework. Julien et al. surmised that a compressed work

schedule provided employees with greater latitude in meeting employment and household

obligations. Julien et al. indicated that a compressed work schedule allowed employees to

work longer hours on given days with additional off days. In contrast, since flextime

often occurred close to set hours, the flextime work arrangement did not provide enough

flexibility for employees for meeting work and nonwork needs.

Conversely, Julien et al. (2012) maintained that telework arrangements did allow

employees to manage workplace and family needs more successfully. Telework

arrangements provide employees with the opportunity to have more control over work

tasks. The findings from the study did not support the third hypothesis that telework

reduced the work–life conflict. The principal cause attributed to this finding was that

telework arrangements lacked a clear separation and distance between work and the

employee's home life.

Some managers and employees incorrectly assumed that the reduction in

commute time for teleworkers provided employees with an increase in time to satisfy

nonwork demands. Julien et al. (2012) stated that, for telecommuters, when the

workplace was always present and constantly available, employees faced difficulties

juggling work and nonwork demands. This can increase the employees' risks of being

overworked and experiencing burnout.

Thomas (2014) confirmed that workplace technology has blurred the lines

between work and home more than any other work–related factors. Virtual work may

inadvertently force employees to choose between work and family. Duxbury and Halinski

(2014) found that telework arrangements are more advantageous for helping employees

to meet work demands but not home demands. Schneider (2011) postulated that changes

in the culture of the workplace become necessary for workers who chose work

commitment as opposed to the welfare of their families. It is essential that a successful

balance is present between virtual employees' work and family lives.

Stout, Awad, and Guzmán (2013) reviewed work–life programs from the

manager's perspective instead of from the employee's viewpoint. The researchers

explored managers' attitudes for work–life programs in the private sector. The findings

from the study interestingly revealed that managers' perceptions of employees influenced

managers' perceptions of telework arrangements. Specifically, if a manager felt that

employees were responsible, the manager supported and encouraged work–family

programs. Conversely, if a manager perceived that employees were irresponsible, then

the work–family arrangements were viewed negatively. In the latter instance, the work–

family plans were deemed negative for both the employees and the organizations,

resulting in a lack of promotion for the work–family arrangements in the organization

(Stout et al., 2013).

The Economy

Economic factors have caused an increase in virtual work arrangements in recent

years. Due to the recent financial tumult that forced companies to reduce operating cost

and explore alternate work arrangements, many U.S. and foreign firms have adopted

virtual work arrangements (Ozcelik, 2010). Since the 1980s, the U.S. economy has

transformed from an industrial economy to a service economy. As a result, the workforce

shifted to include an increased number of information or knowledge workers (Hoang,

Nickerson, Beckman, & Eng, 2008). The growth in knowledge workers has changed the

nature of employment and allowed more employees to work off–site with the assistance of computer–based technologies.

While economic necessity fueled virtual work arrangements for some organizations, others use virtual work arrangements as a strategic initiative for becoming more flexible and competitive in global markets (Hoang et al., 2008). Globalization has created the need for an increase in specialized white–collar jobs for addressing the complexities that arise in the world markets. Thus, virtual work arrangements allow organizations to seek and retain specialized workers for assisting with global issues (Hoang et al., 2008). Lister and Harnish (2011) noted that the use of virtual work arrangements reduces oil consumption. This has helped to reduce economic and political vulnerability, which has resulted from the Unites States' dependence on oil imported from foreign countries, according to Lister and Hannish.

Business Continuity

Business continuity is a crucial concern for most organizations. Virtual work arrangements provide a viable operational solution for unexpected events or emergency– response situations (Colbert, 2011; Hoang et al., 2008; Mahler, 2012; Martin & MacDonnell, 2012). It is a strategic action for organizations to have a business continuity plan (Colbert, 2011; Mahler, 2012). The plan must include an objective to safeguard business processes that are essential to an organization's survival for remaining operational during an emergency (Heng, Hooi, Liang, Othma, & San, 2012). The use of virtual work arrangements, as a component of such plans, aids organizations when emergencies or unexpected events threaten business continuation. Colbert (2011) defined

unexpected events as events that are of natural, technological, or human origin that inherently lead to a business interruption or work stoppage. These events create financial losses for organizations. Colbert noted that during the 9/11 terrorist, business interruption insurance claims exceeded those for property claims, thus reiterating the benefits of employing business continuity strategies.

In recent years, Hurricane Katrina, terrorist attacks such as 9/11, and the continued threat of severe weather have pushed business continuity planning to the forefront. Unfortunate events have compelled many public and private organizations to prepare plans for disaster that include measures for business operation continuity (Colbert, 2011; Martin & MacDonnell, 2012). Organizations that have offered flexible remote work sites and virtual work arrangements have demonstrated increased ability to rebound in crises. One of the early pioneers in implementing telework programs as a business continuity effort at the federal government level is the Defense Information Systems Agency (DISA). In 2010, many federal agencies were forced to close operations due to a severe storm, but because DISA had an effective telework program in operation, 1,200 agency employees were able to carry out work responsibilities. It was estimated that 35% of federal workers were able to work from home during the severe storms of 2010 due to federal telework programs (Overmyer, 2011). The implementation of telework efforts continues to assist the U.S. federal government with the continuity of business operations. As a result, the risk of a total government shutdown resulting from bad weather remains minimal (Overmyer, 2011).

Although several reliable drivers exist for the use of virtual work arrangements, most managers and leaders just want to ensure that the virtual work design is appropriate for their organization and employees. In February 2013, Yahoo!'s new CEO Marissa Mayer created controversy by announcing that Yahoo! employees previously allowed to telecommute had to return to the office. Soon after the Yahoo! announcement, electronics retailer giant Best Buy followed suit and Bank of America reduced telecommuting efforts in December 2012 (Stern, 2013). According to Stern, Yahoo!'s Director of Human Resources Jackie Reses distributed a memo to employees outlining the reason for the suspension of telecommuting that explained, "some of the best decisions and insights come from the hallway and cafeteria discussions, meeting new people and impromptu team meetings. Speed and quality are often sacrificed when we work from home" (p. A08). The utilization of virtual work continued to grow elsewhere, but some companies such as Yahoo! have questioned the effectiveness of virtual work policies.

Meanwhile Aetna, a large health insurance provider based in Hartford, Connecticut, has embraced the concept of virtual work. According to Stern (2013), in 2005, 5% of Aetna's workforce operated using a virtual work arrangement. By 2013, that number increased to 47%. Additionally, teleworkers are thriving at Aetna, and the company boasted that the virtual work policies have saved the company millions annually in real estate costs. The use of virtual work programs has allowed Aetna to lower employee turnover, employee training, and recruitment costs (Stern, 2013). Although operating in a virtual work context is not suitable for every organization and employee, the strategy has proven to be successful for many companies.

Productivity of Virtual Workers

Subordinate productivity is a primary concern for many managers regardless of the work environment. Several researchers have concluded that virtual work arrangements can positively influence employee productivity (Cisco Systems, 2009; Martin & MacDonnell, 2012; Mekonnen, 2013; Overmyer, 2011; Snyder, 2012; Weisberg & Porell, 2011). Weisberg and Porell (2011) maintained that evidence has increased to support the idea that remote workers are more productive than traditional office workers. Research data indicated that the productivity of traditional office workers reduced at hour 38 versus hour 56 for remote workers who had increased flexibility with work schedules and work locations (Weisberg & Porell, 2011).

Baard and Thomas (2010) cited fewer distractions as one of the factors credited with increasing the productivity of virtual workers. Increased employee morale (Caillier, 2012) and increased autonomy (Robertson & Vink, 2012) have also been linked to increased productivity for virtual workers. Overmyer (2011) credited the increased productivity of virtual workers to the employees' having more flexibility to define work hours and an increased attention to detail on work projects.

However, while evidence suggests that virtual work arrangements increase or improve the productivity of virtual workers, a gap remains in the research literature that specifically examines managers' perceptions of employee productivity in virtual work arrangements. In this section, I examine several studies pertaining to virtual work arrangements with an emphasis on worker productivity and performance. Reviewing prior research on virtual work arrangements is necessary to provide insight into how I

addressed the gap in the literature in this study. The study results contribute to the

existing body of knowledge on virtual work arrangements.

Productivity–Related Virtual Work Studies

Cisco Systems

Cisco Systems (2009) utilized an in–depth telework survey intended to evaluate

the social, economic, and environmental effects associated with telecommuting at its

company. The study included 1,992 Cisco teleworking employees from five regions (i.e.,

Asia Pacific, Europe, Japan, United States, and Canada). The results showed that

approximately 69% of teleworking employees surveyed cited higher productivity levels

when working remotely, 75% of workers noted that the timeliness of the work improved,

and 67% of the teleworkers found that the quality of work improved. In summary, the

results of the study concluded that the majority of participants viewed teleworking as a

positive effect on their productivity levels.

Lloyds of London

Collins (2005) conducted an empirically based study with teleworkers at Lloyds

of London, an insurance market located in London. One of the research questions probed

whether the teleworkers were more productive than office–based staff. The study

involved over 400 full–time and part–time employees who had the choice to work from

home or the office. Based on the productivity information supplied by the teleworkers,

productivity was measured using a quantitative method that gauged the output of work

based on quality and volume. The findings from the study revealed that the Lloyds of

London teleworkers were 23% more productive than traditional office–based workers

were, and the increase in productivity was not linked to the teleworkers' working longer

hours or the gender of the employees (Collins, 2005).

Both these studies differed from this research in that they collected self–reported

productivity data from the employees. Butler et al. (2007) maintained that researchers

have questioned findings related to studies based on self–reported productivity data from

virtual workers, thus questioning the validity of the results. Bailey and Kurland (2002)

contended that the findings elated to employees who self–report productivity data and

who voluntarily work in a virtual work arrangement could be biased. Employees who

desire the nature of virtual work might self–report productivity levels at higher levels

than actually experienced. The design of the current study did not necessitate the

collection of productivity data from virtual workers.

A Meta–Analysis of Virtual Work Empirical Studies

Martin and MacDonnell (2012) conducted a meta–analysis of 22 empirical studies

to explore perceptions of telework in relation to four organizational outcomes:

productivity, retention, organizational commitment, and performance. The study was

conducted to determine whether telework was an effective practice for organizations. The

meta–analysis concluded that a positive relationship existed for telework, although small,

on each of the four organizational outcomes tested. Because productivity is of high

organizational interest, the first hypothesis tested centered on productivity and

hypothesized that telework will be positively associated with perceptions of increased

productivity. Martin and MacDonnell highlighted that productivity was often measured in

terms of how the study participant perceived work output increases or decreases in

conjunction with working in a telework arrangement when compared to a traditional work setting.

The findings from Martin and MacDonnell's (2012) study validated the productivity hypothesis, showing that telework is positively associated with perceptions of increased productivity. The findings also delineated a definite link between telework and the three other organizational outcomes tested. Martin and MacDonnell's study involved a meta–analysis approach in which the researchers examined empirical research on telework and organizational outcomes. The Martin and MacDonnell study differs from this research on virtual work because it entailed a qualitative phenomenological approach aimed at the managers' assessment of virtual worker productivity.

Stanford University Chinese Telework Study

Bloom et al. (2012) conducted a study of work–from–home (WFH) teleworkers employed at a Chinese travel agency, CTrip, which employs over 16,000 workers. The researchers focused on the productivity of CTrip's call center employees and the teleworkers who voluntarily participated in the telework study. Bloom et al. used an experimental design for the study that included a treatment group of WFH teleworkers and a control group of office employees. The study involved 249 voluntary participants.

Some of the factors used by Bloom et al. (2012) to gauge the productivity and performance of the study participants included the number of phone calls answered, phone call length, and the number of orders taken. The findings from the study revealed that the WFH call center teleworkers showed a 13% increase in productivity. Findings also indicated that 9% of the increased productivity was attributed to the fact that the

WFH teleworkers worked more minutes per shift, took fewer breaks, and had fewer sick days. The researchers attributed the remaining 4% of the WFH teleworkers' increased productivity to a quieter and less distracting work environment. Bloom et al. (2012) showed a positive benefit for WFH teleworkers. The authors found that several factors contributed to the successful experiment with CTrip's telework program. First, the nature of the work involved in the call center environment was particularly fitting for a virtual work environment. Secondly, the productivity of participants was easy to quantify and qualify, and the WFH telework initiative did not require a substantial change in the workplace. The findings provided useful information on virtual work arrangements and worker productivity. Bloom et al.'s study differed from this study on virtual work in that the researchers used an experimental design. Additionally, the study did not gauge the managers' perspectives of the teleworkers' productivity.

Factors Influencing Teleworkers Perceived Productivity

Aboelmaged and El Subbaugh (2012) examined the factors that influenced the productivity of teleworkers. The population for the study included 199 Egyptian teleworkers from the private and public sectors. The researchers utilized a self–administered questionnaire to understand the extent to which several independent variables (gender, marital status, the firms' information technology (IT) infrastructure, IT training, management support, job security, work flexibility, job satisfaction, and organizational commitment) affected the teleworkers' attitude toward teleworking.

Aboelmaged and El Subbaugh (2012) revealed that perceived job security was the most important influence on teleworker productivity. Other key drivers were job

satisfaction, work flexibility, organizational commitment, and management support. Aboelmaged and El Subbaugh found that teleworker's demographic factors such as education, gender, education, and marital status had no significant effect on the teleworker's productivity. Based on the results of the study, Aboelmaged and El Subbaugh (2012) emphasized the following actions for managers to maintain or increase the productivity of teleworkers. Managers in telework environments must:

- work to ensure teleworkers of job security and career progression opportunities,

- ensure technology assists flexible working arrangements and provide emotional support, adequate resources, and clearly defined work policies,

- boost teleworkers' job satisfaction and organizational commitments,

- reschedule work times when permissible,

- foster support for the organizations' goals and objectives, and

- ensure the efficient use of IT by providing targeted training based on the teleworkers' needs.

Aboelmaged and El Subbaugh (2012) contributed to the research on virtual work by concentrating on the organizational outcome of productivity. The work used a quantitative method and only included the teleworkers' perceptions, which differ from this research study on virtual work.

Telecommuting and Job Performance

In a 2013 quantitative study, Mekonnen examined the job performance of telecommuters versus nontelecommuters. The researcher used actual production output

data from the U.S. Patent and Trademark Office (USPTO) for the 2010 and 2011 fiscal

years. Mekonnen compared the production output and worked hours of telecommuters

and nontelecommuters for processing patent applications and found that telecommuting

had a positive effect on reducing the USPTO backlog of patent applications and on

generating revenue. The findings showed that the USPTO telecommuters examined on

average 3.87% more patent applications per year when compared to the USPTO average

office–based worker. The additional applications reviewed by the telecommuters

generated higher revenues for the USPTO from the fees collected from the patent

application process. In addition, the telecommuters saved the USPTO funds due to a

reduction in space–related costs. Overall, the study results indicated that an effective

telecommuting practice translated into employees' providing enhanced job performance

at the USPTO (Mekonnen, 2013).

The flexible work schedules related to the USPTO's telework program and a

reduction in the commute time for teleworkers improved the efficiency of USPTO cited

the U.S. Office of Personnel Management (OPM), 2013). USPTO's production data for

2009 and 2010 indicated that patent examiners participating in the Patent Hoteling

Telework Program (PHP) worked longer hours than did nonPHP examiners. The

productivity gains were equivalent to employing six additional patent examiners for a full

year (OPM, 2013). The OPM information supported the results provided by Mekonnen's

(2013) study, revealing that the telework program implemented by the USPTO had

effectively enhanced worker performance and productivity.

Mekonnen's (2013) study supports claims that telework increases productivity. The study used actual output data to compare the productivity of teleworkers to nonteleworkers. Mekonnen's research differs from this current study on virtual work as it used a quantitative descriptive approach and used the teleworkers' actual output productivity data. As stated earlier, my study of virtual work utilized a qualitative phenomenological approach instead of actual productivity data and focused on the managers' perceptions of subordinates working in virtual work arrangements.

Westfall's Model of Production

Westfall (2004) examined productivity as a rationale for telecommuting based on a model of productivity formed of four major elements. The first element outlined the actual hours of work performed in a set period, such as per day, per week, per month, or per year. Westfall highlighted that the average commute time of employees in urban areas was typically 20–30 minutes per day. The reduction in commute time equated to 10% of the employee's workday based on an 8–hour workday. If correctly assumed that the average teleworker will replace daily commute time with work time, then the employee could potentially be 10% more productive. Telework consultants argued that, even though employees have extra time due to telecommuting, organizational leaders must not assume that employees in virtual arrangements will work on assigned duties in lieu of commuting or travel hours (Westfall, 2004).

The intensity of work was the second major factor Westfall (2004) outlined. The *intensity factor* refers to the level of concentration employees exerted into work or the level of intensity at which employees performed work duties. Westfall found that

individuals work at an intense level for short periods when properly motivated. Westfall surmised that telecommuters might work more intensely because of not commuting to work. The reduction in commute time can offer employees more energy to devote to assigned projects. Conversely, Westfall found that, if employees utilized extra energy for longer work hours, energy might not be available to increase the intensity level for performing actual work functions.

The third factor highlighted by Westfall (2004) centered on the *efficiency of work*, which the author defined as the amount of labor output compared to the quantity of labor input. The components that affected work efficiency included supporting technology, experience, training, and organization of work. Telecommuting requires employees to maintain a certain level of technology in the home or remote setting to meet the technological demands to work off–site. Westfall indicated that workers who used more information technology to perform job duties were more productive.

The last factor highlighted by Westfall (2004) centered on *adjustments*, which refers to the additional inputs organizations must provide in comparison to inputs for other workers. The costs associated with telework arrangements, such as expenses related to equipment, technology support, training, and other services, could reduce the outputs gained from virtual work arrangements. Westfall concluded that, if the productivity of virtual workers had (a) increased as often highlighted in the literature, (b) yielded positive productivity achievements, and (c) produced a measurable effect on the organization's bottom line, then organizations would have adopted virtual work arrangements long ago.

Westfall found that many organizations offered virtual work arrangements as an option, but did not strongly promote the strategy.

Productivity of Telecommuters

In a 5–year longitudinal study, Butler et al. (2007) investigated the temporary and long–term effects of telecommuting on productivity for call center employees at the Kentucky American Water Company. Butler et al. used Westfall's (2004) model to compare the productivity results in the year that the project began to the productivity measured in the following 27 months. The researchers examined if the gains in the productivity of virtual workers were the result of a placebo or the Hawthorne effect. Butler et al. found that telecommuting positively increased employee productivity, that telecommuters had sustained productivity levels, and that no direct evidence that a placebo or the Hawthorne effect existed. Additionally, minimal evidence emerged to support claims that telecommuting negatively affected the performance of nontelecommuting employees.

Productivity and Dull or Creative Tasks

Dutcher (2012) evaluated the productivity of virtual workers while performing dull or creative tasks. Dutcher selected dull and creative tasks because these functions mimicked the work completed in many industries contemplating virtual work arrangements. The quantitative study involved 125 individuals with observations of 63 participants in a lab setting and the remaining participants in a field setting. The average age of the participants was 21 years, and 52% of the participants were male. Study participants received a monetary reward based on a piece–rate pay scale for correct

answers. The average amount earned was $18.91. To test the dull task component,

Dutcher used a typing test. The results of Dutcher's (2012) study indicated that

participants in the field setting (outside of the lab) showed 6% to 10% less productivity

on dull tasks compared to those in the lab setting. To assess creative tasks, participants

played a game against a computer. The findings for creative tasks indicated that

participants outside of the lab were 11% to 20% more productive than workers in the lab

setting.

The results of the study have practical implications for managers when choosing

workers to work outside of the traditional office setting. Dutcher (2012) asserted that,

when the work tasks of virtual workers resembled data entry–type functions, the

productivity of virtual workers was likely to be low. Conversely, productivity was more

likely to increase when the work tasks facilitated creative input from the virtual workers.

Dutcher's (2012) study did not evaluate the productivity of virtual workers completing

daily tasks in the worker's normal work environment but used a controlled work setting.

Unlike Dutcher's study, this current research on virtual work examined managers

supervising virtual subordinates engaged in day–to–day tasks. This study did not include

the use of a controlled environment.

Leadership and Productivity

Gladys (2014) conducted a phenomenological study to focus on factors that

contributed to a successful virtual workforce. The goal of the study was to understand

whether the behavior of virtual leaders added or detracted from the organization's success

based on five factors: productivity, retention, attendance, professional development, and

opportunity for promotions. Gladys conducted 17 interviews with participants in the IT

field. Participants were associated with the American Council for Technology (ACT) and

Industry Advisory Council (IAC) Pacific. These professionals worked collectively to

promote communication between the government and IT industry.

The productivity–related research component of Gladys' study provided an

understanding of the leadership behaviors that most positively and negatively affected the

success of a virtual workforce in terms of employee productivity. Gladys posed two

productivity–related interview questions to study participants:

- What does your leader do that causes you to be more productive?

- What does your leader do that makes you less productive?

One of the findings from the study revealed that the leader's concern and

involvement with virtual workers was the most significant factor that positively affected

the success of a virtual workforce from a productivity standpoint. Other factors included

building and maintaining trust with virtual workers and empowering virtual workers

through autonomy. The findings showed that the top factors that negatively affected the

productivity of virtual workers included infrequent or unclear communication and leaders

that tended to micromanage virtual workers (Gladys, 2014).

Gladys (2014) offered three conclusive findings from the study results. First,

leaders must lead more and not less. Leaders that are adequately trained to lead a virtual

workforce can improve the worker's performance. Secondly, leadership behaviors that

encompass human interaction and trust influenced the fiscal performance of a virtual

organization. Gladys noted that leaders who improved their behaviors by showing more

human concern and trust for virtual workers reduced the negative effects caused by

micromanaging. Third, leadership behavior that involved recognizing, mentoring, and

counseling virtual employees could improve the success of virtual organizations. To

increase the success of virtual work arrangements, Gladys (2014) argued that leaders

must work to ensure that virtual workers have purposeful work assignments. The study

reinforced the effect that leadership behaviors have on the productivity of virtual

workers. Leaders need training on leading a virtual workforce. Leaders must display

behaviors that foster commitment from and the work performance of virtual employees to

accomplish organizational goals (Gladys, 2014).

The study is significant because Gladys (2014) examined how leaders' behaviors

influence the productivity of virtual workers and their organization's overall success.

While Gladys' study was a phenomenological study, it differed from this present study on

virtual work because Gladys did not assess the perceptions of managers but focused on

the perceptions of the employees. In particular, the emphasis of Gladys' study centered

on the effects that leaders' behaviors have on productivity and four other work–related

factors.

In summary, the productivity studies listed in this section addressed the

productivity of virtual workers from varying perspectives. A review of the existing

literature revealed that a lack of empirically based qualitative research exists on studies

related to the productivity of virtual workers conducted from the managers' perspectives.

The existing research on the productivity of virtual workers has centered on their

perceptions of productivity and other factors such as work–life balance, job satisfaction,

and employee morale. To address the gap in the literature on virtual work, this study identified managers' perceptions of subordinate productivity in a virtual work arrangement. The study did not include teleworkers' perceptions. This study also examined managers' perceptions of the challenges endured while overseeing the productivity of subordinates working in virtual work arrangements, which has also been understudied.

A review of the existing literature on virtual work arrangements supported the positive attributes of virtual work arrangements on subordinate productivity. The rising use of virtual work arrangements thus warrants additional research on the phenomenon of virtual work. Based on a review of existing literature, management resistance lingers in both the private and public sectors for virtual work arrangements.

Management Resistance to Virtual Work

Several authors and scholars have indicated that there is resistance to virtual work practices by some managers (Eversole et al., 2012; Lister & Harnish, 2011; Mekonnen, 2013; Peters, den Dulk, & de Ruijter, 2010; Pyoria, 2011; Weisberg & Porell, 2011). Researchers have argued that resistance from first–line supervisors and middle managers are the principal reason for the slow adoption of the virtual work arrangement (Eversole et al., 2012). Most managers welcome Internet technology and associated applications for conducting business, but some professionals view these same technological innovations adversely for business activity (Mackenzie, 2010). Understanding the managerial resistance toward virtual work remains essential as the resistant behavior can have an impact on subordinates' attitudes and acceptance of new technology, including virtual

work (Lilly & Durr, 2012). Managers' behaviors can unduly influence employee behavior, which can affect the efficiency and productivity of virtual workers.

Many factors contribute to management resistance to virtual work arrangements. Two factors are a lack of information and training on virtual work and a discomfort with the degree of flexibility virtual work offers to employees. Peters, Bleijenbergh, and Oldenkamp (2009) argued that line managers were adverse to virtual work arrangements when organizations failed to provide adequate IT infrastructures and related training.

Another significant factor contributing to managerial resistance to virtual work was a manager's need for control (Eversole et al., 2012; Russ, 2011). Managers feared the loss of influence and authority over virtual workers and the changes that virtual work arrangements presents to an organization's work culture (Brice et al., 2014; Peter et al., 2010; Pyoria, 2011). Peters et al. (2009) maintained that managers prefer a more traditional approach to managing subordinates, and the occasional or incidental use of telework arrangements to a more structured approach.

The most significant change for managers moving from a traditional work setting to a virtual setting is the lack of visual oversight of employees (Lautsch & Kossek, 2011; Overmyer, 2011; Weisberg & Porell, 2011). Managing workers who are not physically present is a major obstacle for the adoption of virtual work (Weisberg & Porell, 2011).

Eversole et al. (2012) argued that organizational leaders must recognize and understand that fear often follows change. The researchers found that organizations must focus more on the cultural change when asking individuals to adopt virtual work arrangements. Eversole et al. explained that organizational leaders must anticipate that a

change in culture may cause resistance. In the case of a change to virtual work, the resistors are often middle managers (Eversole et al., 2012).

Management Resistance

Scholefield and Peel (2009) performed a study to examine the perceptions and attitudes of managers toward teleworking arrangements. The study included 123 white–collar marketing managers. Scholefield and Peel conducted the study on work assignments performed from home or outside of the traditional office setting. The study was limited to managers who supervised a moderate number of full–time virtual subordinates. The researchers used a mixed–method approach that consisted of a quantitative paper–based survey and qualitative in–depth interviews.

Scholefield and Peel (2009) found that the majority of the marketing managers overwhelmingly reported a positive attitude toward virtual work, but had significant concerns that affected the actual implementation of the arrangement. The results of the study revealed that participants shared the following concerns: (a) teleworking is only partially suitable, (b) there are problems of reliability and usability of information and communication technologies, and (c) there is a lack of trust for virtual workers. Based on the participants' responses, the results indicated that managers perceived that teleworkers' lack of physical presence in the workplace could negatively affect productivity levels.

Scholefield and Peel (2009) identified several benefits of teleworking. One benefit is the ability for virtual workers to have a greater focus on work assignments without distractions. Other benefits included better work–life balance and an increased

ability to attract and retain staff. The disadvantages most commonly cited included technological–related issues that affected the productivity of virtual workers, a lack of face–to–face contact with workers and impromptu communications, home distractions, and team–related issues. Scholefield and Peel found that virtual work arrangements were not suitable for all employees. To ensure workers' success in a virtual environment, they must have an appropriate work environment, adequate technological support, and clear goals for outputs.

Corporate Culture

Organizational or management culture is another factor that may contribute to a manager's lack of acceptance of virtual work arrangements (Lautsch & Kossek, 2011; Messer, 2010; Pyoria, 2011). The key to successful implementation of virtual work arrangements is changing the corporate culture of an organization to value workplace flexibility rather than viewing such flexibility as a detriment to the achievement of organizational goals (Putnam, Myers, & Gailliard, 2014). Several aspects of virtual work arrangements are incompatible with some corporate cultures and management styles such as the need for the workers to be physically present at work or a work culture unaccepting of virtual work. Messer posited that corporate culture is traditionally formed and reinforced through face–to–face interaction. During these interactions, corporate values are shared and reaffirmed. Thus, it remains to be seen if the Internet and related technologies will adequately support, nurture, and sustain an organization's culture.

Mulki et al. (2009) declared that challenges exist for organizations when replicating a virtual work environment with features commonly found in a traditional

work setting. In many organizations, corporate cultures place considerable emphasis on visibility, which impedes virtual work arrangements (Hoang et al., 2008). Advancements in technology such as instant messaging and social networking offers alternatives for face–to–face interaction that can help to bridge the differences in the two work environments (Mulki et al.).

Virtual work arrangements require changes in an organization's culture to one with a willingness to accept the use of a virtual work design (Moen, Hill, & Kelly, 2011). Moen et al. found that the successful implementation of virtual work arrangements required organizations to have a corporate culture supportive of innovative technologies and one that embodied trust. A culture, which changes the traditional managerial mindset that subordinates need close supervision to achieve organizational outcomes, will contribute to the success of virtual work arrangements.

Resistance at the Federal Government Level

Management resistance for virtual work arrangements in the public sector is similar to the resistance found in the private sector. Virtual work arrangements can improve the resiliency of federal operations and significantly benefit the governments' business continuity efforts (Overmyer, 2011). Green and Roberts (2010) maintained that managerial resistance in the federal work force is primarily among middle–level–ranked managers. Overmyer (2011) maintained that two major factors that impede the implementation of virtual work arrangements at the federal government level are the attitudes of federal management personnel and the organization's culture.

Overmyer (2011) reported that the Director of the Office of Personnel

Management declared that the largest barrier faced by governmental leaders for virtual

work is a nineteenth–to–twentieth century managerial mindset, which managers believe

that employees must be physically present at a desk to be productive. Although progress

has resulted in reduced management resistance at the federal level over time,

management resistance continues to be one of the most frequently reported barriers

(OPM, 2013).

Other barriers to virtual work at the federal level include information technology,

security, and budget constraints (OPM, 2013). Researchers have found that the keys to

surmounting management resistance include implementing management programs that

support telework initiatives, including telework pilot programs (Peters & Heusinkveld,

2010). As more federal agencies explore telework initiatives to offset deep budget cuts,

federal leaders must address the management resistance to virtual work.

Minimizing Management Resistance at Federal Agencies

Overmyer (2011) examined the efforts to thwart management resistance at several

federal agencies, including the Defense Information Systems Agency (DISA), Federal

Deposit Insurance Corporation (FDIC), and the National Institutes of Health (NIH). A

crucial driver for the successful implementation of DISA's virtual work program was

related to the support received from senior leadership, including the agency's director.

Overmyer discovered that the DISA director embraced the concept of telework and

supported its implementation. In addition, Overmyer reported that managers at DISA

with previous experience working in virtual work arrangements were able to debrief and

share experiences with colleagues on the effectiveness of telework practices. The

managers stressed the importance of establishing performance standards and for ensuring

that DISA employees remained informed of the agency's expectations.

Some DISA managers expressed concerns for telework due to the reduced visual

oversight of workers (Overmyer, 2011). To combat this fear, DISA conducted extensive

briefings to managers and virtual subordinates on managing workers in virtual

arrangements. Measuring performance was another area of concern for most DISA

managers with virtual subordinates. DISA recommended that managers use the same

measures for all employees in similar positions, whether they were teleworkers or office–

based workers (Overmyer, 2011).

According to Overmyer (2011), the FDIC also successfully integrated telework

options. The FDIC began a teleworking program in 2000–2001. This independent agency

created by Congress was tasked with maintaining the nation's financial system. As of

2009, the FDIC had 8,000 employees, of which 27% teleworked one to three times per

week. Almost all FDIC employees were eligible to telework. To overcome the reluctance

of FDIC managers to permit employees to telework, FDIC managers were encouraged to

try teleworking themselves. It was anticipated that managers might better support

telework initiatives after experiencing the benefits firsthand. To reduce resistance to

telework at the FDIC, the managers were educated on key issues related to virtual work

combined with targeted training on leading virtual workers (Overmyer, 2011).

The (NIH) has also implemented a telework program (Overmyer, 2011). As of

May 2010, the NIH permitted 30% of the agency's 18,400 employees to telework up to

three days per week. Overmyer noted that the NIH faced many of the same problems as

other federal agencies, including management resistance. Several managers have

correlated employee physical presence in the office with productivity, but a group of NIH

managers needed to shift managerial attitudes. To increase support for the use of

telework, NIH managers were encouraged to test telework through small pilot programs

to show that employees were productive in a telework arrangement. Training programs

were also implemented and included both online and face–to–face training. The training

programs addressed such factors as managing off–site workers' performances and

communicating effectively with virtual workers (Overmyer, 2011).

The Telework Divide

Mahler (2012) described the *telework divide* as a significant difference in the

numbers for teleworkers versus nonteleworkers in organizations. The telework divide has

managerial implications for workers with a desire to telework who lack the required

managerial approvals. In 2012, Mahler provided results from a federal telework survey

conducted in 2011 with approximately 9,700 federal government workers. Mahler noted

that a sizable number of federal workers lacked the approval to telework. The results

indicated that management resistance or technical difficulties prevented 30% of federal

workers from teleworking. Mahler maintained that federal managers must be aware that

employees prevented from teleworking often have a lower level of job satisfaction, which

ultimately affects productivity.

Based on survey data reported by the 2011 Merit Systems Protection Board,

Mahler (2012) reported a 72% job satisfaction rating for teleworkers. In comparison,

workers prevented from utilizing teleworking arrangements experienced only a 10% job satisfaction rating. For federal employees who chose not to participate in the telework programs, the job satisfaction rate was 35%. Mahler reported that 83% of teleworkers compared to 9% for nonteleworkers had a positive effect on personal productivity and performance levels.

Based on the study results, Mahler (2012) reported that 86% of teleworkers were satisfied with their job and organization compared to 13% of nonteleworkers. Approximately 81% of teleworkers desired to remain with the organization compared to 14% for nonteleworkers. The information from Mahler's study is important for managers and supervisors who make decisions to permit workers to use or not use telework arrangements. Mahler contended that managers must understand that telework–related decisions might unintentionally result in job dissatisfaction, reduced productivity, and lowered retention rates. Organizations that offer virtual work options help retain valuable employees and increase productivity levels (Mahler, 2012).

Work Motivation of Federal Teleworkers

Caillier (2012) conducted a study focused on the work motivation of federal teleworkers. The goal of the study was to draw attention to the topic of telework in the U.S. federal government. Despite the increase in the number of teleworking employees in public organizations, a lack of research exists on the topic of telework in public agencies maintained Caillier. A quantitative approach was used in the study to examine telework arrangements and the work motivation of federal teleworkers versus nonteleworkers.

Caillier hypothesized that based on utilizing the social exchange theory; teleworkers are more motivated than nonteleworkers.

Scholars have long studied work motivation and worker productivity, including the 1930's Hawthorn studies exploring employee motivation and productivity. Caillier's (2012) study on federal telework concentrated on work motivation in relation to job satisfaction, organizational commitment, and job involvement. The social exchange theory utilized in the study provided a foundation for understanding that treating individuals fairly creates a moral obligation to reciprocate favorably.

Telework, telecommuting, or virtual work arrangements are all voluntary actions on behalf of the organization that may create an obligation to reciprocate contended Caillier. Caillier (2012) stated that when employers allow workers to telecommute, a feeling of indebtedness to the organization motivates workers to increase productivity. Caillier found that employees feel a sense of appreciation towards the organization when managers allow telecommuting, thus strengthening relationships and providing situations where employees feel obligated to the organization.

The 2010 FedView Survey, previously called the Federal Human Capital Survey, formed the basis of the data collected for Caillier's study. The survey, conducted by the Office of Personnel Management, included permanent federal employees. The study encompassed 97% of the federal executive branch workforce and involved the distribution of over 500,000 surveys to full–time federal government workers. The federal workers returned 263,000 surveys. Although the survey included many federal agencies and organizations, only the data from the Department of Health and Human

Services (DHHS) supported Caillier's (2012) study. According to Caillier, utilizing the

DHHS data was primarily due to the large size of the DHHS agency and the high

percentage of teleworkers in DHHS. In addition, the number of teleworkers in DHHS had

steadily increased in comparison to other federal organizations.

The results of Caillier's (2012) did not support the hypothesis that frequent

teleworkers would have higher levels of work motivation when compared to

nonteleworkers. The study results only partially supported the social exchange theory in

relation to telework. The findings revealed that frequent teleworkers had lower levels of

each factor (job satisfaction, organizational commitment, and work motivation) than the

infrequent teleworker. The results further indicated that the lowest level of work

motivation involved DHHS workers that lacked the desired approval from management

to telework. According to Caillier (2012), the motivation levels decreased because the

employees did not have the benefit of teleworking. Some managers argued that employee

related factors (job satisfaction or job commitment) affected the managers' decisions to

allow employees to engage in teleworking. However, Caillier has indicated that workers

still believe that resistance from managers towards the concept of teleworking is the

primary factor contributing to the manager's decision to disallow telework arrangements

Recommended Managerial Actions

The traditional methods of coordinating and controlling employee actions are not

suitable for managing employees in virtual work arrangements (Golden, 2009). Thus,

managers will need to take new approaches to managing virtual workers. To minimize

the concerns for virtual worker productivity and lessen the resistance to virtual work,

Golden offered the following six suggestions for managers and organizational leaders implementing virtual work arrangements:

- Managers should focus on managing by objectives rather than managing by oversight. The management technique of walking around and visibly assessing what employees are working on is no longer possible in virtual work arrangements. New management concepts must stress accountability and completion of set work objectives.

- Managers must ensure that formal virtual work policies and agreements are developed, clearly understood, and articulated to all virtual workers and their managers. Organizations must develop a virtual work agreement that clearly defines work expectations, reporting procedures, methods for contacting and communicating with supervisors and others, and conflict–resolution procedures.

- Managers must redesign compensation systems and policies as appropriate, which includes incentives for promoting desirable behaviors.

- Leaders must ensure that organizations institute regular training programs on virtual work arrangements for the worker, the manager, and even the nonvirtual worker. Managers must ensure that the training directed toward nonvirtual workers and coworkers addresses perceptions of fairness and organizational justice.

- Managers must take the necessary steps to avoid professional or social isolation that occurs for some workers in virtual work arrangements. To minimize feelings of isolation, managers must work to build employee relationships and trust and

increase camaraderie. In addition, managers must hold regular informal and socially related face–to–face activities.

- Managers must understand that virtual work arrangements necessitate a new approach to management and discard old management ways of viewing employee management.

The key to the motivation and productivity of virtual workers may reside with the leader more than the worker. Leaders must strive to understand the nature of managing in a virtual work environment and the leadership skills required for success (Golden, 2009).

Leadership for Virtual Work Environments

Leaders gather a group of people with the skills and knowledge to accomplish set goals (Pinar, Zehir, Kitapçi, & Tanriverdi, 2014). This concept is true for any work environment. However, technology has changed how managers lead workers in today's work environment. Effective leadership is crucial for the success of virtual work arrangements and for maintaining worker productivity. Shriberg (2009) argued that many employees welcomed the opportunity to work from home or remote locations, but without the proper leadership, virtual work arrangements can lead to disaster for employees who lack the skills to work independently.

Offstein et al. (2010) indicated that the single best determinant for predicting the success of telework arrangements was rarely the technology, but leadership. Old styles of leadership applied to virtual work arrangements are ill equipped for addressing the needs of virtual workers when achieving organizational goals. Offstein et al. stated that

managers and leaders must recognize the need for adopting leadership behaviors closely

aligned to today's workforce, including workers in virtual work arrangements.

Virtual Leadership

Colfax, Santos, and Diego (2009) noted that the topic of virtual leadership has

been on management's radar for quite some time and that organizations must view the

use of virtual leadership as a priority. Mayo et al. (2009) maintained that an insufficient

amount of research has examined the influence of leadership as a facilitator for the

adoption of virtual work arrangements. The role of leadership in a virtual work

environment differs from the leader's role in a traditional business setting (Hicks &

McCracken, 2011). Virtual leadership means leading in a nonphysical environment and

involves managing distributed work teams (Kerfoot, 2010). Team members must

communicate and coordinate work tasks and responsibilities through various forms of

electronic media. Leaders of virtual teams are also boundary managers who must

motivate workers to self–manage their assigned work responsibilities (Kerfoot).

Leading and empowering face–to–face teams through interaction provides

challenges for managers, whereas leading and managing teams in a virtual setting create a

unique set of difficulties. These challenges include leading a group of geographically

dispersed workers in different time zones, countries, and cultures where individuals may

speak different languages. Leaders that master these virtual challenges become invaluable

assets to their organizations (Shriberg, 2009).

Shriberg (2009) maintained that leadership and teamwork are not formed around

technology and gadgets. Instead, leadership and teamwork are formed around the

relationships that people form with each other. The leader must focus on building relationships with employees for ensuring successes in virtual operations. Virtual managers must:

- make certain employees understand each other and work expectations,

- ensure that trust is developed and maintained, and

- work with each virtual worker to determine employee strengths, weaknesses, and potential areas for improvement.

Kerfoot (2010) outlined four skills for enhancing the effectiveness of virtual leaders. First, the virtual leader must develop enhanced listening skills. Technology dominates communication in virtual and distance work environments. Because leaders and workers cannot use their eyes to notice visual cues, virtual leaders must improve listening skills to enable greater concentration of the verbal messages delivered. The virtual leader needs to acquire the capability for high–level listening so that listening creates "seeing" (Kerfoot).

Secondly, the virtual leaders must create and foster a sense of community. Kerfoot described this as creating a sense of "aliveness" by focusing on the people side of the organization. It necessitates supporting relationships and interactions that facilitate the exchange of ideas and opportunities among geographically dispersed workers and perhaps teams. The virtual leader must inspire the distant workers or teams to create a sense of urgency or motivation to achieve organizational outcomes without the benefit of face–to–face interaction.

Thirdly, effective communication skills are also critical for virtual leaders (Kerfoot, 2010). Leaders must have an understanding of the skills required to communicate through electronic media and without face–to–face interaction. The communication skills needed for virtual settings include establishing an atmosphere for active employee involvement and engagement. Managers must also ensure the organization's virtual policies are well communicated and enforce adherence to them (Kerfoot).

Fourth, virtual leaders must possess employee–coaching skills. Coaching is a challenge for most leaders, and virtual coaching is a vital skill for virtual leaders (Kerfoot, 2010; Shriberg, 2009). Many leaders mistakenly believe that the managerial success achieved in the traditional work model will transfer to the virtual counterpart. Leaders mistakenly believe that the effectiveness and efficiency levels displayed by traditional workers will also transfer (Shriberg). The virtual leader is not able to offer on–site supervision and monitoring and must therefore use more coaching to achieve performance outcomes (Kerfoot).

Transformational Leadership

Various scholars and researchers have supported the concept of virtual leadership, whereas others have supported the use of transformational leadership as an effective leadership style for virtual work environments. Purvanova and Bono (2009) concluded that transformational leadership behaviors had a stronger effect on virtual team performance than on face–to–face teams. Transformational leadership behavior is instrumental in increasing team performance in virtual work environments where

electronically communicated media primarily support work conditions (Purvanova &

Bono). Brunnell (2013) examined the effects of physical and psychological distance on

the quality of the superior–subordinate relationships. Brunnell indicated that a high level

of transformational leadership lessened the impact of physical and psychological

distances on the quality of superior–subordinate relationships. The following section

highlights two theories that aid in understanding employee behavior in the virtual

workplace.

Conceptual Framework

Two theories supported the conceptual framework for this study. The first is

adaptive structuration theory (AST), which assists the understanding of organizational

change resulting from technology. The second conceptual framework is McGregor's

theory x and theory y, which are used to provide an understanding from a human

behavior perspective on managerial resistance for the adoption of virtual work

arrangements. When organizations implement new technology–related functions such as

virtual work, it is vital for organizations to recognize the link between attitudes,

emotions, and behavior (Lilly & Durr, 2012).

Adaptive Structuration Theory (AST)

This research draws on AST to understand the relationship between

advancements in technology and the organizational change that accompanies the

implementation of virtual work policies. AST is based on structuration theory, first

proposed by Giddens (1984), who described "structure" as a set of rules and resources

that engage human action. Furumo and Melcher (2006) explained that the use of the term

structure relates to the rules and resources that facilitate an understanding of the environment in which the employees operate, thus influencing the human activity found within organizations.

DeSanctis and Poole (1994) borrowed from Giddens's (1984) structuration theory and proposed AST to study the relationship between advancements in information technologies, social structures, and human interactions. DeSanctis and Poole contended that AST provides a framework for examining the organizational change that occurs as a result of the implementation and use of advanced technologies. AST is consistent with structuration theory because it emphasizes social structures along with the rules and resources imparted by technologies and organizations that form the foundation of human activity. The social structure component serves as a guideline for the planning and facilitation of task completion. AST provides a conceptual lens through which to understand the mutual adaptation of technology by organizational members. AST views IT implementation as a prompter for *structuring*, which in this context refers to the social processes that facilitate organizational rules and resources.

Subsequent to technological innovations, the structures existed in the organizations' reporting hierarchies, organizational knowledge, and normal operating procedures (DeSanctis & Poole, 1994). Organizational leaders and managers incorporate existing structures into the new structures formed by technological advancements. The existing structures are replicated, modified, or enhanced to work with these new structures. Once the technological improvements are complete, new social structures

emerge, including new rules and resources. When interaction begins, the structures are supported (DeSanctis & Poole, 1994).

Studies Using Adaptive Structuration Theory

Bhattacherjee and Harris (2009) conducted a study of individuals' adaptation of IT using AST as a conceptual framework for understanding shared adaptation. Individual adaptation includes "the extent to which a system is modified by users to fit their personal needs, preferences, and work patterns" (p. 39). The study examined adaptation of IT at the individual level, not at the group level. Bhattacherjee and Harris "investigated the following: (1) the causative drivers of IT adaptation among individual users, (2) the outcomes of IT adaptation, and (3) the factors that influence the outcomes of IT adaptation" (p. 37).

The empirical results supported the theoretical link between adaptation and individual usage behavior (Bhattacherjee and Harris, 2009). The study found that, among the three elements under investigation, IT usefulness emerged as the largest predictor of IT adaptation, closely followed by IT adaptability and ease of adaptation. The moderating effects of the link between IT and post–adaptive IT usage were found to be significant, which implied that the expected outcomes of IT adaptation cannot be viewed entirely until users make changes to the corresponding work structures to realize the gains provided by adaptable IT (Bhattacherjee & Harris, 2009).

Harmer and Pauleen (2012) used DeSanctis and Poole's (1994) AST as a guiding framework for the study of Australian remote workers called offroaders. Harmer and Pauleen described offroaders as workers who have the ability to work from any location

using advanced technologies to retrieve required resources to facilitate task completion.

Harmer and Pauleen asked, "How have mobility enhancing technologies helped to shape

the socio–technical environment that is the offroaders' life world?" (p. 2). Harmer and

Pauleen examined the spirit of AST for their study. In this context, *spirit* is interpreted as

the general intent of the structure (rules and resources) and the underlying values and

goals. DeSanctis and Poole explained that spirit is considered the official line that "the

technology presents to people regarding how to act when using the systems, how to

interpret its features, and to how to fill in gaps in procedures which are not explicitly

specified" (p. 126).

Harmer and Pauleen (2012) viewed AST as a useful framework for understanding

the narratives obtained from participants and "making some sense of the data" (p. 28). It

also created questions that are potentially applicable to any organization considering

implementing virtual work programs. The questions that are of consequence to

organizations include:

> Can organizations restructure to meet changing work practices? Will offroaders
>
> numbers grow until they instigate organizational restructuring by sheer numbers
>
> and force of spirit or will offroaders ultimately be forced to return to the straight
>
> and narrow? Will continually changing technology accelerate the trend of
>
> developing offroaders? (p. 28)

AST in Relationship to This Study

AST provides a framework for examining organizational change that occurs as a

result of the implementation and use of advanced technologies (DeSanctis & Poole,

1994). The adaptation of technology by organizations is a major component that brings

forth an organizational change (Torraco, 2005). AST relates to this study because

innovations in technology have enabled the use of virtual work arrangements.

Technological innovations have allowed employees to perform work assignments from

home or other off–site locations, previously only performed in a traditional work setting.

The concept and acceptance of employees who work in a virtual work design brings

changes to the social structure of organizations, which influences how organizations

operate and communicate as well as how managers and subordinates interact with one

another. A virtual work arrangement creates new rules, policies, and procedures to meet

the work structure change of a virtual work design.

One of the research questions for this study focused on the challenges managers

face in managing the productivity of subordinates in virtual work arrangements. Another

question focused on managers' attitudes toward and perceptions of virtual work

arrangements in general. These two questions provided insight into management's

resistance of virtual work arrangements to determine if that resistance results from

managing the technological aspects of virtual work arrangements or from the perceptions,

beliefs, or attitudes of managers toward virtual work arrangements.

Gaps in Literature

Martin and MacDonnell (2012) maintained that, although prior research has

indicated that virtual work arrangements present several sound benefits for individuals

and society, the implementation of this work mode has not been enthusiastically received

by organizations. The lack of consolidated evidence for management that virtual work

arrangements are advantageous for the organizations may be a factor (Martin & MacDonnell, 2012). A plethora of available research on virtual work arrangements has focused on the virtual worker (Golden & Fromen, 2011; Lautsch, Kossek, & Eaton, 2009; Martin & MacDonnell, 2012). According to Golden and Fromen (2011), existing research has focused primarily on individuals and not on those responsible for management or supervisory oversight of virtual workers.

Virtual work arrangements are of practical concern and worth attention from researchers (Morganson et al., 2010). Yet, there remains a dearth of empirical research that specifically explores the productivity of virtual workers that does not include the virtual workers' perceptions or self–reported productivity data. This study addressed a gap in the literature on subordinate productivity in virtual work arrangements. More importantly, this research is useful for addressing the gap in the literature on virtual work–related studies performed from the managers' perspectives.

As previously noted, the majority of the existing literature on virtual work arrangements has centered on employee–related outcomes (Lautsch et al., 2009; Martin & MacDonnell, 2012). A literature search revealed numerous studies on virtual work. This study differed from most of the existing studies because it emphasized managers' perceptions of subordinate productivity in virtual work arrangements. Prior studies on virtual work have addressed various aspects of virtual work including:

- employee work–life balance (Aspen & Thompson, 2009; Gálvez et al., 2011; Hilbrecht et al., 2013; Hill, Tranby, Kelly, & Moen, 2013; Lazar, Osoian, & Ratiu, 2010; Maruyama et al., 2009; Morganson et al., 2010),

- job satisfaction of virtual workers (Morganson et al., 2010; Virick, Dasilva, & Arrigton, 2010),

- flexible work schedules and employee well–being (Hayman, 2010),

- flexible work arrangements and family conflicts (Allen, Johnson, Kiburz, & Shockley, 2013),

- the association between individual differences and the utilization of flexible work arrangements (Shockley & Allen, 2010),

- the direct and indirect impact of telework on work effort in U.S. federal agencies (Caillier, 2014),

- disabled teleworkers and work accommodations (Linden & Milchus, 2014),

- employee perceived benefits and the challenges of teleworking (Baard & Thomas, 2010),

- the link between organizational work–life practices and organizational performance (Beauregard & Henry, 2009),

- predicting teleworkers' successes by exploring personality, motivation, situational, and job characteristics (O'Neill et al., 2009),

- perceptions of accountability in teleworkers versus nonteleworkers (Caillier, 2013),

- ergonomic risks for computer–based remote workers (Ellison, 2012),

- design of home workspace for teleworkers (Ng, 2010),

- work and nonwork boundaries (Hecht & Allen, 2009),

- issues relating to workplace isolation and virtual workers (Bartel et al., 2012; Mulki et al., 2009),

- effects of telecommuting on commuter travel at the household level (Zhu, 2013),

- psychological strain on mobile workers, resulting from information and communication related technology (Paridon & Hupke, 2009),

- telecommuters' perceptions of their supervisors' leadership styles (Madlock, 2012),

- personality dimensions and telecommuting attitudes (Clark, Karau, & Michalisin, 2012),

- examining safety factors among teleworkers (Robertson et al., 2012),

- flexible work schedules and unionized workers (Berg, Kossek, Misra, & Belman, 2014),

- teleworkers and their constructive feedback (Caillier, 2013),

- utilization of human capital in virtual workplace environments (Nafukho, Graham, & Muyia, 2010), and

- whether telework is pro–poor (Kanellopoulos, 2011).

In the chapter, I reviewed several studies related to productivity and the use of virtual work arrangements. The Cisco Telework study (Cisco Systems, 2009) and the Lloyds of London Telework study (Collins, 2005) utilized productivity data as reported by employees. Martin and MacDonnell (2012) used a meta–analysis of existing telework studies. Dutcher (2012) employed a different approach to examine virtual workers'

productivity in performing dull and creative tasks with a controlled setting and did not include the managers' perspectives on subordinate productivity.

The studies conducted by Mekonnen (2013) and Butler et al. (2007) entailed the use of actual productivity data regarding virtual workers. Aboelmaged and El Subbaugh (2012) assessed the factors that influenced teleworkers' productivity and included teleworkers' perceptions. Gladys (2014) utilized a phenomenological approach and focused on the virtual workers' perceptions of the leaders' behaviors and related effects on productivity. As noted, a literature search revealed numerous studies on the topic of virtual work, but only a limited number of researchers have examined virtual worker productivity from the managers' perspectives, leaving a gap in the literature and a need for conducting this study.

McGregor's Theory X and Theory Y

In many cases, a change to a virtual work mode necessitates a change in management style whereby managers must accept the fact that subordinates will be out of sight. The lack of worker visibility can be a major hurdle for some managers. As previously discussed, much of the management resistance to virtual work arrangements stems from the managers' desires to observe employees at work (Shriberg, 2009; Weisberg & Porell, 2011). McGregor's theory x and theory y provide insight into the managers' attitudes and assumptions of subordinates that contribute to the manager's way of thinking (Kopelman, Prottas, & Falk, 2012). These two theories support two varying assumptions that influence decision–making in the workplace.

Theory x considers a pessimistic view of employee behavior in the workplace, whereas theory y is a more optimistic view (Kopelman et al., 2012). Theory x assumes that employees are lazy and seek ways to avoid work, lack ambition, and avoid responsibility; that employees find that money and rewards are both major motivating factors for hard work; and that employees need to be closely monitored and supervised to maintain productivity. Theory y is in stark contrast to theory x and assumes that employees do want to work, strive to do a good job, and find that doing well at work serves as a strong motivator. In addition, employees can be self–directed, responsible, creative, and resourceful (McGregor, 1960).

McGregor (1960) maintained that traditional organizations have centralized decision–making, supervisor–subordinate hierarchies and assumptions about human nature and motivation that shape managers' views of external controls of work. Kopelman, Prottas, and Falk (2010) declared that evidence exists that a great number of managers view themselves as closer to theory y than theory x. Yet, many managers still have the underlying concepts of theory x embedded in the managerial mindset that guides decisions, which is one of the reasons the change to a virtual work environment faces such resistance. These managers rely on theory x assumptions and perceive close supervision and control of subordinates as a necessary means to achieve organizational goals.

Several researchers have posited that virtual work arrangements promote autonomy and empowerment (Maruyama & Tietze, 2012; Raiborn & Butler, 2009). Many employees work independently quite successfully and contest the belief that close

supervision is a necessity. This holds true with McGregor's theory y, which challenges the notion that employees cannot be self–directed and self–motivating.

Trust of employees is likely at the core of the need for close supervision. It is also necessary that managers believe that employees, although out of sight, are still being productive and performing well. Trust is a reciprocal process, and, with virtual work, managers place considerable trust in employees to work independently. In turn, employees will reciprocate and gain a higher level of trust for management and coworkers (Koehler, Philippe, & Pereira, 2013). Employees often develop enhanced problem solving skills when not under the watchful eyes of the managers. Managers must display more trust in virtual employees for task completion and focus more on outcomes. Instead of removing or hindering the work flexibility that virtual work arrangements afford employees, management can use it as a motivational tool to enhance and improve employee performance and employee retention (Vidyarthi, Chaudhry, Anand, & Liden, 2014

Transition and Summary

Virtual work arrangements have become more widespread in recent years (Golden, 2009). Green and Roberts (2010) asserted that the virtual organization was the most important organizational structure of the twenty–first century. Nebl and Schroeder (2011) stated that implementation of virtual work arrangements was a business decision. Very few business decisions fail to have an effect on the productivity of workers. Thus, it is imperative that leaders and managers have a greater understanding of subordinate productivity in virtual work arrangements and related challenges.

A virtual work arrangement is a practical business strategy for many organizations, yet, managerial resistance to this work design remains a factor (Lister & Harnish, 2011; Mekonnen, 2013; Overmyer, 2011; Weisberg & Porell, 2011). Managerial resistance to virtual work arrangements exists in both the public and private sectors (Lister & Harnish; Snyder, 2012; Weisberg & Porell, 2011). The primary cause of this resistance centers on traditional management practices whereby most managers find it challenging to supervise workers who are not physically present (Lautsch & Kossek, 2011; Weisberg & Porell) to ensure productivity levels are sustained.

The existing literature discussed many benefits of virtual work arrangements (Greer & Payne, 2014; Martin & MacDonnell, 2012; Overmyer, 2011; Scholefield & Peel, 2009; Ye, 2012), although the evidence suggests that managers may still require additional empirical evidence to support the effectiveness of virtual work arrangements. I reviewed several virtual work–related studies and discovered that the majority of the existing literature on virtual work arrangements centered on employee–related outcomes such as employee job satisfaction, employee isolation, and employee work–life balance (Lautsch et al., 2009; Martin & MacDonnell, 2012). The literature search also revealed that limited research has been conducted on the productivity of virtual workers that did not include the workers' perceptions of productivity levels. Moreover, there remains a lack of research solely conducted from the manager's perspective on virtual work arrangements in relation to subordinate productivity. The results of the literature search demonstrated that conducting this study was suitable for addressing the gap in the literature on virtual work arrangements and related worker productivity.

In the literature review, I highlighted the concept of virtual leadership and the importance of adopting leadership behaviors best suited for leading virtual workers. Lilly and Durr (2012) maintained that the behaviors of managers might affect worker attitudes toward new technology such as virtual work. Managers in virtual work arrangements must adjust to the challenges of managing in a work environment where direct supervision and interaction with subordinates are limited or impossible. Managers who learn to control outcomes instead of processes minimized the management resistance to virtual work arrangements (Mayo et al., 2009). This study contributes to the literature on virtual work arrangements by addressing the gap in the literature on virtual work–studies related to employee productivity. I also addressed the gap in the literature on virtual work studies conducted from the manager's viewpoint. Chapter 3 contains information on the study, including the nature of the study, research design and methodology, and the role of the researcher. Chapter 3 also includes information on the study participants, the data collection and analysis process, issues of trustworthiness, and ethical concerns.

Chapter 3: Research Method

This chapter provides discussions on the research design and rationale, the role of the researcher, participant information and recruitment, the study instrument, and the research questions. In addition, I present discussions on the data collection process and data analysis technique used for the study. I conclude the chapter with a discussion on issues of trustworthiness, ethical procedures, and a summary of the information presented.

Purpose of the Study

The purpose of this phenomenological study was to explore managerial perspectives of subordinate productivity in virtual work arrangements. Specifically, I sought to determine if managers perceived that a virtual work environment had an adverse effect on the productivity of virtual workers. I further explored the challenges that managers experience in overseeing the productivity of virtual workers. The secondary aim of the study was to contribute to the existing literature on the topic of virtual work in conjunction with subordinate productivity.

This qualitative study probed the phenomenon of virtual work to provide insight into and understanding of the lived experiences of managers in virtual work arrangements. Semistructured interviews with 40 managers who had direct managerial oversight of virtual workers provided the data collected for this study. The results of the research may influence social change by offering fuller comprehension of managerial perspectives of virtual work as they relate to subordinate productivity. The information obtained from this exploration may increase the acceptance and use of virtual work

arrangements. Increased acceptance of virtual work could expand the opportunities for individuals to work from home or other remote locations.

Research Design and Rationale

I employed a phenomenological approach for this research study to investigate the central phenomenon of virtual work in relation to subordinate productivity. Qualitative studies provide an opportunity to explore issues more extensively (Marshall & Rossman, 2011) and support a detailed investigation of the problem. Researchers have used a phenomenological approach to gain an appreciation of a person's understanding, insight, and viewpoint relating to human experiences.

Greer and Payne (2014) used phenomenological research to discover the themes related to the lived experiences of employees and supervisors on the challenges presented by telework. Gladys (2014) also used a phenomenological approach to uncover the themes associated with the leaders' behavior, which have an effect on the productivity of virtual workers. The qualitative approach provides the ability to conduct fieldwork outside of the constraints of predetermined categories (Patton, 2002). I utilized this approach for understanding the phenomenon of virtual work and the participants' related work experiences and associated perceptions, rather than forging perceptions that fit into set categories.

According to van Manen (as cited in Tuohy, Cooney, Dowling, Murphy, & Sixmith, 2013), four fundamental life world themes allow phenomenological researchers to reflect on the individuals experience in the world. The four themes provide insight into the way in which humans experience the world are as follows:

- Lived space (Spatiality) – Refers to the space where people are located. Our lived places such as city, country, or building location all have an effect on our experiences;

- Live body (Corporeality) – Refers to being present in the world. A person's physical presence conceals or reveals certain facets of a person's life. Individuals reveal things consciously and unconsciously to others, such as body language for example;

- Live time (Temporality) – Relates to subjective time, unlike the time on a clock. Certain events that occur at particular times in our lives influence people's perception. As an example, a person's perception of retirement savings is different at age 25 than at age 55; and

- Lived Human Relations (Relationality) – Refers to the human relations shared with others. Interaction with others, shape our impression of the others when interacting with people. People influence each other through the relationship process (Tuohy et al., 2013).

The four themes listed above provide insight into how people experience the world in which they live (Tuohy et al., 2013).

A quantitative approach was not suitable for conducting this study as the methodology involves the use of standardized methods. Quantitative researchers often collect information through surveys or factors for systematic evaluation. This study did not require testing hypotheses or assessing relationships between dependent and independent variables as found in quantitative studies (Borrego, Douglas, & Amelink,

2011). Moreover, utilizing the quantitative approach was not appropriate, since the aim of this research was to offer an understanding of the effects that virtual work arrangements have on subordinates based on the managers' perceptions.

Role of the Researcher

As the researcher in this study, I examined the perceptions of managers who have direct responsibilities and oversight of virtual workers. Forty business managers addressed the semistructured interview questions used in the study. Englander (2012) stated that interviews are the main source of data collection used in qualitative research. Accurately capturing the participants' views and opinions were essential to study. Moustakas (1994) declared that the researcher is a key instrument in the data collection process. My role as the researcher included the following: (a) identifying study participants, (b) preparing the instrument for data collection, (c) interviewing participants, and (d) following interview protocol guiding the study. Further, I transcribed the interview transcripts, reviewed transcripts for accuracy, and categorized, interpreted, and analyzed the data obtained from participants.

Methodology

Participants

This research focused on middle level managers who supervised virtual workers. The participants have a variety of business skills and management experience, and all have experience in managing subordinates in virtual work arrangements. The participants selected for this study managed two or more virtual workers and had at least one year or more of experience supervising traditional office workers and virtual workers. All

participants must have satisfied the minimum age requirement of 18 years to take part in the investigation. I used this inclusion criterion for this study.

Sampling techniques that are well defined enhances the credibility of a study (Roberts, 2010). I utilized a purposeful sampling technique and intentionally selected participants that would provide the most productive and information–rich perspectives on the phenomenon examined (Abrams, 2010). In qualitative research, the correct sample size helps to adequately address and answer the questions. According to Patton (2002), no rules govern sample sizes in qualitative inquiry. The sample size is dependent on the specific factors the inquirer desires to understand, the purpose of the study, the time constraints, and resources available for the study. Abrams (2010) declared that qualitative sampling was rarely specific when forecasting an actual number of participants. The sample size for this study was 40 business managers who voluntarily participated in this study. Overall, the sample size was sufficient to achieve data saturation and included a cross section of managers from several different business areas. The data obtained provided a wealth of information and facilitated an understanding of the managers' perceptions of subordinate productivity in a virtual work placement.

Recruitment of Participants

Middle managers who supervised employees in virtual work arrangements were recruited for inclusion in this study. The managers worked in the areas of accounting, human resources, information technology, finance, and other business management fields. Recruitment of participants occurred in the Atlanta, Georgia metropolitan area. To recruit participants, I distributed approximately 150 invitations through several

professional business associations: Professional Managers Association (PMA), the

Hispanic Internal Revenue Employees (HIRE), the Military Outreach for Service (MOS),

and the Association for Improvement of Minorities (AIM). I had some knowledge of the

potential participants as professional colleagues, professional acquaintance, or members

of the professional organizations.

The invitation distributed (Appendix A) to potential participants included

information on the study and the criteria for participation. All information gathered on the

participants and their associations remained confidential and private. To ensure managers

met the established criteria, I held conversations with prospective participants to ensure

they met the eligibility requirements.

Instrument

In this phenomenological study, semistructured interviews were the main source

of data collection. Semistructured interviews provided participants with the ability to

offer candid feedback to the interview questions. The interview questions were not

gathered from a proven measurement tool. Rather, I created the survey instrument and the

study questions (Appendix B) to capture the end goal of the study. Participants' responses

to the interview questions represented the data collected for the study. Each interview

session was audio taped with the participant's permission. I transcribed the data from the

audio recordings using Microsoft Word. I removed all personal identifiers from responses

to maintain the anonymity of participants' responses.

Two human resource professionals reviewed the study instrument tool to assist

with the dependability of the questionnaire. I obtained the advice from the human

resource professionals to assure that the study questions were relevant and appropriate for capturing the intent of the study topic. The professionals provided feedback, which was incorporated into the data collection instrument. The instrument was field tested by industry professionals to check for the reliability of the survey instrument. Pre–testing the questionnaire form ensured that the correct phrasing of the study questions generated sufficient responses. No pre–tested participants joined in the full study. To ensure the credibility of the information obtained, I applied a member checking technique to support the results obtained and to validate the participants' responses. Member checking can assist with identifying discrepant data. Additionally, requesting feedback from others is a valuable method of checking biases and assumptions and possible defects in logic, or methodology (Maxwell, 2005). Several participants agreed to participate in the member checking process and received copies of the transcribed interviews for review.

Research Questions

The research questions included three open–ended questions with subquestions. The research questions were:

- What is your perception of subordinate productivity in virtual work arrangements?

    Subquestion: Specifically, what positive or negative effects do you perceive are related to subordinate productivity?

    Subquestion: How are your virtual employees more or less productive than workers are in a traditional work setting?

    Subquestion: How do you measure subordinate productivity?

- From a managerial perspective, what challenges did you face managing the productivity of your subordinates in virtual work arrangements?

    Subquestion: How do you perceive this differs from the challenges faced in traditional office settings?

    Subquestion: How would you best describe your leadership style?

- What are your attitudes and perceptions towards virtual work arrangements?

    Subquestion: What learned experiences and or values contributed to your perceptions or opinions about virtual work arrangements?

Data Collection

Phenomenological researchers generally depend on interviews for gathering information. Leedy and Ormrod (2005) maintained that the actual execution of a phenomenological study equally depends on the participants and the researchers. As the phenomenological researcher, I worked with participants to find the central theme of the study. To accomplish this task, I interviewed participants and carefully assessed responses describing their everyday experiences of overseeing the productivity of virtual workers.

Interviewing is useful when assembling information on participants' perceptions and experiences on the research topic. Patton (2002) insisted that the role of interviewing in qualitative inquiry was to allow researchers to assess the participants' perspectives on the subject matter. Assessment commences with a belief and an assumption that participants' perspectives are meaningful, knowledgeable, and explicit.

I utilized an interview questionnaire form comprised of three open–ended interview questions and subquestions to gather data. Greer and Payne (2014) used opened–ended questions for the qualitative component of their study to probe the supervisors' perceptions of the challenges associated with telework. Open–ended interview questions provided an opportunity for the managers in this study to share perceptions of the issues that affect subordinate productivity in virtual work arrangements. Two of the research questions and subquestions were related to subordinate productivity. A third interview question explored the managers' attitudes and perceptions towards virtual work arrangements. The questions and subquestions posed to participants, provided sufficient information for addressing the purpose of the study.

During the interview session, I actively listened to each participant's response to the interview questions posed. I allowed ample time for the participants to share in–depth experiences and perceptions related to the phenomenon. If uncertainly arose with the nature of a participant's response, I requested an example to ensure that I understood the entirety of the participants' answers.

I minimized or suspended all judgments, perceptions, personal biases, and experiences that influenced participants' responses (Leedy & Ormrod, 2005). In my position as a manager, I work in a virtual work arrangement and with some participants on a professional level. I did not include any of my employees (direct reports) in the study. I secured a second person to review the transcribed interviews to ascertain the recognition of relevant themes and to ensure that personal biases did not have an effect

on the results. The independent reviewer signed a confidentiality agreement form shown in Appendix C.

Data Collection Process

Participant interviews provided the basis for the research work. Prior to scheduling the interview sessions, I ensured that all participants met the established criteria for the study. I obtained a signed informed consent form (Appendix D) before starting interviews. I conducted the interviews, which averaged 25 to 45 minutes. The interviews were conducted at a mutually agreed upon location. Each meeting followed the same protocol and steps (Appendix E). The duration of the data collection phase was close to 90 days.

A digital audio tape–recorded the interview sessions with the participants' consent. Handwritten notes supported the interviews. If the participants did not agree to have the interview session recorded, I manually recorded the responses. An open–ended questionnaire form listed the participant number and the interview questions. Each participant's questionnaire form was assigned a number to maintain anonymity. I did not utilize any personal information or identifiers on the interview questionnaire forms.

Each interview session began with information concerning the study. I explained the intended function of the information gathered to the study participants. I obtained written informed consent from the managers prior to the beginning of each interview. The informed consent form listed the following:

- Information that reiterated that participation in the study was strictly voluntary and that the manager may disengage from the research at any time without penalty;

- A list of any potential risk to the participant;

- Assurance that all responses and data obtained would remain confidential;

- Information on the researcher and contact information;

- An offer to provide a summary of the findings; and

- A line for the study participant to sign and date the informed consent form which signified an agreement to participate.

At the close of each interview session, I reminded the participants that the information obtained would remain confidential. I also discussed the intended purpose of the study, and the future use of the data. I expressed my gratitude to the participants for voluntarily participating in the study. Managers were informed that they had the opportunity to review the transcripts of the interview session, if desired. Several respondents requested and received the transcribed interviews for review. I requested permission to make a follow up contact if information or clarification was needed on the data collected. All of the information collected was clear, resulting in no follow up contacts necessary. I also volunteered to share the results of the study with participants upon completion of the research.

Interview Protocol

I used an interview protocol to guide the discussions and to collect the data that provided the basis for the study. During the data collection process, each interview

session used the same interview protocol to ensure that I did not inadvertently introduce

bias into the process (Abrams, 2010). The interview protocol form provided a systematic

guide and steps to follow when conducting each interview and included: (a) how to start

the interview, (b) a reminder to obtain the informed consent, (c) explain the nature of the

study, (d) explain why and how the data is collected and used, (e) outline the

confidentiality related issues for participants, and (f) complete the steps for closing the

interview.

Data Analysis and Interpretation

I used Microsoft Word to compile the transcribed interviews for data analysis.

During the data analysis phase, I identified the common themes, which evolved from

managers' responses related to the focus of the research. I examined the data obtained

using the process of thematic analysis. Thematic analysis is a form of content analysis.

The coding scheme in thematic analysis is formed on the categories designed with intent

to summarize the dominant themes identified within the text (Franzosi, 2004). Thematic

analysis affords the researcher with the ability to capture the explicit the meaning

expressed by respondents. It facilitates pattern recognition in the data collected (Patton,

2002). According to Gavin (2008), thematic analysis involved:

- reviewing the transcripts for emergent themes,

- identifying the data in the text of the transcripts related to the themes,

- combining the related patterns into sub themes if necessary, and

- conducting a second review examining the transcripts to ensure the themes

  derived are a concise representative of the participants' responses.

Thematic analysis and a simplified version of the Stevick–Colaizzi–Keen method (Moustakas, 1994 as cited by Creswell 2013) facilitated data analysis. An Excel spreadsheet facilitated the tabulation of the findings from the data collected.

Data Analysis Technique

The analysis of qualitative data requires creativity as researchers must take the raw data collected and organize it into meaningful units. The researcher seeks to explain the interpretation of the information obtained (Patton, 2002). A practical and useful approach for phenomenological studies is the Stevick–Colaizzi–Keen method of data analysis for phenomenological data (Moustakas, 1994). The method entails acquiring "full description of participants' experiences with the phenomenon; considering each statement with respect to significance for description of the experience and recording all relevant statements (horizontalization); listing nonrepetitive, nonoverlapping statements (delimiting); listing (then synthesizing) textural and structural descriptions of the phenomenon into a universal description of the experience representing the group as a whole" (Moustakas, 1994, p. 122). To analyze the data collected, I used the following steps:

1. I transcribed the audio recordings of the interview sessions using the Microsoft Word program.

2. I assigned each participant interview with a participant label *P* for participant followed by the participant number beginning with the 01. The process allowed for the anonymity of each participant during the data analysis process.

3. During the interview process, I used the epoche process, which entailed eliminating or increasing an awareness of prejudices, viewpoints or assumptions, or biases related to the phenomenon studied.

4. At the conclusion of each participant's interview, I carefully read the interview transcripts to reach an overall understanding of the information obtained as it connected to the study's objectives. I read the interview transcripts a second time and placed notes on the actual transcribed documents.

5. I identified all significant statements related to the phenomenon thoroughly reviewing the interview transcripts based on each interview question.

6. I listed all relevant and significant statements developed from the data transcripts on paper. Significant statements described the participants' experiences when managing virtual subordinates. I placed all nonrepetitive statements in a horizontal format and created a list. This process allowed the assessment of equal weight to each statement.

7. I grouped all significant statements into an Excel spreadsheet to assist with data analysis and tabulations.

8. I grouped all significant statements identified into meaning units (themes) to assist with developing an accurate account of the virtual work phenomenon.

9. I created textural descriptions for each theme. A textural description describes *what* the study participants experienced and included verbatim examples.

10. I created structural descriptions to describe *how* the experience occurred. I reflected on the setting and the context in which participants experienced the phenomenon.

11. Lastly, I developed the essence of participants' experiences by incorporating the structural and textural descriptions. A composite description resulted in the essence of the participants' experiences when supervising subordinates in virtual work arrangements and the challenges presented.

Issues of Trustworthiness

The validity of the information received and the results are an inbuilt component of any research work. Validity is the accurateness, importance, and integrity of a research project (Leedy & Ormrod, 2005). Most importantly, validity helps to ensure that information is not omitted that is relevant to the investigation. To assist with establishing content validity, I requested a review of the interview questions used in the data collection process from two human resource professionals. The human resource professionals assessed the data collection instrument and provided feedback. To ensure internal validity, I designed a standard method for conducting the interviews, organizing the data collected, and for performing data analysis. Throughout the inquiry, I secured the data and performed ethically throughout the inquiry process. There are four criteria to gauge the validity of a qualitative study (a) credibility, (b) transferability, (c) dependability, and (d) confirmability (Coast & Horrocks, 2010).

Credibility refers to the accurate reporting of the study results (Borrego et al., 2011). To assist with credibility in this study, the interview sessions were audio recorded.

I allowed all participants the opportunity to review the interview transcripts. This process is referred to as member checking, whereby the transcribed interviews are reviewed by the participants for validation. Several managers agreed to participate in this process and received the transcribed transcripts of the interviews. I requested notification of inaccuracies in the transcribed information, and if the participant did not respond, I accepted all original transcriptions to be accurate.

Transferability was another means of ensuring the validity in a qualitative inquiry. Transferability refers to the ability to extrapolate results to other populations in similar contexts. To build transferability, the study involved the inclusion of managers from diverse business fields (accounting, finance, information technology, management, and human resources). The responses were sufficient to facilitate transferability to managers in similar work settings within other industries.

Dependability is very similar to reliability and is concerned with the accuracy of the actual measuring instrument or study procedures. Researchers must capture data accurately by using a reliable study instrument. The instrument was designed specifically to secure the intent of the study. As previously note, two human resource professionals reviewed the study instrument and provided feedback. I applied the same interview practices and protocol for each interview conducted. All of the information and data received were processed in a standardized manner.

Beverland, Kates, Lindgreen, and Chung (2010) declared that confirmability refers to the extent that the interpretation of the data collected accurately portrays the participants' views of the phenomenon under study as opposed to the views of the

researcher. I offered the participants the opportunity to review the transcribed interview transcripts for accuracy. Confirmability was achieved by reviewing the transcribed interview transcripts against the recorded information for accuracy.

I work as a manager in a virtual work arrangement and therefore researcher bias was possible. I disclosed my role as a manager of virtual workers to study participants as recommended by Creswell and Plano Clark, (2010). Throughout the data analysis process, I continually reviewed the participant responses to ensure bias did not threaten the study. Further, I utilized an external person to review the interview transcripts independent of the researcher's assessment to ensure the themes were adequately assessed.

Ethical Procedures

Ethical standards are a necessary component in research to increase the trustworthiness of the study. When undertaking a qualitative study, areas of ethical issues include clearly identifying the research problem, formulating the research purpose, the research questions, and obtaining and analyzing the study data. Throughout the data collection phase, I ensured the participant's anonymity, remained neutral when conducting interviews, clearly outlined the study's purpose, and stated the researcher's role in the study (Patton, 2002).

Researchers must ensure sound measures are in place to protect study participants. Prior to the start of the participant recruitment phase of the study, I obtained approval from the Institutional Review Board (IRB). The IRB approval number is 10–11–13–0081514. The IRB is tasked with ensuring that research studies are conducted in a

manner whereby participants are free from physical or psychological harm. Each participant signed an informed consent form. The informed consent form (Appendix C) identified the researcher, the supervising institution, how the participants were selected, the purpose of the study, the benefits of participating, and the level and type of participant involvement. The informed consent form also included a notation of the risks to participants, a guarantee of participant confidentiality, awareness that participants could withdraw at any time, and researcher's contact information.

The participants were assured that all personal information, interviews, and the employee's affiliated organizations would remain confidential. Participants were informed that they had the liberty to conclude participation in the study at any time for any reason. Respondents were encouraged to ask clarifying questions if necessary. The managers received no incentives for voluntarily participating in the study. To ensure the anonymity of the participants, each respondent was assigned a participant label that did not contain the personal identifiers. The process allowed for the anonymity of each participant during the data analysis process.

The ethical concerns were to ensure the manager's protection from harm, to obtain informed consent, to ensure confidentiality and rights of privacy, and to represent the study honestly and without prejudice. The goal is to manage the data collected and the storage and deletion of the data. I have sole access to the data. All participants and related information remained confidential and stored in a locked file cabinet. The destruction of data occurs after five years from the dissertation approval date. After that date, the data collected will be shredded or erased.

Transition and Summary

The goal of this chapter was to present an overview of the research methods employed in this qualitative study. In the current chapter, I discussed the research design and rationale, methodology, and the role of the researcher. I also discussed the security of participant information, data collection, data analysis, issues of trustworthiness, and ethical procedures. .

In summary, I utilized a phenomenological qualitative approach for this study to examine the managers' perceptions of subordinate productivity in a virtual work arrangement. The leaders supervised two or more workers in virtual arrangements. The managers had at least one year of management experience supervising both virtual and traditional workers. All participants were required 18 years of age or older. I obtained IRB approval before starting the recruitment and data collection for the study. The recruitment process resulted in a purposeful sample of 40 business managers. I used semistructured interviews with participants to collect data for the study. To assure consistency, during the interview process, an interview protocol form guided the interview process. The data analysis included the use of a hand coding method and an Excel spreadsheet for tabulating responses. I present the results of the study in Chapter 4. Chapter 5 presents a summary discussion of the study and the conclusions.

Chapter 4: Results

The purpose of conducting this qualitative study was to examine the perceptions of managers with direct managerial responsibility for virtual workers. The study had one primary objective and two subobjectives. The primary objective was to explore the managers' perceptions of subordinate productivity in virtual work arrangements, primarily to support or refute assumptions that a virtual work design hinders the productivity of workers.

The first subobjective of this study explored the managers' perceptions of the challenges encountered when overseeing the productivity of subordinates working in a virtual context. The second subobjective explored the managers' overall perceptions of virtual work arrangements. I utilized a phenomenological approach to guide the study's probing of the phenomenon of virtual work. The phenomenological inquiry facilitated an investigation of virtual work and provided managers an opportunity to share perceptions, attitudes, beliefs, and opinions on subordinate productivity in virtual work arrangements.

The use of virtual work arrangements has grown in recent years, and future growth is anticipated (Greer & Payne; 2014; Martin & MacDonnell, 2012). Virtual work is of relevance to many business establishments today, but there tends to be managerial resistance to the implementation of this design work. Worker productivity in virtual work arrangements is a core concern for many leaders (Scholefield & Peel, 2009; Shriberg, 2009; Weisberg & Porell, 2011). The perceptions of managers are crucial to the adoption of virtual work arrangements (Eversole et al., 2012; Martin & MacDonnell, 2012; Scholefield & Peel, 2009) and therefore warrant further study. A search of existing

literature revealed a gap in the literature on virtual work arrangements that examined subordinate productivity from the managers' perspectives. This study addresses the gap and contributes to the body of knowledge on virtual work.

To fulfill the aim of the study, I analyzed participants' responses to identify patterns and themes relating to the managers' perceptions of virtual work in conjunction with subordinate productivity. The research findings are a compilation of the perceptions of the 40 managers participating in the study. In Chapter 4, I present a discussion of the research questions, information on the study setting, participant information, and a description of the data collection procedures and data analysis. In the chapter, I provide a discussion on issues of trustworthiness and a discussion of the findings concluded from this research.

Interview Questions

The three research questions and subquestions used for the study were as follows:

- What is your perception of subordinate productivity in virtual work arrangements?

    Subquestion: Specifically, what positive or negative effects do you perceive are related to subordinate productivity?

    Subquestion: How are your virtual employees more or less productive than workers in a traditional work setting?

    Subquestion: How do you measure subordinate productivity?

- From a managerial perspective, what challenges do you face managing the productivity of your subordinates in virtual work arrangements?

   Subquestion: How do you perceive this differs from the challenges faced in traditional office settings?

   Subquestion: How would you best describe your leadership style?

- What are your attitudes and perceptions towards virtual work arrangements?

   Subquestion: What learned experiences and or values contributed to your perceptions or opinions about virtual work arrangements?

Study Setting

The study included 40 business managers. Each participant was contacted via phone or email to establish rapport and for ensuring that participants met the study criteria. I discussed the research process and purpose of the study with participants before the interviews commenced. All interviews were conducted in the metro Atlanta, Georgia area and occurred at a mutually agreed upon location. I reviewed and obtained an informed consent form from each study participant and personally conducted each interview. Due to scheduling conflicts, I conducted five interviews via telephone utilizing the same interview protocol as used with the face–to–face interview process. I audiotaped the interviews with the participants' permissions. I expressed unwavering gratitude to each participant for voluntarily participating in the study.

Participant Demographics

I used a purposeful sampling technique for the study that resulted in selecting

participants based on predetermined criteria. In this research investigation, I explored the

work experiences of 40 business managers who supervised two or more subordinates

with at least one year of experience supervising both traditional office workers and

virtual workers. All participants were over 18 years of age. Figure 1 is a bar graph

showing the frequencies of the business–related fields represented in the study.
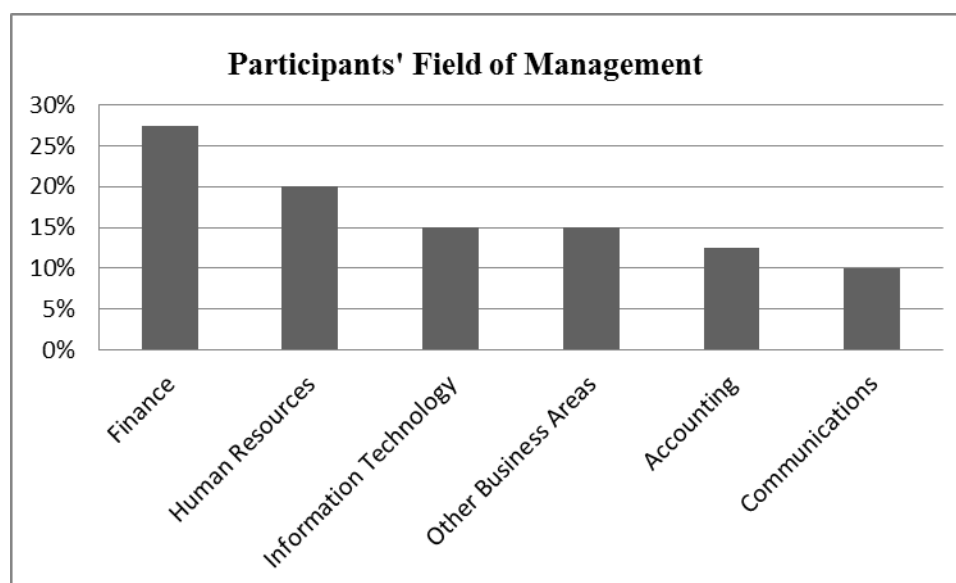
Figure 1. The participants' fields of management.

The majority of the participants were employed in the fields of finance (28%),

followed by human resources (20%), information technology (15%), accounting (12%),

and communication (10%). The remaining 15% included managers employed in other

business areas such as research, client services, and program management. Participants averaged 17 years of managerial experience and managed 11 virtual subordinates on average. The majority of the subordinates worked full–time and worked an average of 26 hours per week working in a virtual arrangement. The remainder of the work week was spent in a traditional office–based setting. Approximately 60% of the participants were from the private sector and 40% from the public sector.

Data Collection and Analysis

Data Collection

The 40 interviews involved three open–ended questions and provided the data source for this research study. The design of the instrument provided insight on the managers' perceptions and views of subordinate productivity in virtual work arrangements. The interviews also explored the challenges managers experience overseeing the productivity of subordinates working in a virtual work setting. The data collected from the interviews identified the shared experiences of the participants. The information was used to identify themes and patterns among the participants' responses. The duration of the interviews was approximately 25 to 45 minutes and only one interview was conducted with each participant. An audio tape recorder was used for most sessions. A few participants did not consent to the use of an audio tape recorder. Therefore, I noted each response on paper and sent the participant a transcribed copy of the interview for review.

During the interviews, I allowed ample time for participants to respond to each question. I transcribed the recorded interviews using Microsoft Word software with the

help of an assistant. It was possible that transcription errors changed the meanings or interpretation of the transcribed data. To minimize such errors, I compared the transcribed data to the recorded taped information for accuracy. There were no apparent errors identified during data transcription.

Data Analysis

A hand coding method facilitated the identification of significant statements, patterns, themes, and keywords from the interview transcripts. Content analysis and a simplified version of the Stevick–Colaizzi–Keen method facilitated data analysis. Content analysis is a method of classifying written or oral materials into effective groupings or categories. Groups or categories provide a representation of similar meanings found in the data (Moretti et al., 2011).

The data analysis process involved several reviews of the transcribed interviews to understand the managers' perceptions of virtual work and subordinate productivity. Assessments of transcribed data required a thorough line–by–line review of the participants' responses. The line–by–line assessment identified the significant statements found in each interview transcript. The significant statement framed the views of the participants' experiences related to the virtual work phenomenon under study. Upon completing the task of identifying all significant statements, the statements were grouped into larger units called themes.

No preset codes or themes guided the data analysis process. The themes formed directly from the significant statements and were identified from the transcribed interviews. An analysis of each question and related responses transpired separately. The

themes were grouped into meaning units according to each research question. I created

textural descriptions and codes for each meaningful unit identified. All nonrepetitive

significant statements were included and listed on a worksheet. Further, I recorded all

themes and patterns until no new themes emerged, indicating a point of saturation. The

themes and significant statements were organized and categorized by each research

question in a Microsoft Excel spreadsheet. The spreadsheet facilitated the tabulation of

the information analyzed.

Trustworthiness of the Study

According to Roberts (2010), qualitative researchers often employ the term

trustworthiness when referring to the concept of validity. As outlined in Chapter 3, I used

various means of ensuring the trustworthiness of the collected data. The primary method

used for assuring the validity and trustworthiness of the data was the use of an audio

recorder during the interview sessions with the participants' permissions. Handwritten

notes supplemented the use of the audio recorder during the interview process.

To ensure credibility of data and to ensure consistency during the data collection

phase, I followed the same interview practices and protocol for each interview. To

address concerns of reliability, I used a standardized script for the interviews to ensure

that participants received the same interview questions. The same instrument

(questionnaire form) was used for each interview. To ensure instrument dependency, I

requested a review from human resource professionals to assess the interview questions

presented to participants.

To ensure confirmability and to remove bias, I disclosed my role as a manager of virtual workers and a second person reviewed the transcribed interview sessions for accuracy. To ensure transferability, the study participants included a diverse group of business managers who supervised virtual workers. Respondents included managers from both the public and private sectors. The results are generalizable for the study participants and managers in similar positions. The results may be transferable to other managers who supervise virtual workers. The following section discusses the results and findings derived from the data collected.

Results and Findings

The study findings revealed significant results that provided an increased understanding of the managers' perceptions of subordinate productivity in virtual work arrangements. The results of the investigation also led to an increased understanding of the challenges managers experience when supervising the productivity of virtual workers. In the following sections, I offer a discussion of the research questions, findings, and the themes identified from participants' responses to the research questions. Samples of the managers' supporting statements are provided. To ensure participant anonymity, I used the letter *P* followed by the assigned participant number for identifying all quotes listed from the study participants.

Research Question 1

Research Question 1: What is your perception of subordinate productivity in virtual work arrangements?

The first question represented the core objective of this study, which was to capture the managers' perceptions of subordinate productivity in virtual work arrangements. Specifically, the managers' perceptions helped to confirm or reject the assumption that virtual work has a negative influence on subordinate productivity. The first research question included one central question and three subquestions.

The responses to the first question were reviewed line–by–line and categorized into the four themes: (a) subordinate productivity was positively influenced by virtual work arrangements, (b) subordinate productivity is negatively influenced by virtual work arrangements, (c) the productivity of virtual workers is based on the individual employee and not the virtual work environment, and (d) there is no difference in the productivity of subordinates resulting from working in a virtual work arrangement. The emergent themes are a representation of the core component of the experiences of the 40 managers participating in the study. I provided a summary of the participants' perceptions of subordinate productivity in virtual work arrangements in Figure 2.

Managers' Perceptions of Subordinate Productivity in Virtual Work Arrangements
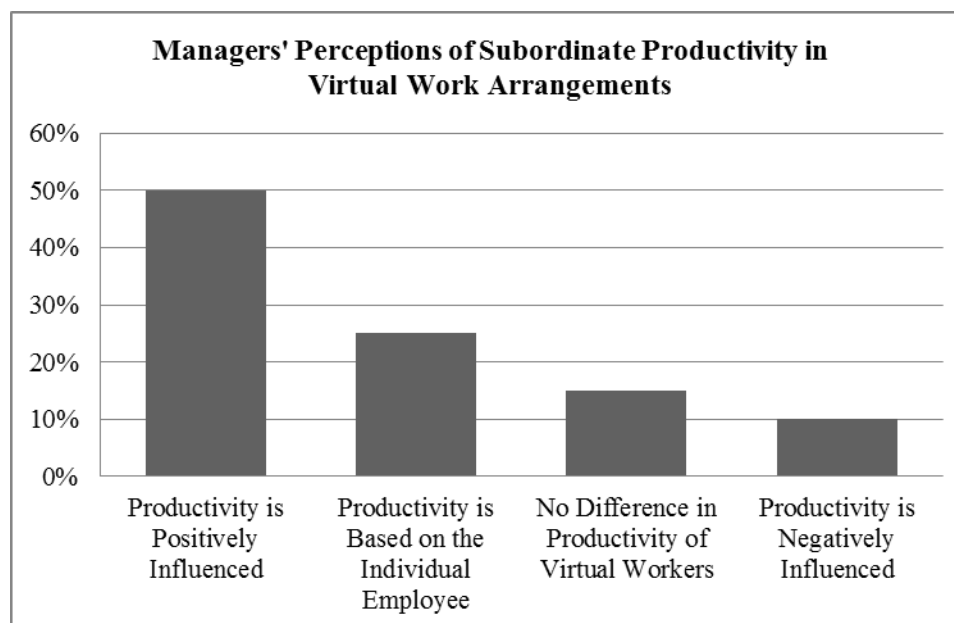
Figure 2. The managers' perceptions of subordinate productivity.

Findings

The results indicated that 49% of the managers participating in the study perceived that virtual work arrangements had a positive influence on subordinate productivity and perceived that employees were productive working in a virtual setting. The main reason cited was fewer distractions and interruptions. It was the perception of 26% of the participants that productivity was related to the individual employee and not inherent in the characteristics of the work environment. Participants shared the perception that virtual work arrangements are not for all employees since some employees lack the ability, desire, or focus to work independently, and thus require greater supervision. A number of participants (15%) perceived no difference in subordinate productivity because

of subordinates working in a virtual work arrangement. This group of managers shared

the opinions that working virtually is not a factor in maintaining the productivity of

employees. Lastly, 10% of the respondents perceived that virtual work arrangements

negatively influenced subordinate productivity. The factors that participants attributed to

the reduced productivity of virtual workers included distractions and interruptions at a

remote work site, a lack of supervisory oversight, communication problems, and

technology related issues. The four themes and participants' supporting statements are

listed below.

Primary Theme 1. Virtual work arrangements have a positive influence on subordinate productivity.

Participants' supporting statements.

P04: "For the most part generally speaking, participants are productive because

they have fewer interruptions".

P09: "My perception is that in my experience often times employees are more

productive than when office–based in the same environment with their teammates".

P24: "I feel that our employees are very productive".

P39: "I like the concept of virtual work because I believe it does improve

productivity".

Theme 2. Productivity is based on the employee and not the work environment.

Participants' supporting statements.

P02: "I think employees can be productive in virtual work environments. My personal opinion is that it is based on the individual. Some individuals can work well away from the office then there are other individuals that need people interaction".

P11: "I have been a manager for quite some time and I think it varies depending on the type of work involved, and varies on the type of employees you have and the skill level they possess".

P14: "I think it depends on the individual employees. I think that some people are just better at it than others".

P39: "For those employees that are already productive, it has enhanced their productivity".

Theme 3. There is no difference in the productivity of subordinates working virtually.

Participants' supporting statements.

P02: "Productivity is the same regardless of whether you are in–house, in a face–to–face environment, or if the employees are located in a virtual environment."

P08: "Overall productivity will be the same rather they are working virtually or in the office."

P35: "The productivity that I get from people regardless of whether they are in the office or virtually is fortunately the same."

P39: "I think that their performance in a virtual environment is reflective of their performance in the office environment."

Theme 4. Virtual work arrangements have a negative influence on subordinate productivity.

Participants' supporting statements.

P31: "I don't think the productivity decreases, but it slows down because they don't have that interaction with me (the manager) and I see that as a negative."

P23: "My perception is that productivity decreases due to the distractions found in telework arrangements."

P20: "I have not seen a decline in productivity because we still deliver our work product, but I can say that I have seen a decline in the quality of the work products delivered."

Subquestion 1a. Specifically, what positive or negative effects do you perceive are related to subordinate productivity?

I posed this subquestion to managers to obtain insight on the factors that have a positive or negative effect on the productivity of virtual workers. Listed below are the findings and relevant participants' responses to subquestion 1a. I separately assessed the positive and negative factors. Five themes emerged for the factors that had positive effects on virtual worker productivity: (a) fewer distractions, (b) better work–life balance, (c) less commute time, (d) increased employee morale, initiative and job satisfaction, and (e) more relaxed work environment.

Findings related to the positive factors for subordinate productivity.

Based on the research results, most managers perceived that more than one factor had a positive effect on the productivity of virtual workers. The primary positive theme centered on distractions. The findings indicated that 52% of the respondents perceived that virtual workers have fewer distractions and or interruptions in virtual work arrangements. Fewer distractions were considered to have a positive outcome on the productivity of virtual workers. The managers perceived that the diminution in the worker distractions and or interruptions contributed to greater work focus for virtual workers and therefore improved productivity.

The study findings showed that 40% of the participants perceived that virtual work arrangements contributed to better work–life balance for employees. The managers viewed better work–life balance as having a positive effect on subordinate productivity. Many employees viewed the scheduling flexibility afforded to most virtual workers to be a significant plus.

The study findings indicated that 30% of the participants perceived that the reduction in employee commute time positively affected subordinate productivity. Several respondents shared the belief that virtual workers tended to work more due to the decreased commute time. Based on the study findings, 29% of the participants perceived that increased employee morale and job satisfactory had a positive effect on virtual worker productivity. Respondents commented that virtual workers appeared happier and this related positively to productivity. Lastly, 10% of the managers perceived that a more relaxed work environment in which employees tended to work longer hours and where

employees did not have to conform to a specific dress code had a positive effect on employee productivity. The themes and supporting statements are discussed below.

Primary Theme 1. Fewer distractions

Participants' supporting statements.

P07: "I think you actually get more time out of the employee when they are working virtually. I think they are more focused and have fewer distractions…"

P14: "Big positive is there is less distractions. There are certain tasks where good focus is essential, and virtual work lends itself better to those tasks."

P24: "Virtual employees are able to focus more because they have less interruptions and distractions. Overall, virtual work can increase worker productivity because there are less distractions for the entire team."

P27: "Fewer distractions ….. The office environment at times can be quite busy with unexpected interruptions, phone calls, unplanned meetings, and conversations basically anything that takes you away from your planned schedule. So the positive is less distractions."

Theme 2. Improved employee work–life balance.

Participants' supporting statements.

P06: "It provides the opportunity for employees to have a better balance of work and home life. Some people are very well suited to work from home and it is an environment in which they prefer."

P16: "The positive effects of teleworking are that the employee … has more flexibility with their schedule for scheduling personal appointments or to help with school age children."

Theme 3: Decreased employee commute.

Participants' supporting statements:

P28: "Most employees tend to be more engaged because they have less commute time, they don't have to dress for work and a lot tend to start work earlier…"

P36: "Another positive is that you probably get more engaged employees, especially because of the traffic issues. When the employee does not have to deal with getting stuck in traffic, they can work from the comfort of their own home…"

P37: "The positive effect is that we do get more work time, especially when you work in a large metro area like ours where employees can have an hour long or more work commute."

Theme 4: Increased employee morale, job satisfaction, and initiative.

Participants' supporting statements.

P18: "The positive is that any time you can make the work environment more comfortable for the employee and more positive, you will get better results and a quality work product."

P24: "Positives: employees are happier which can produce better outcomes of the work."

P32: *"Employees seem to be happier in a virtual work environment and much more willing to take on added or extra responsibility …"*

Theme 5. Employees have a more relaxed work environment.

Participants' supporting statements.

P28: "They don't have to dress for work, a lot of them tend to start work earlier, and also a lot of them tend to work longer. Most of my employees have been very productive."

P36: "They can work from the comfort of their own home, and they don't have to get up and get dressed for success and can wear their jeans and t–shirts."

Findings related to the negative factors affecting subordinate productivity

The study findings revealed that several managers perceived that virtual work arrangements also have a negative effect on subordinate productivity. Ten themes emerged from the participants' responses for the negative factors associated with virtual worker productivity. The themes are as follows: (a) the lack of face–to–face interaction, (b) providing adequate supervisory oversight, (c) virtual work not suitable for all employees, (d) difficulty experienced maintaining team dynamics, (e) communicating with virtual workers, (f) virtual workers' lack of time management, (g) maintaining staff development, training, and mentoring, (h) connectivity and technological issues, (i) inconsistent use or enforcement of virtual work policies, and (k) distractions at home or remote location. The study findings for the top four negative themes and participants' supporting statements are discussed below.

The results of the study revealed that 62% of the respondents perceived that the lack of face–to–face interaction experienced in virtual work arrangements had an adverse result on the productivity of subordinates working virtually. The participants felt that the

lack of face–to–face interaction with virtual employees had an adverse effect on building and maintaining work–team relationships, for training, mentoring, coaching of virtual subordinates, and transferring knowledge. Some managers simply preferred the face–to–face interaction with subordinates. The respondents shared the belief that some employees need face–to–face interaction with others and did not work well in isolation. The lack of face–to–face interaction was a reoccurring theme identified within this study

The findings indicated that 30% of the managers perceived that supervisory oversight issues have a negative effect on subordinate productivity. Participants shared the perceptions that some virtual workers require direct in–person supervisory oversight to maintain productivity. Some respondents perceived that the lack of supervisory oversight could yield less than productive results. There was a shared belief among several managers that more oversight is often required for virtual worker.

The study results indicated that 26% of the participants shared the belief that virtual work may not be a good fit for all employees. Managers perceived that some employees lack the work ethic or desire to work independently. Other respondents shared the perception that some subordinates just have an innate need to have in–person contact with supervisors or coworkers and do not work well virtually.

Based on the study findings, 19% of the participants shared the belief that virtual work affects team dynamics, meaning how well the team interacts and works together. Participants commented that team relationships are more difficult to maintain in virtual work arrangements and this can affect the synergy of the team and ultimately

productivity. Participants commented that ensuring that virtual workers feel united, as a team was an important component for team effectiveness.

Primary Theme 1: A lack of face–to–face interaction with virtual subordinates.

Participants' supporting statements.

P02: "I am the kind of person that comes from the old school. I want to have that type of physical eye contact with my staff. I want to be able to read their body language and feel the vibes."

P21: "They spend a lot of time following up on items because we do not have the opportunity to meet in person."

P25: "There is value in being able to physically sit at a table to discuss issues, because in a virtual environment things can get lost in translation."

P28: "Some employees feed off of the face–to–face interaction, they like the water cooler discussions, and to talk with other employees. This can have a negative effect on employees who want the face time interaction with others and managers."

P37: "For the negative aspects, I think it makes it extremely difficult to develop people. It is very prohibitive for transferring knowledge, and skill building."

Theme 2: Maintaining adequate supervisory oversight.

Participants' supporting statements.

P26: "On the negative – there are those that require more oversight, guidance and direction and if you are not there, they are not getting that."

P38: "It is unfair… we leave the remote worker alone because we are unable to observe them, and the remote workers feel that that the office–based worker has an unfair advantage because they have the manager right there."

P42: "All in all it requires more supervision from me and that for me is a negative."

Theme 3: Virtual work arrangements may not be an efficient work mode for all employees.

Participants' supporting statements.

P01: "Yet the fact remains that not all employees are suited for virtual work arrangements. Some employees need that face–to–face oversight."

P04: "There are some people that get energized by being around other people. That is one of the negative drawbacks…"

P38: "The positive side is that the employee does not have the manager on site with them and they can work independently, but if they are not an independent worker then this becomes a negative."

P40: "As stated earlier, it is an individual thing for each employee… because some individuals lack focus and need to be engaged in the office, and need that interaction with their coworkers to get the job done."

Theme 4: Maintaining team dynamics

Participants' supporting statements.

P28: "From a negative standpoint, you lose face time, interaction time with the group. So I think as a manager that we have to find ways to bring everyone together as a team."

P29: "The old and tried and true method of having regular in–person staff meetings contributed to the sense of family. Now with the virtual setting, we don't get to see one another regularly and thus the sense of community is negatively impacted."

Subquestion 1b. How are your virtual employees more or less productive than workers in a traditional work setting?

The goal of this question was to understand the participants' perceptions of whether virtual subordinates are more or less productive in comparison to subordinates in a traditional work setting. Five themes emerged from the managers' responses to this interview question: (a) virtual workers are more productive than traditional workers due to longer work hours, a preference for virtual work and shorter commute time; (b) virtual workers are more productive than traditional workers due to fewer distractions or interruptions; (c) virtual workers are less productive than traditional workers due to a reduction or lack of face–to–face interaction; (d) there is no difference in the productivity of virtual workers versus traditional workers; and (e) virtual workers are less productive due to slower response rates for work request, emails or phone calls. The findings from this question were somewhat similar in nature to the answers to other questions. As an example, two of the themes centered on workplace distractions and the lack of face–to–

face contact with managers, coworkers, or team members. Overall, the majority of the respondents perceived that virtual subordinates were more productive than the traditional office–based counterparts.

Findings.

Primary Theme 1. Virtual employees were more productive as a result of increased work hours, a preference for virtual work, and less commute time.

The study findings indicated that 38% of the managers perceived that virtual employees worked longer hours, which was primarily due to the employee having less commute time and a preference for virtual work. These factors were perceived to contribute to increased productivity.

Participants' supporting statements.

P10: "More productive because the commute time is less. The shorter commute time gives them more time for their work day."

P26: "Here in the Atlanta area all of my employees use some form of public transportation. So without the commute factor I see many of those same employees still working after normal hours."

P39: "They also seem to be happier working from home and therefore work harder to accomplish assigned projects by the set deadlines."

Theme 2. Virtual workers are more productive due to fewer distractions.

The results of the study showed that 26% of the respondents shared the belief that virtual subordinates were more productive than traditional office–based workers, primarily due to the virtual worker experiencing fewer distractions or disruptions in the

workplace, allowing for greater focus on work assignments. Many participants shared the perceptions that the social related distractions and interruptions that often occur in the traditional office setting have a negative effect on the productivity of office–based workers. There was the perception that social related interactions are minimized when employees work virtually.

Participants' supporting statements.

P31: "Actually, I think my virtual workers are more productive than my employees that come into the office. The reason is that when you come into the office you are more prone to being distracted."

P36: "They are less distracted, more focused; you get more work time out of them, which may not necessarily be a good thing for them"

P39: "In the office some employees have the gift of gab (they love to talk), and love to socialize; this causes interruptions, distractions and lowers productivity."

Theme 3. Virtual workers are less productive due to a reduced level of face–to–face interaction.

Based on the study findings, 24% of the participants perceived that virtual workers were less productive than traditional workers due to the employees' inability to interact face–to–face with managers, team members, and coworkers. The lack of face–to–face interaction was further perceived to contribute to communication failures and prevented managers from assessing employee nonverbal cues during discussions. There was a shared perception among this group of participants that virtual work environments

create obstacles for building workplace relationships, balancing workloads, and exchanging knowledge.

Participants' supporting statements.

P16: "As a manager, you can observe the body language, decipher if an employee has a concern about a directive, and address it at that point."

P20: "In the office you often get the correct product the first time because you have face–to–face oral conversation which helps to remove any misunderstandings about what product is to be delivered."

P21: "Less productive, I cannot actually ascertain when people have down time, if someone does not have enough work. I must ask or rely on them to volunteer to inform me."

P36: "I think what you are missing is the kind of interaction for the building of knowledge, the networking and just the face–to–face time that helps build relationships even with their manager."

Theme 4. There is no difference in the productivity of virtual workers versus traditional workers.

The study results revealed that 15% of the participants viewed the productivity of virtual workers as similar or the same as traditional office workers.

Participants' supporting statements.

P28: "My experience has been if they are not engaged (productive) in the office, they are not going to be engaged (productive) virtually. If they fluff off in the office, they will fluff off virtually."

P37: "I really don't think there is a significant difference. I go back to the point earlier if they work in the office they will work at home. If they waste time in the office they will waste time at home."

Theme 5. Virtual workers are less productive as a result of slower response time to work issues.

The study findings showed that 13% of the participants shared perceptions that virtual workers were less productive due to a slower response time to work requests, calls, or emails. Consequently, managers perceived that virtual workers were less productive than the traditional office–based workers. Participants shared concerns for the inability to reach employees when a response was needed. The inability to make contact when necessary, contributed to perceptions that the virtual workers were less productive than traditional office–based workers.

Participants' supporting statements.

P23: "I find the majority of my virtual workers to be less productive because of the lack of availability to respond to questions immediately and completing the assigned task timely."

P33: "When the employee is working virtually and there is an immediate need for a response that employee may not be available or responsive."

P35: "Sometimes when dealing with people in a virtual setting and you tell them the is urgent or that you need something ASAP, the question becomes, what is ASAP, is it 5 minutes, 10 minutes or 15 minutes, etc."

Subquestion 1c: How do you measure subordinate productivity?

The purpose of the subquestion was to obtain information on how virtual worker productivity is measured. The respondents did not identify any quantifiable data used to measure productivity, such as data entry, call volume, or number of cases completed. Six themes emerged from the participants' responses to this question: (a) task completion, (b) timeliness, (c) quality, (d) accuracy, (f) initiative, (g) customer feedback, and (h) other factors which included successful collaboration with team members and collaborations with others. The study findings indicated that most participants identified more than one factor applied to measuring subordinate productivity. Listed below are the top four themes, findings and relevant responses.

Findings

Primary Theme 1. Productivity is measured by task completion.

An evaluation of the results concluded that 71% of the participants discussed statements centered on measuring subordinate productivity based on project completion, including how properly, or thoroughly subordinates completed assigned tasks.

Participants' supporting statements.

P14: "I measure it by the work end product. Not all products are equal, but all of my employees are involved in similar tasks. I look at the work produced on similar tasks by each employee as a relative measure."

P28: "So, I look more at output versus the actual time spent working on the project."

Theme 2: Timeliness.

Theme 3: Quality.

Theme 4: Accuracy

Based on the study findings, participants also measured the productivity of virtual workers by the timeliness (50%) quality (31%), and accuracy (24%) of completed work assignments.

Participants' supporting statements.

P24: "We have task deadlines, and we measure how well the task was completed, if it was completed thoroughly and by the deadline."

P29: "We measure productivity by projects completed, timeliness and quality of those projects completed, whether a person is in the office or virtual we use the same measures of productivity."

P35: "The things that I look at are the assignments and the time frame. Was the work done accurately, and within the timelines?"

P38: I measure it by their time management, the accuracy of the information that they are providing and the delivery and the quality of work.

P40: "I measure productivity by the quality of the work completed."

In Figure 3, I present a summary of the themes that emerged from the participants' data for measuring the productivity of virtual workers.

Factors Used to Measure Productivity

A bar chart with the y-axis labeled from 0% to 80% in 10% increments. The x-axis categories and approximate values are: Task Completion (~71%), Timeliness (~50%), Quality (~31%), Accuracy (~24%), Initiative (~12%), Customer Feedback (~10%), Other Factors (~5%).
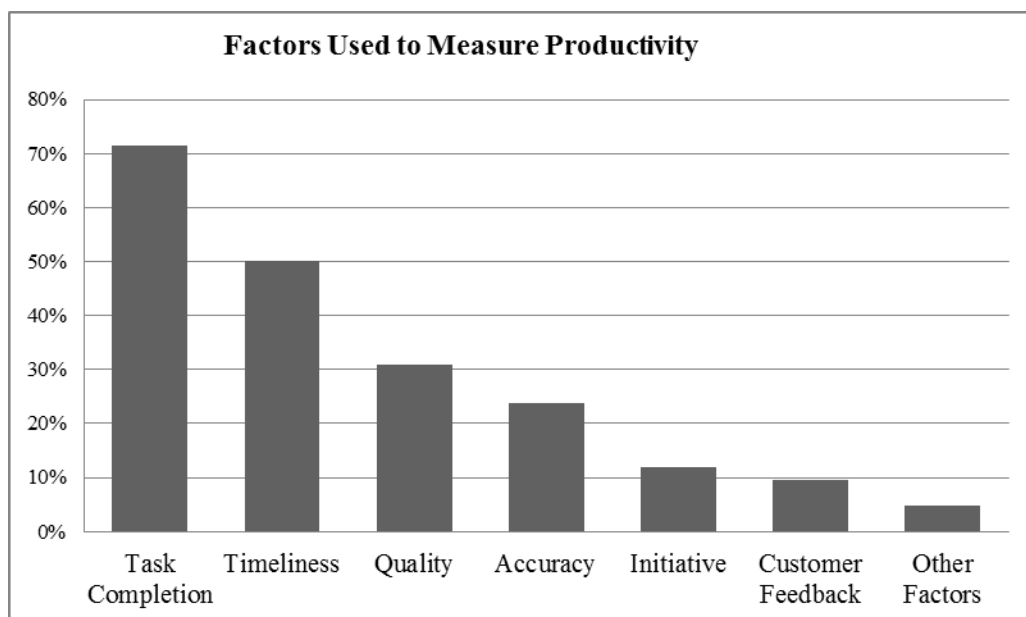
Figure 3. The themes expressed by participants for measuring the productivity of virtual workers.

Research Question 2

Research Question 2. From a managerial perspective, what challenges do you face managing the productivity of your subordinates in virtual work arrangements?

A subobjective of the study was to expand an understanding of the challenges managers experience overseeing the productivity of virtual workers. This second research question focused on this objective and included one main question and two subquestions. Based on the study results, ten themes emerged from research question two. The ten themes are: (a) managing workers despite face–to–face interaction, (b) dealing with communicating challenging, (c) providing adequate supervisory oversight, (d) overcoming trust–related issues, (e) changing the mindset of managers who prefer the

traditional work mode, (f) motivating virtual workers (g) balancing employee workload, (h) training and developing staff, (i) addressing connectivity and technological issues, and (j) no challenges.

The results, themes, findings, and participants' responses follow. The study results indicated that several participants expressed more than one theme related to the challenges managers encountered overseeing the work output of virtual subordinates. In Figure 4, I provide a summary of the top five themes extracted from participants' responses.
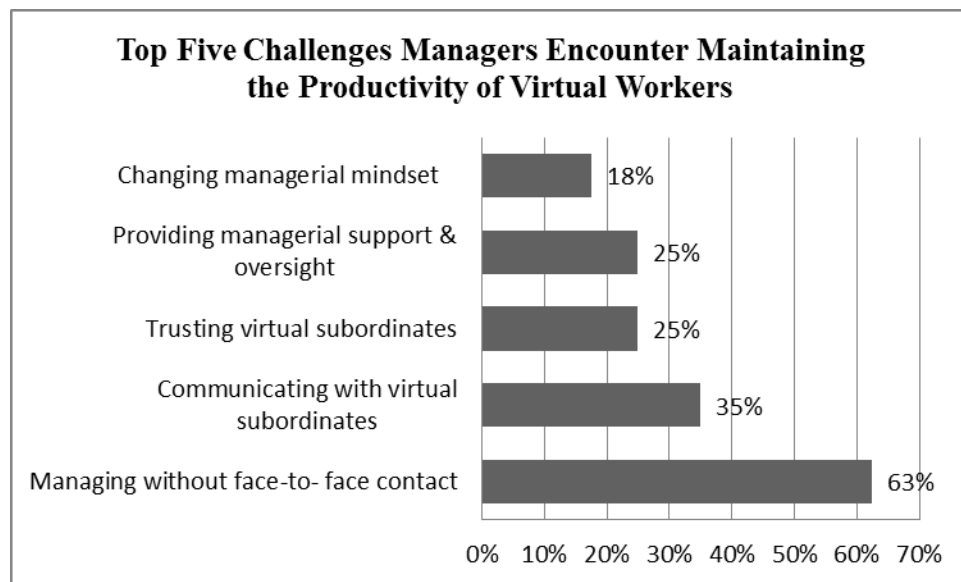
Figure 4. The themes expressed for the top five challenges managers encounter overseeing the productivity of virtual workers.

Findings

Primary Theme 1: Managing workers without face–to–face interaction.

The findings indicated that the most common theme identified from the participants' responses centered on factors linked to face–to–face interaction. More than 60% of the participants discussed the lack of face–to–face interaction experienced in virtual work arrangements as a challenge in some context. The study results showed that the managers perceived a lack of face–to–face interaction presented obstacles for building workplace relationships with virtual workers. It further presented obstacles for employee mentoring, coaching, training, maturation, and knowledge transfer. Several participants shared the preference for face–to–face interaction and communication with subordinate employees. The inability to read facial and body cues was also a notable factor discussed by participants.

Participants' supporting statements.

P03: "Knowledge transfer is more difficult without face–to–face interaction."

P10: "It is more difficult to interact with new employees, to fully see their strength and weaknesses and to build relationships."

P17: "Maintaining employee bonding: the lack face–to–face contact makes it harder to maintain that bond…"

P20: "The personal interaction is missing. In the office, if there are questions the whole group can hear the questions and answers and this helps everyone to be on the same page."

P31: "When you are working virtually you miss body language. You may perceive that everything is fine and wonderful, but in actuality the employee does not understand what you are saying, but they are not telling you that."

P38: "My biggest problem as a manager is just seeing them face–to–face. It puts a welcome touch on things to have that personal contact."

Theme 2: Dealing with communicating issues.

Based on the study findings, 35% of participants deemed that communicating with virtual workers presented challenges for managing the productivity of virtual workers. Participants shared insights about the challenges of communicating through technological devices and the preference for in–person communication.

Participants' supporting statements.

P11: "When the employee is teleworking, you have to consciously decide which method (technological tool) to use to reach the employee."

P29: "For me it is about seeing the person when I am talking to them and watching for recognition or confusion to ensure the communication (interpretation) gets the desired results."

P32: "Communicating effectively with your employees over the phone and through other means of communications is not ideal; I would prefer face–to–face communication."

P41: "Not being physically present with my staff is major for me. I like to communicate with my staff in person and read their body language."

Theme 3: Overcoming trust related issues.

The study results indicated that 25% of the managers have issues trusting that virtual workers are in fact working. The respondents perceived that trust–related concerns are a significant challenge for managers with workers who lack the work ethic to work independently. The managers want to ensure that virtual workers remain productive and engaged during assigned work hours.

Participants' supporting statements.

P11: "Sometime when you try to make contact with the employee and you do not get a response the question becomes, where is the employee?"

P25: "I firmly believe that the most effective managers have established and developed trust with individuals in their workforce. Trust is very difficult to develop virtually."

P26: "The challenge for me is while the cats away the mouse will play (the out of sight out of mind) mindset."

P27: "That the employee remains focused on the work and is not watching television instead of working."

Theme 4: Managerial or supervisory oversight is reduced.

The study findings indicated that providing adequate supervisory was another challenge expressed by 25% of the participants. This group of participants shared the belief that virtual work arrangements required more supervisory oversight of subordinates to ensure productivity levels remained consistent. Participants expressed concerns for managing workers that were not physically present in the office.

Participants' supporting statements.

P10: "Visually observing what the employees are working on to see if more or less time is required for task completion."

P34: "The challenges I face are with those that are less productive, lacks motivation, and are less discipline… It requires more hand holding and more supervision."

P39: "The challenge for me is providing the supervisory support for virtual workers to ensure productivity is maintained."

Theme 5: Changing how managers view virtual work arrangements.

The study findings indicated 18% of the respondents perceived that changing the managerial mindset to grasp and fully accept the concept of virtual work was a challenge. Many of the participants preferred the traditional work mode to virtual work for ensuring worker productivity, but appeared to understand the organization's need or desire to put it into practice.

Participants' supporting statements.

P13: "Challenges are cultural, meaning in the beginning the question was, what is it going to take to make people accept the idea?"

P21: "Honestly, my biggest challenge is with my peers and my supervisor. There is a lot of hesitancy and second guessing of those that work virtually."

P35: "I need to be able to understand the environment in which my employees are working. I grew up without computers, using a pencil and paper to complete my work."

Subquestion 2a: How do you perceive this differs from the challenges faced in the traditional office settings?

I posed this subquestion to understand the managers' perceptions of the challenges encountered managing the productivity of virtual subordinates in comparison to the challenges encountered for subordinates in a traditional work setting. Based on the study findings, the majority of the respondents perceived that the challenges are indeed different. However, 20% of the participants perceived no notable differences or challenges for managing the productivity of virtual workers in comparison to traditional workers.

Based on the study findings, six themes emerged in response to this interview question: (a) less face to–face interaction is present in virtual work arrangements than in the traditional work setting, (b) more supervisory oversight is required in virtual work environments, (c) communicating with virtual workers is more challenging in virtual work arrangements, (d) the challenges are similar or the same (e) more challenging to develop, train, and maintain work teams in virtual work arrangements, and (f) technological issues affect worker productivity more often in a virtual work setting than in the traditional office setting. Several participants highlighted more than one factor. The top four themes and related responses are discussed below.

Findings

Primary Theme 1: Less face–to–face interaction experienced in virtual work arrangements.

The study findings revealed that 58% of the participants perceived that the most common difference in managing the productivity of virtual workers versus traditional workers was related to the reduction in face–to–face interaction. Participants shared the opinion that visibly observing, interacting, and providing guidance and feedback is easier for employees in a traditional work setting. The managers also perceived that training and developing employees are easier in a traditional work setting versus a virtual setting.

Participants' supporting statements.

P01: "In a virtual work environment I do not have the ability to observe the daily activity of my virtual workers, to observe the efforts put forth on assigned tasks."

P18: "In an office location, I could easily walk around and call everyone together for a quick team meeting, or pop in someone's office or bring someone into my office for a quick discussion."

P26: "When my staff report to the office, if I need something, I am right at their desk as opposed to calling… I think it is easier to manage those employees that you can reach out and touch so to speak."

P34: "I feel in a face–to–face environment when the employee physically sees the manager, they will ask for assistance if needed. But virtual employees are a bit more reluctant to pick up the phone or email you if they are confused."

P35: "I think it differs in how it will affect my ability to teach my staff. When training someone face–to–face, I could rely on body language to help me to see if the person understands the information or is lost."

Theme 2: More supervisory oversight is required of virtual workers.

The study findings indicated that 30% of the managers held the perception that the challenges differ from the traditional office setting in that more supervisory oversight of virtual workers is required, or that supervisory oversight is lacking in virtual work arrangements. Several participants perceived that finding the correct balance of supervisory oversight is vital to maintaining virtual worker productivity.

Participants' Supporting Statements.

P01: "In a virtual work environment I do not have the ability to observe the daily activities of my virtual workers, to observe the efforts they are putting forth on assigned tasks."

P14: "When I have to watch certain virtual employees more closely, it can be perceived by the employee differently. In the office, I can be passive and just observe."

P24: "It is different because you have to ensure that the work is completed. Employees must complete tasks by the required deadline. The manager must have faith and trust in the employee that they will get the work done."

Theme 3: No substantial challenges or similar to the challenges faced in the traditional work environments.

Based on the study findings, 20% of the participants found no difference or similar challenges in managing the productivity of virtual workers in comparison to managing the productivity of traditional office–based workers.

Participants' Supporting Statements.

P05: "To a certain extent the challenges are the same because an employee can get lost in a building. You know when you need them you cannot always locate them, even with all the technology that we have."

P20: "In the office setting you don't have any challenges because you have your employees there, you can have the impromptu meetings, you can have your training, and you can grow and develop employees."

P27: "The challenges can be similar in just making sure the employee remains accountable and accessible. I don't think it differs if I am in the office or not. It does not differ substantially for me."

P30: "No difference."

Theme 4: Communicating is more challenging in virtual work arrangements with respect to managing the productivity of subordinates working virtually.

The study results showed that 20% of the participants perceived that communicating is more challenging in virtual work arrangements than in a traditional work setting. Communicating with workers is imperative to managing productivity. Several participants commented that communication failures affect worker productivity.

The participants perceived that it is easier to communicate in a traditional work setting since the employee is physically present. In a traditional setting, the manager can read and assess nonverbal body language and body cues when communicating and outlining work tasks with subordinates with in–person interaction.

Participants' Supporting Statements.

P28: "The communication piece in my mind is harder and you must work harder on the communications piece to bring the group together, and to stay engaged with the individuals."

P29: "The real issue of virtual versus the traditions centers on the ability and the facility to communicate. It is easier for most traditional office–based managers to communicate, counsel or have that personal interaction with the staff."

P35: "The whole concept of communication is vastly different…. and because I am from the old school of management, I must keep an open mind to how these workers communicate. I know there is a greater opportunity for miscommunication."

Subquestion 2b: How would you best identify your leadership style?

I posed this subquestion to determine if the managers participating in the study had utilized a predominant leadership style. The goal was to determine if a connection existed between the acceptance of virtual work arrangements and the participants' leadership styles. The responses to the questions did not reveal one core leadership style shared amongst the majority of the participants.

Many of the managers did not define an actual leadership style by name but described characteristics of the various leadership styles. The findings showed that there

were several leadership styles used by participants. The top two leadership styles were servant and transformational leadership. Figure 5 shows an assessment of the leadership style of the managers surveyed. The study results revealed that the leadership style of the participants that were strongly opposed to virtual work arrangements was the authoritarian leadership style. The next section reflects information on the top four leadership styles of the managers participating in the study with the supporting participant responses. In Figure 5, I provide a summary of the leadership styles of the managers in this study.
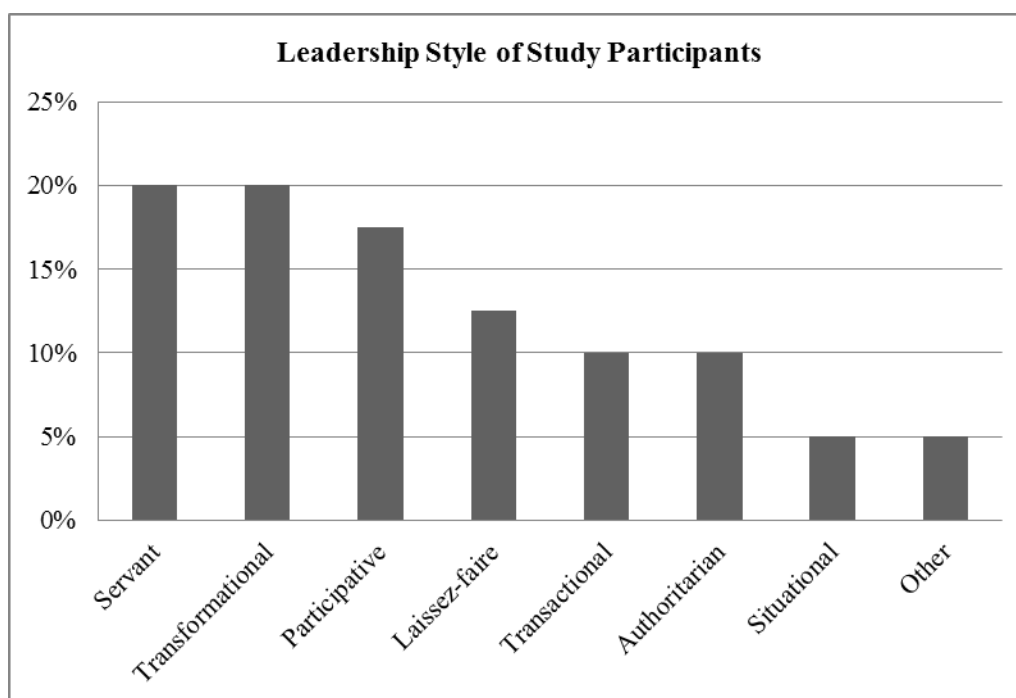
Figure 5. Grouping of the leadership styles of study participants.

Findings.

Primary Theme 1. Servant Leader

The study findings indicated that 20% of participants identified with servant leadership. Managers who consider themselves servant leaders are more likely to allow employees to work in flexible work arrangements such as virtual work (Eversol et al., 2012).

Participants' Supporting Statements.

P16: "I consider myself a servant leader. Developing employee skills and the skills needed if the employee is seeking advancements. I am a coach by trait, so I don't mind coaching and giving directions. Coaching is natural for me."

P25: "My leadership is one that I embrace the leadership of my organization and together we lead. I always felt an immediate kinship to the term servant leadership..."

Theme 2. Transformational Leader

Based on the study results another 20% of participants described their leadership style as transformational. Transformational leaders often inspire positive change in the individuals they lead.

Participants' Supporting Statements.

P02: "My leadership style is truly one of empowering people, giving people the opportunity to do what they do best."

P11: "I like the face–the–face contact with my staff. I like to show my employees how to do a product and then be available if they have any questions."

Theme 3. Participative Leader

Another 18% of participants identified with the traits of participative leaders. Participative leaders often allow employees to participate in the decision–making process.

Participants' Supporting Statements.

P27: "I value the input of my employees to assist with decisions. I know my employees are important, meaning I realized that I need them to accomplish our assigned tasks. I like to have their support and buy–in on certain issues."

P28: "Participatory: I have found that I will try to adjust my leadership style to my staff or to the employee so I can get them engaged."

Theme 4. Laissez–faire Leader

The study findings showed that 13% of the participants identified with laissez–faire leadership. These leaders often have a more relaxed style of management.

Participants' Supporting Statements.

P17: "I am not super controlling. I would rather sit down and give my staff the work product and wait for them to come back to me if they have any problems."

P35: "I am a laissez–faire manager. I expect people to do their job to the best of their ability. I expect people to come to me if they have questions. If not, I assume they understand."

P41: "I am a laid back leader. I let my employees do their jobs and come to me when assistance is needed. I do seek their input, but the ultimate decision lies with me."

Research Question 3

Research Question 3. What are your attitudes and perceptions towards virtual work arrangements?

A second subobjective of this study was to assess the manager's overall perception of virtual work arrangements. The aim of this research question was to gauge the manager's acceptance of virtual work to determine if managerial resistance was present among the study participants. The results, findings, and sample participants' responses follow. Based on the respondents' comments, two themes emerged for this research question: favorable perceptions of virtual work or unfavorable perceptions of virtual work arrangements.

Findings

Primary Theme 1: Participants held a favorable perception of virtual work.

The study findings revealed that 87% of the respondents held a favorable view or perception of virtual work arrangements and 13% held an unfavorable view. The participants that offered a favorable view shared the opinion that the virtual work mode extends many useful benefits to the employees and to the organization. A number of participants in favor of virtual work arrangements, reiterated that virtual work is not for all employees. Participants felt the success or failure of the work mode rests with the employee and not the work environment.

Participants' Supporting Statements.

P03: "I am actually an advocate for it. I think it works for some people and not for others."

P09: "It is a benefit to the employee and to the organization."

P10: "I think it is a good thing to have for those people that can really handle it.

P15: "I love virtual work. Everyone has different lifestyles and issues. The flexibility in the work schedule is a plus."

P27: "I think it is great, it is awesome. It allows the flexibility for people to have better work life balance."

P34: "I support virtual work and I am a strong proponent of this design work. It reduces traffic and it keeps me out of it."

Theme 2. Participants held an unfavorable perception of virtual work.

The study findings revealed that 13% of the participants held an unfavorable attitude or perception of virtual work arrangements. There was a shared perception that a virtual work arrangement challenges the balance between home and work, which could potentially impede subordinate productivity. This group of participants also perceived that virtual work arrangements reduced the personal contact employees have with managers and coworkers.

Participants' Supporting Statements.

P20: "I do not like it (virtual work). When teleworking, you lose the personal touch, you lose the personal interaction with your employees."

P23: "It reduces overall productivity."

P35: "If you put me in a room where no one else could hear or was around, I would say this is crazy. There are a number of issues relating to my field of work that makes it difficult."

P37: "Personally, I dislike it. I do not want to bring work home. I want home to be home."

In Figure 6, I display a bar chart showing a visual representation of the participants' overall perceptions of virtual work arrangements. As previously noted, the majority of participants were in favor of virtual work arrangements. A low percentage of participants were not in favor of the virtual work design.
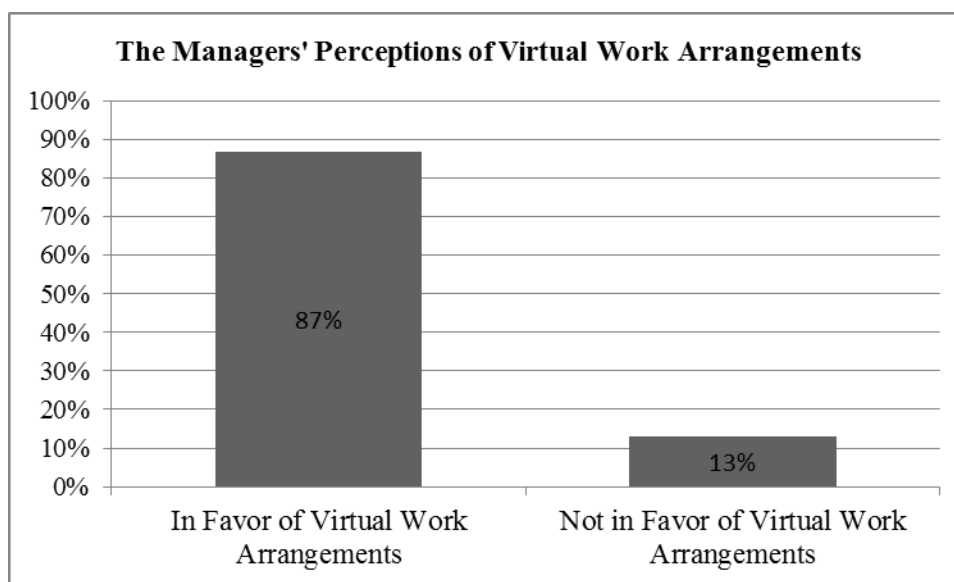
Figure 6. The managers' overall perceptions of virtual work arrangements.

Subquestion 3a. What learned experiences and or values contributed to your perceptions or opinions about virtual work arrangements?

The purpose of the subquestion was to provide an understanding of the participants' learned experiences or values that helped to shape the managers' views of virtual work arrangements. Two themes emerged from this subquestion: (a) the manager's past work experiences contributed to their perceptions of virtual work

arrangements, and (b) technology related factors in the manager's everyday life helped to shape perceptions or attitudes for virtual work.

Finding 1.

Primary Theme 1. The participants' past work experiences contributed to the participants' views of virtual work.

The study findings indicated that the majority of the managers (55%) commented that past work experiences helped to shape their perceptions of virtual work arrangements. Some of the participants had previously worked outside of the traditional office setting in some capacity without direct supervisory oversight. This prior work experience made it easier for these managers to accept virtual work arrangements.

Participants' Supporting Statements:

P08: "Through training on virtual work, I learned again if I can trust them at work I can trust them at home. This was learned through my many years as a manager, managing various personalities and types of work."

P15: "I have experience in many areas before I got to the position. It helped me to understand that it does not matter where the employee is physically located as long as the employee is productive..."

P31: "My military experience and training taught me to be flexible. Therefore, we need to be flexible when change comes around and be ready to change in a moment…"

Finding 2.

Secondary Theme: Technological factors contributed to the participants' views of virtual work arrangements.

Based on the study findings, 24% of the managers maintained that technology related factors contributed to a more receptive and accepting view of the concept of virtual work. The respondents commented that the technological gadgets and innovations used in their personal lives helped to underscore the importance of technological change in the workplace. Many participants clearly conceptualized how technology has contributed to changes outside of the workplace and subsequently in the workplace.

Participants' Supporting Statements.

P01: "Technology has changed how we shop… how we communicate… so why not how we work. Technology has pushed virtual work to the forefront, but it cannot instill strong work ethics, it can only aid those that have it."

P13: "We are in a world now where nothing stays the same and we must adapt. We are living in a world where we must be able to change with the technology advancements all around us."

P17: "What has made me more accepting is that I usually have a natural knack with technology in my personal life. I can generally learn to work with new technology fairly quickly."

P39: "Managing virtual workers is very different and challenging. Technology is steadfastly moving forward, just as it is in our personal life. So we as managers should not expect things to stay the same"

Discrepant Cases and Nonconforming Data

There were minimal discrepant cases identified in the data collected. I examined all statements from the transcribed interviews to identify the shared perceptions, attitudes, and beliefs of the 40 participants toward virtual work arrangements. There were a number of similarities among the participants and related responses of virtual work and virtual subordinates.

Summary and Transition

The primary goal of this study explored the managers' perceptions of subordinate productivity in virtual work arrangements. The results of the study can be useful for refuting the assumptions that a virtual work design impairs subordinate productivity. There were two subobjectives of this study. The first subobjective examined the challenges managers experience overseeing the productivity of subordinates working in a virtual setting. The second subobjective examined the managers' attitudes towards the use of virtual work arrangements.

Based on the study findings, 49% of the managers participating in this study, did not perceive that virtual work arrangements had an adverse effect on employee productivity. The study findings revealed that 26% of participants perceived that the productivity of virtual workers was related more to the individual employee, and not the actual work environment. Several participants shared the perceptions that if the employee is productive in the office, the employee will be productive virtually. Approximately 15% of the participants shared the belief that there was no difference in the productivity of

subordinates because of working in a virtual context. Lastly, 10% of the participants

perceived that virtual work arrangements have hampered employee productivity.

The study findings revealed that the managers in this study perceived that virtual

workers were more productive than office–based workers. The reasons cited included the

virtual workers' increased work hours, reduced commute time, and preference for virtual

work. There was also the perception that virtual workers were more productive due to the

reduction in social related distractions or interruptions often found in a traditional work

setting. Nonetheless, several managers agreed that some virtual workers were less

productive than office–based counterparts due to slower response time for email, calls, or

work requests. Additionally, the managers perceived that the virtual workers were less

productive than office–based workers due to the lack of face–to–face interaction with

superiors, coworkers, or team members.

A subobjective of the study was designed to provide an awareness of the

challenges that a virtual work design presented to managers monitoring the productivity

of virtual workers. The findings of the study revealed that virtual work arrangements

presented several challenges related to managing virtual worker productivity. The top

four challenged, discussed most by respondents were: (a) managing worker despite the

lack of face–to–face interaction, (b) communicating with virtual workers, (c) providing

adequate supervisory oversight, and (d) dealing with trust–related issues for virtual

workers.

A second subobjective of the study examined the managers' overall perceptions

of virtual work arrangements. The study findings indicated that 87% of managers held

positive perceptions and supported virtual work arrangements, while 13% were not in favor of this work mode. In Chapter 4, I outlined the results and study findings. In Chapter 5 are discussions on the interpretations of the study findings, recommendations for action, implications for social change, and recommendations for future research on the topic of virtual work arrangements. The conclusions formed from the results of the study are outlined in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Overview

This final chapter presents an overview of the study, including an evaluation of the findings associated with managers' perceptions of subordinate productivity in virtual work arrangements. In this study, I sought to increase knowledge of virtual work arrangements related to subordinate productivity. I further sought to use this research to support or refute assumptions that a virtual arrangement adversely affects virtual worker productivity.

Discussion

This phenomenological study involved 40 semistructured interviews with managers who oversee the productivity of employees working in a virtual context. This research addresses a gap in the literature regarding virtual work related to subordinate productivity conducted from the managers' perspectives. The focus of the research questions was threefold: (a) managers' perceptions of subordinate productivity in virtual work arrangements, (b) the challenges managers experience overseeing subordinate productivity in virtual work arrangements, and (c) managers' attitudes and perceptions toward virtual work.

The study findings revealed that over half of the 40 managers participating in the study possessed positive perceptions of subordinate productivity under a virtual work design. Nonetheless, the study results indicated that virtual work arrangements presented key challenges for managers supervising the productivity of subordinates. The findings will be discussed further within this chapter.

I presented this work's objective in Chapter 1, which was to explore managers'

perceptions of subordinate productivity in virtual work arrangements. Specifically, the

study goal was to ascertain if managers perceived that virtual work arrangements

hindered subordinate productivity. Chapter 1 presented the rationale for the study,

background of the problem, problem statement, purpose of the study, the nature of the

study, and research questions. The chapter provided information on the conceptual

framework, operational definitions, assumptions, and limitations of the study. The study's

significance and implications for social change were highlighted in this chapter.

Chapter 2 presented a review of the literature from varying perspectives,

including qualitative and quantitative studies that examined virtual worker productivity.

The research on virtual work related to subordinate productivity from a manager's

perspective is very limited. The focus of the literature review centered on subordinate

productivity in virtual work arrangements. I also reviewed articles and studies that

discussed managerial resistance for virtual work and articles related to leadership in

virtual work arrangements. Chapter 2 included a review of the literature related to the two

theories that supported the conceptual framework for this study: (a) adaptive structuration

theory and (b) McGregor's theory x and theory y. The purpose of the literature review

was to increase knowledge of the factors that affect subordinate productivity in virtual

work arrangements, the related challenges, and the managerial resistance to this work

design.

I outlined the research design and methodology selected for this study in Chapter

3. The chapter discussed participant information, the role of the researcher, and data

collection, and the data analysis procedures used for this study. The chapter also included

a discussion on issues related to trustworthiness for this study. Chapter 4 presented the

research findings and related discussions. In this chapter, I provided a discussion of the

interview questions and participants' responses. The chapter presented the themes

identified from the 40 semistructured interviews with the managers and provided samples

of participants' supporting statements. This final chapter includes an interpretation of the

findings from the research, the limitations of the study, recommendations for action and

future research, implications for social change, and the conclusions formed for the study.

Interpretation of Findings

The accompanying information is an interpretation of the findings of this work.

The results listed in Table 1 provide a summary of each area of the overall investigation

on managers' perceptions of virtual work arrangements. The summary relates to the

research questions and subquestions where responses clearly delineate a theme. A

discussion follows the table of key findings.

Table 1

Summary of Key Findings

Area of Investigation	Key Findings
Perceptions of Subordinate Productivity in Virtual Work Arrangements	• Virtual work arrangements have a positive effect on subordinate productivity. • The productivity of employees working in a virtual environment depends on the individual employee and not the work environment. • Virtual work arrangements are not a good fit for all employees or jobs. • A virtual work arrangement does not adversely affect the productivity of workers.
Positive Effects of Virtual Work Arrangements on Worker Productivity	• Provides for decreased distractions and interruptions. • Offers better work–life balance for the employee. • Reduces employee commute time. • Increases employee morale and job satisfaction.
Negative Effects of Virtual Work Arrangements on Worker Productivity	• A lack of face–to–face interaction with virtual workers. • Virtual work may not be suited for all employees. • Supervisory oversight is more difficult. • Virtual work arrangements present difficulties for maintaining or building team dynamics.
Virtual vs. Traditional Workers and Productivity	• Because of increased work hours and less commute time, virtual subordinates are more productive compared to traditional workers • Socially related distractions and interruptions in traditional work settings negatively affect the productivity of office–based workers. Virtual workers experience less social distractions, and thus are more productive. • Virtual workers are less productive than traditional workers because of a lack of face–to–face interaction with managers, team members, and coworkers. • Virtual workers have slower response times in work requests, returning calls, or answering emails, which reduced productivity.

(*table continues)*

Area of Investigation	Key Findings
Measures of Productivity	• The rate subordinates complete assigned tasks. • The timeliness of task completion. • The quality and accuracy of products produced.
Challenges Linked to Managing Virtual Worker Productivity	• A lack of face–to–face interaction hinders building and maintaining work/team relationships. • Communicating with virtual workers through technological devices is difficult when assessing or reading nonverbal clues and body language. • Managers must provide adequate managerial oversight. • Trusting virtual workers to remain productive who lack the ability to work with little direction. • Changing the managerial mindset of managers that prefer a traditional work setting.
Managing Productivity of Virtual vs Traditional Workers (How It Differs)	• It is easier to visibly observe, interact, and provide guidance and feedback to employees in a traditional work setting. • Communication is more challenging in a virtual work arrangement than in a traditional work setting.
Leadership Style of Managers	• Servant (20%). • Transformational (20%). • Participative (18%). • Laissez–faire (13%).
Attitudes and Perceptions Toward Virtual Work Arrangements	• Favorable attitude (87%). • Unfavorable attitude (13%).
What Shaped Views of Virtual Work Arrangements	• Past work experiences contributed to factors and perceptions of virtual work environments. • Technology–related factors helped to shape the views of virtual work arrangements.

Primary Objective: Managers' Perceptions of Subordinate Productivity in Virtual Work Arrangements

The main objective of this study was to explore the managers' perceptions of subordinate productivity in virtual work arrangements. The analysis of the participants' responses produced four themes related to the productivity of virtual workers: (a) virtual work arrangements have a positive effect on subordinate productivity; (b) the productivity of employees operating in a virtual environment depends on the individual employee, more so than the work environment; (c) virtual work arrangements are not a good fit for all employees or jobs; and (d) virtual work arrangements do not adversely affect the productivity of workers.

The key study findings revealed that nearly half of the participants perceived that virtual work arrangements did not impair employee productivity. The results also showed that nearly one–fourth of the managers perceived that subordinate productivity was based on the individual employee and not the work environment. Several participants verbalized that if employees were productive in the office; they would be productive working virtually.

Subobjective 1: Managers' Perceptions of the Challenges Encountered in Maintaining Virtual Worker Productivity

A subobjective of the study was to examine the challenges managers encounter in overseeing the productivity of subordinates working in virtual work settings. Interpreted from the findings, the respondents identified a number of challenges related to maintaining virtual worker productivity. The top five themes identified from participants'

responses were: (a) managing workers despite the lack of face–to–face interaction, (b)

communicating with virtual workers, (c) providing adequate management oversight, (d)

dealing with trust issues for virtual workers, and (e) changing the managerial mindset of

managers who prefer a traditional work setting.

The study findings revealed that managers perceived that the lack of face–to–face

contact presented the most substantial challenge for managing the productivity of virtual

workers. The lack of face–to–face contact and/or interaction was a common theme

identified from the study. Participants perceived that face–to–face interaction was

essential for providing supervisory oversight, mentoring, training, coaching employees,

transferring knowledge, and building and maintaining work–team relationships. A

number of participants shared the belief that face–to–face interaction was essential for

those workers who lack the skills to work independently.

Subobjectives 2: The Managers' Views of Virtual Work Arrangements

A second subobjective of this study examined managers' attitudes toward the use

of virtual work arrangements. Study findings produced two themes: (a) managers'

favorable perceptions of virtual work arrangements and (b) managers' unfavorable

perceptions of virtual work arrangements. The results of the study showed that 87% of

the managers participating in the study held a favorable view of virtual work, and only

13% held an unfavorable view of virtual work. Most managers recognized the need for

this type of flexible employment arrangement, further acknowledging the benefits that the

virtual work design presents to the organization and the employees. Overall, the

managers participating in the study did not appear to have adverse attitudes or resistance

toward virtual work arrangements, but acknowledged that the virtual work design was not without its challenges.

Study Findings and Relation to Literature Reviewed

I provided a literature review pertaining to virtual work arrangements and virtual worker productivity in Chapter 2. The study results indicated that managers perceived that virtual work arrangements had a positive effect on subordinate productivity. The results confirmed previous findings that workers can be productive in virtual work arrangements (Bloom et al., 2012; Cisco, 2009; Collins, 2005; Martin & MacDonnell, 2012; Mekonnen, 2013). Lari (2012) concluded that virtual work arrangements did not adversely influence employee productivity. Instead, Lari found that telecommuting positively increased virtual worker productivity levels.

The participants' responses also showed that some managers perceived that employee productivity in virtual environments depends on the individual employees and not necessarily the work environment. Both O'Neill et al. (2009) and Pyoria (2011) postulated that a virtual work arrangement was not a good fit for all employees or jobs. There is limited empirical evidence from the managers' perspectives available on this topic. Therefore, study results contribute to the body of knowledge of virtual work on this subject.

The results of this research indicated that managers perceived that a virtual work arrangement decreased the amount of work distractions and interruptions employees often experience in traditional work settings. This confirms the conclusions of Baard and Thomas (2010) and Fonnerand Roloff (2010), who found that virtual workers

experienced fewer distractions than traditional workers. In addition, the study findings

show that managers perceived that virtual work arrangements promoted better work–life

balance for virtual workers, and this was viewed as having a positive effect on employee

productivity. A 2010 study conducted by Morganson et al. concluded that telework

provided higher levels of work–life balance for teleworkers than for traditional

workers—without forfeiting productivity. The findings of several other studies indicated

that a virtual work arrangement improved the work–life balance of workers (Baard &

Thomas, 2010; Hilbrecht, Shaw, Johnson, & Andrey, 2013; Maruyama, Hopkinson, &

James, 2009; Redman, Snape, & Ashurst, 2009).

Several respondents shared the belief that the reduction in employee commute

time had a positive effect on employee productivity by providing more work time and

increased morale due to the commute–related cost savings associated with virtual work.

Lari (2012) and Offstein (2010) asserted that by reducing congestion on the road, workers

spent fewer resources on fuel. Several authors acknowledged the benefits associated with

the commute reduction resulting from virtual work, such as increased job satisfaction

through the cost savings linked to reduce commuting (Kelliher & Anderson, 2010;

Lautsch & Kossek, 2011; OPM, 2013; Redman et al., 2009).

The study findings indicated that the participating managers primarily measured

virtual worker productivity based on task completion, timeliness of completed tasks,

quality of completed tasks, and accuracy of completed tasks. The study results confirmed

the findings by Lautsch and Kossek (2011) that teleworking requires managers to shift

from the traditional physical and visible means of monitoring employee performance to a

virtual approach which brings changes to the workplace and focuses more on tasks and less on work relationships (Mackenzie, 2010). Mayo et al. (2009) contended that managers who learn to control outcomes instead of processes minimized management resistance to virtual work arrangements.

Greer and Payne (2014) postulated that "given the prevalence and continued growth of teleworking, future teleworkers and their managers need to be informed about the challenges that may hinder effective teleworking, and potential strategies for overcoming those challenges" (p. 87). The study findings highlight the numerous challenges managers experience while maintaining virtual worker productivity

Based on the findings of this study, the managers perceived that the lack of face–to–face interaction presented the most significant challenge in managing virtual worker productivity. The lack of face–to–face interaction confirmed the study results conducted by Greer and Payne (2014). The researchers found that virtual worker supervisors perceived that a lack of face–to–face interaction had an effect on the effectiveness of virtual workers.

The study results highlighted that communication issues presented challenges for managers overseeing the work output of virtual workers. Several respondents expressed concerns about communicating through technological devices and the potential for information to be misconstrued. Primarily because virtual workers are not physically present with their managers, participants expressed concerns over their inability to assess or read nonverbal cues and body language when communicating with virtual workers. The study results confirmed the findings of Purvanova and Bono (2009). Purvanova and

Bono argued that: (a) face to–face communication is superior to computer–based communication because face–to–face communication is richer in nonverbal (i.e., visual and auditory) cues, (b) face–to–face communication reduces information that may be lost in translation, (c) face–to–face communication increases feelings of involvement in conversations and social presence, (d) face–to–face communication can provide information on social standing and social contexts, and (e) face–to–face communication is easier and less taxing than other communication methods.

Stryker and Santoro (2012) claimed that face–to–face communication was an essential element for all work teams, but even more essential for teams working in high–tech fields. Drew (2013) further contended that a significant challenge of working in virtual settings was establishing and maintaining a sense of camaraderie among employees who are rarely together in the same location. Marques (2010) insisted that communication is the foundation of successful human interaction, regardless of the location or environment. As technology advances and the work environment become more complex, it is critical for managers to realize the communication challenges that virtual work presents.

Dealing with trust–related issues was another study finding. Managers expressed concerns about their ability to trust that their virtual workers were in fact working. Pyoria (2011) concluded that a successful telework arrangement requires a climate that fosters trust and respect between the workers and management. Richardson (2010), who contended that managers who displayed trust in virtual workers had a positive influence on employees, including overall productivity, confirmed the need for trust. Dahlstrom

(2013) confirmed that trust, along with communication and support, was vital for success in virtual work environments.

The study results revealed that managers perceived that providing adequate supervisory oversight of virtual worker was challenging. Several participants shared the perception that it was more challenging to oversee virtual workers who are not physically present in the same office as the manager. This perception may be linked to the managers need for direct control. Pyoria (2011) declared that "fads and fashions in business management may come and go, but there is one thing that is always constant: the reluctance of managers to relinquish their power" (p. 391). Lautsch and Kossek (2011) also confirmed the managers' need for visual oversight of workers. Lautsch and Kossek maintained that virtual worker managers must learn to manage the performance of workers who are not located on site.

The findings support the use of McGregor's theory x as the conceptual framework for this study. According to McGregor's theory x assumptions, some managers share the belief that employees need to be under direct supervisory control to be productive (McGregor, 1960). Theory x is often ingrained with traditional management practices and thus the use of virtual work requires a shift to a more modern style of management, which assumes that employees can work independently and sustain productivity.

The study findings revealed that changing the mindset of managers who prefer the traditional work mode to virtual work is a challenge. Most of this can be attributed to worker visibility. Overmyer (2011) reported that federal efforts to implement telework have been thwarted by managers with a nineteenth–to–twentieth–century managerial

mindset, in which managers assume that employees must be physically present at a desk

in a traditional work setting to be productive. Caillier (2012) noted that employees who

desire telework, but lack the approval of their managers had decreased levels of

motivation and job satisfaction. Since motivation is often associated with performance,

productivity may be affected by the managers' decisions to disallow teleworking. The

results of Caillier's study indicated that workers still believe that resistance from

managers toward the concept of teleworking is the primary contributing factor in the

manager's decision–making to allow virtual work.

Leadership for virtual workers was also discussed in this study. Successful

leadership for virtual workers is a daunting task. It is essential that leaders understand the

skills required for managing workers in a virtual work environment are much more

complex than the skill sets required for managing in a traditional, face–to–face setting

(Berry, 2011). Gladys (2014) noted that leaders who were adequately trained to lead

virtual workers could improve worker performance. The study results showed that

transformational leadership was one of the top two leadership styles utilized by the

managers participating in the study. The findings support the study by Purvanova and

Bono (2009), which indicated that transformational leadership behavior had a stronger

effect on virtual team performance than on face–to–face team performances. In addition,

Purvanova and Bono found that transformational leadership behavior was instrumental in

increasing team performance in virtual work environments.

The study results indicated that the other top leadership style found among the

participants was servant leadership. Servant leaders serve more as a resource to workers

to facilitate task completion. Servant leaders display more concern for others than for maintaining power and control (Eversole et al., 2012). According to Eversole et al., it is imperative that managers make an effort to change the command and control mindset many managers' share, and shift more toward a servant leadership style.

Gladys (2014) supported the use of servant leadership. Gladys declared that leaders who displayed more human concern and trust for virtual workers reduced the negative effects caused by micromanaging. Eversole et al. (2012) maintained that servant leaders are more likely to approve an employee's request to telework. Interestingly, Parolini, Patterson, and Winston (2009) noted that a leadership team composed of leaders who have transformational leadership characteristics and who display servant leadership characteristics may be more effective in virtual environments. This concept was founded on the precept that the transformational leader will concentrate on the needs of the organization, whereas the servant leader will concentrate more on the needs of the employees.

Several authors and or scholars have indicated that managers tend to resist virtual work practices (Eversole et al., 2012; Lister & Harnish, 2011; Mekonnen, 2013; Peters, den Dulk, & de Ruijter, 2010; Pyoria, 2011; Weisberg & Porell, 2011). The study results did not find a high level of resistance for virtual work arrangements from the participating managers. In fact, it found quite the opposite. The research results indicated that, overall, managers had a positive attitude toward virtual work environments. The findings confirmed the study by Scholefield and Peel (2009), which found that managers held a positive opinion for virtual work arrangements—but noted more disadvantages

than advantages were connected with this work model. Similarly, the study results indicated that managers support virtual work, but noted significant challenges, as previously discussed such as managing workers in the absence of face–to–face contact and providing adequate oversight of virtual workers.

The study findings revealed that managers formed perceptions of virtual work arrangements from past work experiences. Some managers formed perceptions of virtual work arrangements from experiences related to the personal use of technology. This finding was new and contributes to the body of knowledge on how managers form opinions for the benefit of utilizing and supporting virtual work arrangements.

Limitations of the Study

As stated in Chapter 1, this study has limitations; the data collected from the 40 participants do not capture the perceptions of all managers who supervise virtual workers. This study did not explore the views or perceptions of organizational executives or subordinates. Instead, the study involved middle managers, and several unknown factors may have influenced the managers' perceptions of virtual work arrangements. These factors include the organization's virtual work policies or the subordinate's view of virtual work arrangements. Although all study participants were 18 years or older, the study did not consider the age group or gender of the participants, which is also a limitation. The study focused primarily on virtual worker productivity, although other factors may cause managers to resist virtual work arrangements.

Recommendations for Further Study

Based on a search of existing research from 2009 to the present, there remains a demand for additional scholarly research on virtual work from the managers' perspectives. Since existing literature has often placed considerable stress on individual employee–related outcomes, I recommend further research on topics related to managerial aspects of virtual work. Since several managers in this study perceived that virtual work arrangements presented challenges for establishing or maintaining employee–supervisor relationships and/or team relationships due to the lack of face–to–face interaction, future studies should include managers who work solely in virtual contexts to provide information on how these managers build employee–supervisor relationships.

A potential area of future study could focus on organizations with virtual workers who use webcams and other technical devices to allow workers to communicate visually, to offset for the lack of face–to–face interaction. The study could assess if the role of technological devices such as webcams minimizes the desire for in–person, face–to–face contact, or if the managers perceive the devices as obstacles. In addition, a future study could include different generational groups, such as Baby Boomers, Generation X, and Millennials, to acquire information on how the various generations perceive virtual work arrangements and the management improvements desired. Future studies are important to prepare and respond to the work needs of future generations (Nafukho, Graham, & Muyia, 2010).

The execution of a virtual workplace can be costly for some organizations. Most organizations must invest in both hardware and software to facilitate employees working in a virtual setting. Thus, further research can focus on the financial aspects associated with virtual work to examine the cost benefits of this design work. Another study can be directed at the societal benefits of a virtual workplace to ascertain the degree that virtual work has benefited society.

Recommendations for Actions

As previously noted, study participants identified the lack of face–to–face interaction as the most significant challenge in managing the productivity of virtual worker. It is imperative that organizational leaders provide managers with information and training on leading virtual workers in the absence of face–to–face interaction. To address this concern, and the others discussed in this study, I offer several recommendations. Many of the actions listed were outlined by Golden (2009) in Chapter 2. The possible actions are as follows:

- Work with consultants that are well versed in virtual work arrangements to develop policies and training for managers assigned virtual workers.

- Provide mentoring by experienced managers to those managers who are new to working in a virtual context to assist with the transition.

- Develop training sessions for those managers who have managed long–term in a traditional setting to better assist with the change to virtual work.

- Set up a consistent technological usage protocol for all employees to follow, such as for communications: email, instant messaging, or phone.

- Ensure that the organization's technological capabilities can facilitate the utilization of virtual work. Organizations should invest in the latest software and hardware technologies available that would enable managers to interact with employees face–to–face such as web cams and other technological devices.

- Ensure the communication of virtual work policies to all virtual workers and implement measures to ensure the proper adherence of such policies.

- Schedule set times for virtual coffee or lunch breaks in an effort to bring virtual staff together on a regular basis.

- Hold in–person training sessions and meetings with virtual workers on a consistent and regular basis where permissible to minimize employee isolation.

Reflections

The journey of my doctoral study has had many challenges. The main challenge was balancing my work and family life with my course work. I realized that I wanted to conduct a study on virtual work arrangements after hearing several managers express concern and dismay for the virtual work design. My first challenge was narrowing my dissertation study topic so that it was not too broad. I wanted to focus on virtual work and conduct a study that would be meaningful to managers of virtual workers. Another challenge was finding applicable literature related to virtual work and subordinate productivity, as the topic of virtual work is still a new concept in today's business world. The literature review helped to solidify my study topic further as I realized a limited

number of articles exist that discussed my area of interest. My initial thought was to conduct a quantitative study on virtual work, but I truly feel that a phenomenological qualitative study provided a deeper understanding of the managers' perceptions, attitudes and beliefs for the concept of virtual work. I am pleased with the lessons learned and the valuable information gathered from the study participants, my classmates, and my professors.

Implications for Social Change

Virtual work is a relevant topic in today's business world. Several years ago, the importance of telework was highlighted when President Obama signed the 2010 Telework Enhancement Act. The telework act required federal agencies to initiate strategies for teleworking (Scott, Dam, Paez, & Wilton, 2012). The continued integration of information technologies in work arrangements could potentially allow more professionals to work virtually from nontraditional locations (Alexander & Dijst, 2012). It is the potential growth in virtual work arrangements that underscore the social importance of understanding how a virtual work arrangement influences employee productivity.

Positive social change occurs by improving the quality of a person's daily life. The study results could be used to provide positive social change by offering insight into the managers' views of virtual work arrangements. This study further provided information on the distinct challenges managers experience overseeing the work output of virtual workers. The information presented in this study is significant for organizational leaders faced with the decision of whether to implement virtual work

arrangements because it indicates that employee productivity will not necessarily erode in a virtual work placement. The positive results could help to reduce managerial resistance or skepticism regarding the use of virtual work arrangements, thus allowing more individuals to benefit from this flexible work design. An increased use of virtual work arrangements can affect positive social change in society be reducing gasoline consumption, road congestion, and related pollutants. It can further assist organizations by reducing space–related costs and improving employee morale and work–life balance.

This research contributes to positive societal change by focusing on the organizational issue of productivity in virtual work arrangements. This area has been largely understudied. As noted previously, the majority of existing studies on virtual work focused on employee–related outcomes. Therefore, I examined the virtual work phenomenon while placing emphasis on the organizational outcome of productivity. I specifically concentrated on the managers' perceptions, attitudes, and shared beliefs of virtual work arrangements and worker productivity, which also has been largely understudied.

Although some organizations have been slow to embrace the concept of virtual work, I anticipate that this work model will become more popular as more leaders recognize the associated benefits (Scott et al., 2012). It is important to provide a richer understanding of virtual work, as Green and Roberts (2010) maintained that the virtual organization is one of the most significant innovations affecting the structure of organizations in the 21st century. The decision to implement virtual work arrangements is a business management decision and very few business management decisions do not

induce an effect on subordinate productivity (Nebl & Schroeder, 2011). It is essential that organizational leaders have adequate information to help with business decisions related to virtual work and to sustain worker productivity to meet organizational outcomes.

Summary and Study Conclusions

As discussed in Chapter 1, Mahler (2012) stressed the importance of understanding managers' telework concerns and the disadvantages this work model possesses. A thorough understanding of the under–acknowledged shortcomings to teleworking will facilitate the development of solutions to address related management challenges (Mahler, 2012). The information provided by this study could potentially contribute to increased receptivity for virtual work arrangements. It further offers meaningful information on the numerous challenges that virtual work arrangements present to managers responsible for overseeing virtual worker productivity.

This research study has fulfilled its mission to address the gap in literature on virtual work–studies and explore managers' perspectives on this topic. The study findings and related data advance the knowledge of virtual work arrangements. The study results may be replicated by other researchers to assist with understanding various aspects relating to the management of employees working in a virtual context.

In this study, I examined managers' perceptions of subordinate productivity in virtual work arrangements. I also explored the challenges managers encounter while overseeing the productivity of employees working in a virtual context and managers' views of virtual work arrangements in general Based on the findings from this study, I formed three conclusions:

Conclusion 1: Virtual work arrangements do not necessarily hamper subordinate productivity. A goal of this study was to support or refute assumptions that virtual work arrangements hinder worker productivity. Almost half of the managers participating in the study perceived that virtual work arrangements did not negatively affect worker productivity. Another 26% of participants did not perceive a change in subordinate productivity levels resulting from a virtual work environment. Therefore, the positive study findings do not support assumptions or claims that a virtual work arrangement adversely affects subordinate productivity. This determination is significant because it can have a positive societal effect by potentially reducing managerial resistance to virtual work arrangements.

Conclusion 2: Virtual work arrangements pose significant challenges for managers responsible for overseeing virtual worker productivity levels. A subobjective of this study was to identify the challenges managers face while overseeing employee productivity in a virtual work arrangement. The results of the study identified the following significant challenges: (a) managing workers in the absence of face–to–face contact, (b) communicating with subordinates working virtually, (c) dealing with trust issues related to virtual workers, (d) providing adequate supervisory oversight of virtual workers, and (e) changing the mindset of managers who strongly prefer the traditional work model.

Conclusion 3: Managers support the use of virtual work arrangements. The second subobjective of this study was to examine the managers' overall views of virtual work arrangements. The study results indicated that the participating managers were

largely supportive of virtual work arrangements—but emphasized that this work design presents several challenges for maintaining virtual worker productivity.

In summary, the use of virtual work arrangements is expected to increase as technological innovations continue to make great strides in how and where employees work. Maintaining employee productivity, regardless of the work environment, is crucial for organizations to survive. Although it is important for organizations to focus on employee needs, it is imperative that organizational leaders remain cognizant of the needs and perceptions of managers or others entrusted to maintain the productivity of subordinates working in virtual work arrangements. Organizational leaders can apply the data gained from this study to understand managers' perceptions of virtual work and related worker productivity to develop strategies to ensure worker productivity is maintained.

References

Aboelmaged, M. G., & El Subbaugh, S. M. (2012). Factors influencing perceived productivity of Egyptian teleworkers: An empirical study. *Measuring Business Excellence, 16*(2), 3–22. doi:10.1108/13683041211230285

Abrams, L. S. (2010). Sampling hard to reach populations in qualitative research: The case of incarcerated youth. *Qualitative Social Work, 9*, 536–550. doi:10.1077/1473325010367821

Alexander, B., & Dijst, M. (2012). Professional workers @ work: Importance of work activities for electronic and face–to–face communications in the Netherlands. *Transportation, 39*(5), 919–940. doi:10.1007/s11116-012-9400-2

Allen, T. D., Johnson, R. C., Kiburz, K. M., & Shockley, K. M. (2013). Work–family conflict and flexible work arrangements: Deconstructing flexibility. *Personnel Psychology*, *66*(2), 345–376. doi:10.1111/peps.12012

Aspen, K., & Thompson, L. (2009). The recruitment value of work–life benefits. *Personnel Review*, *38*, 195–210. doi:10.1108/00483480910931343

Baard, N., & Thomas, A. (2010). Teleworking in South Africa: Employee benefits and challenges. *SA Journal of Human Resource Management, 8*(1), 1–10. doi:10.4102/sajhrm.v8i1.298

Bailey, D. E., & Kurland, N. B. (2002). A review of telework research: Findings, new directions, and lessons for the study of modern work. *Journal of Organizational Behavior, 23*(4), 383–400. doi:10.1002/job.144

Bartel, C. A., Wrzesniewski, A., & Wiesenfeld, B. A. (2012). Knowing where you stand: Physical isolation, perceived respect, and organizational identification among virtual employees. *Organization Science, 23*(3), 747–757. doi:10.1287/orsc.1110.0661

Beauregard, T. A., & Henry, L. C. (2009). Making the link between work–life balance practices and organizational performance. *Human Resource Management Review, 19*(1), 9–22. doi:10.1016/j.hrmr.2008.09.001

Berg, P., Kossek, E. E., Misra, K., & Belman, D. (2014). Work–life flexibility policies: Do unions affect employee access and use? *Industrial & Labor Relations Review, 67* (1), 111-137 doi:10.1177/001979391406700105

Bernardino, A. F., Roglio, K. D. D., & Del Corso, J. M. (2012). Telecommuting and HRM: A case study of an information technology service provider. *Journal of Information Systems and Technology Management, 9*(2), 285–306. doi:10.4301/S1807-17752012000200005

Berry, G. R. (2011). Enhancing effectiveness on virtual teams. *Journal of Business Communication*, *48*(2), 186–206. doi:10.1177/0021943610397270

Beverland, M., Kates, S., Lindgreen, A., & Chung, E. (2010). Exploring consumer conflict management in service encounters. *Journal of the Academy of Marketing Science, 38*(5), 617–633. doi:10.1007/s11747-009-0162-0

Bhattacherjee, A., & Harris, M. (2009). Individual adaptation of information technology. *Journal of Computer Information Systems, 50*(1), 37–45. Retrieved from http://www.iacis.org/jcis/jcis.php

Bloom, N., Liang, J., Roberts, J. C., & Ying, Y. J. (2012). *Does working from home work? Evidence from a Chinese experiment*. Retrieved from http://www.stanford.edu/~nbloom/WFH.pdf

Borrego, M., Douglas, E. P., & Amelink, C. T. (2011). Quantitative, qualitative, and mixed research methods in engineering education. *Journal of Engineering Education, 41*(1), 153–166. doi:10.1002/j.2168-9830.2009.tb01005.x

Bourne, K. A., & Forman, P. J. (2014). Living in a culture of overwork: An ethnographic study of flexibility. *Journal of Management Inquiry, 23*(1), 68–79. doi:10.1177/1056492613481245.

Brice, Jr, J., Nelson, M., & Gunby, Jr., N. W. (2011). The governance of telecommuters: An agency and transaction cost analysis. *Academy of Strategic Management Journal, 10*(1), 1–17. Retrieved from http://www.alliedacademies.org/public/journals/journaldetails.aspx?jid=13

Brunelle, E. (2013). Leadership and mobile working: The impact of distance on the superior–subordinate relationship and the moderating effects of leadership style. *International Journal of Business and Social Science, 4*(11), 1–15. Retrieved from http://www.ijbssnet.com/

Butler, S. E., Aasheim, C., & Williams, S. (2007). Does telecommuting improve productivity? *Association for Computing Machinery. Communications of the ACM, 50*(4), 101–103. doi:10.1145/1232743.1232773

Caillier, J. G. (2012). The impact of teleworking on work motivation in a U.S. federal government agency. *American Review of Public Administration*, *41*, 461–480. doi:10.1177/0275074011409394

Caillier, J. G. (2013). Does teleworking affect managing for results and constructive feedback? A research note. *Canadian Public Administration*, *56*(4), 638–654. doi:10.1111/capa.12043

Caillier, J. G. (2014). Do role clarity and job satisfaction mediate the relationship between telework and work effort? *International Journal of Public Administration, 37*(4), 193–201. doi**:**10.1080/01900692.2013.798813

Calvasina, G. E., Calvasina, R. V., & Calvasina, E. J. (2012). The virtual office: HRM legal, policy, and practice issues. *Business Studies Journal*, *4*(2), 37–46. Retrieved from http://www.alliedacademies.org/public/journals/JournalDetails.aspx?jid=26

Cisco Systems. (2009). *Cisco study finds telecommuting significantly increases employee productivity, work–life flexibility and job satisfaction.* Retrieved from Cisco Technology News Site at http://newsroom.cisco.com

Clark, L., Karau, S. J., & Michalisin, M. D. (2012). Telecommuting attitudes and the big five' personality dimensions. *Journal of Management Policy & Practice*, *13*(3), 31–46. Retrieved from http://www.na-businesspress.com/jmppopen.html

Coast, J., & Horrocks, S. (2010). Developing attributes and levels for discrete choice experiments using qualitative methods. *Journal of Health Services Research and Policy, 12*(1), 25–30. doi:10.346457934563454

Coenen, M., & Kok, R. A. W. (2014). Workplace flexibility and new product development performance: The role of telework and flexible work schedules. *European Management Journal, 32*(4), 564. doi:10.1016/j.emj.2013.12.003

Colbert, C. J. (2011). *Telework as part of a business continuity strategy: A path toward organizational resilience* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI 3475090)

Colfax, R. S., Santos, A. T., & Diego, J. (2009). Virtual leadership: A green possibility in critical times but can it really work? *Journal of International Business Research*, *8*(2), 133–139. Retrieved from http://www.alliedacademies.org/public/journals/journaldetails.aspx?jid=15

Collins, M. (2005). The (not so simple) case for teleworking: A study at Lloyd's of London. *New Technology, Work, and Employment, 20,* 115–132. doi:10.1111/j.1468-005X.2005.00148.x

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: Sage.

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage

Creswell, J. W., & Plano Clark, V. L. (2010). *Designing and conducting mixed methods research.* Thousand Oaks, CA: Sage.

Crisp, C., & Jarvenpaa, S. L. (2013). Swift trust in global virtual teams: Trusting beliefs and normative actions. *Journal of Personnel Psychology*, *12*(1), 45–56. doi:10.1027/1866-5888/a000075

Dahlstrom, T. R. (2013). Telecommuting and leadership style. *Public Personnel Management*, *42*(3), 438–451. doi:10.1177/0091026013495731

Day, F., & Burbach, E, M. (2011). Telework considerations for public managers with strategies for increasing utilization. *Communications of the IBIMA, 2011.* doi:10.5171/2011.880212

DeSanctis, G., & Poole, M. S. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization Science*, *5*(2), 121–147. Retrieved from http://pubsonline.informs.org/journal/orsc

Diaz, I., Chiaburu, D. S., Zimmerman, R. D., & Boswell. W. R. (2012). Communication technology: Pros and cons of constant connection to work. *Journal of Vocational Behavior*, 80, 500–508. Retrieved from http://www.journals.elsevier.com/journal-of-vocational-behavior/

Drew, J. (2013). How to open new doors by closing your office. *Journal of Accountancy*, *216*(1), 24–29. Retrieved from http://www.journalofaccountancy.com/

Dutcher, E. G. (2012). The effects of telecommuting on productivity: An experimental examination. The role of dull and creative tasks. *Journal of Economic Behavior & Organization*, *84*(1), 355–363. doi:10.1016/j.jebo.2012.04.009

Duxbury, L., & Halinski, M. (2014). When more is less: An examination of the relationship between hours in telework and role overload. *Work, 48*(1), 91–103. doi:10.3233/WOR-141858

Ellison, J. (2012). Ergonomics for telecommuters and other remote workers. *Professional Safety*, *57*, 86–90. Retrieved from http://www.asse.org/assets/1/7/Jessica-Ellison-Article.pdf

Elsbach, K., & Cable, D. (2012). Why showing your face at work matters. *MIT Sloan Management Review, 53*(4), 10–12. Retrieved from http://sloanreview.mit.edu/

Englander, M. (2012). The interview: Data collection in descriptive phenomenological human scientific research. *Journal of Phenomenological Psychology*, *43*(1), 13–35. doi:10.1163/156916212X632943

Eversole, B. A. W., Venneberg, D. L., & Crowder, C. L. (2012). Creating a flexible organizational culture to attract and retain talented workers across generations. *Advances in Developing Human Resources, 14,* 607–625. doi:10.1177/1523422312455612

Fiksenbaum, L. M. (2014). Supportive work–family environments: Implications for work–family conflict and well–being. *International Journal of Human Resource Management, 25*(5), 653–672. doi:10.1080/09585192.2013.796314

Fenner, G. H., & Renn, R. W. (2010). Technology–assisted supplemental work and work–to–family conflict: The role of instrumentality beliefs, organizational expectations and time management. *Human Relations*, *63*, 63–82. doi:10.1177/0018726709351064

Fonner, K. L., & Roloff, M. E. (2010). Why teleworkers are more satisfied with their jobs than are office–based workers: When less contact is beneficial. *Journal of Applied Communication Research*, *38*(4), 336–361. doi:10.1080/00909882.2010.513998

Fonner, K. L., & Stache, L. C. (2012). All in a day's work, at home: Teleworkers' management of micro role transitions and the work–home boundary. *New Technology, Work & Employment*, *27*(3), 242–257. doi:10.1111/j.1468-005X.2012.00290.x

Forgacs, T. (2010). Empirical research findings on telework: Management experiences and attitudes. *Business & Economic Horizons*, *1*(1), 6–13. Retrieved from http://academicpublishingplatforms.com/journal.php?journal=BEH

Franzosi, R. (2004). Content analysis. In M. Lewis–Beck, A. Bryman, & T. Liao (Eds.), *Encyclopedia of social science research methods.* Thousand Oaks, CA: Sage Publications, Inc. doi:10.4135/9781412950589.n166

Fuhr, J. P., & Pociask, S. (2011). Broadband and telecommuting: Helping the U.S. environment and the economy. *Low Carbon Economy, 2*(1), 41–47. doi:10.4236/lce.2011.21007.

Furumo, K., & Melcher, A. (2006). The importance of social structure in implementing ERP systems: A case study using adaptive structuration theory. *Journal of Information Technology Case and Application Research, 8*(2), 39–58. doi:10.1080/15228053.2006.

Gálvez, A., Martínez, M., & Pérez, C. (2011). Telework and work–life balance: Some dimensions for organisational change. *Journal of Workplace Rights*, *16*(3/4), 273–297. doi:10.2190/WR.16.3-4.b

Gavin, H. (2008). Thematic analysis. In *Understanding research methods and statistics in psychology.* London, England: Sage Publications Ltd. doi:10.4135/9781446214565.n17

Genova, G. L. (2010). The anywhere office = Anywhere liability. *Business Communication Quarterly,73*(1), 119. doi:10.1177/1080569909358104

Giddens, A. (1984). *The constitution of society: Outline of the theory of structure*. Berkeley, CA: University of California Press.

Gladys, A. (2014). *A phenomenological study of the lived experiences of employees who work virtually and their perceptions of leadership behaviors that create a successful virtual organization.* Doctoral dissertation). Available from Proquest Dissertations and Theses database. (UMI 3619351).

Golden, T. D. (2009). Applying technology to work: toward a better understanding of telework. *Organization Management Journal (Palgrave Macmillan Ltd.)*, *6*(4), 241–250. doi:10.1057/omj.2009.33

Golden, T. D., & Froman, A. (2011). Does it matter where your manager works? Comparing managerial work mode (traditional, telework, virtual) across subordinate work experiences and outcomes. *Human Relations, 64*(11), 1451–1475. doi:10.1177/0018726711418387

Green, D. D., & Roberts, G. E. (2010). Personnel implications of public sector virtual organizations. *Public Personnel Management*, *39*(1), 47–57. doi:10.1177/009102601003900103

Greenhaus, J. H., & Allen, T. D. (2011). Work–family balance: A review and extension of the literature. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (2nd ed., pp. 165–174). Washington, DC: American Psychological Association

Greer, T. W., & Payne, S. C. (2014). Overcoming telework challenges: Outcomes of successful telework strategies. *Psychologist–Manager Journal*, *17*(2), 87–111. doi:10.1037/mgr0000014

Guiler, J. K., & Kelly, M. (2009). Don't look for me, I'll be working from Starbucks today: A review of regulations that may apply to off–site workplaces. *SAM Advanced Management Journal (07497075)*, *74*(2), 23–31. Retrieved from http://samnational.org/publications/sam–advanced–management–journal–contents/

Harmer, B. M., & Pauleen, D. J. (2012). Attitude, aptitude, ability and autonomy: the emergence of 'offroaders', a special class of nomadic worker. *Behaviour & Information Technology*, *31*(5), 439–451. doi:10.1080/0144929X.2010.489117

Hayman, J. (2010). Flexible work schedules and employee well–being. *New Zealand Journal of Employment Relations (Online), 35*(2), 76–87. Retrieved from http://www.nzjournal.org/index.htm

Hecht, T. D., & Allen, N. J. (2009). A longitudinal examination of the work–nonwork boundary strength construct. *Journal of Organizational Behavior, 30*(7), 839–862. doi:10.1002/job.579

Heng, T. B., Hooi, S. C., Liang, Y. Y., Othma, A., & San, O. T. (2012). Telecommuting for business continuity in a non–profit environment. *Asian Social Science, 8*(12), 226–237. doi:10.5539/ass.v8n126

Hicks, R., PhD., & McCracken, J., PhD. (2011). Coaching as a leadership style. *Physician Executive, 37*(5), 70–72. Retrieved from http://www.unboundmedicine.com/medline/journal/Physician_executive?start=24 0&prev=true

Hilbrecht, M., Shaw, S. M., Johnson, L. C., & Andrey, J. (2013). Remixing work, family and leisure: teleworkers' experiences of everyday life. *New Technology, Work & Employment*, *28*(2), 130–144. doi:10.1111/ntwe.12010

Hill, R., Tranby, E., Kelly, E., & Moen, P. (2013). Relieving the time squeeze? Effects of a white–collar workplace change on parents. *Journal of Marriage and Family, 75*(4), 1014–1029. doi:10.1111/jomf.12047

Hines, A. (2009). How accurate are your forecasts? More accurate than you might think. *World Future Review*,1(5), 5–22. doi:10.1177/194675670900100503

Hoang, A., Nickerson, R., Beckman, P., & Eng, J. (2008). Telecommuting and corporate culture: Implications for the mobile enterprise. *Information Knowledge Systems Management*, *7*(1/2), 77–97. doi:10.1016/j.sbspro.2012.06.1049

Hunter, E., Neubert, M., Perry, S., Witt, L., Penney, L., & Weinberger, E. (2013). Servant leaders inspire servant followers: Antecedents and outcomes for employees and the organization. *Leadership Quarterly, 24*(2), 316–331. doi:10.1016/j.leaqua.2012.12.001

Hunton, J., & Norman, C. (2010). The impact of alternative telework arrangements on organizational commitment: Insights from a longitudinal field experiment. *Journal of Informational Systems, 24*(1), 67–90. doi:10.2308/jis.2010.24.1.67.

Hynes, M. (2012). The practices of technology: Putting society and technology in their rightful place. *International Journal of Technology, Knowledge & Society*, *8*(3), 37–54. Retrieved from http://ijt.cgpublisher.com/product/pub.42/prod.849

Jaakson, K., & Kallaste, E. (2010). Beyond flexibility: reallocation of responsibilities in the case of telework new technology, work and employment telework and change of responsibilities. *New Technology, Work & Employment*, *25*(3), 196–209. doi:10.1111/j.1468-005X.2010.00248.x

Julien, M., Somerville, K., & Culp, N. (2011). Going beyond the work arrangement: The crucial role of supervisor support, *Public Administration Quarterly, 35*(2), p.168–204. Retrieved from http://www.spaef.com/index.php

Kanellopoulos, D. N. (2011). How can teleworking be pro–poor? *Journal of Enterprise Information Management, 24*(1), 8–29. doi:10.1108/17410391111097401

Kelliher, C., Anderson, D. (2010). Doing more with less? Flexible working practices and the intensification of work, *Human Relations, 63*(1), 83–106. doi:10.1177/0018726709349199

Kerfoot, K. M. (2010). Listening to see: The key to virtual leadership. *Nursing Economics, 28*(2), 114–115. Retrieved from http://europepmc.org/abstract/med/20446383

Koehler, J. W., Philippe, T. W., & Pereira, K. N. (2013). Employee trust: Traditional versus telecommuting work environments. *Academy of Business Research Journal*, *1,* 257–63. Retrieved from http://www.aobronline.com/

Kopelman, R. E., Prottas, D. J., & Falk, D. W. (2012). Further development of a measure of theory x and y managerial assumptions. *Journal of Managerial Issues, 24*(4), 450–470. Retrieved from http://connection.ebscohost.com/c/articles/87526568/further–development–measure–theory–x–y–managerial–assumptions

Kopelman, R. E., Prottas, D. J., & Falk, D. W. (2010). Construct validation of a theory x/y behavior scale. *Leadership & Organization Development Journal, 31*(2), 120–135. doi:10.1108/01437731011024385

Lari, A. (2012). Telework/workforce flexibility to reduce congestion and environmental degradation? *Procedia – Social and Behavioral Sciences,* 48,712–721. doi:10.1016/j.sbspro.2012.06.1049

Lautsch, B. A., & Kossek, E. E. (2011). Managing a blended workforce: Telecommuters and non–telecommuters. *Organizational Dynamics*, *40*(1), 10–17. doi:10.1016/j.orgdyn.2010.10.005

Lautsch, B. A., Kossek, E. E., & Eaton, S. C. (2009). Supervisory approaches and paradoxes in managing telecommuting implementation. *Human Relations,* 62(6), 795–827, doi:10.1177/0018726709104543

Lauzun, H., Morganson, V., Major, D., & Green, A. (2010). Seeking work–life balance: Employees' requests, supervisors' responses, and organizational barriers. *Psychologist–Manager Journal, 13*(3), 184–205. doi:10.1080/10887156.2010.500953

Lazar, I., Osoian, C., & Ratiu, P. (2010). The role of work–life balance practices in order to improve organizational performance. *European Research Studies Journal, 13*(1), 201–213. Retrieved from www.ersj.eu/

Lee, S., & Hong, J. (2011). Does family–friendly policy matter? Testing its impact on turnover and performance. *Public Administration Review*, *71*(6), 870–879. doi:10.1111/j.1540-6210.2011.02416.x

Leedy, P. D., & Ormrod, J. E. (2005). *Practical research planning and design.* Upper Saddle River, NJ: Pearson Education, Inc.

Leonardi, P. M., Treem, J. W., & Jackson, M. H. (2010). The connectivity paradox: Using technology to both decrease and increase perceptions of distance in distributed work arrangements. *Journal of Applied Communication Research, 38*(1), 85–105. doi:10.1080/00909880903483599

Lilly, J. D., & Durr, D. W. (2012). Technology changes at work and employee reactions: The role of leader behavior. *Human Systems Management*, *31*(3/4), 193–201. doi:10.3233/HSM-2012-0769

Linden, M., & Milchus, K. (2014). Teleworkers with disabilities: Characteristics and accommodation use. *Work, 47*(4), 473–83. doi:10.3233/WOR-141834

Lister, K., & Harnish, T. (2011). The state of the telework in the U.S. *Telework Research Network*. Retrieved from http://www.workshifting.com

Long, L. K., & Meglich, P. A. (2013). Preparing students to collaborate in the virtual work world. *Higher Education, Skills and Work – Based Learning, 3*(1), 6–16. Do: 10.1108/20423891311294948

Mackenzie, M.L. (2010). Manager communication and workplace trust: Understanding manager and employee perceptions in the e–world. *International Journal of Information Management, 30(*6), 529–541. doi:10.1016/j.ijinfomgt.2010.04.001

Madlock, P. E. (2012). The influence of supervisors' leadership style on telecommuters. *Journal of Business Strategies, 29*(1), 1–24. Retrieved from http://connection.ebscohost.com/c/articles/77472590/influence–supervisors–leadership–style–telecommuters

Mahler, J. (2012). The telework divide: Managerial and personnel challenges of telework. *Review of Public Personnel Administration, 32(*4), 407–418. doi:10.1177/0734371X12458127

Marques, J. F. (2010). Enhancing the quality of organizational communication. *Journal of Communication Management, 14*(1), 47–58. doi:10.1108/13632541011017807

Martin, B. H., & MacDonnell, R. (2012). Is telework effective for organizations? *Management Research Review, 35*(7), 602–616. doi:10.1108/01409171211238820

Maruyama, T., Hopkinson, P. G., & James, P. W. (2009). A multivariate analysis of work–life balance outcomes from a large–scale telework programme. *New Technology, Work & Employment*, *24*(1), 76–88. doi:10.1111/j.1468-005X.2008.00219.x

Maruyama, T., & Tietze, S. (2012). From anxiety to assurance: Concerns and outcomes of telework. *Personnel Review, 41*(4), 450–469. doi:10.1108/00483481211229375

Mayo, M., Pastor, J., Gomez–Mejia, L., & Cruz, C. (2009). Why some firms adopt telecommuting while others do not: A contingency perspective. *Human Resource Management, 48*(6), 917–939. doi:10.1002/hrm.20322

Maxwell, J. A. (2005). *Qualitative research design: An interactive approach*. Thousand Oaks, CA: Sage Publications

MacDermid Wadsworth, S., & Southwell, K. (2011). Military families: Extreme work and extreme "work–family", *ANNALS of the American Academy of Political and Social Science, 638*(1), 163–183. doi:10.1177/000271621141644

McGregor, D. (1960). *The human side of enterprise*. New York, NY: McGraw–Hill.

Mekonnen, T. (2013). *Examining the effect of teleworking on employees' job performance.* (Doctoral dissertation). Available from Proquest Dissertations and Theses database. (UMI 3594074)

Messer, R. (2010). Going nowhere – but fast! E–employment – the next internet revolution. *Business Information Review, 27*(2), 101–103. doi:10.1177/0266382110370432

Moen, P., Kelly E. L., & Hill, R. (2011). Does enhancing work–time control and

flexibility reduce turnover? A naturally occurring experiment. *Social Problems,*

58(1), 69–98. doi:10.1525/sp.2011.58.1.69.

Moon, S., PhD., & Roh, J., PhD. (2010). Balancing work and family in South Korea's

public organizations: Focusing on family–friendly policies in elementary school

organizations. *Public Personnel Management, 39*(2), 117–131.

doi:10.1177/009102601003900203

Moretti, F., van Vliet, L., Bensing, J., Deledda, G., Mazzi, M., Rimondini, M., …

Fletcher, I. (2011). A standardized approach to qualitative content analysis of

focus group discussions from different countries. *Patient Education and*

Counseling, 82(3), 420–428. doi:10.1016/j.pec.2011.01.005

Morganson, V. J., Major, D. A., Oborn, K. L., Verive, J. M., & Heelan, M. P. (2010).

Comparing telework locations and traditional work arrangements. *Journal of*

Managerial Psychology, 25(6), 578–595. doi:10.1108/02683941011056941

Moser, K. S., & Axtell, C. M. (2013). The role of norms in virtual work: A review and

agenda for future research. *Journal of Personnel Psychology*, *12*(1), 1–6.

doi:10.1027/1866-5888/a000079

Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.

Mukherjee, D., Lahiri, S., Mukherjee, D., & Billing, T. K. (2012). Leading virtual teams:

How do social, cognitive, and behavioral capabilities matter? *Management*

Decision, 50(2), 273–290. doi:10.1108/00251741211203560

Mulki, J. P., Bardhi, F., Lassk, F. G., & Nanavaty–Dahl, J. (2009). Set up remote workers to thrive. *MIT Sloan Management Review, 51*(1), 63–69. Retrieved from http://sloanreview.mit.edu/

Mustafa, M., & Gold, M. (2013). 'Chained to my work'? Strategies to manage temporal and physical boundaries among self–employed teleworkers. *Human Resource Management Journal, 23,* 413–429. doi:10.1111/1748-8583.12009

Nafukho, F. M., Graham, C. M., & Muyia, H. M. A. (2010). Harnessing and optimal utilization of human capital in virtual workplace environments. *Advances in Developing Human Resources, 12*(6), 648–664. doi:10.1177/1523422310394791

Nebl, T., & Shroeder, A. (2011). Understanding the interdependencies of quality problems and productivity. *TQM Journal, 23*(5), 480–495. doi:101108/17542731111157590

Ng, C. (2010). Teleworker's home office: An extension of corporate office? *Facilitie*s, 28, (3/4), 137–155. doi:10.1108/02632771011023113

Nilles, J. M. (2014). Global trends 2030: The forecast of the thousand hands. *World Future Review,* 5: 383–384. doi:10.1177/1946756713510279

Nilles, J. M., Carlson, F. R. Jr., Gray, P., & Hanneman, G. J. (1976). *Telecommunications–transportation trade off: Options for tomorrow.* New York, NY: John Wiley.

Nunamaker Jr., J. F., Reinig, B. A., & Briggs, R. O. (2009). Principles for effective virtual teamwork. *Communications of the ACM*, *52*(4), 113–117. doi:10.1145/1498765.1498797

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. Retrieved from http://universitypublications.net/ijas/0602/html/toc.html

Nydegger, R., PhD., & Nydegger, L., B.A. (2010). Challenges in managing virtual teams. *Journal of Business & Economics Research, 8*(3), 69–82. Retrieved from http://www.cluteinstitute.com/journals/journal–of–business–economics–research–jber/

Offstein, E. H., Morwick, J. M., & Koskinen, L. (2010). Making telework work: Leading people and leveraging technology for competitive advantage, *Strategic HR Review, 9(2),* 32–37. doi:10.1108/14754391011022244

Ojala, S., Nätti, J., Anttila, T. M. (2014). Informal overtime at home instead of telework: Increase in negative work—family interface, *International Journal of Sociology and Social Policy*, 34 (1/2), 69–87. doi:10.1108/IJSSP-03-2013-0037.

O'Neill, T. A., Hambley, L. A., Greidanus, N. S., MacDonnell, R., & Kline, T. B. (2009). Predicting teleworker success: An exploration of personality, motivational, situational, and job characteristics. *New Technology, Work & Employment*, *24*(2), 144–162. doi:10.1111/j.1468-005X.2009.00225.x

Overmyer, S. (2011). *Implementing telework: Lessons learned from four federal agencies.* IBM Center for the Business of Government, Transforming the Workforce Series. Retrieved from http://www.businessofgovernment.org/report/implementing–telework–lessons–learned–four–federal–agencies

Ozcelik, Y. (2010). The rise of teleworking in the USA: Key issues for managers in the information age. *International Journal of Business Information Systems*, *5*(3), 211–229. doi:10.1504/IJBIS.2010.031927

Paridon, H., & Hupke, M. (2009). Psychosocial impact of mobile telework: Results from an online survey. *Europe's Journal of Psychology, Special section*, *5*(1), 1–20. doi.10.5964/ejop.v5i1.282

Parker, D., Waller, K., Xu, H. (2013). Private and public services: Productivity and performance migration, *International Journal of Productivity and Performance Management, 62*(6), 652–664. doi:10.1108/IJPPM-10-2012-0119

Parolini, J., Patterson, K., & Winston, B. (2009). Distinguishing between transformational and servant leadership. *Leadership & Organization Development Journal, 30*(3), 274–291. doi:10.1108/01437730910949544

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Pearce II, J. A. (2009). Successful corporate telecommuting with technology: Considerations for late adopters. *Organizational Dynamics*, *38*(1), 16–25. doi:10.1016/j.orgdyn.2008.10.002

Peters, P., Bleijenbergh, I., & Oldenkamp, E. (2009). The telework adoption process in a Dutch and French subsidiary of the same ICT–multinational: How national culture and management principles affect the success of telework programs. *Journal of E–Working, 3*, 1–16. Retrieved from http://www.inderscience.com/www/info/ijwi/ijwi_archives.php

Peters, P., den Dulk, L., & de Ruijter, J. (2010). May I work from home? Views of the employment relationship reflected in line managers' telework attitudes in six financial–sector organizations. *Equality, Diversity and Inclusion: An International Journal, 29*(5), 517–531. doi:10.1108/02610151011052799

Peters, P., & Heusinkveld, S. (2010). Institutional explanations for managers' attitudes towards telehomeworking. *Human Relations, 63*(1), 107–135. doi:10.1177/0018726709336025

Pinar, T., Zehir, C., Kitapçi, H., & Tanriverdi, H. (2014). The relationships between leadership behaviors team learning and performance among the virtual teams. *International Business Research, 7*(5), 68–79. doi:10.5539/ibr.v7n5p68

Purvanova, R. K., & Bono, J. E. (2009). Transformational leadership in context: Face–to–face and virtual teams. *Leadership Quarterly*, 20, 343–357. doi:10.1016/j.leaqua.2009.03.004

Putnam, L, Myers, K., & Gailliard, B. (2014). Examining the tensions in workplace flexibility and exploring options for new directions. *Human Relations, 67*(4), 413–440. doi:10.1177/0018726713495704

Pyoria, P. (2009). Virtual collaboration in knowledge work: From vision to reality. *Team Performance Management, 15*(7), 366–381. doi:10.1108/13527590911002140

Pyoria, P. (2011). Managing telework: risks, fears and rules. *Management Research Review*, *34*(4), 386–399. doi:10.1108/01409171111117843

Raiborn, C., & Butler, J. B. (2009). A new look at telecommuting and teleworking. *Journal of Corporate Accounting & Finance (Wiley)*, *20*(5), 31–39. doi:10.1002/jcaf.20511

Redman, T., Snape, E., & Ashurst, C. (2009). Location, location, location: Does place of work really matter? *British Journal of Management*, *20,* S171–S181. doi:10.1111/j.1467-8551.2008.00640.x

Richardson, J. (2010). Managing flexworkers: Holding on and letting go. *Journal of Management Development, 29*(2), 137–147. doi:10.1108/02621711011019279.

Robertson, M. M., Schleifer, L. M., & Huang, Y. (2012). Examining the macroergonomics and safety factors among teleworkers: Development of a conceptual model. *Work*, *41,* 2611–2615. doi:10.3233/WOR-2012-1029-2611

Robertson, M. M., & Vink, P. P. (2012). Examining new ways of office work between the Netherlands and the USA. *Work*, *41,* 5086–5090. doi:10.3233/WOR-2012-1042–5086

Roy, S. R. (2012). Digital mastery: The skills needed for effective virtual leadership. *International Journal of e–Collaboration, 8*(3), 56–66. doi:10.4018/jec.2012070104

Russ, T. L. (2013). The relationship between theory x/y: Assumptions and communication apprehension. *Leadership & Organization Development Journal, 34*(3), 238–249. doi:110.1108/01437731311326675

Sardeshmukh, S. R., Sharma, D., & Golden, T. D. (2012). Impact of telework on

 exhaustion and job engagement: A job demands and job resources model. *New*

 Technology, Work & Employment, *27*(3), 193–207. doi:10.1111/j.1468-

 005X.2012.00284.x

Schneider, B. (2011). The human face of workplace flexibility. *ANNALS of the American*

 Academy of Political and Social Science, *638*, 103–122.

 doi:10.1177/0002716211415824

Scholefield, G., & Peel, S. (2009). Managers' attitudes to teleworking. *New Zealand*

 Journal of Employment Relations (Online), 34(3), 1–13. Retrieved from

 http://www.nzjournal.org/

Scott, D. M., Dam, I., Páez, A., & Wilton, R. D. (2012). Investigating the effects of social

 influence on the choice to telework. *Environment & Planning A*, 44(5), 1016–

 1031. doi:10.1068/a43223

Shockley, K.*, & Allen, T. D. (*2010). Investigating the missing link in flexible work

 arrangement utilization: An individual difference perspective. *Journal of*

 Vocational Behavior, 76, 131–142. doi:10.1016/j.jvb.2009.07.002

Shriberg, A. (2009). Effectively leading and managing a virtual team. *Business Review,*

 Cambridge, 12(2), I–I, II. Retrieved from http://www.jaabc.com/brc.html

Snyder, K. (2012). Enhancing telework: A guide to virtual leadership. *Public Manager,*

 41(1), 11–14. Retrieved from https://www.td.org/Publications/Magazines/The–

 Public–Manager/Archives/2012/Spring/Enhancing–Telework–a–Guide–to–

 Virtual–Leadership

Spinuzzi, C. (2012). Working alone together: Coworking as emergent collaborative

activity. *Journal of Business and Technical Communication*, 26(4), 399–441.

doi:10.1177/1050651912444070

Stavrou, E., & Kilaniotis, C. (2010). Flexible work and turnover: An empirical

investigation across cultures. *British Journal of Management*, *21*(2), 541–554.

doi:10.1111/j.1467-8551.2009.00659.x

Stern, G. M. (2013, Apr 01). The widening divide over telecommuting telework thrives at

Aetna but is banned at Yahoo. *Investor's Business Daily*. Retrieved from

http://www.telepresenceoptions.com/2013/03/the_widening_telecommuting_div

Stout, M. S., Awad, G., & Guzmán, M. (2013). Exploring managers' attitudes toward

work–family programs in the private sector. *Psychologist–Manager Journal*,

16(3), 176–195. doi:10.1037/mgr0000005

Stryker, J. B., & Santoro, M. D. (2012). Facilitating face–to–face communication in

high–tech teams. *Research Technology Management*, *55*(1), 51–56.

doi:10.5437/08956308X5501013

Sullenger, B. (2007). Telecommuting: A reasonable accommodation under the Americans

with Disabilities Act as technology advances. *Regent University Law Review,

19*(2) 533–556. Retrieved from

http://www.regent.edu/acad/schlaw/student_life/studentorgs/lawreview/issues.cfm

Taskin, L., & Bridoux, F. (2010). Telework: a challenge to knowledge transfer in

organizations. *International Journal of Human Resource Management*, *21*(13),

2503–2520. doi:10.1080/09585192.2010.516600

Thomas, K. J. (2014). Workplace technology and the creation of boundaries: The role of VHRD in a 24/7 work environment. *Advances in Developing Human Resources*, *16*(3), 281–295. doi:10.1177/1523422314532092

Torraco, R. J. (2005). Work design theory: A review and critique with implications for human resource development. *Human Resource Development Quarterly, 16*(1), 85–109. doi:10.1002/hrdq.1125

Tremblay, D., & Thomsin, T. (2012). Telework and mobile working: Analysis of its benefits and drawbacks. *International Journal of Work Innovation*, 1(1*)*, 100–113. doi:10.1504/IJWI.2012.047995

Tuohy, D., Cooney, A., Dowling, M., Murphy, K., & Sixsmith, J. (2013). An overview of interpretive phenomenology as a research methodology. *Nurse Researcher*, *20*(6), 17–20. doi.org/10.7748/nr2013.07.20.6.17.e315

U.S. Office of Personnel Management. (2013). *Status of telework in the federal government. Report to Congress*. Washington, DC: Chief Human Capital Officers Council. Retrieved from http://www.telework.gov/Reports_and_Studies/Annual_Reports/2013teleworkreport.pdf

U.S. Office of Personnel Management. (2012). *OMP Fiscal Year 2011 annual report*. Retrieved from http://www.opm.gov/about–us/budget–performance/performance/2011–annual–report.pdf

U.S. Office of Personnel Management. (2011). *Guide to telework in the federal government.* Retrieved from http://www.telework.gov/guidance_and_legislation/telework_guide/telework_guide.pdf

Vidyarthi, P. R., Chaudhry, A., Anand, S., & Liden, R. C. (2014). Flexibility i–deals: How much is ideal? *Journal of Managerial Psychology, 29*(3), 246–265. doi:10.1108/JMP-07-2012-0225

Virick, M., Dasilva, N., & Arrigton, K. (2010). Moderators of the curvilinear relation between extent of telecommuting and job and life satisfaction: The role of performance outcome orientation and worker type. *Human Relations, 63*(1), 137–154. doi:10.1177/0018726709349198.

Weisberg, A., & Porell, M. (2011). Moving telework from compliance to competitiveness. *Public Manager, 40*(1), 12–14. Retrieved from https://www.td.org/Publications/Magazines/The–Public–Manager/Archives/2011/Spring/Moving–Telework–from–Compliance–to–Competitiveness

Westfall, R. D. (2004). Does telecommuting really increase productivity? *Communication of the ACM*, *47*(8), 93–96. doi:10.1145/1012037.1012042

Wheatley, D. (2012). Good to be home? Time–use and satisfaction levels among home–based teleworkers. *New Technology, Work & Employment*, *27*(3), 224–241. doi:10.1111/j.1468-005X.2012.00289.x

Williams, E. (2011). Environmental effects of information and communications technologies. *Nature, 479*(7373), 354–358. doi:10.1038/nature10682

Wilton, R. D., Páez, A., & Scott, D. M. (2011). Why do you care what other people think? A qualitative investigation of social influence and telecommuting. *Transportation Research Part A: Policy and Practice,* 45(4), 269–282. doi:10.1016/j.tra.2011.01.002

Ye, L. R. (2012). Telecommuting: Implementation for success. *International Journal of Business and Social Science, 3*(15), 20–29. Retrieved from http://www.ijbssnet.com/

Zhu, P. (2013). Telecommuting, household commute and location choice. *Urban Studies, 50*(12), 2441–2459. doi:10.1177/0042098012474520

Appendix A: Study Invitation

Invitation to participate in the research project titled: "The Perceptions of Managers Relating to Subordinate Productivity in Virtual Work Arrangements"

Dear Potential Participant:

I am conducting interviews as part of a research study to increase an understanding of how managers perceive that the virtual work environment relates to subordinate productivity. As a manager, you are in an ideal position to give your valuable and insightful information from your own perspective of subordinate productivity under a virtual work design. For my study, I am seeking study participants that are mid–level or first line managers who supervise two or more subordinates in a virtual work arrangement, and that also who have supervised subordinates in traditional work environments and a virtual work environment for a minimum of one year. In addition, all participants must be 18 years or over.

The interview will take approximately 30 to 45 minutes and will be very informal. My goal is to capture your thoughts and perspectives on supervising subordinates in a virtual work environment. All of your responses to the questions will be kept confidential. Each interviewee will be assigned a participant number to help ensure that participant personal identifiers are not revealed. At no time during the data analysis or study findings will actual participant identifiers be revealed. The study is voluntary and there is no compensation for participating in the study.

It should be noted that many of the existing studies on virtual work arrangements were conducted from the employee's perspective and hence there is a need for more research studies aimed at the management level. Therefore, your participation will be a valuable addition to the field of virtual work research. The findings from the study could lead to greater understanding of how managers perceive subordinate productivity relates to virtual work environments.

If you would like to participate in the study, please suggest a day, time and place for an interview that works best for you and I will do my best to be available. If you have any questions, please do not hesitate to contact me.

     Thank you,
     Frank Melvin

Appendix B: Questions and Subquestions

- What is your perception of subordinate productivity in virtual work arrangements?

    Subquestion: Specifically, what positive or negative effects do you

    perceive are related to subordinate productivity?

    Subquestion: How are your virtual employees more or less productive

    than workers in a traditional work setting?

    Subquestion: How do you measure subordinate productivity?

- From a managerial perspective, what challenges do you face managing the

    productivity of your subordinates in virtual work arrangements?

    Subquestion: How do you perceive this differs from the challenges faced

    in traditional office settings?

    Subquestion: How would you best describe your leadership style?

- What are your attitudes and perceptions towards virtual work arrangements?

    Subquestion: What learned experiences and or values contributed to your

    perceptions or opinions about virtual work arrangements?

    Please share the following information:

- Please circle your area of profession.

    a. Information Technology
    b. Accounting
    c. Finance
    d. Human Resources
    e. Other (_____)

- Number of years supervising two or more subordinates? _____

    f. In a traditional work environment? _____
    g. In a virtual work environment? _____

- How many subordinates do you supervise? _____

    h. In a traditional work environment? _____
    i. In a virtual work environment? _____

- What is the average number of hours that your employees work in a virtual context per week? _____

Appendix C: Confidentiality Agreement

Name of Signer:

During the course of my activity in collecting data for the research project titled: "***The Perceptions of Managers Relating to Subordinate Productivity in Virtual Work Arrangements***" I will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing the Confidentiality Agreement I acknowledge and agree that:

- I will not disclose or discuss any confidential information with others, including friends or family.
- I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized.
- I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant's name is not used.
- I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
- I agree that my obligations under the agreement will continue after termination of the job that I will perform.
- I understand that violation of the agreement will have legal implications.
- I will only access or use systems or devices I am officially authorized to access and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

Signing the document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.

Signature: Date:

Appendix D: Consent Form

You are invited to take part in a research study of ***The Manager's Perception of Subordinate Productivity in a Virtual Work Arrangement.*** The researcher is inviting participants to be in the study that supervise two or more subordinates in virtual work arrangements, and that have supervised workers in both a traditional work setting and a virtual work setting for a minimum of one year. The form is part of a process called "informed consent" to allow you to understand the study before deciding whether to take part.

The study is being conducted by a researcher named **Frank Melvin**, who is <u>a doctoral student</u> at Walden University. You may already know the researcher as a coworker or member of a professional business association, but the study is separate from that role.

Background Information:

The purpose of the study is to either refute or support claims that subordinate productivity is negatively influenced by the virtual work design, as perceived by the managers who supervise virtual workers.

The topic was chosen because a review of the literature has revealed that management resistance remains toward the particular work design, and also because more studies are needed on virtual work arrangements from a management perspective.

Procedures:

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

- Meet with researcher Frank Melvin for an interview session to address questions related to supervising subordinates in a virtual work arrangement.
- The interview session will take approximately 30 minutes to 45 minutes.
- **The interviews will be audio recorded with the participant's permission**.
- Only one interview session will be required.

Here are some sample questions:

What is your perception of subordinate productivity in virtual work arrangements?

   Subquestion: Specifically, what positive or negative effects do you perceive are related to subordinate productivity?

   Subquestion: How are your virtual employees more or less productive than workers in a traditional work setting?

   Subquestion: How do you measure subordinate productivity?

From a managerial perspective, what challenges do you face managing the productivity of your subordinates in virtual work arrangements?

   Subquestion: How do you perceive the challenges differ from the challenges faced in traditional office settings?

   Subquestion: How would you best describe your leadership style?

Voluntary Nature of the Study:

The study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at any professional business association or any organization will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may stop your participation in the study at any time without penalty.

Risks and Benefits of Being in the Study:

Being in the study would not pose a risk to your safety or wellbeing.

The potential benefits of the study include a greater understanding of how managers perceive that subordinate productivity is influenced by a virtual work design. The study is important because many of the

existing studies have been aimed at the employee level, such as job satisfaction, work–life factors, and or employee isolation. The study will be conducted to examine subordinate productivity from the eyes of the manager.

Payment:

No payments or gratuities will be granted for participation in the study.

Privacy:

Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of the research project. All participants will be identified with a participant number. The researcher will not include your name or any personal identifiers that could identify you in the study reports. Data will be kept secured by Frank Melvin in a locked environment. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:

You may ask any questions you have now. Alternatively, if you have questions later, you may contact the researcher via email.

Walden University's approval number for the study is 10–11–13–0081514 and it expires on 10–10–2014.

The researcher will give you a copy of the form to keep.

Statement of Consent:

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

Printed Name of Participant

Date of consent

Participant's Signature

Researcher's Signature

Appendix E: Interview Protocol

Study: The Perceptions of Managers Relating to Subordinate Productivity in
Virtual Work Arrangements

Interview Steps:

1. Thank the participant for agreeing to participate in the study titled: The
Perceptions of Managers Relating to Subordinate Productivity in Virtual Work
Arrangements.

2. List the following information:

   Date _____

   Time _____

   Location _____

   Interviewer _____

   Interviewee # _____

   Notes to interviewee:

3. State Purpose of Study:

    *The purpose of the proposed qualitative phenomenological study is to
    explore from a managerial perspective subordinate productivity in virtual work
    arrangements. Particularly, the study will focus on the phenomenon of virtual
    work arrangements and subordinate productivity to ascertain if productivity is
    negatively influenced as perceived by managers.*

4. 4. Ask participant to verify that they are 18 years or older _____

5. Review informed consent form _____

6. Obtain signature on form _____

7. Explain potential risk to the participant _____

8. Share how data will be collected and used _____

9. Explain how responses will remain confidential _____

10. Reiterate that participant may end the interview at any time for any reason _____

11. State that Approximate length of the interview should be 30 to 45 minutes _____

12. Ask participant not to refer to subordinates or others by name _____

13. State that three major questions and related subquestions will be posed _____

14. Request permission to audiotape responses, if participants decline inform them that you will read back responses at the conclusion of the interview _____

15. Ask participant if they have any questions before you begin _____

16. Start recorder if permission has been granted − State date and participant number − no participant names will be stated on audiotape _____

17. Begin questions starting with question #1 _____

18. At the conclusion of the interview, ask participant if they want you to read back responses or play back audio tape. Also ask if they would like to review the transcribed response upon completion _____

19. Ask the participant if they would like to receive a summary of the findings from the study_____

20. Ask the participant if they may be contacted if additional information or clarification is needed_____

21. Conclude with the statement that expresses gratitude for participant taking the time to participate in the study _____