

**THE DIFFERENTIAL IMPACTS OF TELECOMMUTING ON  
PARTICIPANT WORKER EXPERIENCES**

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**A Research Project  
Presented to the Faculty of  
The George L. Graziadio  
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**In Partial Fulfillment  
of The Requirements for the Degree  
Master of Science  
in  
Organization Development**

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**by  
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## **Abstract**

Telecommuting affects workers across job-related and person-related dimensions. Extant research highlights the impacts on work intensification, job satisfaction, isolation and development, manager and coworker relations, work-family conflict, physical and psychological health, gender and identity, time and space. This study explores telecommuter perceptions of the most profound impacts of the work arrangement and identifies actions they or their employers can take to enhance the experience. The research focuses on the experience of this population and investigates the phenomena using a mixed-methods approach consisting of an online survey and in-depth interviews. Results indicate the most profound impacts are: work intensity, isolation and development, work-family conflict and time, and job satisfaction. Moreover, these impacts display close correlations with others analyzed. These impacts also reflected the paradoxical dynamics of telecommuting work arrangements. Participants recommended that communication technology and practicing clear, consistent, and frequent communication with colleagues would enhance the telecommuting experience.

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## Chapter 1

### Introduction

Over the last 10 years, telecommuting, defined by Merriam-Webster as “work[ing] at home by the use of an electronic linkup with a central office,” has gained popularity among a broad range of both private and public organizations (“Telecommuting,” 2011). Globally, employment practices are trending in favor of telecommuting and industry experts predict the practice will continue to gain momentum in the next decades and beyond (Bélanger & Allport, 2007; Lister, 2010; WorldatWork, 2009). By 2019, according to data published by researchers based at George Washington University (Shahan, 2010), 30% of employees in industrialized countries will telecommute 2 to 3 days per week. Further, the estimated value of the market for their products and services is expected to simultaneously reach \$400 billion per year (Lister, 2010).

In the United States, telecommuting has established a beachhead and is growing by substantial percentages year over year (Bélanger & Allport, 2007; Shahan, 2010). Advocates of telecommuting nationwide won a decisive, public victory in December 2010 when President Barack Obama signed into law the Telework Enhancement Act of 2010 requiring “the head of each executive agency [of the federal government] to establish and implement a policy under which employees shall be authorized to telework” (para. 1).

From 2005 to 2008, the number of Americans who worked from home or remotely at least 1 day per month jumped 74% to 17.2 million (WorldatWork, 2009). A report released by the Consumer Electronics Association (2009), "Telework and the Technologies Enabling Work Outside Corporate Walls," indicated that in July 2009,

more than 38 million people (37% of the total U.S. workforce) worked from home at least once per month.

As the title of the Consumer Electronics Association (2009) report suggests, the widespread expansion of telecommuting is, in part, built on improvements in technical infrastructure. High-speed and wireless Internet connectivity, as well as personal and laptop computers, has become pervasive in homes around the world. Organizations have invested in powerful server farms, Web security solutions, and virtual private networks. Technology, however, can best be understood as an enabler of the groundswell in adoption of telecommuting practices.

The greatest forces behind the climb in support for telecommuting are the needs of organizations and employees. Employers today often lament the cost of recruiting and training new employees. Large and small businesses alike spend tens of thousands of dollars to attract candidates, on-board new hires, and design and deliver on-the-job, online, classroom, and mentoring programs. Employee turnover is a fundamental dysfunction in many organizations, generating hidden costs that negatively affect enterprise effectiveness and performance, particularly in light of the employment preferences of distinct labor pools (ISEOR, 2010; Winograd & Hais, 2011). In a recent study, 56% of hiring managers reported that Generation Y workers are more difficult to recruit and 64% reported them more difficult to retain (Lister, 2010). Although employers may be aware of these statistics, they are also struggling to remain solvent in a volatile economic climate and, as such, may perceive employee retention programs as marginally impactful and peripheral, lying outside of core, strategic business processes and objectives. Those organizations that do that place a high immediate value on these

programs may struggle to develop and implement best practices across the enterprise. In personal conversations among employees and organizations, telecommuting is often held up as a simple, contemporary, and successful approach to combating these concerns.

Telecommuting has evolved as a means to address the concerns noted above as well as to increase productivity and employee satisfaction, reduce absenteeism, overhead, and operating costs, move toward environmental sustainability, and achieve greater work-life balance.

From an organizational perspective, much research has been published to benefit employers. Articles in professional publications, commercially available guides, and white papers offered by consulting firms are poised to assist employers in determining if telecommuting may be an appropriate and advantageous option for them. These resources generally also propose best practices in program implementation. A few of these best practices include evaluating organizational readiness, assessing manager and supervisor resistance, and identifying employees who have the skills related to tasks and job types that lend themselves to telecommuting (The WorkPlace, 2007). Ample material also has been published related to theories surrounding telecommuter's relationship to the organization as well as on the topics of defining associated human resource business processes; addressing legal considerations; and best managing, assessing the productivity of, and driving the performance of telecommuting employees. Some of these strategies include setting ground rules for behavior during working hours, deploying instant messaging and video conferencing technologies for communication, and implementing security protocols to protect organizational data (Krasne, 2008).

From an employee perspective, much has been written about schemes workers can employ to determine if telecommuting is a suitable option, the economic advantages of telecommuting, the social and psychological effects of telecommuting on work/life balance and related boundary management techniques. Topics include creating a back-up office space, maintaining motivation, minimizing distractions, claiming a home office tax deduction and cultivating effective work habits (Marquit, 2011).

Many studies have also considered one or several advantages and disadvantages of telecommuting as preconceived by the researcher. In her thesis, *Do Flexible Work Arrangements Affect Perceptions Regarding Career Advancement?*, Hammond (2011) found a similar promotion rate for flexible work arrangement employees, a sample stipulated to include telecommuters and employees who did not have flexible work arrangements. Her research demonstrated that flexible work arrangements did not influence career advancement for employees electing the option. Hammond's study mirrors those which address researcher-selected disadvantages that do not undertake to inquire about remedies.

In sum, research to date has done little to address the aspects of this work arrangement that telecommuters themselves perceive as the most disadvantageous. It has also been limited in addressing telecommuters' specific recommendations about how to best remedy these disadvantages. Studies that do touch on these queries have generally narrowed the focus to the experiences of telecommuters employed by one organization or in one particular industry. It is curious that studies have not focused attention on telecommuters themselves as primary sources of knowledge and consultative capability.

## Research Purpose

This research project aimed to give voice to telecommuters. The project evolved out of the researcher's professional experiences, personal interest, and scholarship in organization development. The researcher has been employed as a telecommuter with four distinct organizations and maintains a network of former colleagues, professional acquaintances, and personal associates who are currently or were formerly employed as telecommuters.

In recent years, the subject of the benefits and disadvantages of telecommuting has been raised in countless conversations with members of these groups. Although positive attitudes and experiences appeared to support longevity with the employer and greater engagement, frustrations of the telecommuters often led to a deterioration or termination of the relationship with the employing organization. Indirectly witnessing and directly participating in these events, the researcher was influenced by their hidden, "off-balance-sheet" effects on organizations, such as gains in informal knowledge and organizational commitment as well as lost human potential and diminished capacity for innovation. Although at any one moment a telecommuter may find the benefits of the situation outweigh the disadvantages, the position of the scales often change.

Consequently, organizations have an opportunity to learn how telecommuters perceive the work arrangement within the scope of their professional and personal lives. All parties have an opportunity to benefit from the findings of this study, which include dimensions of the arrangement that telecommuters most commonly recognize as influential and how they or their employer could potentially enhance the experience.

The operating framework of this study will allow respondents to (a) communicate an understanding of their present reality, (b) clarify the work arrangement's role in creating that reality, and (c) formulate recommendations for actions to influence their future. In this context, creating the conditions for success entails providing an opportunity and safe venue for telecommuters to reflect on the benefits and drawbacks of their situation and cultivate insight into the underlying assumptions, values, and needs. Equipped with this information, they may be able to devise answers to overcome these obstacles, open channels of communication with their organizations, and potentially effect joint resolutions. Ultimately, the onus is squarely on the shoulders of both groups to learn if and what change is vital to enable employees to be more satisfied, productive, creative, and efficient in their positions.

The purpose of the research was to investigate the experiences of telecommuters. The specific research questions were: What do telecommuters identify as the most profound impacts of telecommuting as a work arrangement? What actions can telecommuters or their employers take to improve the work arrangement?

### **Methodology**

This exploratory study uses both quantitative and qualitative data collection and analysis techniques. An online survey was constructed and distributed and a smaller group of one-on-one, in-depth interviews was conducted

Although telecommuting is flourishing internationally and is one of the fastest growing truly global employment practices, this study is based in the United States. Studies in this subject area typically use terms including *telecommuter*, *telework*, *home-worker*, and *flexible work arrangement*. Some studies distinguish between these terms for

various purposes. This study does not make a distinction between these terms and will employ the term *telecommuter* for the purpose of consistency.

### **Chapter Summary and Organization of the Thesis**

Chapter 1 served as an introduction to the research project. The chapter included an overview and opening discussion of the subject of telecommuting, background and context vis-à-vis the disadvantages of telecommuting, the purpose and significance of this study, and an overview of the research methodology. Chapter 2 features a review of literature related to the disadvantages of telecommuting. Relevant authors and works are examined, evaluated, and summarized in light of the research question. Chapter 3 describes the research methods used in this study. This chapter identifies and elucidates questionnaire and interview design, variables, survey instruments, and data collection practices. Chapter 4 presents the findings of the study. Quantitative and qualitative data are described, rendered, and interpreted. Finally, chapter 5 presents a synthesis of the quantitative and qualitative results, addresses limitations of the research, presents recommendations from telecommuters and offers suggestions for future study.

## Chapter 2

### Literature Review

Over the last 10 years, a range of literature from a variety of authors and perspectives has substantially grown the discourse on telecommuting. For the purpose of organization, this literature can be classified into two main categories: job-related and person-related. Factors in the job-related sphere are: work intensification, job satisfaction, isolation and development and manager and coworker relationships. In the person-related sphere, the central issues are: work-family conflict (WFC), physical and psychological health impacts, gender and identity, time and space. This chapter reviews the pertinent literature in both areas and end with a summary of the relevant contributions.

#### Job-Related Literature

**Work intensification.** The debate around the intensification of work is connected to “the effort employees put into their jobs during the time that they are working” (Kelliher & Anderson, 2010, p. 85). Discourse in this area focuses on two main forms of work intensification, *extensive effort*, referring to the time spent at work, and *intensive effort*, referring to physical and mental input. For example, a 2009 study by O'Neill, Hambley, Greidanus, MacDonnell, and Kline with a sample of 156 employees from eight organizations in a large western Canadian city documented the phenomenon of increased telecommuter extensive and intensive effort. Findings in this study indicated that telecommuters work on average 10% more hours per week than non-telecommuters and report 12.5% greater daily productivity (equating to approximately one additional productive hour per workday).



The findings from studies in this area (Burchell, 2002; Fairris & Brenner, 2001; Green, 2001; Warr, 1987) suggest that work intensification correlates to negative outcomes for employees (Kelliher & Anderson, 2010). Although Kelliher and Anderson found that remote workers did report work intensification in their 2010 study examining the impact of the implementation of flexible work arrangements on employee behavior in UK-based private sector organizations ( $N = 37$ ), the researchers did not find evidence that these workers responded negatively to their intensified work experience. Rather than feeling exploited, Kelliher and Anderson reported that much intensification resulted from telecommuters voluntarily exerting more extensive and intensive effort in a recognized trade for the increased flexibility in scheduling (or control) and work-life balance enabled by the employer's flexible work arrangement. Reporting on longitudinal research tracking the experience of a group of professional workers ( $N = 15$ ) moving from traditional office work arrangements to telecommuting arrangements, Brocklehurst (2001) supports this explanation, noting that rather than "seizing the control initiative" and working less, management was troubled that telecommuters exhibited intensified work patterns (p. 459). This finding supports Kelliher and Anderson's (2010) reference to social exchange theory (Blau, 1964/1986) as a means to understand telecommuters' positive scores on measures of overall job satisfaction and organizational commitment as compared to those in non-flexible work arrangements.

Certainly, Kelliher and Anderson's (2010) findings regarding telecommuters' attitudes toward work intensification as well its effect on job satisfaction are valuable in challenging earlier studies which place work intensification in the negative realm. Kelliher and Anderson's study, however, has limitations which call into question the

generalizability of their findings to the larger population of telecommuters, specifically those who work exclusively from their homes. For instance, Kelliher and Anderson's questionnaire did not contain questions explicitly addressing work intensification. Thus, they were not able to relate work intensification to specific employee outcomes.

From a sampling standpoint, Kelliher and Anderson's (2010) study included 729 remote workers, but 71.1% of them telecommuted 1 day (or less) per work week. Full-time telecommuters may experience more work intensification, as the experience of one intensified day is multiplied by at least 5 (days per work week), or less intensification, as they may have developed strategies and mechanisms to prevent it. Also, for the large majority of respondents in this study, over 76%, telecommuting was not a formalized work arrangement. Telecommuters may feel less obliged to engage in work intensification in exchange for flexibility, balance or control when it is a codified part of their work arrangement. This may also be true if telecommuting is treated as a form of compensation and rates of pay are lower as compared with other employees.

**Job satisfaction.** Kelliher and Anderson's (2010) contribution to the literature on work intensification was a byproduct of a study largely aimed at uncovering the nature of the relationship between flexible work arrangements, job satisfaction and organizational commitment. As discussed, they found a positive relationship between telecommuting and job satisfaction. A review of the literature in this area, however, highlights a split among telecommuting researchers as to the nature of this conclusion (Bailey & Kurland, 2002). For example, in a study examining differences in work-life balance support, job satisfaction and inclusion as a function of work arrangement ( $N = 578$ ), Morganson, Major, Oborn, Verive, and Heelan (2010) examined the effect of work location,

telecommuting, client site, satellite office and main office, on job satisfaction (and other outcomes) and found that telecommuters reported higher job satisfaction than main-office workers. However, many studies (Bélanger, Collins, & Cheney, 2001; Gajendran & Harrison, 2007; Golden, 2006; Golden & Veiga, 2005) suggest that this relationship is more complex, with a number of proximal factors moderating the positive distal relationship between telecommuting and job satisfaction.

A significant study in this area (Golden & Veiga, 2005) utilizing professional-level employees ( $N = 321$ ) attempted to resolve these inconsistent findings regarding the relationship between telecommuting and job satisfaction. Golden and Veiga found that the relationship between telecommuting and job satisfaction is a function of the extent of telecommuting, with job satisfaction highest at low to moderate levels of telecommuting and lowest at relatively high levels of telecommuting. In this study, Golden and Veiga found that task interdependence and job discretion were moderating factors of this curvilinear relationship. These outcomes dispute the notion that increased extent of telecommuting results in increased job satisfaction regardless of moderating factors. Moreover, there may be a: “crucial threshold in the amount of time an individual can telecommute beyond which the benefits of additional gains in job satisfaction are not accrued” (p. 313).

Building on Golden and Veiga (2005), in a study of 575 exempt employees in a global telecommunications organization in the United States, Virick, DaSilva, and Arrington (2010) explored life satisfaction and worker type as additional moderating factors of the curvilinear relationship between extent of telecommuting and job satisfaction. In addition to supporting Golden and Veiga’s (2005) earlier findings, they

found that both life satisfaction and worker type moderate telecommuter job satisfaction (Virick et al., 2010). Their study showed that levels of job satisfaction remained constant among high performance outcome orientation telecommuters regardless of the extent of telecommuting. However, low performance outcome orientation telecommuters showed the highest levels of job satisfaction at moderate levels of telecommuting. In terms of worker type, this research suggests that extent of telecommuting has a differential effect; those telecommuters with high drive and low enjoyment seem to be more satisfied with very high or very low levels of telecommuting. Nonetheless, this differential effect based on worker type does not hold true for measures of life satisfaction which is greatest among all worker types when extent of telecommuting is moderate.

Also related to telecommuter worker type, O'Neill et al. (2009) found that certain personality and motivational traits exhibit differential validity in relation to job satisfaction and self-perceived performance. For the telecommuters in the study, level of sociability and need for autonomy were related to levels of self-perceived performance. Job satisfaction, however, was a related outcome exclusive to non-telecommuters.

A study by Morganson et al. (2010) demonstrated the link between inclusion (social and professional isolation) and telecommuter job satisfaction, with main-office workers reporting significantly higher inclusion than telecommuters. Morganson et al. added that if inclusion can be fostered among telecommuters, it can be concluded that job satisfaction also can be maximized.

Still other researchers (Ilozor, Ilozor & Carr, 2001) have contributed to the debate around telecommuter job satisfaction. Though Ilozor et al.'s research preceded Golden and Veiga's (2005) study, they nonetheless challenge their later conclusions regarding the

value of extent of telecommuting as a variable associated with telecommuter job satisfaction. Rather, Ilozor et al.'s (2001) findings, based on survey data collected from IBM Australia telecommuters, indicate that management communication strategies, including clear, regular communication of deadlines, job responsibilities, goals and expectations, assistance in career development, supporting continuing training and regular reviews of work and salary, are the most active factors in the job satisfaction of telecommuters.

**Manager and coworker relationships.** Shortly after Golden and Veiga's (2005) study, Golden (2006) went on to examine how leader-member exchange (LMX) quality, team-member exchange (TMX) quality and work-family relationships (conflict) might mediate this link. Here, in a study of telecommuting employees in a large telecommunications company, Golden called on information richness and social exchange theories and posited that telecommuting alters the quality of relationships by changing "informational cues available to interpret and enact interactions with others, which in turn impact job satisfaction" (p. 320). Telecommuters replace face-to-face affective and material interactions with technology-enabled forms of communication, including e-mail and telephone. Interactions via these mediums are, however, less affective due to diminished contextual relevance, synchronicity and spontaneity as well as reduced capacity to perceive emotional reactions and decipher messages conveyed. Telecommuters relying on these forms of communication thus may experience a loss of affect with office-based coworkers and managers resulting in the deterioration of these relationships. In comparison, relationships between telecommuters and their families may become more rich and positive as affective, face-to-face communication with family

members increases and the level of congruence between the demands of work and family rises.

Ultimately, Golden (2006) found that LMX, TMX and WFC all mediate the relationship between the extent of telecommuting and job satisfaction and were all impacted. Somewhat surprisingly though, LMX quality was found to have a linear, rather than curvilinear association with the extent of telecommuting (Golden, 2006). In accounting for this result, Golden speculated that telecommuters perhaps give precedence to manager relationships and are assiduous in maintaining contact to offset the impact of limited face-to-face communications.

In a meta-analysis of 46 studies in natural settings involving 12,883 employees focused on positive and negative consequences of telecommuting, Gajendran and Harrison (2007) reported parallel results, adding that telecommuting employees may have been granted that work arrangement due to top performance, special status or close, in-group relationships with managers. Thus, they may be vigilant about not allowing this status to deteriorate and consciously incorporate affective elements into communications (Golden, 2006) with managers to preserve this standing.

However, Golden (2006) found a negative, linear relationship between TMX quality and extent of telecommuting. Gajendran and Harrison (2007) found a similar linear relationship, noting a close-to-zero effect on coworker relationship quality at low levels of telecommuting but a negative effect at high levels of telecommuting. In explaining this finding, Golden suggests that telecommuters view coworker relationships as less critical, regardless of the extent to which they telecommute, and are therefore less

apt to maintain those connections. He also offers evidence of the negative link between co-worker satisfaction and the prevalence of telecommuters in a workplace.

Golden's (2006) study also sheds light on the relationship between WFC, telecommuting, and job satisfaction. In his study, Golden found that extent of telecommuting had a curvilinear relationship to WFC and that WFC had a curvilinear relationship to job satisfaction. The drop in WFC was most pronounced at higher levels of telecommuting and the highest levels of job satisfaction were seen in those with less WFC. These findings imply that increased affective communication with family members and congruence between work and family demands lead to greater job satisfaction.

Nonetheless, as in Kelliher and Anderson's (2010) study, respondents in both of Golden's studies (Golden, 2006; Golden & Veiga, 2005) reported they telecommuted on average 1 or fewer days per work week. Consequently, the generalizability of these findings to workers telecommuting 20 to 40 (or more) hours per work week remains uncertain.

In the previously mentioned meta-analysis, Gajendran and Harrison (2007) address the conceivable differential effects of hours spent telecommuting, noting that part-time was the operating norm for telecommuting and less than 10% of telecommuters worked in this arrangement on a full-time basis. Variance in work hours spent telecommuting (telecommuting intensity or extent of telecommuting) represents a range of psychological commitment to this work modality which may affect divergent impacts on the individual outcomes of telecommuting, including job satisfaction (Gajendran & Harrison, 2007; Madsen, 2003).

**Work-family conflict.** The telecommuting discourse focused on WFC may be considered from several perspectives: boundary absence and blur, sphere disparity and role conflict. Perhaps unsurprisingly, one camp of researchers on WFC suggests that telecommuting work arrangements increase WFC (Mann & Holdsworth, 2003; Sullivan & Lewis, 2001; Tietze, 2002; Wilson & Greenhill, 2004) with an alternate camp (Gajendran & Harrison, 2007; Madsen, 2003) supporting the notion that telecommuting may reduce WFC.

Studies by Mann and Holdsworth (2003) and Sullivan and Lewis (2001), examining the psychological impact of telecommuting compared to office-based work ( $N = 49$ ) and the relationship between work-family, boundaries and gender among telecommuters and their families ( $N = 28$ ) respectively, suggest that telecommuting results in a blurring of boundaries between work and home life with increased WFC as a general outcome. Subjects in these studies reported both a physical and psychological breakdown of these borders. The primary illustration of the increase in WFC was in relations with co-residents as family members intruded into time allotted for work, struggling to distinguish between periods the telecommuter is in the work role versus the family role and experiencing feelings of stress, frustration and anger (Mann & Holdsworth, 2003; Sullivan & Lewis, 2001).

Tietze (2002) and Wilson and Greenhill (2004) argue that telecommuting results in the sphere disparity or *worlds colliding*. In this interpretive framework, work and family exist as mutually exclusive domains organized around contrasting principles, paid work and money and family, home, and love respectively. These spheres also differ in their discourses, norms and behaviors, sets of participants and temporal regimes.



Subsequently, the colliding of these worlds challenges the traditional paradigms present in each.

Within the context of WFC, Madsen (2003) explores the concept of role conflict in more depth. Grounded in role-conflict theory, Madsen defines WFC in terms of the conflict arising from the inability to balance incompatible work and family roles and specifies three forms of WFC, time-based, strain-based and behavior-based conflict. Using this theoretical lens, “conflict within a role will result in an undesirable state. Because of conflicting demands . . . among roles, multiple roles lead to personal conflict as it becomes more difficult to perform each role successfully” (p. 36). In findings from her study aimed at investigating the differences in WFC between full-time worksite employees and full-time telecommuting employees ( $N = 221$ ), Madsen reported that telecommuters’ perceived levels of time-based work interference with family (WFC) rose in relation to overall hours worked. Anecdotally, this result seems largely generalizable to both telecommuter and non-telecommuter populations, although it is unsupported by the set-up of Madsen’s study. Overall, Madsen (2003) found that telecommuters held lower perceptions of various dimensions of WFC than non-telecommuters. This conclusion supports Gajendran and Harrison’s (2007) findings which suggest a negative relationship between telecommuting and WFC, telecommuting results in lower WFC, where the most benefits are reaped in high-intensity arrangements.

Collectively, these studies seem to imply that telecommuting does indeed influence perceptions of WFC. Though, findings from a later study by Wight and Raley (2009) using archival survey data to examine the prevalence of telecommuting, motivations for adopting the work arrangement and its associations with other patterns of

time use in the United States provide evidence to the contrary. In this study, White and Raley found “little evidence that telecommuting allows workers to mesh these two critical aspects of their lives any more smoothly than those who work exclusively outside the home” (p. 201). In terms of motivation, most workers did not cite the need to reduce WFC (or increase work-family balance) as their principal reason for working from home.

**Isolation and development.** A 2008 study of 261 professional-level telecommuters and their managers by Golden, Veiga, and Dino focuses on the impact of professional isolation and offers defines the construct as:

a state of mind or belief that one is out of touch with others in the workplace (Kiekema, 1992). In effect, professional isolation signifies one’s inherent striving and desire to feel socially connected in the workplace (Baumeister & Leary, 1995) has been thwarted. (p. 1412)

This definition is useful in underscoring the integrated social, psychological and affective elements of a professional experience. Based on 93 semi-structured interviews with public and private employees for their 2002 study examining perceptions of professional isolation, Cooper and Kurland take this notion a step further in concluded that professional and social isolation are inextricably linked and distinguishing between them is misleading. Moreover, they propose that isolation is critically linked to employee development and telecommuters miss three types of developmental activities that occur frequently in traditional workplaces: interpersonal networking with organization members, information learning to enhance skills and information share and mentoring from superiors and colleagues.

Likewise, Hardhill and Green (2003) reference the “lumpy” nature of face-to-face communication and recognize its critical role in knowledge transfer, in driving teamwork and supporting creativity. Social interaction encompasses components of interpersonal

networking, provides informal learning and mentoring and supports the formation of trusting relationships with coworkers and managers (Cooper & Kurland, 2002).

In a separate qualitative study examining the association between managerial monitoring strategies and telecommuters' perceptions of professional isolation ( $N = 54$ ), Kurland and Cooper (2002) note the differential impact of the absence of developmental activities on telecommuter isolation. These findings suggest that as employees telecommute with increasing frequency, the role played by the manager as chief organizational lifeline grows stronger while opportunities to develop intra-organizational networks decline.

In the same study, Kurland and Cooper (2002) found that telecommuters were more likely to be concerned about professional isolation when their performance was not primarily linked to measurable outputs. Although, they expressed concerns about isolation in terms receiving due credit for their ideas and work product, missing out on desirable assignments and gaining recognition with others in their organization. In many instances, these telecommuters perceived themselves as invisible, "out of sight" or "out of the loop," and relied on their direct supervisors to advocate for them and their performance to others. Following, they believed this invisibility resulted in lower performance ratings by managers, decreased recognition of accomplishments and being passed over for promotions.

Although telecommuters and managers also commented on the absence of key developmental activities, the telecommuters did not report feelings of professional isolation if they held low expectations surrounding promotions, telecommuted infrequently (1 day per week or semi-monthly), preferred relative anonymity or had

seniority in the company with long-established, national networks (Kurland & Cooper, 2002).

Golden et al. (2008) elaborate that work relationships provide crucial knowledge comprising contextual information about events and detailed, nuanced understandings of clients, projects and managers necessary for effective sense-making of complex information and, ultimately, job performance. In line with the preceding line of reasoning, the study found a negative relationship between professional isolation and job performance, which increased with the extent of telecommuting and for telecommuters engaged in lower amounts of in-person communication. Telecommuters scored higher in levels of professional isolation compared to non-telecommuters and this isolation resulted in a negative impact on telecommuter job performance.

Nonetheless, this study calls attention to the complex, indirect nature of the relationships between telecommuting, professional isolation, job performance and face-to-face interaction as the study also revealed that extent of telecommuting is not significantly correlated with professional isolation (Golden et al., 2008). Perhaps most bewilderingly, the study revealed that greater amounts of face-to-face communication are related to increased (rather than decreased) levels of professional isolation.

Though the amount of isolation they reported varied, telecommuters in Cooper and Kurland's (2002) study ostensibly limited their telecommuting frequency because they feared becoming isolated. This finding points to the discrete influence of isolation on extent of telecommuting.

## Person-Related Literature

**Physical and psychological health.** The literature around the physical and psychological health impacts of telecommuting as a work arrangement is limited in volume and breadth. However the extant literature suggests that increased autonomy is the most prevalent positive proximal outcome (Gajendran & Harrison, 2007) and isolation is the most universal negative proximal outcome (Golden et al., 2008; Mann & Holdsworth, 2003; Madsen, 2003).

Gajendran and Harrison (2007) reported that an increased perceived autonomy is a principal means through which telecommuting exerted its positive attitudinal and behavioral impacts. Though Gajendran and Harrison's findings suggest that perceived autonomy operates as a positive psychological mediator, a 2006 study by Thatcher and Zhu uncovered a number of potential negative aspects of telecommuting associated with increased autonomy related to identity disruption and work dislocation.

With regard to isolation, Mann and Holdsworth's (2003) and Golden et al.'s (2008) findings suggest that isolation results in telecommuters experiencing increasing ambiguity, uncertainty, worry, panic and fear concerning their abilities to perform effectively. Mann and Holdsworth (2003) suggest that telecommuter separation from the social interaction of the workplace produced the social isolation and loneliness that were most frequently associated with the feeling of negative emotions. Telecommuters can experience this isolation as vacuous space void of effective emotional or psychological benchmarks and rapidly back-filling with anxiety. From a professional vantage point, their confidence is diminished, decision-making ability is compromised and as a result, they may frequently attempt corrections to stay on course (Golden, Veiga & Dino, 2008).

The absence of emotional support from colleagues in close physical proximity may result in the inability to resolve issues and lead to frustration, which may then serve to further alienate them from non-telecommuter coworkers (Golden et al., 2008; Mann & Holdsworth, 2003).

Although telecommuters may be suffering the negative psychological impacts associated with isolation, Madsen (2003) reported that telecommuters perceived higher health levels than non-telecommuters. In explaining this apparent contradiction, it would seem possible that telecommuters may not: (a) readily examine their physical and psychological condition regularly as related to the telecommuting work arrangement; (b) compare their own health situation to that of their non-telecommuting colleagues; (c) believe they can effect a change in the outcome; (d) believe the impacts of telecommuting are, on the whole, any different from other work arrangements; or (e) fear the disruption of the telecommuting arrangement, along with any positive outcomes, if awareness is created around the negative impacts.

To date, Mann and Holdsworth's (2003) study serves as the most explicit treatment of the physical and psychological impacts of telecommuting which includes data from a critical control group of non-telecommuters. Their results do not suggest which, if any, of the informal hypotheses (noted above) may ring closest to the experience of the telecommuters in their study. The study indicated that the emotional impact for telecommuters is likely more negative than for non-telecommuters. Overall, telecommuters experienced more specific negative emotions, in particular loneliness, which was not at all reported by the office-workers. Additionally, a greater percentage of

telecommuters than non-telecommuters reported experiencing negative emotions, predominantly irritability, loneliness, irritability, guilt, and worry.

In a related second study conducted by Mann and Holdsworth (2003), independent t-tests were utilized to determine if a difference could be detected between the mental and physical health scores for telecommuters and office-workers. The study revealed a significant difference in the mental health scores of the two groups, with the authors finding higher levels of emotional ill health for the telecommuters, although the two groups exhibited no significant disparity in physical health.

Examining data from these two studies, Mann and Holdsworth (2003) also found that female telecommuters experienced higher levels of mental and physical ill health as compared with their male counterparts. The authors posit that this disparity may be a function of the female telecommuters maintaining responsibility for the majority of household duties, resulting in feelings of frustration, loneliness and inadequacy. By contrast, male telecommuters experienced more mental and physical ill health than male office workers. Further, the authors suggest this finding may be related to the male telecommuters' loss of status, lower visibility to company members and a detrimental effect the work arrangement may have on their social position.

**Gender.** Discourse on the impact of gender in telecommuting work arrangements identifies it as a significant mediating variable that may result in divergent outcomes (Hardill & Green, 2003; Madsen, 2003; Sullivan & Lewis, 2001; Wight & Raley, 2009; Wilson & Greenhill, 2004). Some researchers (Madsen, 2003; Wight & Raley, 2009) suggest that the differential impact of gender in telecommuting may be understood in terms of interview and survey responses, measures of time spent engaging in domestic

and work activities and reported reasons for engaging in the work arrangement. Other researchers, however, emphasize the power of the implicit, referring to what is not said, explained or explicitly contracted, to reinforce traditional gender roles and work-family paradigms. Although the camps are not mutually exclusive, these studies tend to accentuate the conflict inherent in paid work moving into the home (Hardill & Green, 2003; Sullivan & Lewis, 2001; Wilson & Greenhill, 2004). When added to the weight of domestic responsibilities, the outcome is often isolation and increased stress, the prevailing negative outcomes for females (Hardill & Green, 2003; Sullivan & Lewis, 2001; Wilson & Greenhill, 2004).

Among the studies measuring male and female responses, Wight and Raley (2009) noted that the sub-group of mothers with young children cited coordinating work and family life as the top reason to telecommute. Additionally, coordinating work and family ranked a close second with the larger group of mothers in this study. Conversely, few fathers reported this reason and men with young children were less likely than other groups to cite this impetus. In addition, Wight and Raley's study underscored differential impacts in extensive work intensity, finding that women telecommuters spend almost an hour less time in paid work than those who do not work at home.

Both Madsen's (2003) and Wight and Raley's (2009) studies found that males reported less time-based work interference with family, observing that, for example, fathers working at home actually spend less time engaged in primary childcare. Though they experienced higher WFC than females (Madsen, 2003), males tended to view telecommuting as an opportunity to help with the childcare rather than the primary reason for choosing this arrangement (Sullivan & Lewis, 2001). Gender also appeared to play a



role in telecommuters' understanding of time. Female telecommuters tended to combine work and family in the more elastic nature of domestic time while male telecommuters imported industrial time into the home, preserving a psychological boundary between work and family with the support of their women partners.

In their 2001 study, Sullivan and Lewis relate a convenient, flexible structure for interpreting the impact of telecommuting on gender roles. This structure, really two models, consists of the "new opportunities for flexibility model" and the "exploitation model" as well as hybrids consisting of parts of both models (p. 124). The flexibility model regards telecommuting as a potential solution to the primarily female challenge of balancing family and work. In this framework, male domestic participation increases and conventional gendered roles collapse with the disappearance of spatial boundaries between family and work. The exploitation model perceives telecommuting as a means of maintaining the exploitation of women through both paid work and home and family responsibilities. Hardill and Green (2003), Sullivan and Lewis (2001), and Wilson and Greenhill (2004) find that the assumption of these dual roles carries risk and may result in increased work-family stress, decreased professional visibility, identity confusion and, particularly for women, social isolation.

Perhaps most remarkable finding in Sullivan and Lewis' (2001) study is that household roles remained unchanged without attention to which partner worked at home; the level of parity that existed prior to telecommuting was likely to persist. Furthermore, very little verbal communication surrounded the allocation or distribution of responsibilities. Although the women in this study did not verbalize dissatisfaction with their situations, they acted as both the primary caregivers for the children and constructed

their careers around this responsibility. This finding would seem to refute the notion of telecommuting's potential for emancipation and autonomy and support the exploitation model in terms of limiting possibilities for the adoption or construction of new gender roles (Sullivan & Lewis, 2001; Wilson & Greenhill, 2004). Wilson and Greenhill thus contend that the promise of telecommuting, inflated as choice, flexibility and autonomy, is a fabrication and illusory if there are no real alternatives. There is no choice if telecommuting is the only option to manage work, childcare and other domestic duties.

**Identity, time, and space.** Telecommuting literature treats identity, time, and space as deeply concomitant mediators and outcomes (Brocklehurst, 2001; Hardill & Green, 2003; Musson & Tietze, 2004; Thatcher & Zhu, 2006; Tietze, 2002, 2005; Wilson & Greenhill, 2004).

Identity is the response to the question "Who am I?" and fundamentally captures a person's self-view (Thatcher & Zhu, 2006, p. 1077). An individual's identity functions as a broad lens for the interpretation and organization of "intra-and-interpersonal actions and experiences, provides the motivation, plans, rules and scripts for behavior and adjusts in response to changes in the social and physical environment" (Thatcher & Zhu, 2006, p. 1077). Without exception, the research on the topic of identity is clear in suggesting that telecommuting challenges all aspects of identity (Brocklehurst, 2001; Hardill & Green, 2003; Musson & Tietze, 2004; Thatcher & Zhu, 2006; Tietze, 2002, 2005; Wilson & Greenhill, 2004).

Thatcher and Zhu (2006) provide the most thorough, theory-driven analysis of identity in the telecommuting literature. The basic conclusion the reader may draw from their exploration of the topic is that telecommuting has far-reaching implications for

identity processes, including enactment, identification and verification, because it alters the work environment, disrupts key social psychological processes and exists as a “psychologically weak” circumstance, offering less structure and fewer contextual cues (Thatcher & Zhu, 2006, p. 1082).

Identity enactment theory stresses identity as routines and habitual behaviors that provide structure and consistency to an individual’s daily life. Engaging in these routines and behaviors is dependent upon specific external structures, such as social context, temporal and spatial regimes. By disrupting the enactment of both work and home routines, telecommuting endangers the security and stability of one’s identity. Individuals must then experiment and develop new behaviors, habits and routines in the new environment in an attempt to reestablish the pre-existing identity or create a new identity to meet the new situation (Thatcher & Zhu, 2006).

Through its disruptive impact on work context and thus identity enactment, telecommuting compels reliance on alternative psychological processes such as organization-related identification and verification while at the same time weakening the mechanisms that enable these processes (Thatcher & Zhu, 2006). As both job-related and social engagement with colleagues, managers and other members of the organization decline, values and norms central to the organizational culture are less likely to be transmitted, thus weakening organizational identity. Though some telecommuters exercise specific strategies to maintain this organizational link, many find they increasingly associate themselves with home-related and other identities. Telecommuters may employ strategies such as extensive work intensification, increased communication and exercising control in planning and organizing their paid work environment to

reinforce their identity as, for example, high-performing employees (Thatcher & Zhu, 2006; Wilson and Greenhill, 2004). Wilson and Greenhill (2004) suggest that telecommuters create more work-centered identities than office-based workers. They may also establish new behavioral routines as a means to create and relate identities (Thatcher & Zhu, 2006). Though, in utilizing low-affect, digital communication methods, their attempts at relating this identity also suffer.

Brocklehurst (2001) offers a distinct perspective on the question of self-identity creation in telecommuting work arrangements. He contends that “it is one of the distinguishing features of late modernity that individuals have to constantly work at recreating their self-identity” (p. 448). Moreover, the “iron cage” of bureaucracy (posited by renowned German sociologist Max Weber) actually served to provide meaning to an individual’s working experience in a variety of ways, including supporting their long-term narrative and key routines in the maintenance of identity (Brocklehurst, 2001, p. 448).

Theoretically, telecommuting arrangements reduce or eliminate the immediate physical, spatial and temporal structures and controls of the organization, thereby liberating the individual in some capacities. In reality, however, telecommuters do not become more powerful (Brocklehurst, 2001). Rather, lacking a discourse to explain who they are, individuals spend exorbitant amounts of energy developing new working identities that are credible to themselves and others as well as recreating the familiar routines of their former workplaces. Similarly, Tietze (2005) found that telecommuters drew on self-regulatory acts in an effort to convince themselves that they were working

and drew on coping strategies in the form of available cultural scripts and libraries of meaning to construct new networks of relationships.

Verification theory posits that each individual has important others who verify different components of the individual's self (Thatcher & Zhu, 2006). Following, it is only in some combination of relationships that a person is fully verified. In traditional work environments, an individual's identity can be verified through relationships and exchanges with a variety of colleagues who "collectively" verify their identities (p. 1084). Telecommuting changes the composition of the individual's environment in terms of the make-up of available verifiers and the capacity of the individual to obtain full verification. The inability to verify one or more identities poses a meaningful obstacle to telecommuter satisfaction.

The discussion of the role of gender (Hardill & Green, 2004) and WFC (Tietze, 2002; Wilson & Greenhill, 2004) in telecommuting outcomes considered the discrete impacts of moving paid work into the home. Simultaneously, Musson and Tietze (2004) provided a comprehensive framework for understanding this epic shift in temporal and spatial regimes in their examination of how emerging forms of work arrangement create opportunities for participants to explore the relationship between life and work ( $N = 25$ ). Musson and Tietze offer that telecommuting "Taylorizes" the household arena through the imposition of scientific management techniques and practices and a quantified, controlled, and commoditized understanding of time consistent with the dominant system of industrial production. Previously blurry and cyclical, the temporalities of the household arena become decontextualized and definite while relationships become efficient and scheduled thereby accelerating public and private lives. The telecommuters

in Musson and Tietze's study, however, tended to cope with conflicting demands of work and family by employing a plurality of frames. The majority employed a task-based approach to their work day, which frequently meant working long hours to complete as many tasks as possible. Many respondents in a variety of UK-based studies indicated that the scheduling of tasks was a largely unknown variable as they were dependent on the timing of others, including coworkers and clients (Hardill & Green, 2003). In Musson and Tietze's (2004) study, throughout the work day, telecommuters considered the conflict between work and domestic requirements and shaped their lives through conscious choices based on which codes and norms, namely identities, took precedence in a given situation. These findings suggest that rather than the industrial sphere "Taylorizing" the home, a bi-directional impact, featuring task-based work structure and blurred boundaries between domestic and work spheres, may be more prevalent. Moreover, as Hardill and Green (2003) note, there are both gains and drawbacks in this modification of the boundaries between work and home.

Tietze (2002) holds that the daily choices they must make are essential opportunities for telecommuters and their families to reinforce and strengthen their identities and boundaries through: addressing priorities, negotiating their moral fabric and informing a running dialog about how they live their lives. In her 2005 study, Tietze suggests that telecommuters and their families should set aside spaces and times in which paid activity can be engaged. Co-residents of the household, children, roommates, partners, and spouses must have a voice in the discourse on the boundaries of paid work and the identities enacted around redefined temporal and spatial maps.

## Summary

The goal of this chapter was to review the range of literature contributed to the telecommuting discourse over the last 10 years, representing a variety of authors and perspectives on the work arrangement. Factors in both the job-related and person-related spheres have been investigated from several perspectives. The primary veins of research have focused on work intensification, job satisfaction, isolation and development and manager and coworker relationships in the job-related sphere and WFC and time, physical and psychological health impacts, gender and identity in the person-related sphere. Though, to date, research may be deficient in exploring potential links across sample groups representing multiple industries and organizations. In addition, the majority of these studies approach investigation of the phenomena a mixed methodological approach (both quantitative and qualitative). The central goal of this study was to determine the most profound impacts of telecommuting as a work arrangement as identified by participant workers as well as actions telecommuters or their employers could take to enhance the experience. The remaining chapters will continue this investigation. This study will add to the body of knowledge regarding the experience of workers participating in telecommuting arrangements and means by which outcomes for key stakeholders can be enhanced. It is believed this data will be beneficial in setting targets and crafting strategies for continuous improvement of the work arrangement.

## Chapter 3

### Methods

The purpose of the research was to investigate the experience of telecommuters. The specific research questions were: What do telecommuters identify as the most profound impacts of telecommuting as a work arrangement? What actions can telecommuters or their employers take to improve the work arrangement? This study aimed to shed light on telecommuter perceptions of the factors contributing to the proximal and distal outcomes of the work experience. This chapter is composed of: a synopsis of the research design, a description of the sample, an overview of the measures employed, and an outline of the data analysis process.

#### Research Design

This study aimed to uncover the most profound impact of telecommuting as a work arrangement on participant workers. The research design was a mixed methodology consisting of both quantitative and qualitative components. Data collection methods included an online survey and individual interviews carried out in-person, via Skype video calls and telephone. This mixed-method design was intended to maximize the advantages of both approaches, while minimizing their respective weaknesses (Punch, 2005) and providing a robust understanding of the research focus. The online survey was created to gather relevant demographic information and ascertain the attitudes and experiences of telecommuters compared to non-telecommuters. The individual interviews were designed to gather more detail, further explore the perceptions of telecommuters based on the survey results, and aid in researcher understanding of the phenomenon.



## Participants

The researcher intended to investigate phenomena across a broad range of organizations and industries to promote the generalizability of findings. Subsequently, survey and interview respondents were recruited independent of organization or industrial affiliation. To the same end, respondents represented a range of job titles, age groups, and salary levels as well as self-identified males and females.

This study was concerned with telecommuters who worked an average of at least 30 hours per week (not part-time, seasonal or on-call status), worked from their homes for 25% or more of their total weekly hours (excluding work-related travel), travelled less than 25% of their weekly work hours, were employed by organizations with a threshold of 20% of employees working in a headquarters location or other organization-sponsored field office location (not client locations or vehicles), worked for only one organization (not consultants with multiple clients, contractors or those running home-based businesses), and worked for organizations with a minimum of 20 employees.

Online survey distribution began in August 2011 was initiated with a convenience sample of the researcher's friends, colleagues, and acquaintances as well as professional and academic networks. The link to the online survey was sent to 108 individual potential respondents. The initial sample snowballed as original participants invited members of their own personal and professional networks to participate. To secure additional participants, the researcher posted the link to the survey and a two-sentence description of the project on her personal social networking Website page, Facebook, as well as on her personal professional networking Website page, LinkedIn. The researcher intended to investigate phenomena across a broad range of organizations and industries to promote

generalizability of findings; therefore, survey and interview respondents were recruited independent of organization or industrial affiliation. Respondents represented a range of job titles, age groups, and salary levels as well as self-identified males and females.

A total of 211 respondents began the survey and a total of 158 completed the survey by November 19, 2011, equating to an overall completion rate of 75%. Surveys were returned by telecommuters both known and unknown to the researcher with a diversity of industries, job fields, and levels represented. Telecommuters as well as traditional office workers played in the respondent mix. Though the researcher's network is represented internationally, the sample was limited in scope geographically to respondents in the United States. Since the survey was not translated into languages other than English, only respondents fluent in English were able to participate and the researcher did not attempt to recruit potential respondents currently residing outside the United States. The racial, ethnic, gender and situational make-up of the sample was unintentional and resulting representation was arbitrary. Participant demographics are shown in Tables 1, 2, and 3. Demographic information specific to telecommuter participants is shown in Table 4.

**Table 1**  
**General Participant Demographics**

	<u>All Respondents</u>		<u>Telecommuters</u>		<u>Non-Telecommuters</u>		
	<u>Total</u>	Male	Female	Male	Female	Male	Female
n	158	54	104	30	41	24	63
% of total	100	34	66	19	26	15	40
Age	41	43	39	43	42	43	38
Work Experience	19	22	19	22	21	22	17

*Note.* The mean is reported in years for age and work experience. Data are rounded to the nearest whole number. Three participants (one male telecommuter and two female non-telecommuters) did not report age. Mean values were calculated without this data.

**Table 2**  
**Participant Job Categories**

<u>Job Category</u>	n	<u>All</u>	<u>Telecommuters</u>		<u>Non-Telecommuters</u>	
		% of Total	Male	Female	Male	Female
Executive/Senior Level Official or Manager	25	16%	20%	10%	46%	6%
First/Mid-Level Official or Manager	50	32%	27%	32%	21%	38%
Professional (Individual Contributor)	61	39%	33%	46%	25%	41%
Technician	1	1%	0%	0%	4%	0%
Sales Worker	3	2%	7%	2%	0%	0%
Administrative Support Worker	8	5%	3%	2%	0%	10%
Other	10	6%	10%	7%	4%	5%

*Note.* All percentages rounded to nearest whole number.

**Table 3**  
***Participant Job Fields***

<u>Job Field</u>	n	<u>All</u>	<u>Telecommuters</u>		<u>Non-Telecommuters</u>	
		Total	Male	Female	Male	Female
Accounting/Finance/Insurance	8	5%	0%	5%	4%	8%
Administrative/Clerical	3	2%	0%	2%	0%	3%
Banking/Real Estate/Mortgage	1	1%	0%	2%	0%	0%
Biotech/R&D/Science	2	1%	3%	0%	0%	2%
Building Construction/Skilled Trades	0	0%	0%	0%	0%	0%
Business/Strategic Management	16	10%	7%	7%	21%	10%
Creative/Design	7	4%	3%	7%	0%	5%
Customer Support/Client Care	3	2%	0%	2%	0%	3%
Editorial/Writing	2	1%	0%	0%	0%	3%
Education/Training	17	11%	13%	7%	13%	11%
Engineering	2	1%	3%	0%	4%	0%
Food Service/Hospitality	0	0%	0%	0%	0%	0%
Human Resources	20	13%	7%	15%	8%	16%
IT/Software Development	22	14%	33%	10%	25%	3%
Installation/Maintenance/Repair	0	0%	0%	0%	0%	0%
Legal	4	3%	3%	0%	4%	3%
Logistics/Transportation	0	0%	0%	0%	0%	0%
Manufacturing/Production/Operations	2	1%	0%	0%	0%	3%
Marketing/Product	12	8%	7%	0%	8%	13%
Medical/Health	3	2%	0%	7%	0%	0%
Other	12	8%	3%	15%	0%	8%
Project/Program Management	9	6%	7%	7%	0%	6%
Quality Assurance/Safety	0	0%	0%	0%	0%	0%
Sales/Retail/Business Development	11	7%	10%	12%	8%	2%
Security/Protective Services	2	1%	0%	0%	4%	2%

*Note.* R&D = research and development, IT = information technology. All percentages rounded to nearest whole number.

**Table 4**  
***Telecommuter Demographics***

<u>Variable</u>	<u>All Telcommuters</u>			
	<u>M</u>	<u>% (Total)</u>	<u>Male</u>	<u>Female</u>
Years Telecommuted (M)	5.8	100	5.7	5.8
Hours Telecommuted Per Week (M)	21.4	100	21.3	21.5
Percent of Work Week Telecommuted (M)	46.6	100	42.5	49.7
Tenure with Current Company (M)	7	100	8.5	6.3
Formalized part of work arrangement:				
Yes	40	56	43%	66%
No	31	44	57%	34%
Total	71	100	100%	100%
Household status:				
Married (Living with spouse)	22	31	27%	35%
Married (Living with spouse and one [or more] child under age 18)	19	27	33%	23%
Single (No others in residence)	12	17	17%	18%
Single (Living with roommates, to include friends and/or family)	9	12	26%	5%
Other	4	6	3%	8%
Single (Cohabiting with relationship partner)	3	4	0%	8%
Single (Cohabiting with relationship partner and one [or more] child under age 18)	1	1	0%	3%
Single (Living with one [or more] child under age 18)	1	1	0%	3%
Number of children under age 18 at home:				
1	8	38	20%	55%
2	13	62	80%	45%
3 or more	0	0	0%	0%
Number of children under age 5 at home:				
None	12	57	50%	64%
1	7	33	30%	36%
2	2	10	20%	0%
3 or more	0	0	0%	0%
Relationship partner or spouse work arrangements:				
Works full-time (40+ hours/week) outside the home in a traditional office	25	56	56%	56%
Works part-time outside the home in a traditional office	1	2	6%	0%
Telecommutes full-time (40+ hours/week)	3	7	11%	4%
Telecommutes part-time	7	16	17%	15%
Self employed with a home-based business	6	13	6%	19%
Domestic and/or child care responsibilities (full-time)	0	0	0%	0%
Not currently employed or retired	3	7	6%	7%

*Note.* All percentages rounded to nearest whole number.

## Data Collection

This study took an exploratory approach to achieve an understanding of the phenomena from the participant point of view and to enable more participants to have their voices heard. The researcher created a survey tool using Qualtrics online survey technology provided through Pepperdine University. This survey was designed to obtain a wide view of the telecommuting experience. Following, survey structure, language, criteria and instrumentation were chosen for efficacy and to appeal to a broad respondent pool.

The in-person interview protocol was drafted with the intent of obtaining deeper details around the online survey responses, emergent themes in this data and raising questions best addressed in an open-ended format. The interview protocol was also designed to generate multiple in-depth views of the telecommuting experience. The researcher aimed to create an environment wherein respondents could authentically and freely express, name, and communicate their attitudes, emotions, and opinions. Live, in-person, telephonic, and Web-based video interviews were conducted.

The researcher provided the link to the Qualtrics online survey (Appendix A) to all interested potential participants. The first page of the online survey described the study and detailed the terms of participation and rights of participants. In lieu of a signed consent form, participants had the opportunity to click a box on the first page of the survey to provide their consent and acknowledgement of conditions before continuing with the first survey question. Participants were not able to access the survey questions unless they clicked the consent box.

The survey, which required 10 to 15 minutes for completion, was initially open for a 2-week period. All respondents had the opportunity to end participation at any time without risk or penalty. A reminder email was sent to all participants opting to provide their email addresses 1 week after the initial email invite and then again 1 day before the close of the survey. As the survey was anonymous, the researcher was unaware of which participants had completed the questionnaire. Thus, all survey participants during this period received these reminder emails.

Before the close of the first 2-week period, the decision was made to extend the survey deadline to enable more participants to respond. The originally anticipated snowball effect was evinced as insufficient and the researcher personally reached out to members of her network with requests to post the survey link on their personal and professional networking Websites. These later respondents received the same auto-generated emails after the survey was completed. They did not receive email reminders to complete the survey as they were provided an anonymous link and email addresses could not be tracked unless provided by the respondent. Ultimately, the survey was kept open for 16 weeks.

**Survey items.** After agreeing to consent, respondents first answered demographic questions, including gender, age, total work experience, job field, and job category. Next, company tenure and percentage of increase in compensation at last review were assessed as control variables. Further discussion of these variables can be found in the discussion of measures and control variables in the next section. Data regarding frequency of performance evaluation and mode of appraisal were collected based on Kurland and Cooper's (2002) findings linking telecommuter isolation to an absence of appraisal

against quantifiable outputs and Virick et al.'s (2010) conclusions regarding telecommuter job satisfaction and performance outcome orientation.

The survey next asked about situational factors, including household living situation and relationship or marital status (Bélanger et al., 2001), the work arrangement of relationship partners or spouses and the presence and age of any children living in the home (Morganson et al., 2010; O'Neill et al., 2009).

The tenure of employment with the current organization and percentage of increase in base salary awarded at last performance review were collected as control variables. Golden (2006) cites Ramsower's 1985 findings that showed a negative correlation between job satisfaction and telecommuting longevity with job satisfaction declining over a 6-month period. Golden (2006) suggests controlling for longevity to avoid any honeymoon effect of participants' initially perceived benefits of telecommuting. A similar mechanism was employed to account for positive prejudice in perception of work arrangement related to performance-based pay increases.

Following, a definition of telecommuting was stated and respondents were asked to indicate if they telecommute considering that definition. If the respondent identified as a telecommuter, extent of telecommuting was determined in hours per week spent telecommuting and, as verification of the reliability of the report, the percentage of total work time spent telecommuting was also recorded (Golden, 2006). The longevity of the respondent's current telecommuting arrangement was assessed with the intention of determining if the respondent had experienced their current role in both traditional and telecommuting modalities. Kelliher and Anderson's (2010) discussion of the likelihood of work intensification as related to the nature of a specific telecommuting arrangement



underpinned an additional demographic question. This question was aimed at discovering if the telecommuting arrangement was the product of a formalized agreement with human resources or that of an exclusive, tacit understanding with a manager.

From this point, traditional office employees answered an abridged version of the full survey, excluding sections on isolation and development, space, and overall impact of telecommuting. Responses of traditional employees are compared to those of telecommuters and serve as the basis to establish relationships between variables.

The remaining and lengthiest portion of the survey focused on the participant's specific experiences with different aspects of the telecommuting and traditional office work experience. These questions were drawn from relevant research and published literature on the topic included in the previous literature review (chapter 2) portion of this paper. More detail on the development of these questions is provided in the upcoming discussion of measures employed in the study.

**Interviews.** The researcher developed a customized, semi-structured, interview protocol for this project. The protocol (Appendix B) was designed to allow the researcher to delve more deeply into respondent perceptions of the impacts of telecommuting. Individual questions were pre-established, open-ended, and based on the impacts identified in the survey. Subject responses were not limited to a pre-arranged set and instead took a narrative, organic, and conversational form. Although each subject answered the same pre-set questions, clarifying and follow-up questions were added in situations where the researcher found them to be useful and appropriate.

**Protection of human subjects.** Institutional approval to conduct the proposed research study was obtained through Pepperdine University's Institutional Review Board

on July 28, 2011. In addition, the researcher completed the Human Participants Protection Education for Research Teams course sponsored by the National Institute of Health on September 30, 2010.

In quantitative data collection, the subject consent to participate in research activities prefaced the online survey. Potential respondents were unable to view the questionnaire or respond to items until they stipulated to consent to participate. In the qualitative portion, as potential telecommuters expressed interest in participating in an interview, they were emailed the subject consent to participate in research activities. Those agreeing to be interviewed signed and returned the form to the researcher via email.

The confidentiality of data was, in part, safeguarded by anonymizing the survey results. The Qualtrics online survey technology created a unique, random number for each participant response. Responses could not be matched to participant names. The survey included an option for participants to include their email addresses if they were interested in participating in an interview or requesting study results. This information, if provided, was not used for coding or matching purposes. Further, there were no apparent risks, costs, or financial incentives to participate in this study. All participant responses were kept confidential. Only aggregate data was reported in the research and in any subsequent analysis in possible future publication of results. Research data were stored securely in the researcher's locked file cabinet during the study and will be kept in this location for 6 years following the study, after which time all of it will be destroyed.

## Measures

As participant worker experiences differed in their relative areas of impact, a single instrument or scale was not available. As a result, elements of extant instruments and researcher-originated questions were utilized. All instruments and scales are part of the public domain and, though credited, do not require licenses or permissions.

**Work intensity.** This section included six questions, five using a Likert-type scale and one in “Yes/No” format. Three researcher-developed questions determined the respondent’s perceptions of extensive effort, the extent to which the respondent works more hours telecommuting than he or she would if working in a traditional office. Three questions were based on Green’s (2004) Work Effort Index. These questions were designed to determine aspects of respondent self-perceptions surrounding intensive effort, or how hard they believed themselves to work. A factor analysis was conducted on these questions to produce a single factor with a positive eigenvalue. The Work Effort Index was the score on this factor, which was used in the data analysis.

**Job complexity and autonomy.** This section included single-item statements on a Likert-type scale (O’Neill et al., 2009). Though job complexity and autonomy were not directly addressed in the review of literature, the researcher included these questions to assess the potential correlational influence of these factors on others, including job satisfaction, work intensification and isolation and development. Responses were reverse keyed, with a higher score indicating lower job complexity or autonomy.

**Job satisfaction.** This section consisted of three questions (statements) on a Likert-type scale. These three questions function as the three-item measure of overall job contained in the Michigan Organizational Assessment Questionnaire (Cammann,

Fichman, Jenkins, & Klesh, 1979, as cited in Golden, 2006). This widely-used scale is popular in a variety of research settings and offers reliability ranging from 0.77 to 0.87 in measuring respondent job-related affect (Golden, 2006).

**Manager and coworker relationships.** This question block included 17 questions on a Likert-type scale encompassing both manager relationships, LMX, and coworker relationships, TMX quality.

*Manager relationships (leader-member exchange quality).* Three questions adapted from the LMX 7 instrument (Graen & Uhl-Bien, 1995) assess leader-member exchange quality. These questions assess the quality of working relationships between managers and their subordinates. Research over the last 30 years strongly suggests that member-only assessments (managers are not surveyed) are the most appropriate, valid tool to measure the leader-member relationship (Golden, 2006). The final LMX score is the average of responses on all seven items.

*Coworker relationships (team-member exchange quality).* A six-item measure, adapted for brevity from the 10-item measure developed by Seers (1989), assesses TMX. This instrument employs a 5-item, Likert-type scale and measures the quality of relationships between team members (rather than between members and managers or organizational leaders). Seers reports that this TMX instrument produced a variance ranging from 3 to 18% depending on the reference construct. Golden (2006) relates further findings showing a coefficient alpha of 0.85 for the scale. Responses from the six items were averaged to build an overall rating.

**Work-family conflict and time.** In this segment, four questions (statements) on a five-point, Likert-type scale assess the degree to which work interferes with other aspects

of the respondent's life (personal time), according to the Work Interference with Family scale (Gutek, Searle & Klepa, 1991; Kopelman, Greenhaus & Connoly, 1983). In Gutek et al.'s (1991) studies, the scale showed an average coefficient alpha of 0.82.

In addition, though the issue of time was discussed in the reviewed literature as a function of or inextricably linked to matters of space, this study will treat, investigate, and discuss WFC and time together, as interrelated impacts. From this perspective, time is viewed as an indicator of the existence or extent of intrusion of work into personal spheres.

**Isolation and development.** In this survey block, a seven-item construct (statements) developed by Golden et al. (2008) is used to assess the extent to which respondents experience isolation as well as its perceived impact on respondent career development. Noting a lack of established measures of professional isolation, Golden et al. based this scale on prior qualitative research on telecommuter professional isolation (Cooper & Kurland, 2002; Kurland & Cooper, 2002) and correlated it to the well-accepted UCLA Loneliness Scale. The content validity of this measure was independently assessed by a panel of 15 informed judges. They reported an average item confidence rating of 4.0 on a scale from 1 (not at all confident) to 5 (totally confident) and consistent agreement levels of 90% on item categorization (Golden et. al, 2008). In factor analysis, a single factor comprised of seven items accounted for 60% of the variance in responses.

**Physical and psychological health.** The section of the survey focuses on physical and psychological health and is composed of 17 Likert-type and simple frequency scale questions and statements. The instrument employed is the Duke Health Profile (DUKE),

a 17-item generic questionnaire for adults 18 years or older that measures respondent-reported functional health status and health-related quality of life during a 1-week time period (Parkerson, Broadhead and Tse, 1990). Published by Duke University Medical Center, the instrument contains six health measures (physical, mental, social, general, perceived health, and self-esteem) and four dysfunction measures (anxiety, depression, pain, and disability). The specific items were selected from the 63-item Duke-University of North Carolina Health Profile based on face validity and item-remainder correlations. The reliability of the DUKE is demonstrated through Cronbach's alphas of 0.55 to 0.78 and test-retest correlations of 0.30 to 0.78. The DUKE does not collect individually-identifiable health information and responses remain anonymous and confidential.

**Gender.** The selected telecommuting literature suggests the differential impact of gender on telecommuting outcomes. In the interest of brevity, rather than devoting several survey questions to this topic, the researcher preferred to utilize gender as a discrete, control variable. A single check-box self-identification question was included in the demographics section.

**Identity.** Identity was addressed with a total of 11 survey questions (statements) on a Likert-type, 5-point scale. In the interest of parsimony and relative focus, this section employed two out of five instruments developed by Kreiner and Ashforth (2004) as part of their larger study on organizational identification. The instruments, including level of organizational identity (organization identity strength) and need for organizational identification, were developed through deductive scale development (where an a priori classification scheme is used to generate specific items) and were designed to balance sufficient domain sampling and internal consistency considerations

(Kreiner & Ashforth, 2004). Kreiner and Ashforth's instruments are broadly considered validated measures and used as the basis for further topical research (Pate, Beaumont, & Pryce, 2009). For ease of cognition, the researcher adapted spelling of items in this measure from United Kingdom English to American English.

***Level of organizational identity (organization identity strength)***. Four questions (statements) assess the strength of the respondent's identification with their organization. The instruments identified in these two subsections were developed by Kreiner and Ashforth (2004), as discussed in the previous section.

***Need for organizational identification***. Seven questions (statements) assess the level of the respondent's need for organizational identity.

**Space**. Four questions (statements) on a Likert-type scale, adapted from the Home-Work Boundaries Inventory developed by Patterson (2002), assess the relative presence, strength and porosity of the respondent's boundaries between his or her home and work spheres. Due to the small number of participants drawn on for Patterson's study, the reliability of the Home-Work Boundaries Inventory was difficult to establish. However, Patterson's initial estimates of coefficient alpha varied between 0.74 and 0.84 for all included items. Further, the researcher was unable to identify any other extant instruments intended to measure the extent or success of spatial or boundary management efforts amongst telecommuters or home workers.

**Overall impact**. One researcher-developed, forced rank question (statements) assessed the respondent's perception of the most profound impact of the telecommuting work arrangement on their life. This question was designed as a tool to compare and

validate respondent perceptions of the impact of discrete variables addressed in previous survey blocks.

### **Data Analysis**

**Quantitative.** A descriptive statistical analysis was performed on data from the online surveys. Measures of central tendency, standard deviation, and frequency distributions were calculated for demographic data and on a discrete variable basis for each measure (Punch, 2005). T-tests and correlational analysis were employed to investigate the differences between the telecommuter and non-telecommuter groups as well as the proximal and distal associations between the variables. Statistical significance for this study was defined as .05 ( $p < .05$ ).

**Qualitative.** Analyzing the qualitative data, the researcher compiled and reviewed all responses to determine similarities and differences and draw out themes. Throughout the range of telecommuter responses, several themes emerged from the data.

An approach similar to grounded theory analysis (Punch, 2005) was utilized in the content analysis to explore relationships between the interview data and determine linkages. However, in contrast to the standard grounded theory approach, the researcher did not undertake to conceive a broad, second-order theory to explain the phenomena present in the empirical data. Rather than espousing a single theory, as this study is exploratory in nature, the researcher employed induction to infer several abstract, higher-order possible conclusions from the data. This undertaking consisted of uncovering the conceptual categories at a first level of abstraction, determining the relationships between these categories and, finally, further conceptualizing and specifying these relationships (Punch, 2005). The researcher completed all data entry, displays, coding, and



conclusions. An independent reviewer reviewed the analysis to ensure inter-coder reliability (Punch, 2005).

### **Summary**

This chapter provided an overview of the research methodology used to explore the differential impacts of telecommuting as a work arrangement. This study's research design, sample, data collection, measures and data analysis were addressed. The following chapter provides an analysis of the collected data.

## Chapter 4

### Findings

The purpose of the research is to investigate the experience of telecommuters. The specific research questions are: What do telecommuters identify as the most profound impacts of telecommuting as a work arrangement? What actions can telecommuters or their employers take to improve the work arrangement? This chapter presents findings of the study and describes the data collection results and data analysis. The chapter is organized in two sections. The first section presents data gathered using the Qualtrics online survey. The second section presents data gathered during individual interviews with study participants. The chapter ends with a summary.

#### Quantitative

A descriptive statistical analysis was performed on data from the online surveys. Measures of central tendency and standard deviation were calculated for demographic data and on a discrete variable basis for each measure (Punch, 2005). T-tests and correlational analysis were employed to investigate the differences between the telecommuter and non-telecommuter groups and gender sub-groups as well as the proximal and distal associations between the variables. Statistical significance for this study was defined as .05 ( $p < .05$ ).

**Most profound impacts.** In the final question of the online survey, telecommuters ( $N = 69$ ) completed a forced ranking, identifying the dimensions of the work arrangement having the most and least profound impact on their lives. One male and one female telecommuter omitted this question, accounting for the disparity between

the total count of telecommuters shown ( $N = 69$ ) and the total highlighted in the participant demographics section ( $N = 71$ ).

In interpreting participant responses, each impact was evaluated as an ordinal variable and the mean was used to determine relative rank, with one being the most impactful and eight being the least. From most profound impact to least impact, as shown in Table 5, the final variable ranks are:

1. Job satisfaction, represented as “My level of satisfaction with my job” ( $M = 3.51$ ,  $SD = 2.52$ ).
2. Work intensity, represented as “How hard I work or the number of hours I work” ( $M = 3.70$ ,  $SD = 2.57$ ).
3. WFC and time, represented as “The amount of conflict I have between my work and family life (or family time and personal time,  $M = 3.88$ ,  $SD = 2.30$ ).
4. Physical and psychological health, represented as “My physical or emotional health” ( $M = 4.42$ ,  $SD = 2.28$ ).
5. Manager and coworker relationships, represented as “My relationships with my manager and/or coworkers” ( $M = 4.61$ ,  $SD = 2.16$ ).
6. Identity, represented as “My identity as a skilled, committed employee and member of my organization” ( $M = 4.65$ ,  $SD = 2.39$ ).
7. Isolation and development, represented as “How much I feel connected to my colleagues (or organization) or my prospects for career development” ( $M = 4.88$ ,  $SD = 1.94$ ).
8. Space, represented as “The physical space, work-related routines, rules and activities I engage in my home” ( $M = 5.10$ ,  $SD = 2.65$ ).

**Top three impacts.** The first, second and third-ranked impacts, job satisfaction, work intensity and WFC and time respectively, together garnered 64.6% of all number one rankings ( $N = 82$ ) while the bottom five accounted for only 35.4%. Noting the important telecommuters assigned these top three impacts, the researcher chose to more closely examine the statistics, correlations and relationships from the section of the survey questionnaire related to those dimensions.

**Table 5**  
***Most Profound Impacts: All Telecommuters***

CR	Impact	Rank Position								n <sup>a</sup>	M	V	SD
		1	2	3	4	5	6	7	8				
1	My level of satisfaction with my job	21	14	6	5	4	5	7	7	69	3.51	6.37	2.52
2	How hard I work or the number of hours I work	21	8	6	7	7	4	7	8	69	3.7	6.63	2.57
3	The amount of conflict I have between my work and family life (or family time and personal time)	11	10	14	8	6	7	5	7	69	3.88	5.28	2.3
4	My physical or emotional health	5	12	8	13	5	10	5	10	69	4.42	5.22	2.28
5	My relationships with my manager and/or coworkers	7	5	14	6	10	10	11	6	69	4.61	4.65	2.16
6	My identity as a skilled, committed employee and member of my organization	9	4	12	7	6	9	12	9	69	4.65	5.73	2.39
7	How much I feel connected to my colleagues (or organization) or my prospects for career development	2	8	4	9	20	12	5	8	69	4.88	3.78	1.94
8	The physical space, work-related routines, rules and activities I engage in my home	6	6	4	12	4	4	10	20	69	5.1	7	2.65
	<b>Total<sup>b</sup></b>	82	67	68	67	62	61	62	75				

*Note.* The “most profound impact” question was a forced rank. Respondents assigned each impact a whole number from one (the most profound impact) to eight (the least profound impact). Instructions specified each number rank should be assigned to only one impact.

CR = Cumulative rank; Rank Position = Numerical rank assigned to an impact; M = mean; V = variance; SD = standard deviation.

<sup>a</sup>One male and one female telecommuter omitted this question, accounting for the disparity between the total count of telecommuters shown ( $N = 69$ ) and the total highlighted in the participant demographics section ( $N = 71$ ).

<sup>b</sup>Some respondents assigned a particular rank number to more than one impact (e.g., three impacts ranked first and none ranked fourth). Thus, the total number of responses shown for cumulative ranks one through eight may be greater than, less than, or equal to  $N$ .

As both gender and length of time telecommuting were identified as potential mediating factors, the researcher next examined these sub-groups.

**Gender.** The online survey data was sorted by gender to compare female responses (see Table 6) and male responses (see Table 7) to the most profound impact question. The breakdown shows that both the female group ( $N = 40$ ) and the male group ( $N = 29$ ) ranked job satisfaction, work intensity and WFC as the top three impacts, mirroring the results of the total respondent group. Similar to the larger respondent group, the top three impacts showed substantial import. In the female group, the top three most profound impacts garnered 66.7% of the number one rankings ( $N = 51$ ) and compared to 61.3% in male group ( $N = 31$ ).

Although their top three most profound impacts showed parity, female and male respondent groups differed in their rankings of the bottom five impacts. The female group ranked physical and emotional health fourth, space and time seventh and isolation and development eighth. By contrast, the male group ranked isolation and development fourth, physical and psychological health seventh and space and time eighth. Both groups, however, ranked manager and coworker relations fifth and identity sixth.

Table 6

*Most Profound Impacts: Female Telecommuters*

CR	Impact	Rank Position								n <sup>a</sup>	M	V	SD
		1	2	3	4	5	6	7	8				
1	My level of satisfaction with my job	16	4	1	4	3	3	5	4	40	3.58	7.12	2.67
2	How hard I work or the number of hours I work	13	5	3	3	5	2	3	6	40	3.75	7.01	2.65
3	The amount of conflict I have between my work and family life (or family time and personal time)	5	7	9	6	1	4	4	3	40	3.78	5.05	2.25
4	My physical or emotional health	2	10	5	8	5	5	2	3	40	4.05	3.95	1.99
5	My relationships with my manager and/or coworkers	5	4	5	2	8	8	4	4	40	4.6	4.91	2.22
6	My identity as a skilled, committed employee and member of my organization	5	2	9	4	3	5	7	5	40	4.65	5.41	2.33
7	The physical space, work-related routines, rules and activities I engage in my home	4	4	1	7	4	1	7	11	40	5.15	6.75	2.6
8	How much I feel connected to my colleagues (or organization) or my prospects for career development	1	3	4	6	8	8	5	5	40	5.15	3.52	1.87
	<b>Total<sup>b</sup></b>	51	39	37	40	37	36	37	41				

*Note.* The “most profound impact” question was a forced rank. Respondents assigned each impact a whole number from one (the most profound impact) to eight (the least profound impact). Instructions specified each number rank should be assigned to only one impact.

CR = cumulative rank; rank position = numerical rank assigned to an impact; M = mean; V = variance; SD = standard deviation.

<sup>a</sup>One female telecommuter omitted this question, accounting for the disparity between the total count of female telecommuters shown ( $N = 40$ ) and the total highlighted in the participant demographics section ( $N = 41$ ).

<sup>b</sup>Some respondents assigned a particular rank number to more than one impact (e.g., three impacts ranked first and none ranked fourth). Thus, the total number of responses shown for rank positions one through eight may be greater than, less than, or equal to  $N$ .

Table 7

*Most Profound Impacts: Male Telecommuters*

CR	Impact	Rank Position								n <sup>a</sup>	M	V	SD
		1	2	3	4	5	6	7	8				
1	My level of satisfaction with my job	5	10	5	1	1	2	2	3	29	3.41	5.54	2.35
2	How hard I work or the number of hours I work	8	3	3	4	2	2	4	2	29	3.62	6.32	2.51
3	The amount of conflict I have between my work and family life (or family time and personal time)	6	3	5	2	5	3	1	4	29	4.03	5.75	2.4
4	How much I feel connected to my colleagues (or organization) or my prospects for career development	1	5	0	3	12	4	0	3	29	4.52	4.04	2.01
5	My relationships with my manager and/or coworkers	2	1	9	4	2	2	7	2	29	4.62	4.46	2.11
6	My identity as a skilled, committed employee and member of my organization	4	2	3	3	3	4	5	4	29	4.66	6.38	2.53
7	My physical or emotional health	3	2	3	5	0	5	3	7	29	4.93	6.71	2.59
8	The physical space, work-related routines, rules and activities I engage in my home	2	2	3	5	0	3	3	9	29	5.03	7.61	2.76
	<b>Total</b>	31	28	31	27	25	25	25	34				

*Note.* The “most profound impact” question was a forced rank. Respondents assigned each impact a whole number from one (the most profound impact) to eight (the least profound impact). Instructions specified each number rank should be assigned to only one impact.

CR = cumulative rank; rank position = numerical rank assigned to an impact; M = mean; V = variance; SD = standard deviation.

<sup>a</sup>One male telecommuter omitted this question, accounting for the disparity between the total count of male telecommuters shown ( $N = 29$ ) and the total highlighted in the participant demographics section ( $N = 30$ ).

<sup>b</sup>Some respondents assigned a particular rank number to more than one impact (e.g., three impacts ranked first and none ranked fourth). Thus, the total number of responses shown for rank positions one through eight may be greater than, less than, or equal to  $n$ .

**Less than 6 months telecommuting experience.** Online survey data from respondents telecommuting less than 6 months was sorted out to compare their responses to the most profound impact question (see Table 8) to those of the larger telecommuter sample (see Table 5 on page 52). Though the sub-group of respondents telecommuting

less than 6 months (sorted on the continuous variable “length of time telecommuting”) is too small a sample ( $N = 7$ ) to offer statistical relevance, the results nonetheless offer a point of comparison. This group of respondents ( $N = 7$ ), consisting of three females and four males, ranked job satisfaction, WFC and work intensity respectively as their top three most profound impacts. This ranking provides a contrast to the ranking of the larger group of telecommuters which positioned work intensity second and WFC third.

**Comparing telecommuter and non-telecommuter groups.** The researcher next proceeded to compare the telecommuter and non-telecommuter respondent groups (see Table 9). To determine if any significant differences between the groups existed, tests of differences (t-tests) were conducted on the continuous variables.

The t-tests were conducted with Microsoft Excel using a two-tailed, unequal variance (type three) method. A confidence interval of 95% and alpha of .05 ( $p = .05$ ) were utilized as baseline points of comparison below which ( $p < .05$ ) statistical significance was generally accepted. Subsequently, significant differences between the telecommuter and non-telecommuter groups were discovered in four continuous variables: job complexity ( $p = .005$ ), job autonomy ( $p = .030$ ), coworker relations ( $p = .031$ ) and general health ( $p = .015$ ). Differences between the groups on all other continuous variables tested, including those measuring the three impacts telecommuters identified as most profound, were statistically insignificant ( $p > .05$ ). Impact rankings were not compared as the forced ranking addressed only the telecommuter experience and was thus not applicable to the non-telecommuter group.



Table 8

*Most Profound Impacts: Telecommuting Less Than 6 Months*

FR	Impact	Rank Positions								n <sup>a</sup>	M	V	SD
		1	2	3	4	5	6	7	8				
1	My level of satisfaction with my job	2	4	0	0	0	0	0	1	7	2.57	5.95	2.44
2	The amount of conflict I have between my work and family life (or family time and personal time)	2	1	0	3	0	0	0	1	7	3.43	5.95	2.44
3	How hard I work or the number of hours I work	2	0	1	0	1	1	2	0	7	4.29	6.9	2.63
4	My relationships with my manager and/or coworkers	0	0	3	1	1	1	1	0	7	4.43	2.62	1.62
5	My identity as a skilled, comitted employee and member of my organization	1	1	1	0	0	1	3	0	7	4.71	6.9	2.63
6	The physical space, work-related routines, rules and activities I engage in my home	0	1	1	2	0	1	0	2	7	5	5.67	2.38
7	How much I feel connected to my colleagues (or organization) or my prospects for career development	0	0	0	0	5	2	0	0	7	5.29	0.24	0.49
8	My physical or emotional health	0	0	1	1	0	1	1	3	7	6.29	4.24	2.06
	<b>Total<sup>b</sup></b>	7	7	7	7	7	7	7	7				

*Note.* The subgroup of respondents telecommuting less than 6 months (based on the continuous variable “length of time telecommuting”) is too small a sample ( $N = 7$ ) to offer statistical relevance.

FR = final rank; Rank Position = Numerical rank assigned to an impact; M = mean; V = variance; SD = standard deviation.

<sup>a</sup>Respondents telecommuting less than 6 months ( $N = 7$ ) consists of three female and four male respondents.

<sup>b</sup>Respondents were able to assign a particular rank number to more than one impact (e.g., three impacts ranked first and none ranked fourth). However, the total number of responses shown for rank positions one through eight was equal to  $N$ .

Table 9

*Mean, Standard Deviation, and t-Test Comparisons on Continuous Variables for Telecommuter and Non-Telecommuter Groups*

Variable	Telecommuter		Non-Telecommuter		p <sup>a</sup>
	M	SD	M	SD	
Age	42.46	10.89	39.04	11.12	0.056
Work experience	21.66	11.34	18.13	11.19	0.052
Tenure with current employer	7.25	8.28	5.36	5.82	0.107
Instruments					
Work effort	4.92	1.20	4.89	1.18	0.889
<sup>b</sup> Job complexity	1.86	1.01	2.45	1.55	0.005
<sup>c</sup> Job autonomy	2.14	1.32	2.70	1.82	0.030
Job satisfaction	3.99	1.05	3.78	1.01	0.203
Manager relations	3.72	1.08	3.73	0.85	0.857
Coworker relations	3.84	0.58	3.64	0.52	0.031
Work-family conflict and time	3.03	1.05	2.82	0.98	0.194
Health					
Mental	76.20	11.63	79.08	10.85	0.112
Social	79.15	7.32	81.61	9.13	0.063
Physical	63.24	15.29	66.05	11.40	0.203
General	72.86	7.63	75.66	6.43	0.015
Perceived	59.86	27.54	64.94	24.25	0.226

*Note.* The isolation and development instrument is not included in this table as responses were limited to telecommuters. All measures of time are shown in years.

M = mean; SD = standard deviation.

<sup>a</sup>P = probability of error;

<sup>b</sup>Job complexity is reverse scored (lower score indicates greater job complexity).

<sup>c</sup>Job autonomy is reverse scored (lower score indicates greater job autonomy).

**Intra-telecommuter group comparisons and relationships.** Within the telecommuter respondent group, several tests were conducted on the online survey data to investigate potential mediators of the experience and associations between the variables and the impacts.

***Relationships between variables.*** Two correlation tests on the variables and impacts were conducted. The first test explored any relationships between the continuous variables, including the survey instruments (indices). The second test of correlation explored any relationships between survey instruments and the ranked impacts. This test was intended to determine if the survey instrument scores correlated to the impacts. Again, attention was focused on the top three impacts. In addition, since the survey instructions and the language of the items related to general influence, excluding positive or negative language, the second test was aimed at helping to determine the nature or directionality of the ranked impacts. Pearson product-moment correlation of coefficient ( $r$ ) and p-values were generated through two-tailed Minitab tests. A critical value table for a two-tailed test of Pearson's  $r$ , with 69 degrees of freedom and level of significance  $p < .05$  (confidence interval = 95%), establishes statistical significance at a correlational coefficient of greater than or equal to .234. The test of correlation between the continuous demographic variables and the impact variables is shown in Table 10 and the test between the survey index variables and the impact variables is shown in Table 11. The principal focus of the analysis of these correlation tests was on associations with the top three ranked impacts and their related survey indices.

**Table 10**

***Continuous Demographic Variables Correlated to Impact Variables***

Variable	Mean	SD	DMV							IMV							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<u>DMV</u>																	
1. AGE	42.46	10.89															
2. TWE	21.66	11.34	0.930***														
3. TME	87.00	99.35	0.550***	0.518***													
4. FPE	2.52	1.26	0.032	0.081	0.066												
5. HWT	21.38	16.85	-0.140	-0.136	-0.054	0.139											
6. PWT	46.29	33.97	-0.113	-0.076	0.024	-0.061	0.748***										
7. TMT	69.16	63.65	0.473***	0.427**	0.387**	0.035	0.018	0.064									
<u>IMV</u>																	
8. WI	3.70	2.57	-0.075	0.010	-0.043	0.133	0.258*	0.213	0.237*								
9. JS	3.51	2.52	-0.064	-0.172	-0.063	-0.204	-0.025	-0.070	-0.111	0.119							
10. MCR	4.61	2.16	0.192	0.120	0.068	-0.065	-0.078	0.015	0.231	-0.069	-0.028						
11. WFC	3.88	2.30	-0.099	-0.064	-0.001	0.073	-0.209	-0.029	0.118	0.016	-0.007	-0.042					
12. ISD	4.88	1.94	0.075	0.009	0.086	-0.004	-0.200	-0.157	0.185	-0.327**	0.255*	0.462***	0.056				
13. PPH	4.42	2.28	-0.048	-0.130	-0.032	0.076	0.078	-0.011	-0.216	0.040	0.057	-0.094	0.021	0.104			
14. ID	4.65	2.39	0.105	0.071	-0.068	-0.237*	-0.232	-0.253*	-0.005	-0.163	-0.112	0.130	-0.088	0.222	0.062		
15. SP	5.10	2.65	0.017	0.042	0.007	0.229	-0.085	-0.164	0.070	0.052	-0.305*	-0.106	0.142	0.114	0.107	0.312**	

Note. DMV = demographic variables; IMV = impact variables; TWE = total work experience; TME = total months employed with current organization; FPE = frequency of performance evaluation; HWT = hours per week telecommuted; PWT = percent of work week telecommuted; TMT = total months telecommuted, WI = work intensity; JS = job satisfaction; MCR = manager and coworker relations; WFC = work-family conflict and time; ISD = isolation and development; PPH = physical and psychological health; ID = identity; SP = space.

\* p < .05. \*\* p < .01. \*\*\* p < .001.

**Table 11**

***Survey Indices (Instruments) Correlated to Impacts***

Variable	Mean	SD	SIV																	IMV						
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
<u>SIV</u>																										
1. WEI	4.91	1.2																								
2. JC	1.85	1.01	0.243*																							
3. JA	2.14	1.32	-0.153	0.079																						
4. JSAT	3.98	1.04	-0.208	-0.364**	-0.316**																					
5. MRE	3.71	1.07	0.137	-0.101	-0.324**	0.469***																				
6. COR	3.84	0.57	0.071	-0.058	0.032	0.335**	0.282*																			
7. WFAC	3.03	1.04	0.552***	0.291*	-0.249*	-0.177	-0.051	-0.143																		
8. ISODE	3.47	1.39	0.005	-0.029	0.135	-0.234	-0.319**	-0.317**	0.224																	
9. MH	76.19	11.63	-0.030	0.049	0.217	-0.064	-0.201	-0.037	0.031	0.32**																
10. SH	79.15	7.31	0.067	0.042	-0.26*	0.241*	0.311**	-0.025	-0.02	0.052	0.213															
11. PH	63.23	15.28	0.108	-0.047	0.135	0.117	-0.090	0.008	0.297*	0.149	0.175	0.012														
12. GH	72.86	7.62	0.079	0.007	0.122	0.123	-0.061	-0.022	0.207	0.283	0.693***	0.436***	0.761***													
13. PERH	59.85	27.54	-0.018	0.022	-0.018	-0.004	0.019	0.066	-0.098	-0.184	0.052	0.148	0.33**	0.294*												
<u>IMV</u>																										
14. WI	3.70	2.57	0.191	-0.080	0.172	0.041	-0.028	0.014	0.015	0.008	-0.169	-0.051	0.049	-0.072	-0.069											
15. JS	3.51	2.52	0.010	0.055	0.048	0.042	0.072	-0.011	0.092	0.110	0.045	0.139	0.034	0.091	-0.137	0.119										
16. MCR	4.61	2.16	0.087	0.136	-0.186	-0.216	-0.331	-0.191	0.223	0.217	0.161	0.084	0.068	0.156	-0.092	-0.069	-0.028									
17. WFC	3.88	2.30	-0.089	0.006	0.176	0.156	0.048	-0.157	0.094	0.044	-0.022	-0.092	0.169	0.072	-0.119	0.016	-0.007	-0.042								
18. ISD	4.88	1.94	0.045	0.179	-0.239	-0.049	-0.067	-0.085	0.065	-0.067	-0.064	-0.140	-0.020	-0.092	-0.114	-0.327**	-0.255*	0.462***	0.056							
19. PPH	4.42	2.28	0.071	0.269	0.257*	-0.221	-0.254*	-0.070	0.113	0.013	-0.072	-0.104	0.111	0.003	-0.103	0.040	0.057	-0.094	0.021	0.104						
20. ID	4.65	2.39	-0.229	0.112	-0.075	0.064	0.081	-0.026	0.024	-0.128	-0.125	-0.082	-0.069	-0.137	0.010	-0.163	-0.112	0.130	-0.088	0.222	0.062					
21. SP	5.10	2.65	-0.052	0.215	0.099	0.177	0.174	0.073	0.069	-0.218	-0.285*	-0.178	0.042	-0.177	0.085	0.052	-0.305*	-0.106	0.142	0.11	0.11	0.312**				

Note. SIV = survey index variables; IMV = impact variables; WII = work intensity index; WEI = work effort index; JC = job complexity score; JA = job autonomy score; JSAT = job satisfaction score; MRE = manager relations score; COR = coworker relations score; WFAC = work-family conflict and time score; ISODE = isolation and development index; MH = mental health score; SH = social health score; PH = physical health score; GH = general health score; PERH = perceived health score; WI = work intensity; JS = job satisfaction; MCR = manager and coworker relations; WFC = work-family conflict; ISD = isolation and development; PPH = physical and psychological health; ID = identity; SP = space.  
 \* p < .05. \*\* p < .01. \*\*\* p < .001.

*Job satisfaction.* Listed from most significant to least significant ( $|r|$  taken), the correlation tests showed the following links within job satisfaction: an increase in manager relations score is associated with an increase in job satisfaction score ( $r = .469$ ,  $p = .000$ ), an increase in job satisfaction score is associated with a decrease in job complexity score ( $r = -.364$ ,  $p = .002$ ), an increase in coworker relations score is associated with an increase in job satisfaction score ( $r = .335$ ,  $p = .005$ ), an increase in job satisfaction score is associated with a decrease in job autonomy score ( $r = -.316$ ,  $p = .008$ ), an increase in the impact of space is associated with a decrease in the impact of job satisfaction ( $r = -.305$ ,  $p = .011$ ) and an increase in the impact of isolation and development is associated with a decrease in the impact of job satisfaction ( $r = -.255$ ,  $p = .035$ )

*Work intensity.* Listed from most significant to least significant ( $|r|$  taken), the correlation tests showed the following links within work intensity: an increase in WFC and time score is associated with an increase in work effort index score ( $r = .552$ ,  $p = .000$ ), an increase in the impact of isolation and development is associated with a decrease in the impact of work intensity ( $r = -.327$ ,  $p = .006$ ), an increase in the impact of work intensity is associated with an increase in hours per week telecommuted ( $r = .258$ ,  $p = .032$ ), an increase in job complexity score is associated with an increase in work effort index score ( $r = .243$ ,  $p = .042$ ) and an increase in the impact of work intensity is associated with a decrease in total months telecommuted ( $r = -.237$ ,  $p = .050$ ).

*Work-family conflict and time.* Listed from most significant to least significant ( $|r|$  taken), the correlation tests showed the following links within WFC: an increase in physical health score is associated with an increase in WFC score ( $r = .297$ ,  $p = .012$ ) an increase in WFC score is associated with an increase in job complexity score ( $r = .291$ ,  $p$

= .015) and an increase in WFC is associated with a decrease in job autonomy score ( $r = -.249$ ,  $p = .039$ ).

***Comparing female and male telecommuter groups.*** Continuing the analysis of online survey data, the researcher then compared female and male telecommuter responses on the continuous variables and survey index (instrument) scores. The purpose of these t-tests was to determine if statistically significant differences existed between the groups that might mediate perceptions of the most profound impact of telecommuting as a work arrangement. As female and male telecommuter groups identified the same top three most profound impacts, with the second and third impacts switched respectively, the researcher informally hypothesized that differences between the groups would fail to meet the established standard of significance ( $p < .05$ ).

In preparation to conduct the comparison tests, the relevant data was re-sorted and re-grouped. The tests were conducted in the same manner and with the same levels of confidence interval and  $\alpha$  as the previous telecommuter to non-telecommuter group comparison. The test results, as displayed in Table 12, show p-values between .095 and .938 were generated for all variables, indicating that differences between female and male telecommuter groups were not significant.

Table 12

*Mean, Standard Deviation, and t-Tests on Continuous Variables for Female and Male Telecommuter Groups*

Variable	Female		Male		p <sup>a</sup>
	M	SD	M	SD	
Age	42.10	9.29	42.96	12.98	0.759
Work experience	21.44	10.80	21.96	12.22	0.851
Tenure with current employer	5.95	5.34	8.20	11.07	0.310
Instruments					
Work effort	5.13	1.01	4.62	1.39	0.095
Job complexity	1.93	0.93	1.76	1.12	0.511
Job autonomy	2.00	1.22	2.34	1.45	0.302
Job satisfaction	3.98	0.97	4.00	1.16	0.938
Manager relations	3.72	1.08	3.80	0.96	0.742
Coworker relations	3.81	0.54	3.89	0.64	0.596
Work-family conflict and time					
Isolation and development	3.11	1.04	2.93	1.07	0.470
Health	3.63	1.48	3.28	1.28	0.302
Health					
Mental	76.59	12.57	75.67	10.40	0.738
Social	80.24	6.51	77.67	8.17	0.159
Physical	64.88	15.02	61.00	15.61	0.298
General	73.90	7.74	71.44	7.36	0.179
Perceived	60.98	26.25	58.33	29.60	0.698

Note. All measures of time are shown in years. M = mean; SD = standard deviation.

<sup>a</sup>p = probability of error.

**Telecommuting less than 6 months.** Online survey data from respondents telecommuting less than 6 months, sorted on the continuous variable “length of time telecommuting,” was consolidated and reviewed. Tests of differences between this group and the larger telecommuter sample were not conducted as the group’s membership ( $N = 7$ ) is not large enough to provide statistical significance at this study’s established level ( $p < .05$ ).



## Qualitative

Analyzing the qualitative data, the researcher compiled and reviewed all responses to determine similarities, differences and draw out themes. Throughout the range of telecommuter responses, several themes emerged from the data. These themes are explored in the “Further Observations” section.

An approach similar to grounded theory analysis (Punch, 2005) was utilized in the content analysis to explore relationships between the interview data and determine linkages. However, in contrast to the standard grounded theory approach, the researcher did not undertake to conceive a broad, second-order theory to explain the phenomena present in the empirical data. Rather than espousing a single theory, as this study is exploratory in nature, the researcher employed induction to infer several abstract, higher-order possible conclusions from the data. This undertaking consisted of: uncovering the conceptual categories at a first level of abstraction, determining the relationships between these categories and, finally, further conceptualizing and specifying these relationships. The researcher completed all data entry, displays, coding and conclusions and check coding was completed by an independent reviewer to ensure inter-coder reliability.

Interviews were completed with six telecommuters, four women and two men, between November 7 and December 22, 2011. The group’s average tenure of telecommuting was 6 years, with none in the work arrangement less than 4 years. Participants ranged between 28 and 62 years of age, with the majority between 28 and 35 years of age. The interview sample represented an array of job functions such as sales, service, and technical writing and a variety of industries, including computer software, food and beverage, finance, and healthcare. All participants held professional-level positions.

Four interviews were conducted in person and two via Skype video call with duration ranging from 43 to 89 minutes. In addition, four interview subjects were personal friends or acquaintances and two were unknown to the researcher before the study. All subjects were interviewed in their homes and a semi-structured, researcher-developed interview protocol was used. Similar to the survey, the “most profound impact of telecommuting” question followed a series of items (questions) addressing dimensions of the impacts and mediators discussed in the literature review. In classifying responses, the researcher closely examined written transcripts and reviewed audio recordings of the interviews to determine fit with the categorization scheme (eight impact areas) established through the literature review. If language, behaviors or experiences presented could not be conceptualized with extant impact categories, new categories or concepts would be adopted. Classifications were then checked by an independent party.

The qualitative data analysis is organized into three sections: identification of the top three most profound impacts, analyses of the relationships between impacts and participant recommendations to enhance the experience and further observations.

**Top three most profound impacts.** Impacts were ranked through evaluating apparent commonalities across the realm of participant responses to the “most profound impact” question. The impacts identified with the first, second and third-most frequencies were ranked as first, second and third respectively.

***Work-family conflict and time.*** Respondents universally articulated WFC as a top three impact, using words such as “freedom,” “liberation,” “convenience,” “separation” and “control” to describe what they considered to be a largely desirable, gratifying and holistic balancing of their various personal and professional responsibilities and interests. In addition to positive comments, three of the six respondents, however, also described

negative experiences around WFC. Specifically, one related that her previous relationship partner, with whom she cohabitated, was consistently dissatisfied with her home-based work arrangement leading, in part, to the dissolution of that relationship. Another participant's statements reflected that her increased opportunity to exercise, attend to family matters, and enjoy lunch breaks with her spouse conflicted with what she distinguished as a lack of separation: "It is difficult to get away from work sometimes." A third respondent related a similar sentiment, indicating his social life had been negatively affected by the nature of the arrangement: "You always have the task waiting for you".

**Work intensity.** Respondents next identified work intensity as having the greatest impact, with five out of six respondents speaking to the total amount or distribution of time worked, capacity to focus on and ability to execute job duties. Work intensity, however, must be understood as exerting differential impacts on respondents. Two out of five respondents specified increased ability to focus on work tasks leading to a rise in work product in the same period over a traditional, office-based work arrangement. An equal percentage, vocalized a decrease in work intensity based on distractions ever-present in the home work environment as well as the absence of an explicit ritual dressing pattern and formal attire distinction associated with work in more traditional office environments. One telecommuter portrayed an initial increase in work intensity following by a subsequent decrease. This respondent explained the decrease in work intensity as being linked to disengagement resulting from unexpected, unwelcome changes to her job title and responsibilities.

**Isolation and development.** The third most impactful aspect of telecommuting is isolation and lack of career development, with four out of six (67%) respondents conveying changes in their feelings of connection, inclusion or communication with

colleagues or their prospects for career development. Two of these telecommuters communicated positive perceptions, reporting that telecommuting had not hindered but enabled them to secure positions, expanded future possibilities and potentially served to advance their careers. However, both of these respondents related doubt surrounding their ability to give up telecommuting entirely, return to full-time work and thrive in a traditional office environment should a future career opportunity pose such a requirement. The other half of the respondents reported negative perceptions of the impact of isolation and development. One male respondent specified that he experienced telecommuting as “too convenient.” The arrangement had engendered “boredom” and complacency and he was not stretching or challenging himself in his position or career. The second male described the inability to delegate tasks to office-based junior staff members and utilize organizational shared resources such as printing, faxing, and IT help desk services as translating to reduced productivity, efficiency and overall effectiveness, thus jeopardizing his chances to secure future opportunities and advance in his career.

**Relationships between impacts.** Relationships between impacts were assessed in terms of space, identity, job satisfaction, physical and psychological health, manager and coworkers relations, gender, and tenure as a telecommuter. These results are described in the following sections.

**Space.** Participants did not rank impact to physical space, habits and routines among the top three. However, they universally distinguished its significance within the scope of responses to other questions. In particular, five out of six recognized the act of daily showering as a critical habit for success in telecommuting. The majority spoke to the development of routines to manage time and provide structure around the workday. A smaller number expanded on this concept, pinpointing the significance of developing and

enacting a daily routine of grooming, dressing and readying for the day as if he or she was in fact traveling to work in a traditional office environment.

The majority of telecommuters also acknowledged the correlation between maintenance of physical boundaries, such as offices with doors, and positive separation between their work and personal spheres (WFC and time). This correlation was absent when participants did not maintain distinct rooms purposed exclusively for work, or only maintained non-physical boundaries or routines, such as a corner of the living room with desk and chair. The maintenance of a distinct physical space in which only work is conducted related to increased work intensity during periods designated for work and a reduction of intensity outside those periods.

**Identity.** The activities, routines and rituals described in the previous section can be interpreted as identity construction and maintenance activities telecommuters engage to effectively transition between executing the role of household member, parent or spouse, and the role of organizational worker. Respondents with enclosed offices in their homes depicted more success transitioning from their professional and organizational identities to their personal, family or household-based identities outside work hours. This success suggests this group shares an increased capacity to leave work “at the office” during personal time, thereby experiencing less encroachment or “bleed” of work into the personal sphere and, ultimately, lower WFC.

**Job satisfaction.** Outside of the section of the interview protocol dedicated to job satisfaction, the term seemed to resonate little. Instead, responses revealed an alternate impact that could be termed “life satisfaction.” The telecommuting arrangement enabled greater attention to and fulfillment of their personal needs, thus enhancing the total quality of their lives. Participants expressing lower levels of job satisfaction were

associated with higher incidences of complacency, stagnation and career paralysis (“limbo”) with respect to improving their current circumstances or exploring new job opportunities. In this group, increased life satisfaction seemed to balance lower job satisfaction enough that participants experienced increased job longevity. By contrast, respondents expressed higher relative satisfaction with their current positions in areas such as level of challenge, workload and organizational support, interaction and engagement with coworkers and volume of learning opportunities, and were more likely to seek out and evaluate new job opportunities, apply for positions and advance their careers.

***Physical and psychological health.*** The majority of telecommuters reported the work arrangement’s positive or neutral impact on their health status. Typical responses seemed to imply a relationship between increased feelings of freedom and autonomy in task execution with greater opportunity to exercise:

I can now go out to my road bike for an hour instead of my lunch hour and then come back, eat my lunch on my desk and feel a lot better. And I noticed a lot of my colleagues who are in the office don’t get out to do that . . . Mentally, I actually like the fact that I can . . . I could just say “Sorry, I’m gonna be gone for an hour or whatever and then I’ll be back.” There’s definitely a psychological difference to managing your own time.

In addition, lower WFC seemed to correlate to increased psychological health in the form of lower stress levels and increased emotional self-regulation capabilities. The presence of established, identity-related routines, enclosed office spaces as well as positive and consistent manager and coworker relations appeared to be positively correlated with psychological health.

***Manager and coworker relations.*** Data suggests that telecommuters experience impacts to manager and coworker relations across a continuum with some reporting

positive correlation, others no correlation and yet others a negative relationship. Specific telecommuter experience seemed to hinge on factors, including: organizational technical infrastructure, organizational structure, organizational management policy, personal management style and number of direct reports and reporting structure. Yet, the data did imply that physical isolation from coworkers and managers and low affect communication technologies may be associated with psychological health impacts including, lower confidence in abilities and self-esteem levels.

**Gender.** In responding directly to the questionnaire item on gender, females indicated they did not feel a gendered dynamic at play in the work arrangement. Though, in the course of responding to another, non-related question, one female commented that the work arrangement was preferable based on the ability to eliminate time spent getting ready for work. As compared to the time commitment of her male relationship partner, and more broadly males in general, the respondent explained:

You know it's 45 minutes out of my day to get ready for work. He [relationship partner] gets into the shower and he's in and out in 15 minutes and ready to walk out the door. I think with women it's just, it really is time, it's a time suck.

Males reported no knowledge of any gender differential with regard to the work arrangement.

**Tenure as a telecommuter.** Tenure as telecommuter failed to show a strong relationship to any other studied impact or facet of the work arrangement.

**Actions to enhance the experience.** Current and potential future telecommuters and their employing organizations should, at a minimum, be considered in developing strategies and corresponding tactics to optimize the work experience.

**Telecommuter actions.** In outlining actions they could take, respondent comments centered on communication, relationships and space.

*Communication/relationships.* Three out of six respondents indicated they would benefit from being more proactive in communication and interaction with coworkers across their organizations. These respondents expressed the belief that exerting intentional effort and dedicating time to increasing this type of contact would reduce feelings of isolation, increase feelings of inclusion and strengthen relationships with team members and other coworkers:

I could have one-on-one conversations with some of my coworkers more. So that's what makes it [the telecommuting arrangement] better now and I could reach out and talk to more of them . . . adding in specific time . . . during the day is huge . . . So that's very new for me, setting up this schedule . . . Something that I could create to make it better, to make my work better or just my feelings about it better.

Two participants, however, perceived the costs associated with devoting additional time and energy to communication and interaction as outweighing potential benefits.

*Workspace.* The physical set-up of workspace in the home environment, routines and related work habits materialized was also a significant theme, with two out of six respondents pointing to the perceived benefit in increased attention to organization in their home work spaces, including investing their own resources to support their own physical health and well-being.

***Organization actions.*** Respondent recommendations to improve the telecommuting experience focused on infrastructure, management and operations.

*Infrastructure.* Participant responses indicate strengthening of key components of organizational infrastructure would enhance telecommuting work arrangements. Participant comments centered on the need to strengthen distributed computing and networking capabilities as well as general communications, back-end logistics and



general office support. With investment these areas, telecommuters could be more efficient and focus more time on professionally satisfying and strategically relevant job duties rather than the enervating and irrelevant:

Well, the biggest problem is that you end up being your own IT support . . . I've been an investment banker for 14 years and you know I'm still going on doing some of the basic functions as someone in the mail [room] in an office . . . [the] facilities role that I play slows down . . . the amount and the intensity of the work that I'm doing.

*Management.* Respondents indicated that frequent and clear communication from management regarding roles and expectations may aid in sense-making around the experience, thereby reducing experienced ambiguity, aiding telecommuters in reconstructing and verifying identities and perhaps increasing job satisfaction. If these assumptions hold true, organizations may benefit from increased effectiveness and performance.

Management might also provide opportunities for telecommuters to interact with one another in-person a few times per year.

*Operations.* Telecommuter recommendations suggest that consistency and clarity of communication around organizational policies and procedures would significantly enhance the experience. They suggested organizations and their leaders must prioritize pushing information down into the organization so that all parts feel connected to the whole. These efforts may promote stronger manager and coworker relationships, telecommuter job satisfaction, identity construction and verification, though they may require substantial changes in organizational culture and leadership approaches.

**Further observations.** The central feature of telecommuting as a work arrangement is a paradox. Telecommuters cherish the freedom, control and ownership (correlating to lower WFC) over their lives this work arrangement affords. Yet, they also

seem to have internalized a perception correlating trust, emanating from their managers and, more generally, their organizations, to the existence and ongoing survival of the telecommuting arrangement. Though this perception may have little evidentiary basis, feelings of freedom and choice engendered by the work arrangement are too powerful and positively distinct from their previous, traditional office experiences to leave its survival to chance. Consequently, they are likely to engage in behaviors aimed at ensuring the work arrangement is maintained. Increased attention and energy, directed at both managers and coworkers, is devoted to impression management focused on extensive and intensive work efforts and work intensity itself rises. Thus, lower work-family and time conflict comes at a specific and somewhat surprising cost, more work.

In addition, though telecommuters enjoy the comforts and convenience of working in the more relaxed atmospheres of their homes, they reconstruct spaces within their homes to closely resemble traditional workplaces and reframe space intended for personal functions to space intended for work. Moreover, they enact routines and rituals intended to achieve a conscious, emphatic shift in identity (from dweller to worker) until the day's job tasks are completed.

Although telecommuters universally enjoyed greater levels of autonomy afforded by the work arrangement, they also almost universally reported a desire for more connection, communication and informal learning opportunities with colleagues. However, when this subject was further explored, the majority reported that they would not sacrifice any of the benefits reaped from the work arrangement to enjoy significant gains in any of the aforementioned areas.

Finally, participation in decision-making may strengthen telecommuter identities, reduce isolation and improve relationships with management. Moreover, by consulting

telecommuters and hearing their voices prior to implementation, organizations can fully evaluate the impact of policies and procedures on telecommuter levels of identity, engagement and productivity.

### **Summary**

This chapter provided a detailed analysis of data gathered in both the online survey and the individual interviews. First, the quantitative data was analyzed by top impacts, respondent groups were compared and relationships between the variables were explored. Next, the qualitative data was analyzed, relationships between the impacts were explored and general, higher-order observations were presented. Chapter five will present the conclusions of the study.

## Chapter 5

### Conclusions, Recommendations, and Suggestions for Future Study

The purpose of this study was to discover the most profound impacts of telecommuting as a work arrangement on participant experiences and identify actions telecommuters or their employers could take to improve telecommuting as a work arrangement. Understanding these impacts will enable telecommuters and their organizations to take steps to remediate those perceived as negative and maximize advantage of those perceived as positive. This chapter begins with conclusions and interpretation of the research findings. Recommendations are then presented and the study limitations are discussed. The chapter concludes with suggestions for future study.

#### Conclusions

This section synthesizes the quantitative and qualitative findings. Quantitative impact rankings, t-test, and correlation test results are evaluated against interview responses, researcher observations, and scholarship.

**Most profound impacts.** The online survey and semi-structured interviews yielded some similar and some unique results in terms of the top three most profound impacts of telecommuting as a work arrangement. In the quantitative portion of the study, job satisfaction, work intensity, and WFC and time were identified as the top three impacts. In contrast, interview respondents identified WFC and time, work intensity, and isolation and career development. Isolation and development ranked seventh in the overall forced ranking: eighth among women, fourth among men, and seventh among the telecommuting less than 6 months group. Job satisfaction was not verbalized in response to the most profound impact question and, other than responses to the interview question related to job satisfaction, the impact was not articulated by respondents during

interviews. Survey scores on the job satisfaction instrument indicate the telecommuter group had slightly greater job satisfaction ( $M = 3.99$ ) than traditional office workers ( $M = 3.78$ ), but this disparity was not statistically significant ( $p = .203$ ). It was not possible to determine the extent to which interview participant job satisfaction rankings may have been outliers relative to the rest of the group as online survey results were anonymous. Although the researcher did not formulate a hypothesis as to why the discrepancy in ranking came about, it could be speculated that perhaps interview respondents may have considered job satisfaction a more likely “output” of other impacts (e.g., work intensity combined with isolation and development result in job satisfaction at some level, rather than an “input” or standalone impact). The lengthier, more personal format of the interview could have contributed to this differentiation. The same scenario holds true for the discrepancy between the online survey and interview participant rankings of isolation and development.

**T-test results.** As shown in Table 9 on page 58, differences between the telecommuter and non-telecommuter groups were present on four continuous variables. Statistically significant differences between the groups were discovered in job complexity, job autonomy, and coworker relations with telecommuters reporting higher levels than the non-telecommuters. Non-telecommuters scored significantly higher in general health than their non-telecommuting colleagues. These results in job complexity, job autonomy, coworker relations, and general health will be examined in more depth in the next section as they align with correlation test results.

Impacts ranked in the top three in the online survey and interviews, isolation and development, work intensity, WFC and time, and job satisfaction, did not show significant inter-group variance.

**Correlations and observations.** Conclusions were drawn regarding the correlations and observations related to job satisfaction, work intensity, and WFC and time. These are discussed below.

**Job satisfaction.** Results from telecommuter group correlation tests results show increases in manager and coworker relations scores are associated with an increase in job satisfaction scores. Anecdotal evidence from participant interviews suggests that satisfying manager and coworker relationships is a key ingredient in overall job satisfaction. Overall, participants linked higher levels of communication and interaction with managers and coworkers with a better telecommuting experience, particularly when this communication and interaction did not require the implementation of additional layers of organizational structure, policies or procedures. Of the two respondents describing their telecommuting experience with negative tones, one emphasized that he “missed the camaraderie and interactions with coworkers, you feel like you are kind of on an island,” while the other indicated that he had never met his manager in person and identified a “disconnect between me [him] and [his] co-workers.” Although extant research (Golden, 2006; Golden & Veiga, 2005; Ilozor et al., 2001) suggests that several factors, including WFC, extent of telecommuting, job responsibilities, goals and expectations mediate this relationship, this finding is generally in line with previous results.

The positive association between manager and coworker relations scores and job satisfaction scores also reasonably supports this study’s finding that an increase in the impact of isolation and development is associated with a decrease in the impact of job satisfaction. Telecommuter responses clearly linked greater access, communication, and interaction with managers and coworkers with decreased isolation:

Let's say there's a policy that comes out and negatively impacts you. I think you internalize a lot more than if you were in an office and it's like everyone is suffering with it. You know, I get . . . kind of pissed off. . . . You kind of feel like it's just you that's affected, and I think that is obviously a negative.

Three of the six interview participants voiced comments describing an inextricable link between isolation and development, including the consistent absence of informal learning opportunities with managers and colleagues and pointed to its negative impact on telecommuting outcomes, though not necessarily job satisfaction:

So I've been tempted to send my boss an email to say you know maybe there's more to this than everyone's kind of thinking. But what would it take for me to send that? It's sort of, who do you think you are? Like, what do you really know? . . . I don't want to call her because it's not a really big deal. They already sort of developed their whole approach on this whole project like [and] like I'm getting in on the back end when my contribution could have been viable before. Now, it feels like the time has passed and so it's better for me to just zip out and let it go. . . my boss doesn't know how I feel about things either and she would be able to read that sort of non-verbal thing more . . . There would have been more opportunity for adjustment and it just doesn't happen because I'm isolated out here. . . . it pains me because it's like gosh, if I only could help with this, if only I could contribute like this, little more knowledge that I have . . .

These comments boost substantial researcher claims that isolation is the most universal negative proximal outcome of telecommuting (Golden et al., 2008; Madsen, 2003; Mann & Holdsworth, 2003). Respondents' comments also support Mann and Holdsworth's (2003) and Golden et al.'s (2008) findings, suggesting that isolation results in increased ambiguity and uncertainty and compromised decision-making ability. Relatively high levels of manager and coworker communication seemed to mitigate these effects (outside informal learning opportunities), with telecommuters receiving frequent feedback by several modes of communication reporting feelings of confidence and achievement.

Results also show an association between increasing job satisfaction and increasing job complexity and autonomy. Job duties in the interview sample consistently

demanded managing multiple tasks requiring interaction and coordination with colleagues across projects teams and functional areas. Among the group, the majority seemed to recognize that the relative complexity of their jobs played a major role in their distinction as telecommuters; job complexity was ostensibly a given, although it was not verbalized in those terms or related to increasing job satisfaction. Job autonomy was verbalized in several forms and in response to a variety of interview questions. Responses imply that participants highly prize job autonomy, flexibility, and discretion in executing their job tasks, and ultimately associate it with broader themes of life autonomy and the time ownership element of WFC:

I used to hate the routine of going into an office. I hated that I felt like I was on a hamster wheel and I can't get off and I just have to keep doing the same thing over and over like a drone . . . .so the biggest gift for working from home was I've felt like I was in control in my life....and that means a lot to me, a lot.

Such findings support Gajendran and Harrison's (2007) conclusion that perceptions of greater autonomy are a primary method through which telecommuting exerts positive attitudinal and behavioral effects.

Correlation test results also show that an increase in the impact of workspace is associated with a decrease in the impact of job satisfaction. This finding provides additional, although contradictory, detail around the researcher's previous observations regarding the physical constructions, routines, and rituals enacted by telecommuters in their homes to shift their identities from dweller, spouse, or parent to organizational worker. Interview responses seem to indicate that participants believed engaging in these space-related acts were effective in producing desirable telecommuting outcomes, including decreased WFC. Since job satisfaction was not voiced as a desired outcome, it is possible that participants relate experiencing more WFC with lower job satisfaction.



Acting out the physical constructions, routines, and rituals may be associated with both perceived increased success in the work arrangement and lower reported job satisfaction scores. These lower job satisfaction scores could also indirectly refute Kelliher and Anderson's (2010) study reporting higher telecommuter scores on measures of overall job satisfaction and organizational commitment as compared to those in non-flexible work arrangements. Referencing the same social exchange theory (Blau, 1964/1986), it could be speculated that acting out the constructs, routines and rituals could be understood by telecommuters as necessary for success, but involving increased work intensity and disruption of critical work-life boundaries thus resulting in feelings of disengagement or resentment and lower job satisfaction.

**Work intensity.** The first significant work intensity correlation shows an increase in WFC and time associated with an increase in work effort index. The implication is that as respondents work harder, faster, and under greater tension, work increasingly moves into previously personal realms and absorbs more personal time. In addition, results show that increases in the impact of work intensity is associated with a decrease in total months telecommuted. Both of these results seem to represent the experience of those without dedicated, enclosed offices as well as situations and behaviors which played out when respondents were newer to the telecommuting arrangement:

I remember having a conversation with my mom and she was like . . . you just need to have a time when you close the door. But there was no door in my old place. There was no separation from it, it was always in my face, always . . . I didn't know how to cut off the work and to really know how to draw those lines and I let it [work] take advantage of me . . . Part of the nature of recruiting is that there's always more that can be done . . . There are a lot of times I just have to be like alright . . . I know that this hiring manager thinks they don't have enough resumes but that is done. I've hit my limit . . . But I think that some of change comes with my growing up. I have been doing this for five years. I've kind of become older and wiser . . .

Participant responses regarding work intensity somewhat echo Kelliher and Anderson's (2010) study. All participants reported at least one form of work intensification. Five out of six respondents detailed significant extensive intensification on a daily and weekly basis. The majority engaged in increased intensive effort (intensification) citing increased capacity to focus on job tasks as a positive aspect of the work arrangement. Several respondents expressed awareness surrounding their work intensification behaviors. However, much like Kelliher and Anderson's result, work intensification did not correspond to a negative general opinion on the work arrangement as a whole. Participant comments appeared to exhibit cognition that higher levels of work intensification result in negative outcomes, as found by studies in this area (Burchell, 2002; Fairris & Brenner, 2001; Green, 2001; Warr, 1987). Yet, they seemed to believe their own levels of work intensification did not meet or exceed the point at which those negative outcomes were achieved. Results showing an increase in the impact of work intensity is associated with an increase in hours per week telecommuted (extent of telecommuting) supplement these findings.

Curious results, contradicted by the relevant literature, were found in two correlations. The first result showed an increase in the impact of isolation and development is associated with a decrease in the impact of work intensity. The first result was nevertheless supported by interview responses. Participants experiencing the most isolation and lack of development had become demonstrably disengaged from their positions and organizations. From their comments, it is reasonable to infer that they understand their situation is unlikely to improve through the exertion of greater effort on work tasks. Thus, they may then be maintaining their positions, but exerting less

extensive and intensive effort. One telecommuter explained, “I don’t move the work very hard, just enough to get things done.”

The second result showed an increase in job complexity is associated with an increase in work effort index. This finding implies that less complex work tasks are associated with working harder, faster and under more tension. Any explanation of these contradictory findings would rely on conjecture and is thus excluded.

***Work-family conflict and time.*** In the sphere of WFC and time, results show three intriguing associations. The first shows an increase in WFC and time is associated with increasing job autonomy. Data from participant interviews as well as pertinent literature in this area, most notably Brocklehurst (2001), Thatcher and Zhu (2006), Tietze (2005), Wilson and Greenhill (2004), suggest that increasing discretion and flexibility in the work arrangement may upset the preexisting structures and related behavioral patterns of home life as well as dislocate participant worker identities. Telecommuters must fashion and verify new worker identities, outside specific external structures, such as social context and temporal and spatial regimes. In these endeavors, they may utilize strategies such as work intensification, increased communication with managers and coworkers, and exercising control in constructing and organizing home work environments to reinforce their identities and recreate the familiar routines of their former workplaces (Thatcher & Zhu, 2006; Wilson & Greenhill, 2004). Brocklehurst (2001) and Tietze (2005) came to similar conclusions from respective studies, asserting telecommuters craft identities that are more work-centered than those of traditional office workers, spend exorbitant amounts of energy developing them, and seeking cultural cues to construct new networks of relationships. Considering the aforementioned work intensification, the emergence of increasingly work-centered identities and related

behaviors in the home, it is simple to extrapolate how increasing conflict between work and personal concerns or time could result. Participant workers' comments appear to substantiate these ideas as several recounted how the ability to spread job tasks throughout the day and into the late evening served as both a blessing and a curse to their personal lives.

In light of the previous explication, the second result, showing an increase in WFC and time associated with a decreasing job complexity, is still more peculiar. This result was unsupported with respect to interview responses and relevant scholarship. However, it could be postulated that if work pace slows, tasks become less strenuous and tension levels decrease. As a result, telecommuters may no longer be challenged in their roles and become disaffected. If the situation is not remedied, the ensuing frustration and potential job dissatisfaction may negatively impact personal relationships and the home environment resulting in increasing WFC and time.

A third incongruous finding shows an association between an increase in physical health and an increase in WFC and time. Neither interview responses nor related literature affirm these findings. On the contrary, telecommuters universally reported the work arrangement afforded them more opportunity to engage in physical activities (e.g., walking outside, bike rides, horseback rides, yoga, and weight lifting). In addition, one half of interview respondents appreciated that near-constant access to nutritious food options stocked in their refrigerators enabled healthier diet choices. In what would also appear counterintuitive, t-tests show the non-telecommuter group scored significantly higher in general health (an aggregate of mental, social, and physical health scores) than the telecommuting group. Although it is possible the interview sample was not representative of the online survey sample or that interview respondents exaggerated their

participation in physical activities, neither of these suppositions adequately explain how increased WFC and time might be associated with increased physical health.

### **Recommendations**

This study holds that telecommuters themselves are an essential source of wisdom concerning telecommuting as a work arrangement. As such, interview participants are the source of the study's recommendations. Respondent comments on communication technologies indicated their overall relevance to the telecommuting experience. From the participants' perspective, these technologies should be available anytime and anywhere, should be reliable and fast, and should offer multiple dimensions of informal and formal interactions, such as video conferencing, instant messaging, mobile email and VoIP. Web video technology, in particular, may reduce feelings of isolation and improve feelings of connection to and membership in the larger organizational system.

Moreover, with respect to the larger organizational system, participants seemed to link their ability to perform effectively and deliver results with the presence and maintenance of essential components of organizational infrastructure.

From correlation results and literature reviewed, it could be hypothesized that higher levels of contact and levels of coworker relations may assist participant workers in the reformation and ongoing verification of organizational identities. The physical set-up of workspace in the home environment is also critical to the success of the arrangement. Consequently, telecommuters may do well to consult other telecommuters in considering how they might best set up their home workspaces to ensure support and success with regard to the impacts identified.

### **Limitations**

This study was limited in its external validity and power due to its relatively small respondent pool and the recruitment of subjects via a convenience and snowball sample. Though tests of difference demonstrated the absence of statistically significant differences between the male and female samples, the constraints of this approach were nonetheless visible in the fact that survey respondents were women by a factor of nearly two to one. Another possible limitation is that the researcher is a former participant in telecommuting work arrangements. As a result, this study carries the risk of potential bias in the interpretation of response data as well as in other areas. Bearing this risk in mind, steps were taken in the overall design of the research to account for this potentiality. Though coding, data entry, and data analysis were completed by the researcher, bias was reduced through independent review of the results. Additionally, conducting more interviews would have increased the volume of response data, thus enabling analysis, comparison and abstraction across a wider array of participant workers and likely yielding increased higher-order conceptualizations.

### **Suggestions for Future Study**

Although this study generated some insights, more research is needed to advance the understanding of the differential impacts of telecommuting on workers. One suggestion for research is to embark on a longitudinal study to examine the impacts of telecommuting on workers over time. Such a study would compare participant attitudes, behaviors and perceptions of impact as they gain tenure in the work arrangement and become more senior in their roles and individual career paths.

A second recommendation for future exploration is to investigate the impacts of telecommuting on a global scale, encompassing participant workers residing in countries

across the world. A study of this type might venture to discover if telecommuters working for organizations headquartered in countries outside their own experience the arrangement differently than those of the same national origin. Another suggestion in this sphere is to undertake a study to determine best practices for multinational companies to leverage the informal knowledge and experience of telecommuters in global settings.

### **Summary**

This chapter closed the study with conclusions and interpretation of the research findings. Recommendations for both telecommuters and employing organizations were offered and limitations of the study were addressed. Finally, suggestions for future study were presented.

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**Appendix A: Qualtrics Online Survey**

## Telecommuter and Traditional Office Worker Survey

### Q1.1 Informed Consent for Participants

#### Please Read Carefully

As a student in the Master of Science in Organization Development program at Pepperdine University, Graziadio School of Business and Management, I am currently recruiting individuals for my study entitled, “The Differential Impacts of Telecommuting on Participant Workers.” The professor supervising my work is Dr. Ann Feyerherm.

This study is designed to investigate the experiences of telecommuters. The research is concerned with determining the most profound impacts, both personal and professional, of telecommuting as perceived by those participating in this work arrangement. The study focuses attention on telecommuters themselves as primary sources of knowledge and consultative capability. Ultimately, the aim of the project is to enhance the outcomes of this work arrangement for both telecommuters and their employer organizations alike. The experiences of non-telecommuters are critical to the success of this study as meaningful conclusions with respect to some outcomes can best be drawn by comparing the experiences of telecommuters to those of non-telecommuters. So, I am inviting you, as a current telecommuter or traditional office-based employee, to participate in this study.

Please understand your participation in the study is strictly voluntary. The following is a description of what your participation entails, the terms for participating, and a discussion of your rights as a study participant. Please read this information carefully before deciding whether or not you wish to participate. If you should decide to participate in the study, you will be asked to complete the following online survey regarding your experience with lean and your level of empowerment. This survey will take approximately 20 minutes. Please complete the survey alone in a single setting.

Your responses will be kept anonymous and confidential.

There are no direct benefits to you for participating in the study. This is an opportunity for you to give input about your work experiences as a telecommuter or traditional office-based worker. There are no major risks associated with this study.

If you should decide to participate and find you are not interested in completing the survey in its entirety, you have the right to discontinue at any point without being questioned about your decision. You also do not have to answer any of the questions on the survey that you prefer not to answer—simply leave such items blank. Terminating your participation at any time will not put your professional position in jeopardy in any way.

One week after the initial email invitation is sent and again one day before the final survey deadline, a reminder email will be sent to you to complete and return the survey. Since this email will go out to everyone, I apologize ahead of time for sending you these reminders if you have already completed the survey prior to the deadline.

If the findings of the study are presented to professional audiences or published, no information that identifies you personally will be released. The data will be kept in a secure manner for five years, at which time the data will be destroyed.

This survey includes some general questions about your health. It is highly unlikely that any questions will put you or show that you are at a significant risk of illness or injury. However, if these questions raise concerns for you about your state of physical or mental health and you need assistance, please seek the advice of a healthcare professional. As this survey is anonymous and confidential, I am unable to track your responses and refer support service unless you contact me directly with your concern. If you would like more information, please contact me the email address or phone number shown below.

If you have any questions regarding the information that I have provided above, please do not hesitate to contact me at the address and phone number provided below. If you have further questions or do not feel I have adequately addressed your concerns, please contact my research supervisor, Dr. Ann Feyerherm at [contact information]. If you have questions about your rights as a research participant, contact Dr. Yuying Tsong, Chairperson of the Institutional Review Board, Pepperdine University, at [contact information].

You are welcome to a brief summary of the study findings in about one (1) year. If you are interested in receiving the summary, please send me an email under separate cover to [contact information].

Thank you for taking the time to read this information, and I hope you decide to complete the survey.

Sincerely,

Dara S. Hysmith  
Student, Master of Science in Organization Development  
[contact information]

By checking the box below and by completing the survey online, you are acknowledging that you have read and understand what your study participation entails, and are consenting to participate in the study.

I have read the informed consent (above) and agree to participate in this study.



Q1.2 Please enter your email address (Optional: Information be used to send a thank you for your participation and potentially an invitation to participate in a live interview. It will not be used to identify your responses or any other contact).

Q1.3 Please indicate your gender:

- Male
- Female

Q1.4 Please enter your age in years. (This information is kept confidential).

Q1.5 How many years of total work experience do you possess? (Please round down to the closest full year)

Q1.6 Please select the choice that best describes your job field. (Choose only one)

- Accounting/Finance/Insurance
- Administrative/Clerical
- Banking/Real Estate/Mortgage
- Biotech/R&D/Science
- Building Construction/Skilled Trades
- Business/Strategic Management
- Creative/Design
- Customer Support/Client Care
- Editorial/Writing
- Education/Training
- Engineering
- Food Service/Hospitality
- Human Resources
- IT/Software Development
- Installation/Maintenance/Repair
- Legal
- Logistics/Transportation
- Manufacturing/Production/Operations
- Marketing/Product
- Medical/Health
- Other
- Project/Program Management
- Quality Assurance/Safety
- Sales/Retail/Business Development
- Security/Protective Services

Q1.7 Please select your current job category (Choose only one)

- Executive/Senior Level Official or Manager
- First/Mid Level Official or Manager
- Professional (Individual Contributor)
- Technician
- Sales Worker
- Administrative Support Worker
- Other (please specify) \_\_\_\_\_

Q1.8 How long have you been employed with current organization?(Please complete both text boxes)

Please enter total years (0 -99)

Please enter months (0-12)

Q1.9 How often is your performance evaluated? How are you appraised, e.g. industry standards, group targets, personal goals? (Please choose the appropriate frequency and enter a brief description of means of assessment in the text box below the choice)

- Never \_\_\_\_\_
- Annually \_\_\_\_\_
- Semi-annually \_\_\_\_\_
- Quarterly \_\_\_\_\_
- Monthly \_\_\_\_\_
- Other Frequency \_\_\_\_\_

Q1.10 What percentage of increase in base salary did you receive at your last performance review? (If your organization is in the midst of a salary freeze or you did not receive an increase, please enter "0")

Q1.11 Please select the option that best describes your household status. (Select only one)

- Single (No others in residence)
- Single (Living with roommates, to include friends and/or family)
- Single (Cohabiting with relationship partner)
- Single (Cohabiting with relationship partner and one [or more] child under age 18)
- Single (Living with one [or more] child under age 18)
- Married (Living with spouse)
- Married (Living with spouse and one [or more] child under age 18)
- Other (Please provide a brief explanation in the space below) \_\_\_\_\_

Q1.12 Please select the option which best describes the work arrangement of your relationship partner or spouse.

- Works full-time (40+ hours/week) outside the home in a traditional office
- Works part-time outside the home in a traditional office
- Telecommutes full-time (40+ hours/week)
- Telecommutes part-time
- Self employed with a home-based business
- Domestic and/or child care responsibilities (full-time)
- Not currently employed or retired

Q1.13 How many children under age 18 live in your home?

- 1
- 2
- 3 or more

Q1.14 How many of the children living in your home are under age 5?

- None
- 1
- 2
- 3 or more

Q1.15 Telecommuting can be defined as: working from home, communicating with the workplace using mechanisms including: email, Web conferencing, telephone, online meetings, instant messaging and other technologies. Are you currently telecommuting?

- Yes
- No

Q1.16 On average, how many hours per week do you telecommute?

Q1.17 What proportion (percentage) of an average work week do you spend telecommuting? (Please enter characters only)

Q1.18 How many complete years and months have you been telecommuting? (Please complete both text boxes)

Please enter total years (0-99)

Please enter total months (0-12)

Q1.19 Is telecommuting a formalized part of your work arrangement? (Explicitly agreed to by management, a part of your job description and/or a subsequent written agreement)

- Yes  
 No

Q2.1 Have you ever worked in a traditional, office-based job?

- Yes  
 No

Q2.2 When I add it all up, I work longer hours telecommuting than I did in my last traditional, office-based job (of comparable level and role complexity).

- Strongly Disagree  
 Disagree  
 Somewhat Disagree  
 Neither Agree nor Disagree  
 Somewhat Agree  
 Agree  
 Strongly Agree

Q2.3 When I add it all up, I work more total hours when I telecommute than when I work in the office. For example, if I work in the office, I usually leave after eight to nine hours, but when I work from home I tend to put in more hours, including working through lunch and checking my emails after dinner and on weekends.

- Strongly Disagree  
 Disagree  
 Somewhat Disagree  
 Neither Agree nor Disagree  
 Somewhat Agree  
 Agree  
 Strongly Agree

Q2.4 How often does your work involve working at very fast pace?

- Never  
 Rarely, less than 10% of the time  
 Occasionally, about 30% of the time  
 Sometimes, about 50% of the time  
 Frequently, about 70% of the time  
 Usually, about 90% of the time  
 Always

Q2.5 My job requires that I work very hard.

- Strongly Disagree  
 Disagree  
 Somewhat Disagree  
 Neither Agree nor Disagree  
 Somewhat Agree  
 Agree  
 Strongly Agree

Q2.6 I work under a great deal of tension.

- Strongly Disagree

- Disagree
- Somewhat Disagree
- Neither Agree nor Disagree
- Somewhat Agree
- Agree
- Strongly Agree

Q3.1 INSTRUCTIONS: Please indicate your level of agreement with each of the following items.

	Strongly Agree	Agree	Somewhat Agree	Neither Agree Nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
There is a lot of autonomy (freedom) in doing my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My job is quite simple and repetitive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4.1 INSTRUCTIONS: Please indicate your level of agreement with each of the following items.

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
All in all I am satisfied with my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, I don't like my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, I like working in my present position.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5.1 Do you usually know how satisfied your manager is with what you do?

- Rarely
- Occasionally
- Sometimes
- Fairly Often
- Very Often

Q5.2 How well does your manager recognize your potential?

- Not at all
- A little
- Moderately
- Mostly
- Fully

Q5.3 How would you characterize your working relationship with your manager?

- Extremely Ineffective
- Worse Than Average
- Average
- Better Than Average
- Extremely Effective

Q5.4 This part of the questionnaire asks about your role in relation to your work unit. Please focus on the way in which you work with other members of your work unit, not on how much you personally like or dislike other members as friends.

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
Other group members clearly recognize my potential	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other group members usually let me know when I have done something that makes their job easier (or harder).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In busy situations, other group members often volunteer to help me out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other group members clearly understand my job-related problems and needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often make suggestions about better work methods to other team members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am flexible about switching job responsibilities to make things easier for team members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6.1 INSTRUCTIONS: Please indicate your level of agreement with each of the following items.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Because of my work, I am too tired to do some of the things I'd like to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have so much work to do that it takes away from my personal interests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family dislikes how often I am preoccupied with my work while I am at home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My work takes up time I'd like to spend with my family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7.1 INSTRUCTIONS: Please indicate your level of agreement with each of the following items.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel left out on activities and meetings that could enhance my career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I miss out on opportunities to be mentored.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel out of the loop.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I miss face-to-face contact with coworkers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel isolated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I miss the emotional support of coworkers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I miss informal interaction with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8.1 Here are some questions about your health and feelings. Please read each question or statement carefully and select your best answer. You should answer the questions in your own way. There are no right or wrong answers.

	Yes, describes me exactly	Somewhat describes me	No, doesn't describe me at all
I like who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am not an easy person to get along with.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am basically a healthy person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I give up too easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty concentrating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am happy with my family relationships.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable being around people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q8.2 TODAY would you have any physical trouble or difficulty:

	None	Some	A lot
Walking up a flight of stairs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Running the length of a football field.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8.3 DURING THE PAST WEEK: How much trouble have you had with:

	None	Some	A lot
Sleeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hurting or aching in any part of your body	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Getting tired easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling depressed or sad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervousness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8.4 DURING THE PAST WEEK: How often did you:

	None	Some	A lot
Socialize with other people (talk or visit with friends or relatives).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Take part in social, religious, or recreation, activities (meetings, church, movies, sports, parties).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8.5 DURING THE PAST WEEK: How often did you:

	None	5-7 Days	
Stay in your home, a nursing home, or hospital because of sickness, injury, or other health problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9.1 INSTRUCTIONS: Please indicate your level of agreement with each of the following items.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
There is a common sense of purpose in my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My employer has a clear and unique vision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a strong feeling of unity in my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My employer has a specific mission shared by its employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9.2 INSTRUCTIONS: Please indicate your level of agreement with each of the following items.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Without an organization to work for, I would feel incomplete.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'd like to work in an organization where I would think of its successes and failures as being my successes and failures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An important part of who I am would be missing if I didn't belong to a work organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generally, I do not feel a need to identify with an organization that I am working for.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Generally, the more my goals, values and beliefs overlap with those of my employer, the happier I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would rather say 'we' than 'they' when talking about an organization that I work for.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No matter where I work, I'd like to think of myself as representing what the organization stands for.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10.1 Please select the choice that best applies to your situation.

- I have a separate room used exclusively for my office. That is, 90-100% of the time that room is in use, I am using it as my office.
- My office is in a room that is used only occasionally for other activities, such as a guest bedroom.
- The room I use for work is often used for other activities. My workspace in that room is separated from the rest of the room by distinct boundaries such as furniture.
- Other activities often occur in the room or rooms I use for work, and my workspace is not separate from the rest of the space

Q10.4 Check any of the following that apply to your situation:

- I met with my family members to explain what my "workspace" is.
- I, either alone or with my family, established rules regarding the use of this space during my work hours.
- I/We established rules regarding the use of my space during non-work hours.
- I/We established a schedule so that noisy activities do not occur in or around my workspace during my work hours

Q10.5 Check any of the following that apply to your situation:

- I do not establish a schedule. I generally allow the hours I work to vary from day to day and/or week to week.
- I set up a schedule of when I will work.
- I give copies of my work schedule to close friends and relatives
- I tell close friends and relatives what my schedule is.
- I try to work the same days each week.
- On any given day, I work approximately the same hours that I did on that day the previous week.

Q10.7 Check any of the following that apply to your situation:

- I always or usually refuse requests for favors (e.g., babysitting, errands, etc.) when I am in the middle of work.
- I let the home answering machine/voice mail pick up personal calls while I am working.
- If no one else is home to answer the telephone while I am working, I use caller ID to distinguish between personal and business calls. For the most part, I only answer the business calls.

Q11.1 Telecommuting has exerted the greatest impact on the following aspect of my life: (Please rank the following from 1 = Greatest Impact to 8 = Least Impact. Please enter "0" if an aspect has had no effect on your life.)

- \_\_\_\_\_ How hard I work or the number of hours I work
- \_\_\_\_\_ My level of satisfaction with my job
- \_\_\_\_\_ My relationships with my manager and/or coworkers
- \_\_\_\_\_ The amount of conflict I have between my work and family life (or family time and personal time)
- \_\_\_\_\_ How much I feel connected to my colleagues (or organization) or my prospects for career development
- \_\_\_\_\_ My physical or emotional health
- \_\_\_\_\_ My identity as a skilled, committed employee and member of my organization
- \_\_\_\_\_ The physical space, work-related routines, rules and activities I engage in my home

**Appendix B: Qualitative Interview Protocol**

Please note: Other interview questions may arise based on results of the survey. If some relationships between questions in the survey are found, then those may be explored in the interview questions. In addition, some rapport-building with the interview subject (estimated at two to three minutes) will take place prior to the researcher beginning the interview questions.

Interviewer: Thank you for reading and signing the informed consent and agreeing to be a part of my research on the impacts of telecommuting on participant workers. You are aware then, that you do not have to answer any questions and that you can stop the interview at any time without penalty or consequence. Your responses are anonymous and confidential.

1. How long have you been a telecommuter?
2. Please tell me about how you got started telecommuting. What was appealing about the work arrangement?
3. From your perspective, what is most valuable about telecommuting?
4. What challenges have you experienced telecommuting?
5. How has telecommuting affected your overall job satisfaction?
6. How has telecommuting affected your relationships with your coworkers and managers?
7. How has telecommuting affected the amount or intensity of the work you do?
8. How has telecommuting affected the level of connection and inclusion you feel toward your coworkers, other employees and professional networks?
9. What impact has telecommuting had on your career development inside and outside of your organization?
10. How has telecommuting affected your family relationships and/or other important personal relationships?
11. What does telecommuting look like in your home environment? Please describe the space you work in and any habits, routines, schedules and/or rules that you have adopted on account of the work arrangement.

12. How has telecommuting affected your physical, mental or emotional health?
13. In what ways has telecommuting affected how you perceive yourself as a member of your organization? As a professional in your industry? As a mother/father and or husband/wife?
14. In what ways has your gender influenced your telecommuting experience?
15. Are there ways your supervisor or organization could better support the telecommuting arrangement?
16. What advice would you give a friend who was considering transitioning to a telecommuting work arrangement?
17. How would you describe the impact telecommuting has had on your life? In which aspect(s) of your personal or professional life has telecommuting been most impactful? Please describe the specific changes you have experienced in these areas.
18. List the three most important actions you could take today to improve your telecommuting arrangement.
19. List the three most important actions your organization or manager could take today to improve your telecommuting experience.