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# A Closer Look into Remote Work: Examining Resources within Remote Work Arrangements with Outcomes of Job Performance and Work-Family Conflict

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# A Closer Look into Remote Work: Examining Resources within Remote Work Arrangements with Outcomes of Job Performance and Work-Family Conflict

by

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Dedication

*I didn't get here alone,*

*Ain't traveled one mile on my own.*

-Kenny Chesney

To Mom, Dad, Connor, Rick and Tia Maria.

Y'all are the absolute best!

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## Abstract

Remote work has become a popular topic within organizations and the popular press. However, academic research has been inconclusive as to whether remote work is related to benefits of increased job performance and lessened work-family conflict. This study examined remote work resources to gain an in-depth understanding of how remote work relates to job performance and work-family conflict. One hundred fifty-one salespeople participated in two time-lagged surveys regarding remote work resources (autonomy, feedback, access to information and interaction with one's supervisor), outcomes (subjective and objective job performance and work family-conflict) and demographics. Remote work resources were not significantly related to job performance. Contrary to hypotheses, more control over work schedule and control over work process were related to more FIW. In support of hypotheses, more interaction with one's supervisor was related to less FIW and more access to information was related to less WIF. There was no support for hypothesized mediation or moderation but exploratory analyses revealed that proactive personality moderated the relationship between interaction with one's supervisor and objective job performance such that the relationship was stronger for less proactive employees than for more proactive employees. Overall, findings support the value of fine-grained analysis of remote work's resources to provide a nuanced look into their relationships with outcomes.

# Chapter One

## Introduction

Remote work has become a popular flexible work option with one estimate indicating that 67% of organizations in the United States offer telecommuting to at least some of their employees (Matos & Galinski, 2014). It has also become a popular topic within both the academic literature and the popular press, with recent articles such as Forbes' *Telecommuting is the Future of Work* (Biro, 2014) and The New York Times' *It's Unclearly Defined, but Telecommuting is Fast on the Rise* (Tugend, 2014) touting its benefits. However, the option for employees to work away from a shared office location has taken a few hits recently as well; Yahoo! CEO Marissa Mayer eliminated her company's work from home program in June 2013 in order to strengthen the collaboration and culture of the company (Goudreau, 2013; Lavey-Heaton, 2014). Following suit, Best Buy ended their results-only work environment (ROWE) policy (Lee, 2013) and Hewlett Packard has reduced the number of employees allowed to work away from the office (Hesseldahl, 2013; Lavey-Heaton, 2014). The US Patent Office's remote workers have also been in the spotlight recently with an internal investigation into employees misrepresenting their time and attendance (Rein, 2014). Sara Sutton, CEO at Flexjobs, commented that the bad publicity and lessened organizational interest in this flexible work option have more to do with management than actual remote work arrangements (Lavey-Heaton, 2014). It is clear that there is a need for organizations to better understand how to effectively design remote work arrangements.

The purpose of this study was to broaden our understanding of remote work by investigating resource availability and associated outcomes of job performance and work-family conflict. The extant remote work literature generally compares samples of remote and non-remote employees to learn about the outcomes of remote work (e.g., Gajendran, Harrison & Delaney-Klinger, 2014; Martin & MacDonnell, 2012; Mekonnen, 2013). This study breaks the mold by investigating these relationships in a sample of only remote workers (all spend at least some time working remotely) in order to focus on the varying resources available within remote work arrangements and to pinpoint which resources relate to the outcomes of job performance and work-family conflict. In doing so, this study makes several theoretical and empirical contributions. First, the study applies Job Characteristics Theory (Hackman & Oldham, 1976), Job Demands-Resources model (Bakker, Demerouti, De Boer & Schaufeli, 2003; Demerouti, Bakker, Nachreiner & Schaufeli, 2001), Conservation of Resources theory (Hobfall, 1989) and Campbell's (1990) theory of performance to gain a better understanding of which resources within remote work relate to employee effectiveness. This constitutes a theoretical contribution to the remote work literature, which has been criticized as atheoretical (Bailey & Kurland, 2002; Bélanger & Collins, 1998; Gajendran & Harrison, 2007).

Secondly, this study expands the research on remote work and its proposed benefits of high job performance and low work-family conflict through a more fine-grained assessment of remote work, as recommended by Allen, Johnson, Kiburz, and Shockley (2013). Specifically, this study investigates five key job resources that vary across remote work arrangements: two resources related to autonomy (control over work schedule and control over work process), feedback, interaction with one's supervisor and access to information. This study also considers feedback as a moderator and internal motivation, declarative knowledge and procedural

knowledge as mediators to more completely understand the mechanisms through which remote work resources relate to job performance and to work-family conflict. Teasing apart the resources available within remote work arrangements provides a more in-depth understanding of the relationships between remote work and both job performance and work-family conflict and provides more insight into how remote work arrangements should be structured in order to deliver their potential benefits.

Finally, this study adds to the literature by expanding the scope of focus on remote work to be more inclusive of varying working arrangements as well as jobs that have traditionally been done remotely. The extant literature largely ignores jobs such as sales and consulting roles through qualifiers that remote workers need to work from home (rather than other remote locations) or elect to work remotely rather than in a shared office (for an exception, see Miller, 2012). Although this class of employees has not received focused attention in the literature, they are especially important to study in order to broaden our understanding of remote work; these jobs can be studied as prototypes because they have used remote work arrangements successfully for decades (Hinds & Kiesler, 2002; Kurland & Bailey, 1999; Magazine, 2001). Magazine (2001) discusses this idea in her dissertation and adds that "studying [sales] jobs should help researchers to understand how to design remote jobs for greater success" (p. 34). This study investigated resources within remote work, job performance and work-family conflict in a sample of remote salespeople with a purpose to do just that.

In following sections, I discuss the definition and popularity of remote work, followed by its relationships with job performance and work-family conflict in the extant literature. I then describe the theoretical foundation for how resources within remote work provide additional insight into the relationships between remote work and both outcomes of interest followed by the

methodology and results of analyses investigating these relationships. Finally, I discuss the findings and their implications for research and practice.

*Conceptualization of Remote Work*

Employees are engaged in *remote work* when they are working in a physically separate location from their manager and coworkers (Magazine, 2001; Staples, 2001). During remote work situations, employees do not necessarily work from home, as is most frequently discussed in the literature (Coenen & Kok, 2014; Gajendran & Harrison, 2007). Employees may also work from another company (satellite) office, customer location, neighborhood work center or out of their cars or other transportation while traveling (Coenen & Kok, 2014; Pinsonneault & Boisvert, 2001; Staples, 2001). The literature on remote work includes several labels (e.g., telecommuting, telework and distributed work) and boundary conditions regarding what type of arrangements qualify as remote work (de Menezes & Kelliher, 2011; Magazine, 2001). Past studies have defined remote work (or another label for the construct) with limiters that exclude remote workers who do not use telecommunications or technology (Bailey & Kurland, 2002; Coenen & Kok, 2014; Moser & Axtell, 2013), complete work tasks at an alternate location other than home (Kossek, Lautsch, & Eaton, 2006) or perform work such as sales trips or customer meetings that is traditionally done away from a shared office (Gajendran & Harrison, 2007). These varying operational definitions of remote work make it difficult to draw conclusions across the larger body of research. This study broadly defines *remote work* as an inclusive term to include any work completed physically away from managers, coworkers and a shared office location.

Remote work has been growing in popularity, with approximately 23% of US employees doing at least some of their work remotely (Bureau of Labor Statistics, 2013). Remote work is not only growing in the US; a recent study found that 79% of companies across 13 countries

offer remote work to employees (Robert Half Singapore, 2012). Remote work has been enabled by advances in information and communication technology that permit employees to stay better connected to resources to complete their job tasks (Coenen & Kok, 2014; Martin & MacDonnell, 2012). Remote work arrangements are also attractive due to the lowered cost of office space (Pinsonneault & Boisvert, 2001) and environmental pushes, such as the Employee Commute Option of the Clean Air Act, requiring some employers across US regions with high air pollution to reduce employees' commuting by 25% (Bélanger & Collins, 1998). Offering these types of arrangements is also a technique to attract employees, expand the available talent pool and enhance retention (Martin & MacDonnell, 2012; Spilker, 2014).

With the popularity of remote work, it is more important than ever to understand how remote work arrangements can be designed with available resources for employees to maximize effectiveness. The extant literature discusses increased job performance and lessened work-family conflict as key benefits of employees participating in remote work. The findings related to these two particular outcomes have been inconsistent because all remote work is not created equal; job resources discussed as critical to the differences between remote and non-remote work (e.g., autonomy, access to information) also differ within remote work arrangements. Due to the inconsistent results, researchers have called for further investigation into the determinants of success in remote work arrangements (e.g., Hartman, Stoner & Arora, 1991). This study investigates variation in resources available during remote work within a population of remote workers in order to better understand how the resources within remote work relate to the outcomes of performance and work-family conflict. See *Figures 1* and *2* for a summary of hypotheses.

*Performance as an Outcome of Remote Work*

Studies within the remote work literature have evaluated remote work as an opportunity to improve employees' job performance, generally by comparing remote and non-remote workers' performance. Many have found evidence that remote employees have higher job performance and are more productive than their counterparts working from a shared office location (e.g., Gajendran et al., 2014; Mekonnen, 2013). However, job performance has been operationalized several ways within the literature and findings vary with its measurement. For example, the results are inconsistent when performance is self-rated; several studies have found a positive relationship (Farmanfarmaian, 1989; Olson, 1989) while others have not (Neufeld, 1997; Ramsower, 1983). On the other hand, there seems to be general consensus across findings that remote work is positively related to supervisor-rated performance (Farmanfarmaian, 1989; Gajendran et al., 2014) as well as to objective measures of performance (DuBrin, 1991; Mekonnen, 2013; for an exception see Myers, 1999). This pattern of results is also reflected in meta-analytic findings that show remote work is related to employee performance as rated by supervisors and objective measures but not with self-rated performance (Gajendran & Harrison, 2007). Similarly, Martin and MacDonnell's (2012) meta-analysis found that remote work was positively related to supervisor perceptions of performance although employee perceptions were included as well.

A few studies have investigated the relationship between remote work and performance in a sample of only remote workers and considered remote work intensity, the percentage of time that an employee spends working remotely rather than in a shared office, as a driver for employee performance. Through this operationalization, studies have found positive relationships with both self and supervisor-rated performance (Gajendran et al., 2014; Hartman

et al., 1991). The present study expands this area of research beyond the existence or intensity of remote work with a focus on how the resources available in a remote work arrangement relate to job performance.

The relationship between remote work and performance may vary across studies for a few reasons. As described above, the operationalization of performance affects the results. This is a concern within the literature because few studies of job performance as a benefit of remote work have included objective measures of job performance (de Menezes & Kelliher, 2011; Pinsonneault & Boisvert, 2001). For example, Gajendran and Harrison's (2007) meta-analysis included only four studies with measures of "objective ratings of performance" (p. 1535) including supervisor ratings and archival records. Instead, many studies investigating performance of remote workers include measures of self-rated performance (e.g., Hartman et al., 1991; Neufeld, 1997), which may be skewed because employees have motivation to appear more productive in order to continue their remote work arrangement and/or receive good performance ratings from supervisors. This study includes measures of both subjective (self-rated) and objective performance (sales data) in order to provide a full picture of the relationship between resources and performance as well as insight into how the measurement of performance affects its relationships with resources within remote work. Additionally, these studies generally involve one-time data collection (Gajendran & Harrison, 2007), leaving results inconclusive with regard to causality in that those with high job performance may be more likely to "earn" or be able to take advantage of remote work arrangements (Batt & Valcour, 2001). The present study measures variables at two points in time to mitigate this issue.

I sought to build on the research around this relationship through investigating resources available within remote work and their relationships with job performance, specifically, access to

resources that can impact job performance vary across remote work arrangements (Gajendran et al., 2014). This study investigated each of these to provide a clearer picture of which resources within remote work relate to job performance. This study also included internal motivation, declarative knowledge and procedural knowledge as mediators to more fully reveal how resources within remote work relate to job performance.

*Resources within Remote Work and Performance*

Remote work arrangements vary in the resources available to employees. Remote work physically separates employees from coworkers, supervisors and the main workplace; this distance results in less access to resources for some employees while others are able to maintain control of their job and stay informed seamlessly through the use of technology and communication (Fonner & Roloff, 2010; Lee, Shin, & Higa, 2007). To understand how these resources can impact an employee's job performance, I first look to Campbell's (1990) theory of performance in which he describes an equation with performance as the result of combining motivation, declarative knowledge and procedural knowledge. Starting with the motivational component, Job Characteristics Theory (JCT; Hackman & Oldham, 1976) and the Job Demands-Resources model (JD-R; Bakker et al., 2003; Demerouti et al., 2001) provide additional insight into how a job can be designed with access to the appropriate resources to promote improved performance through internal motivation. Resources are defined as, "physical, psychological, social or organizational aspects of the job that are either/or: functional in achieving work goals, reduce job demands and the associated physiological and psychological costs or stimulate personal growth, learning and development" (Bakker & Demerouti, 2007, p. 312). The resources discussed in this study (autonomy, feedback, access to information and interaction with one's

supervisor) were hypothesized to motivate remote employees toward high job performance because they are instrumental in achieving work goals (Bakker & Demerouti, 2007).

*Autonomy resources.* Remote work allows some employees autonomy over when and how they accomplish work tasks but other employees find that remote work arrangements include very little autonomy due to frequent monitoring, check-ins and micromanaging of work tasks (Gajendran et al., 2014). Hackman and Oldham (1974) list autonomy as one of five core job dimensions and define it as "the degree to which the job provides substantial freedom, independence, and discretion of the employee in scheduling the work and in determining the procedures to be used in carrying it out" (p. 5). The varying resource of autonomy affects remote employees' job performance; those with a high amount of autonomy have more control over the timing and process of how they complete work tasks. Job Characteristics Theory (Hackman & Oldham, 1974) and JD-R (Bakker et al., 2003; Demerouti et al., 2001) explain that autonomy is a motivational resource and encourages responsibility for the outcome of the work, leading to increased motivation and job performance.

Within remote work arrangements, employees have varying levels of autonomy through their *control over work schedule*, the extent to which the employee is able to set the time he completes work tasks (McCloskey, 2001). Control over work schedule's positive relationship with job performance has been found previously in Baltes, Briggs, Huff, Wright and Neuman's (1999) meta-analytic finding that having a flexible work schedule was positively related to objective performance. Gajendran et al. (2014) also found that perceived autonomy over work schedule related to supervisor-rated performance. Therefore, I hypothesized that control over work schedule positively relates to performance.

Hypothesis 1. Remote workers with greater control over the hours during which they complete work tasks have higher job performance than do employees with less control over work schedule.

Remote employees also have varying levels of autonomy in their work arrangement through their amount of *control over work process*, the extent that the employee has freedom in setting the procedure for completing job responsibilities (McCloskey, 2001). The literature also supports JCT and JD-R through consistent findings that perceived control over work process is positively related to job performance (Bizzi & Soda, 2011; Dysvik & Kuvaas, 2011; Ho & Nesbit, 2014). Additionally, Humphrey, Nahrgang and Morgeson's (2007) meta-analysis found that perceived job autonomy is positively related to both objective and subjective job performance. Therefore, I hypothesized that control over work process is positively related to performance.

Hypothesis 2. Remote workers with greater control over the method by which they complete work tasks have higher job performance than do employees with less control over work process.

*Feedback.* Job Characteristics Theory also lists feedback as a core job dimension. Hackman and Oldham (1974) describe feedback from others as "the degree to which the employee receives clear information about his or her performance from supervisors" (p. 5). The theory posits that workers' feedback encourages knowledge of the work activities' actual results, leading to increased internal motivation and job performance (Hackman & Oldham, 1974). Feedback leads employees to high job performance because it increases their likelihood of success in achieving work goals (Bakker & Demerouti, 2007). A meta-analysis of nine studies including this relationship found that feedback is positively related to subjective performance

(Humphrey et al., 2007). Therefore, feedback from the employee's supervisor was predicted to relate positively to performance.

Hypothesis 3. Remote workers with more feedback from one's supervisor have higher job performance than do employees with less feedback.

*Access to information.* Remote work arrangements also vary with regard to the degree of access to information that employees have when working away from the shared workspace. Access to the facts, procedures and rules necessary for performing tasks serve as a resource for completing work tasks. Additionally, information pertinent to the job successfully builds the remote workers' declarative knowledge, the second key part of Campbell's (1990) theory of performance (McCloy, Campbell, & Cudeck, 1994). For example, a salesperson would need to know information about the products he or she is selling, associated prices and how to submit and deliver an order of products to the customer. Access to information like this can be an issue for some remote workers because they are not connected to a computer or binders of product information throughout the day and are removed from an office where information may be exchanged informally throughout the day (Magazine, 2001). With the influx of technology, however, many remote workers are seamlessly connected to this type of information through tablets, organizational communications or databases. Access to information as a remote worker will have a positive effect on her performance through providing updated knowledge on product information to sell products to customers. Thus, I hypothesized that access to information is positively related to performance and that declarative knowledge mediates this relationship.

Hypothesis 4. Remote workers with more access to information have higher job performance than do employees with less access to information.

Hypothesis 5. Declarative knowledge mediates the relationship between access to information and job performance.

*Interaction with one's supervisor.* Interaction with one's supervisor varies across remote work arrangements; access can be an issue for some remote workers because they are not present at the office to have casual conversations or to receive additional training from their supervisors (Reinsch, 1997). However, technology can enable remote employees' access to supervisor so that communication is not a concern. Interaction with one's supervisor is a resource for employees because supervisory contact enables the employee to clarify problems, ask questions, and receive advice and support (Ducharme & Martin, 2000; Magazine, 2001). Through these exchanges, employees can also gain additional procedural knowledge, knowing how to perform a task and being able to do it, the third aspect of Campbell's (1990) theory of performance (McCloy et al., 1994). For example, a salesperson with frequent interaction with her supervisor could learn how to highlight the best features of a new product or set up a display that has been successful for coworkers' ability to sell more products. Additionally, a supervisor may role-play a new selling technique with the salesperson during a weekly call to encourage sales of a new product that week. Supporting the idea that interaction with one's supervisor is a resource enabling job performance, Lee et al. (2007) found that physically distant communication such as e-mail and phone conversations can support knowledge sharing in remote workers and Pinsonneault and Boisvert (2001) explain that successful remote work requires frequent and well-structured communication between the employee and manager. Remote employees with frequent interaction with their supervisors can also receive social support from this resource. Social support can be in the form of emotional (sympathy and caring behaviors), instrumental (actual assistance with a task), or informational (providing information or advice to solve a

problem) (House, Umberson, & Landis, 1988; Schaefer, Coyne, & Lazarus, 1981). The social support literature has frequently found evidence of a relationship between job performance and supervisor support (Charoensukmongkol, 2014; Karatepe & Kilic, 2007). Therefore I predicted that interaction with one's supervisor is positively related to performance and procedural knowledge will mediate this relationship.

Hypothesis 6. Remote workers with more frequent interaction with their supervisor have higher job performance than do employees with less interaction with their supervisor.

Hypothesis 7. Procedural knowledge mediates the relationship between interaction with supervisor and job performance.

*Motivation.* As explained by JCT and JD-R, job resources promote job performance through increased internal motivation. JCT focuses on autonomy and feedback as motivational resources. Hackman and Oldham (1974) define internal motivation as, "the degree to with the employee is self-motivated to perform effectively on the job" (p.63). Resources available in one's job (e.g., autonomy and feedback) make the job more meaningful and encourage the employee to feel responsibility for the outcomes of her work and have knowledge over her actual results (Hackman & Oldham, 1976). Further, the resources within a job encourage employees to be intrinsically motivated such that they feel good when they perform well (Lawler & Hall, 1970; Oldham & Hackman, 2010). Not surprisingly, employees who are intrinsically motivated should have higher job performance than those who are not intrinsically motivated (Bakker & Demerouti, 2007; Oldham & Hackman, 2010). I hypothesized that a remote worker's motivation will mediate the relationship between the autonomy and feedback resources and job performance.

Hypothesis 8. Internal motivation mediates the relationship between resources of remote work (autonomy and feedback) and job performance.

*Proactive personality.* Just because resources are available to salespeople within their jobs, a particular sales person may or may not take advantage of that resource. A proactive employee will "scan for opportunities, show initiative, take action, and persevere until they reach closure by bringing about change" (Bateman & Crant, 1993, p. 105) but a non-proactive employee is more likely to sit on the sidelines and wait for things to happen. For example, a proactive salesperson may respond quickly to feedback from his supervisor while a less proactive employee may have the feedback simply go in one ear and out the other. On the other hand, proactive salespeople may be less likely to need or utilize resources provided by their organization because they have their own resources. I think that proactive personality will play a role in the relationships between remote work resources and job performance but do not have hypotheses regarding the direction of these relationships.

*Work-Family Conflict as an Outcome of Remote Work*

Reduced work-family conflict is also hailed as a major benefit of remote work. Greenhaus and Beutell (1985) define *work-family conflict* as "a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect" (p.77). In other words, conflict between the work and family domains makes it difficult to complete the requirements of one role because of participation in the other. There are three types of work-family conflict (time-based, strain-based and behavior-based) with time and strain-based work-family conflict most relevant to remote work, as discussed later. Work-family conflict can also occur in two directions; family can interfere with work (FIW) and work can interfere with family (WIF; Greenhaus & Beutell, 1985; Mesmer-Magnus & Viswesveran,

2005). For clarity throughout this paper, I use the term work-family conflict to discuss the general conflict between the work and family domains. When I discuss a particular direction of conflict, I use the terms work interfering with family (WIF) and family interfering with work (FIW).

The extant literature on the relationship between remote work and work-family conflict has generally been based on comparisons of employees who work remotely versus those who work in a shared office. Results of this line of research have been inconsistent (Allen et al., 2013). Some studies have found that remote work arrangements are associated with lower work-family conflict (Fonner & Roloff, 2010; Madsen, 2003; Raghuram & Wiesenfeld, 2004) while others have found that remote work is unrelated to work-family conflict (Hill, Hawkins, & Miller, 1996**;** Hill, Miller, Wiener, & Colihan, 1998; Shockley & Allen, 2007) or that remote workers actually experience more difficulty with conflicting demands between the work and family domains than non-remote workers (Hill, Ferris, & Martinson, 2003). Gajendran and Harrison (2007) meta-analyzed results from 19 studies and found that remote work (ie. telecommuting) was negatively related to work-family conflict ($d$ = -.23). Allen et al. (2013) found that the availability of remote work was negatively related to FIW ($r_{xy}$ = -.06, CI = -.07 to -.04) and not significantly associated with WIF ($r_{xy}$ = -.05, CI = -.11 to .02) while the use of remote work was negatively related to WIF ($r_{xy}$ = -.08, CI = -.15 to -.01) and not significant with FIW ($r_{xy}$ = -.01, CI = -.07 to .05). Additionally, the authors found that remote work was more strongly related to WIF than to FIW. The variation in effect sizes found in even meta-analytic studies underscores the need to better understand factors that contribute to the effectiveness of remote work arrangements.

There are several explanations for the variation found in the relationship between remote work and work-family conflict. First, remote work has not been clearly differentiated from other forms of flexible work arrangements or consistently defined. For example, Michel, Kotrba, Mitchelson, Clark and Baltes' (2011) meta-analysis combines schedule flexibility, flextime, telecommuting and shift work in the operationalization of "schedule flexibility." Additionally, research on remote work and work-family conflict most frequently entails employees who work from home (Gajendran & Harrison, 2007; Hill et al., 1998) and experience balancing work and family demands differently than those who work from other remote locations (Hill et al., 2003). Allen and Shockley (2009) noted that studies also fail to consistently distinguish between the availability and the actual use of flexible work arrangements like remote work, which can impact results, as demonstrated by Allen et al. (2013). Secondly, the operationalization of work-family conflict is varied across studies to include non-directional conflict between the work and family demands, work-family balance, and WIF (Allen et al., 2013). Without clear and consistent definitions of these key variables, it is difficult to draw conclusions about the relationship between remote work and work-family conflict across the literature.

Kossek, Hammer, Kelly and Moen (2014) call for research into the elements of work arrangements that may foster conflict between work and family demands in order to build the knowledgebase around work-family conflict. Similarly, Allen et al. (2013) noted that research is needed to further tease apart aspects of the remote work experience to better understand the relationship between remote work and work-family conflict. Through studying specific resources that vary across work arrangements, I investigate each of these (with feedback as a moderator) to provide insight into which resources within remote work impact employees' work-family conflict.

*Resources within Remote Work and Work-Family Conflict*

Again, remote work arrangements can vary in the depth of resources available to employees. In addition to increasing job performance, the variance in these resources is expected to relate to decreased work-family conflict. The theoretical reasons for these relationships, however, vary slightly. Recall that remote work resources are expected to relate to high performance due to positive effects on employees' internal motivation, declarative knowledge and procedural knowledge. Here, I draw on the Scarcity Hypothesis (Goode, 1960) and Conservation of Resources theory (COR; Hobfall, 1989) in addition to the JD-R model to explain how the resources in remote work can mitigate work-family conflict. As these theories explain, an individual has a limited amount of resources: time, attention and energy (Goode, 1960). An employee's perception of work-family conflict is based on her comparison of available resources and the demands she has from work and family; a remote worker experiences work-family conflict when she does not have enough resources to adequately meet the demands from both domains (Edwards & Rothbard, 2000; Goode, 1960).

To mitigate work-family conflict, elements of a remote work arrangement can serve as additional resources, or "assets that may be used to facilitate performance, reduce demands or generate additional resources" (Voydanoff, 2004, p. 399) for employees to better meet the competing demands from the work and family domains. Specifically, autonomy, access to information and interaction with supervisors can serve as additional resources to drive an employee's ability to balance the competing demands of work and home (Hill, Erickson, Holmes, & Ferris, 2010). For example, employees with high amounts of autonomy have more flexibility in the timing and process of how they complete work tasks so they can more easily accommodate family demands (Bailey & Kurland, 2002; Carlson, Grzywacz, & Kacmar, 2010;

Gajendran & Harrison, 2007). Additionally, employees with access to the other resources discussed have consistent access to the information and support needed to perform job tasks so they maintain resources to meet family demands as well (Karatepe & Kilic, 2007; Voydanoff, 2005).

*Control over work schedule.* Remote work that provides autonomy (control over work schedule and process) enables an employee to better manage her resources and allocate them to best resolve competing demands between work and family (Golden, 2006; Hill et al., 2008). A remote worker's control over work schedule enables her to adjust the timing of work tasks so that she is also able to meet family demands. The level of control an employee has over her work schedule varies across remote work arrangements. Some remote workers have a great deal of control over when they begin and end work as well as taking breaks throughout the day or completing work during non-traditional hours because they are not tied to the traditional hours of an office. Other remote workers have very little control over their work schedule because they need to be constantly available by technology during work hours or have a strict schedule set by the supervisor or organization. Remote workers with control over their work schedule have flexibility in scheduling the day, or allocating the resource of time, to be available for both work and family demands that may arise (Baltes et al., 1999; Golden, 2006). For example, a remote salesperson with high control over her work schedule can take a break from work tasks at 3pm to pick up a child from school or attend a recital. Control over one's work schedule also enables a salesperson to individualize the timing of when to complete work tasks so that he is able to use time and energy resources most effectively (Carlson et al., 2010; Pedersen & Jeppesen, 2012). For example, a remote salesperson with a great deal of control over her work schedule could get an early start to her day in order to be at the customer site when the decision-makers are

available in order to maximize efficiency in completing work tasks so that work tasks can be completed with resources remaining for family tasks. Previous research has found that control over one's work schedule is related to less WIF (Allen et al., 2013; Beutell, 2010; Carlson et al., 2010; Hill et al., 2010; Shockley & Allen, 2007). Remote workers with higher control over their work schedule have the flexibility to adjust when work gets completed so that work does not interfere with family (Golden, 2006). Therefore, I predicted that control over work schedule will be associated with less WIF.

> Hypothesis 9a. Remote workers with greater control over the hours during which they complete work tasks experience less WIF than employees with less control over work schedule.

Remote workers' level of control over schedule also impacts how family interferes with work. Employees with high control over their schedule can arrange (or rearrange) work tasks so that family demands do not interrupt their completion (Allen et al., 2013; Golden, 2006). In support of this, several studies have found that control over work schedule is related to less FIW (Allen et al., 2013; Beutell, 2010; Byron, 2005). Therefore, I predicted that control over work schedule will be associated with less FIW.

> Hypothesis 9b. Remote workers with greater control over the hours during which they complete work tasks experience less FIW than do employees with less control over their work schedule.

*Control over work process.* A remote worker's control over work process empowers him to complete work tasks in a way and order in which the employee can be most effective (Golden, 2006). The level of control over work process varies across remote work arrangements. Some remote workers have a lot of control over the order in which they complete work tasks and the

techniques they use to accomplish tasks throughout the day while others have to follow specific guidelines and procedures on how to complete work as laid out by their supervisors or organizations. Remote workers with control over their work process have flexibility in how they allocate their finite resources to meet both work and family demands (Golden, 2006). For example, a remote salesperson with control over her work process can select the order in which she visits customers to reduce in-between commute time. Through independently managing her own process to complete work tasks, the remote worker with control over work process can minimize the resources used through most effectively allocating the energy, time and attention needed to complete work tasks (Golden, 2006). Previous research has found that control over one's work process is related to less WIF (e.g., Golden, 2006). Remote workers with higher control over their work process have the flexibility to control how resources are used to complete work so that he has more time and emotional energy to spend on family activities (Golden, 2006). Therefore, I hypothesized that a remote worker's control over work process will relate negatively to WIF.

> Hypothesis 10a. Remote workers with greater control over the process through which they complete work tasks report less WIF than do employees with less control over their work process.

Based on individual studies (e.g., Kossek et al., 2006) and a meta-analysis (Michel et al., 2011), the literature on job autonomy and work-family conflict demonstrates that control over one's work process is related to less FIW. Remote workers with high control over their work process can perform their work tasks in a way in which they can complete family demands without harming their work process. I predicted that a remote worker's control over work process will relate negatively to FIW.

Hypothesis 10b. Remote workers with greater control over the process through which they complete work tasks experience less FIW than do employees with less control over their work process.

*Access to information.* The access to information that an employee has also differs across remote work arrangements based on the technology and systems in place to share information with employees physically removed from a main work location and the information created and available in such an office (Lee et al., 2007). Access to information such as the latest products, return on investment and best practices enables a remote salesperson to complete work more efficiently and effectively, saving time and energy for meeting family demands. Similarly, access to information can provide the flexibility for a remote worker to complete job tasks during the time and location the remote worker desires in order to meet family demands without taking away from meeting work demands. Along these lines, Fonner and Roloff (2010) found that information exchange quality was negatively related to remote workers' work-family conflict. I hypothesized that access to information will negatively relate to both directions of work-family conflict.

Hypothesis 11a. Remote workers with greater access to information report less WIF than do employees with less access to information.

Hypothesis 11b. Remote workers with greater access to information report less FIW than do employees with less access to information.

*Interaction with one's supervisor.* Remote workers are also physically separated from supervisors, which can affect their relationship, communication and support. Strides in technology are constantly improving how remote workers are able to connect with their supervisors (Leonardi, Treem, & Jackson, 2010) but the access to this resource varies across

remote work arrangements. Interaction with one's supervisor is a resource for remote employees who can gain additional insights, feedback and advice for balancing work and family demands (Karatepe & Kilic, 2007; Voydanoff, 2005). The extant literature has found that supervisor support negatively relates to work-family conflict (Beutell, 2010; Clark, 2001; Thomas & Ganster, 1995; Warner, 2011) and can serve as a coping resource for employees to deal with balancing work and family roles (Allen, 2001; Halbesleben, 2010). I hypothesized that interaction with one's supervisor will negatively relate to both directions of work-family conflict.

Hypothesis 12a. Remote workers with more frequent interaction with their supervisor report less WIF than do employees with less interaction with their supervisor.

Hypothesis 12b. Remote workers with more frequent interaction with their supervisor report less FIW than do employees with less interaction with their supervisor.

*Feedback.* Supervisors can also provide remote workers with feedback about their performance, which can strengthen the value of the employee-supervisor interaction. Having access to clear information about the effectiveness of one's performance can affect how one performs work tasks and manages resources (Bakker & Demerouti, 2007). For example, if a salesperson receives praise following a business review with a customer, he will more efficiently focus time and energy on reviewing sales with customers rather than casual conversations in future interactions. As discussed earlier and explained by Edwards and Rothbard (2000), effectively using finite resources in one domain protects the resources to meet demands in the other domain as well. Therefore, feedback was predicted to strengthen the relationship between interaction with one's supervisor and work-family conflict. In other words, frequent interactions with supervisors would be more strongly related to employees' work-family conflict when the

supervisor is providing feedback during those interactions. See *Figure 3* for an illustration of the hypothesized relationship.

> Hypothesis 13. Feedback moderates the relationship between supervisor interaction and work-family conflict such that the relationship will be stronger for remote employees with more feedback than for remote employees with less feedback.

The domain specificity hypothesis explains that variables within the employee's work domain (e.g., job stress, hours at work) are more strongly predictive of WIF while variables within the family domain are more strongly related to FIW (e.g., family stress, hours of non-work; Byron, 2005; Frone, 2003). This hypothesis has been supported in the remote work literature previously (e.g., Allen et al., 2013; Byron, 2005) and is predicted here as well. I hypothesized that autonomy, access to information and interaction with one's supervisor will be more strongly related to WIF than to FIW because they are resources associated with the work domain.

> Hypothesis 14. Resources within remote work (autonomy, access to information and interaction with one's supervisor) are more strongly related to WIF than to FIW.

# Chapter Two

## Method

### *Pilot Study*

Prior to collecting data within the focal population of salespeople, a convenience sample of 20 colleagues and friends completed a brief online survey to investigate the reliability and validity of the access to information measure created for this study. Participants had a mean age of 33.30 (*SD* = 9.41) and included 65% females and 35% males. Their racial/ethnic background was as follows: 80% Caucasian, 10% Hispanic and 10% Asian. Thirty-five percent had a 4-year college degree and 60% had a master's or doctoral degree.

The survey included the 5-item "access to information" measure created for this study (sample item: "*I have access to the information needed to do my job*") as well as two similar measures from the Technology Acceptance Model (Agarwal & Prasad, 1998): the 5-item "ease of use" measure (sample item: "*I believe that it is easy to get my work technology to do what I want it to do*") and the 6-item "relative advantage" measure (sample item: "*Using available job information improves my productivity*"). All items were measured on a 5-point Likert scale that ranged from 1(strongly disagree) to 5 (strongly agree). See *Appendix D.*

The study-created access to information scale had good reliability ($\alpha = .91$). The access to information scale was significantly and positively related to the relative advantage measure ($r = .60$, $p = .005$). This relationship was expected due to the scales' similar focus on the availability of job information, therefore supporting the scale's convergent validity. The access to information scale was not significantly related to the ease of use measure ($r = .25$, $p = .30$). This

lack of a relationship with a scale focused on technology's usability, rather than availability, demonstrates the access to information scale's discriminant validity. See *Table 1* for intercorrelations. The results of the pilot study demonstrated that the access to information scale has acceptable reliability and validity and thus could be included in the focal study.

*Focal Study - Participants*

Salespeople were chosen as the participant group for three major reasons. First, because sales jobs are traditionally remote, salespeople can be studied as remote worker prototypes because they have engaged in remote work successfully for decades (Hinds & Kiesler, 2002; Magazine, 2001). Secondly, salespeople are generally remote due to business needs rather than due to choice, which provides a context less likely to be dominated by particular types of employees (e.g., those with high work-family conflict) who have self-selected into remote work arrangements. Finally, salespeople have objective job performance measures based on how they perform compared with their monthly period goal.

I recruited salespeople through contacts with three groups: insurance/financial agents, consumer packaged goods (CPG) sales professionals and personal contacts working in sales. I collected contact information for insurance and financial agents from their company's publically-available contact list. I invited 4,858 agents to participate in the study and the response rate was low (1.68%). I recruited CPG salespeople through two methods: a professional association and partnership with an organization. First, I collected contact information from the contact list of a professional CPG sales group with which I am associated. I invited 756 field-based and account-based salespeople across 50 CPG companies. The response rate for this group was also low (12.17%). Secondly, I contacted 213 salespeople working for a Midwest-based CPG company through a partnership with their leadership and had a good response rate (72.77%). Finally, I

shared the survey link through posts in LinkedIn groups with which I am associated and e-mailing my personal sales contacts, inviting both groups to participate and to share the information with their coworkers.

Overall, 350 salespeople participated in the Time 1 survey. In order to be eligible, participants needed to work at least part of their job remotely and either be married/ living with a partner and/or have a dependent child living at home. Of those completing the Time 1 survey, 32 were excluded because they did not meet these requirements. An additional 67 individuals failed to complete the full online survey, provide accurate job performance data and/or provide contact information to be invited to complete the Time 2 survey. Two hundred fifty-three salespeople were eligible and provided complete Time 1 data. Of these, 99 did not fully complete the follow-up Time 2 survey. One additional participant was removed as an outlier because the Time 2 objective job performance metric was more than 3 standard deviations away from the mean. See *Table 2* for more detail and *Figures 4* and *5* for histograms of the data with and without the outlier.

In total, 151 participants met eligibility criteria, provided complete data, and completed both surveys. Of these, 21 were insurance or finance agents, 124 were CPG salespeople and 6 were salespeople within other industries. Participants had a mean age of 28.45 (*SD* = 10.08) and included 35.3% females and 64.7% males. Their racial/ethnic background was as follows: 89.3% Caucasian, 6% Hispanic, 2% African American, 1.3% Asian and 1.4% other. A total of 92.6% were married, 4% living with partner, and 3.4% single. Additionally, 60.7% had children living at home with them (mean of 1.93 children for those with children).

*Measures*

*Autonomy.* Control over work schedule was measured with Pierce and Newstrom's (1983) five-item scale with items such as, "*How much discretion can you exercise in defining your own work schedule?*" The measure demonstrated good reliability, α = .90. Control over work process was measured with 3 items from Langfred (2000) as used by Golden (2006) (e.g., "*How much authority do you have in determining tasks to be done?*). This scale had acceptable reliability, α = 80. Items measuring control over work schedule and work process were measured on a 5-point Likert scale that ranged from 1 (very little) to 5 (very much). See *Appendix E.*

*Feedback.* Feedback was measured with the *feedback from agents* scale of the Job Diagnostic Survey (Hackman & Oldham, 1974). Two items, "*My supervisor almost never gives me any feedback about how well I am doing in my work" (reverse-scored) and "My supervisor often lets me know how well he/she thinks I am performing the job"* were measured on a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Another item, "*To what extent does your supervisor let you know how well you are doing on your job"* was rated on a 5-point Likert scale from 1 (very little; my supervisor almost never lets me know how well I am doing) to 5 (very much; my supervisor provides me with almost constant feedback about how well I am doing). The scale had acceptable reliability, α = .80. See *Appendix F.*

*Access to information.* Access to information was measured with five items based on the definition by Magazine (2001). Items were validated through the pilot study, discussed earlier. Items such as, "*I have reliable and timely access to information needed to perform my job tasks*" were rated on a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Reliability was good, α = .89. See *Appendix G.*

*Interaction with one's supervisor.* Interaction with one's supervisor was measured with four items adapted from McAllister (1995) regarding the frequency of interaction an employee has with her supervisor. Items such as, "*How frequently do you interact with your supervisor during work?"* were rated on a 5-point Likert scale that ranged from 1 (once or twice per month) to 5 (many times daily). The scale had good reliability, α = 87. See *Appendix H.*

*Motivation.* Intrinsic motivation was measured with four items from the JDS (Hackman & Oldham, 1974). This scale was chosen for its alignment with the operationalization of intrinsic motivation discussed in JCT, JD-R and the current study. Items such as, "*I feel a great sense of personal satisfaction when I do this job well*" were rated on a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Hackman and Oldham (1974) reported an acceptable reliability, α = .76 but I found a poor reliability, α = .53, for the four-item measure. Based on item and scale statistics, I eliminated the reverse-scored item, "*My own feelings generally are not affected much one way or the other by how well I do on this job*", which raised the reliability to α = .64. See *Appendix I.*

*Job performance***.** Job performance data was measured both objectively and subjectively. Objective job performance was measured with one item, "*In consideration of your sales budget/goal for the past sales period, what percentage did you deliver?*" One hundred percent would represent an employee meeting their sales goal and responses could reasonably range from around 30% for low performers to 180% for high performers. As an industry standard, sales goals are based on a combination of factors, including geography, anticipated market grown and sales from previous year. While this data is objective, it is important to keep this in mind because not all sales employees, even within the same company, are given the same sales goal. Subjective job performance was measured with Challagalla, Shervani and Huber's (2000) measure of sales-

specific performance measure. Six items such as, "*selling high profit-margin products*" were rated on a 5-point Likert scale that ranged from 1 (poor) to 5 (excellent). The rating scale differed from the peer-comparison scale used in Challagalla et al. (2000) to better fit the individual-level hypothesis. The scale's reliability was good, $\alpha = 87$ (T1) and .88 (T2). See *Appendices J* & *K* for measures of job performance.

*Work-family conflict.* Time and strain-based work-family conflict in both directions (WIF and FIW) were measured by Carlson, Kacmar and Williams' (2000) 12-item scale. Each measure included six items rated on a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree) so that a higher score represented more conflict. The WIF scale included items such as, "*My work keeps me from my family activities more than I would like*" (time-based) and "*Due to all the pressures at work, sometimes when I come home I am too stressed to do the things I enjoy*" (strain-based). The FIW scale included items such as, "*I have to miss work activities due to the amount of time I must spend on family responsibilities*" (time-based) and "*Due to stress at home, I am often preoccupied with family matters at work*" (strain-based). Alphas were good with .92 (T1) and .90 (T2) for WIF and .91 (T1) and .90 (T2) for FIW. See *Appendix L.*

*Proactive personality.* Proactive personality was measured with the shortened six-item scale (Parker, 1998) based on Bateman and Crant's (1993) original measure. Items such as, "*I excel at finding opportunities,*" were rated on a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree) so that a higher score represented a more proactive personality. Alpha was good, .83. See *Appendix M.*

*Knowledge.* Declarative and procedural knowledge were each measured with two items based on definitions by McCloy et al. (1994). Items such as, "*I know the facts, rules, procedures*

*and principles necessary to perform my job*" (declarative knowledge) and "*I am able to successfully perform the tasks necessary to do well in my job*" (procedural knowledge) were rated on a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Reliabilities were good, α = .82 and .82 for declarative and procedural knowledge. See *Appendix N.*

*Demographics.* Demographics were measured with 11 multiple-choice items: sex (1=male, 2=female), age (18-80), ethnicity (1=African American, 2=Hispanic, 3=Asian/Pacific Islander, 4=Caucasian, 5=2 or more, 6=other), type of sales (1=consumer packaged goods, 2= insurance, 3=pharmaceuticals, 4=automobile, 5= retail, 6=technology, 7=telecom, 8=services, 0=other, with write-in option), tenure with current employer, tenure with current role, yearly salary (1 = less than $15,000 – 9 = more than $150,000), education (1=less than high school – 7=doctoral/professional degree), marital status ("*What is your marital status?*" 1=single, 2=living with partner, 3=married; "*Is your spouse/partner employed?*" 1=yes, 2=no), and children ("*How many children do you have living at home with you*?" 0-10+). Demographics also included two open-ended items regarding job title and current employer. An additional item asked about the participants' telecommuting intensity, "*What percent of your work is done remotely?*" See *Appendix O.*

*Procedure*

For the focal study, I invited salespeople to participate in the study via e-mail, which included information about the study, voluntary participation and informed consent. The Time 1 electronic survey included all measures described above. The initial survey also asked participants to create a unique identification code to link their two surveys as well as leave their e-mail address to be contacted for the Time 2 survey and entered into a raffle for a gift card.

Following a delay of approximately one month, I sent a follow-up invitation for participants to complete the Time 2 survey. The time delay between the Time 1 and Time 2 surveys was designed to allow for a monthly sales period to pass between completing the two surveys. For example, a participant who completed the Time 1 survey on January 27 would respond to Time 1 items prior to the February sales period and Time 2 items following the February sales period (early March). The follow-up survey included measures of job performance (subjective and objective) and work-family conflict. The follow-up survey asked participants for their unique identification code as well as their e-mail address to be entered into a raffle. Following Time 1 data collection, all participants' e-mail addresses were entered into a raffle and five $10 gift cards were electronically mailed to winners. Following Time 2 data collection, all participants' e-mail addresses were entered into a raffle and ten $25 gift cards were electronically mailed to winners.

# Chapter Three

## Results

### *Descriptive Statistics*

Confirmatory factor analysis indicated that the single-factor model mapping survey items (indicators) onto one factor did not provide a reasonable fit to the data [$\chi^2$ (170) = 1181.29, $p <$ .0001, *SRMSR* = .18, *RMSEA* = .20, *CFI* = .41]. However, the five-factor model mapping survey items on to their factors (remote work resources) did provide a reasonable fit to the data [$\chi^2$ (160) = 245.66, $p <$ .0001, *SRMSR* = .06, *RMSEA* = .06, *CFI* = .95]. Additionally, each item significantly loaded on its respective factor ($p <$ .0001) in the five-factor model. A chi-square difference test provides support that the five-factor model fits the data better than the single-factor model. See *Figures 6* and *7* for path coefficients, standard error estimates and $R^2$ values.

Only one difference was detected between individuals who completed the Time 2 survey and those who did not; participants who completed the Time 2 survey had a lower income than participants who completed Time 1, $t(226) = 2.44$, $p < .05$. See *Table 3* for comparison. Only participants who completed both surveys were included in the final sample. Means, standard deviations, and normality indicators of main study variables for all participants are shown in *Table 4* and means and standard deviations of main study variables by employee group are shown in Table 5. Analyses of normality highlighted that motivation, proactive personality, declarative knowledge and procedural knowledge had a similar non-normal pattern. Each of these variables was leptokurtic, or had a high and slender distribution, as indicated by a kurtosis value above +2. These four variables were also negatively skewed; skewness was considered

non-normal if values were outside of the range -1 to +1. Overall, these normality analyses indicated that a majority of participants had high levels of each of these variables. FIW was positively skewed such that a majority of participants had little FIW. The means for these variables were consistent with what is typically found in the literature (Carlson et al., 2000; Hackman & Oldham, 1974; Parker, 1998). Finally, objective job performance was leptokurtic; there was a high concentration of participants' objective job performance around the middle of the distribution (delivering 100 percent of their sales budgets). Shapiro-Wilk is a popular and powerful test for normality which yields a statistic (*W*), degrees of freedom, and significance; significant results can be interpreted as the distribution of data being significantly different than normal (non-normal; Ruxton, Wilkinson, & Neuhauser, 2015). Results of the Shapiro-Wilk test further support the non-normality of motivation ($p < .01$), proactive personality ($p < .01$), declarative knowledge ($p < .01$), procedural knowledge ($p < .01$), FIW ($p < .01$) and objective job performance ($p < .01$). See *Table 6* for Shapiro-Wilk normality statistics.

*Hypothesis Testing - Performance*

Hypotheses regarding the relationships between remote work resources and outcomes were tested with correlational analyses. Due to the number of correlation-based hypotheses, I used a Bonferroni-corrected alpha of .0028 for these analyses. An alpha level of .05 was used for other analyses. All analyses include dependent variables (subjective job performance, objective job performance, WIF and FIW) measured at Time 2 and other variables measured at Time 1.

*Hypotheses 1*, *2* and *3* predicted that control over work schedule (*H1*), control over work process (*H2*) and feedback (*H3*) would positively correlate with job performance. None of these hypotheses were supported. For *Hypothesis 1*, control over work schedule was not significantly related to subjective job performance ($r = -.13$, $p = .12$) or to objective job performance ($r = -.19$,

*p* = .02). For *Hypothesis 2*, control over work process was not significantly related to subjective job performance (*r* = -.12, *p* = .16) or to objective job performance (*r* = -.18, *p* =.03). For *Hypothesis 3*, feedback was not significantly related to subjective job performance (*r* = .11, *p* = .19) or to objective job performance (*r* = .05, *p* =.56). A full set of intercorrelations is presented in *Table 7*.

*Hypothesis 4* stated that access to information would positively correlate with job performance. This hypothesis was not supported for subjective job performance (*r* = .04, *p* = .63) or for objective job performance (*r* = -.10, *p* =.22). *Hypothesis 5* stated that declarative knowledge mediated the relationship between access to information and job performance. Based on Baron and Kenny (1986) criteria, there must be a significant relationship between access to information and job performance in order for there to be a mediation. However, more recent research has shown that observing a direct relationship is not necessary to establish a mediational path (Fritz & MacKinnon, 2007). In an effort to completely investigate the hypothesis, I ran two separate hierarchical linear regressions to further understand the hypothesized relationships (see *Tables 8* and *9).* The first regression had subjective job performance as the dependent variable and the second had objective job performance. Access to information was entered at Step 1 of the equations and declarative knowledge was entered in Step 2. Declarative knowledge did not mediate the relationship; declarative knowledge was not significantly related to subjective job performance (β = .15, *p* = .10) or to objective job performance (β = .08, *p* = .35). Further, the inclusion of declarative knowledge did not result in a significant increase in the variance associated with subjective job performance ($\Delta R^2$ = .02, *p* = .10) or objective job performance ($\Delta R^2$ = .01, *p* = .35).

To further test the mediation effect, I performed a bootstrap analysis using the mediation macro developed by Preacher and Hayes (2014). Through bootstrapping, 5,000 samples were taken from the data to estimate coefficients and calculate the indirect effect of access to information on job performance through declarative knowledge. Results for the indirect effect included a confidence interval of bootstrap estimates; the indirect effect would be considered statistically significant from zero, indicating mediation, if the confidence interval did not contain zero (Hayes & Preacher, 2014). Results did not indicate a significant indirect effect, as the confidence interval was -.01 to .15 for subjective job performance and -.22 to 1.51 for objective job performance. The results are shown in *Tables 10* and *11*.

*Hypothesis 6* predicted that interaction with one's supervisor would positively correlate with job performance. This hypothesis was not supported for subjective job performance ($r$ = .18, $p$ = .03) or for objective job performance ($r$ = .18, $p$ =.03). *Hypothesis 7* predicted that procedural knowledge mediated the relationship between interaction with one's supervisor and job performance. Consistent with the mediation analysis previously explained, this mediation was tested with a hierarchical linear regression with subjective job performance as the dependent variable and a second regression with objective job performance as the dependent variable (see *Tables 12* and *13).* Interaction with one's supervisor was entered at Step 1 of each equation and procedural knowledge was entered in Step 2. The hypothesis was not supported for either type of job performance. Procedural knowledge was significantly related to subjective job performance at Step 2, ($\beta$ = .26, $p$ <.0028) and explained a significant increment in the variance associated with subjective job performance ($\Delta R^2$ = .07, $p$ < .01). However, the relationship between interaction with one's supervisor and subjective job performance was not significant at Step 1 ($\beta$ = .18, $p$ = .03) or Step 2 ($\beta$ = .18, $p$ = .03). In the second regression equation, procedural

knowledge did not result in a significant increase in the variance associated with objective job performance ($\Delta R^2 = .00$, $p = .43$). I used Hayes and Preacher's mediation macro to further test the mediation effect. Results did not indicate a significant indirect effect, as the confidence interval was -.04 to .04 for subjective job performance and -.28 to .16 for objective job performance. See *Table 10.*

*Hypothesis 8* predicted that internal motivation mediated the relationship between resources of remote work (control over work schedule, control over work process and feedback) and job performance. To investigate this relationship with subjective job performance, I ran a hierarchical multiple regression with the three remote work resources entered in Step 1 and internal motivation entered in Step 2. Results of the regression did not support the hypothesis. Motivation was significantly related to subjective job performance at Step 2, ($\beta = .29$, $p < .0028$) and explained a significant increase in the variance associated with subjective job performance ($\Delta R^2 = .08$, $p < .0028$). However, the relationships between the resources and subjective job performance were not significant at Step 1 or Step 2. The results of a similar regression equation did not show support for the hypothesis with objective job performance either. The predictors did not explain significant variance in objective job performance at Step 1 ($F = 2.16$, $p = .10$) or Step 2 ($F = 2.05$, $p = .09$). See *Tables 14* and *15* for standardized coefficients. Through Hayes and Preacher's mediation macro, 5,000 bootstrapped samples were taken from the data to estimate coefficients and calculate the indirect effects of each remote work resource on job performance through motivation. The analysis provided further evidence that motivation does not mediate these relationships. The bias corrected confidence intervals for each of the indirect effects contained zero. See *Table 10.*

Taken together, *Hypotheses 1-4* and *Hypothesis 6* predicted that control over work schedule, control over work process, feedback, access to information and interaction with one's supervisor at Time 1 would predict job performance at Time 2. As described above, none of these individual relationships were significant. Further, the five remote work resources together did not explain significant unique variance in objective work performance, $F$ (6, 144) = 3.21, $p$ < .01, $R^2$ total = .12, or subjective work performance, $F$ (6, 144) = 2.17, $p$ < .05, $R^2$ total = .08, after controlling for remote work intensity ($\Delta F = 1.92$, $p$ = .09 for objective job performance and $\Delta F = 1.47$, $p$ =.20 for subjective job performance). See *Table 16*.

*Hypothesis Testing – Work-Family Conflict*

*Hypotheses 9-12* predicted that control over work schedule (*H9*), control over work process (*H10*), access to information (*H11*) and interaction with one's supervisor (*H12*) would negatively correlate with work-family conflict. For *Hypothesis 9*, control over work schedule was not significantly related to WIF ($r$ = -.11, $p$ = .18) but was positively related to FIW ($r$ = .28, $p$ < .0028). For *Hypothesis 10*, control over work process was not significantly related to WIF ($r$ = -.13, $p$ = .12) but was positively related to FIW ($r$ = .28, $p$ < .0028). *Hypothesis 11* was partially supported; access to information was negatively related to WIF ($r$ = -.30, $p$ < .0028) but not significantly related to FIW ($r$ = -.01, $p$ = .89). *Hypothesis 12* was also partially supported; interaction with one's supervisor was not significantly related to WIF ($r$ = -.06, $p$ = .47) but was negatively related to FIW ($r$ = -.34, $p$ < .0028). These results do not provide support for each of these hypothesized relationships individually, but linear regression analyses demonstrated that the four remote work variables together explained significant unique variance in both WIF, $F$ (7, 141) = 2.60, $p$ < .05, $R^2$ total = .11, and FIW, $F$ (7, 141) = 4.58, $p$ < .01, $R^2$ total = .19 after

controlling for remote work intensity, number of children and marital status ($\Delta F = 4.48$, $p < .01$ for WIF and $\Delta F = 7.45$, $p < .01$ for FIW). See *Table 17*.

Through moderated regression analysis, I tested the moderating role of feedback on the relationship between interaction with one's supervisor and work-family conflict (*Hypothesis 13*). To test this hypothesis, each direction of work-family conflict was used as the dependent variable in separate analyses. Interaction with one's supervisor and feedback were entered in Step 1 and the interaction term (interaction x feedback) was entered in Step 2. Results from the moderated regression analyses indicated that the impact of interaction with one's supervisor on WIF was not moderated by feedback, $F$ (3, 147) = 5.51, $p < .01$, $R^2$ total = .10. Adding the interaction term to the regression equation did not result in a significant change in $R^2$ ($\Delta R^2 = .00$, $p = .89$). See *Table 18*. Similarly, the relationship between interaction with one's supervisor and FIW was not moderated by feedback, $F$ (3, 146) = 7.53, $p < .01$, $R^2$ total = .13. Adding the interaction term to the regression equation did not result in a significant change in $R^2$ ($\Delta R^2 = .00$, $p = .65$). See *Table 19.*

Additionally, I compared the strength of the relationships between each of the remote work resources and each direction of work-family conflict through an asymptotic *z*-test (Steiger, 1980). Because I was comparing dependent correlations (i.e. the correlations shared the remote work resource as a common variable), I also considered the correlation between WIF and FIW FIW ($r = .22$, $p = .007$) within the analysis. I used Lee and Preacher's calculator (2013; based on Fisher's *r*-to-*z* transformation and Steiger's asymptotic covariance equations) to determine the asymptotic *z*-scores and associated *p*-values to test if each remote work resource was more strongly related to WIF than to FIW (*Hypothesis 14*); a *p*-value of less than .05 indicated a statistically significant difference in the strength of relationships. Consistent with the hypothesis,

access to information was more strongly related to WIF than to FIW ($Z$ = -2.92, $p$ <.01). Contrary to the hypothesis, control over work schedule ($Z$ = -3.91, $p$ < .01), control over work process ($Z$ = -4.12, $p$ < .01) and interaction with one's supervisor ($Z$ = -2.85, $p$ < .01) were more strongly related to FIW than to WIF. See *Table 20*.

*Exploratory Analyses*

In an effort to further understand the data, several analyses were conducted for exploratory purposes. First, I evaluated the cross-sectional relationships between remote work resources and outcomes. Using α of .0028 to be consistent with the hypothesized correlational analyses, there were several significant relationships between the variables at Time 1. Many cross-sectional relationships mirrored the time-lagged relationships that were discussed earlier: both feedback ($r$ = -.28, $p$ < .0028) and access to information ($r$ = -.26, $p$ < .0028) were negatively correlated with WIF, interaction with one's supervisor was negatively related to FIW ($r$ = -.25, $p$ < .0028), and none of the remote work resources were significantly related to job performance. There was one key difference in the cross-sectional relationships. The relationships between FIW at Time 1 and both control over work schedule ($r$ = .22, $p$ = .01) and control over work process ($r$ = .20, $p$ = .01) were not significant in consideration of α = .0028, although both resources were positively related to FIW at Time 2.

Second, I looked into the role that proactive personality played on the relationships between remote work resources and job performance. Results from correlational analyses demonstrate that proactive personality was positively related to subjective job performance ($r$ = .30, $p$ < .001) but its relationship with objective job performance was not significant ($r$ = .14, $p$ = .10). Next, I tested the moderating role of proactive personality on each of the relationships between remote work resources and job performance with a series of moderated regression

analyses. Objective job performance was set as the dependent variable, the remote work resource and proactive personality were entered in Step 1 and the interaction term (remote work resource x proactive personality) was entered in Step 2. A significant change in $R^2$ at Step 2, during which I added the interaction term, would demonstrate that proactive personality moderated the relationship. There was not a significant change in $R^2$ for control over work schedule ($\Delta R^2 = .00$, $p = .59$), control over work process ($\Delta R^2 = .01$, $p = .21$), feedback ($\Delta R^2 = .01$, $p = .16$) or access to information ($\Delta R^2 = .01$, $p = .27$). However, there was a significant change in $R^2$ for interaction with the supervisor ($\Delta R^2 = .03$, $p < .05$). See *Table 21*. I plotted this relationship to better understand the impact of the moderation and found that proactive personality moderates the relationship between interaction with one's supervisor and objective job performance such that interaction with one's supervisor has a stronger relationship with one's objective job performance if the salesperson has a less proactive personality rather than a more proactive personality (see *Figure 8).* To further understand this relationship, I conducted additional analyses based on the Preacher, Rucker and Hayes (2007) moderated mediation macro. Bootstrapped confidence intervals for each analysis contained zero which demonstrated that proactive personality did not moderate the relationship between interaction with one's supervisor and objective job performance mediated by declarative knowledge, procedural knowledge or motivation. See *Table 22.*

I conducted an identical series of moderated regression analyses with subjective job performance as the dependent variable. There was no support for proactive personality as a moderator on the relationships between remote work resources and subjective job performance. Regression results did not demonstrate a significant change in $R^2$ at Step 2 for control over work schedule ($\Delta R^2 = .00$, $p = .57$), control over work process ($\Delta R^2 = .00$, $p = .78$), feedback ($\Delta R^2 =$

.00, $p = .53$), access to information ($\Delta R^2 = .01$, $p = .23$), or interaction with one's supervisor ($\Delta R^2 = .00$, $p = .54$).

Next, I looked at a few key relationships that were not included as hypotheses but address valuable research questions based on the issues discussed in the introduction. First, due to the mixed findings regarding outcomes of remote work in the extant literature, I looked into its relationships with job performance and work-family conflict. Remote work intensity was positively correlated with subjective job performance ($r = .19$, $p < .05$) and objective job performance ($r = .24$, $p < .01$) but not significantly related to WIF ($r = -.03$, $p = .74$) or to FIW ($r = -.11$, $p = .18$). Secondly, based on the job performance measurement concerns, I investigated the relationship between subjective and objective measures of job performance. There was a strong positive correlation between participants' ratings of their job performance and their performance metrics at both Time 1 ($r = .34$, $p < .001$) and Time 2 ($r = .48$, $p < .001$).

Fourth, because there is interest in demonstrating the business value of mitigating work-family conflict for employees, I also looked into the relationship between work-family conflict and job performance. Looking at work-family conflict at Time 1 and job performance at Time 2, only one relationship was significant. FIW at Time 1 was negatively related to subjective job performance at Time 2 ($r = -.21$, $p < .05$). FIW at Time 1 was not significantly related to objective job performance at Time 2 ($r = -.11$, $p = .18$). WIF at Time 1 was not significantly related to either subjective job performance ($r = -.04$, $p = .59$) or objective job performance ($r = .09$, $p = .30$) at Time 2.

Additionally, I tested Campbell's (1990) explanation of job performance as the result of combining motivation, declarative knowledge and procedural knowledge. I ran two linear regression equations: one with subjective job performance and one with objective job

performance as dependent variables. The three variables explained significant variance in subjective job performance, $F$ (3, 147) = 10.17, $p < .001$, $R^2$ total = .17. The regression equation with objective job performance, however, was not significant, $F$ (3, 147) = 1.17, $p = .32$, $R^2$ total = .02. See *Table 23*.

Finally, I looked further into the relationship between interaction with one's supervisor and job performance. I ran a series of curve fit analyses to compare linear, quadratic and cubic regression lines to represent the relationship between interaction with one's supervisor and job performance. For objective job performance, the cubic regression line was a better fit, $F$ (3, 147) = 4.11, $p < .01$, $R^2$ total = .08, than the quadratic, $F$ (2, 148) = 4.50, $p < .05$, $R^2$ total = .06, or linear regression lines $F$ (1, 149) = 5.04, $p < .05$, $R^2$ total = .03. Similarly, for subjective job performance, the cubic regression line was a better fit, $F$ (3, 147) = 3.62, $p < .05$, $R^2$ total = .07, than the quadratic, $F$ (2, 148) = 3.80, $p < .05$, $R^2$ total = .05, or linear regression lines $F$ (1, 149) = 4.72, $p < .05$, $R^2$ total = .03. The cubic regression line demonstrates that the relationship between interaction with one's supervisor and job performance is stronger at low and high frequencies of interaction than it is at moderate frequencies of interaction with one's supervisor. For each measurement of job performance, see *Table 24* for regression weights and *Figures 9* and *10* for regression line graphs.

# Chapter Four

## Discussion

The purpose of this study was to broaden the understanding of remote work by investigating resource availability within remote sales jobs and the relationships with work-family conflict and job performance. Autonomy, feedback, access to information and interaction with one's supervisor prior to the start of a sales period (Time 1) were hypothesized to relate to job performance and work-family conflict after the sales period (Time 2). This study extends the remote work literature by applying robust theory, exploring the resources available within remote work and expanding the definition of remote workers beyond that defined in the extant literature.

### *Main Findings*

*Remote work and job performance.* Remote work's influence on job performance has been inconsistent in the existing literature. To better understand the relationship, I looked to Job Characteristics Theory (JCT; Hackman & Oldham, 1976) and the Job Demands-Resources Model (JD-R; Bakker et al., 2003; Demerouti et al., 2001) to inform what resources available within remote work may impact how employees perform in their jobs. Specifically, I hypothesized that autonomy, feedback, access to information and interaction with one's supervisor would positively relate to job performance. Job performance was captured with both subjective and objective measures. Additionally, based on the theories mentioned above, I hypothesized that internal work motivation would mediate the relationships between autonomy and feedback and job performance. Further, I hypothesized that declarative knowledge would

mediate the relationship between access to information and job performance and that procedural knowledge would mediate the relationship between interaction with one's supervisor and job performance.

The results for remote work resources and job performance did not support these hypotheses. None of the remote work resources were significantly related to subjective or to objective job performance. Further, there was no support for motivation, declarative knowledge or procedural knowledge as mediators. The five resources included in this study were aligned with the three parts of Campbell's Theory of Performance, which states that performance is the result of motivation, declarative knowledge and procedural knowledge. The key relationships between the remote work resources and elements of Campbell's performance equation were not significant and therefore the remote work resources were not significantly related to job performance. Because JCT (Hackman & Oldham, 1976) specifies autonomy and feedback as motivational resources, control over work schedule, control over work process and feedback were operationalized as motivational resources. However, neither control over work schedule nor control over work process was significantly related to motivation. This implies that autonomy is not a motivational resource within this population. This may be due to the nature of the sales role; although an employee's company and supervisor allow her autonomy over the timing and ways in which she completes her work, customers may not be so generous. In a customer-focused job, getting to the grocery store by 5 a.m. to meet the needs of the grocery manager or holding an insurance review with a couple in the evening so it fits their schedule may overshadow a salesperson's control over her own day.

Similarly, feedback was not significantly related to motivation; however, it was positively related to declarative knowledge. Although not in line with my hypotheses, this is not

surprising given the population of salespeople. Because sales is such a metric-driven career, supervisors are likely providing very metric-based feedback to their employees and pairing it with any appropriate rules, procedures or updates that may empower the employee to continue or improve performance moving forward. This idea is supported by the strong positive relationship between feedback and interaction with one's supervisor.

Access to information — defined here as access to the facts, procedures and rules necessary for performing tasks—was predicted to relate to declarative knowledge. As expected, access to information was positively related to declarative knowledge. It was also positively related to procedural knowledge. This implies that the information to which salespeople have access includes both what to do as well as how to do it. With half of this population working over 80% of their job remotely, it makes sense that companies would strive to make all of this information accessible to salespeople.

Interaction with one's supervisor was predicted to relate to procedural knowledge, but the two variables were not related. It may be upsetting to companies to see that employees' interactions with their supervisors are neither related to knowing how to get the job done nor related to their job performance. Future research is needed to understand what occurs during sales employee and supervisor interactions and how the interactions can be best designed to encourage effective remote sales employees.

While the results regarding the hypothesized relationships between resources and job performance did not support major job performance theories, exploratory analyses did demonstrate support. Motivation and procedural knowledge were both positively related to subjective job performance. Further, the three theorized elements of job performance (motivation, declarative knowledge and procedural knowledge) did explain a significant portion

of the variance associated with subjective job performance. The findings support the general theories of job performance as well as Campbell's performance equation.

*Remote work and work-family conflict.* Allowing employees to work remotely is often touted as a way to reduce work-family conflict, but the extant research has not consistently found this to be true (Allen et al., 2013; Hill et al., 2003; Hill et al., 1996; Hill et al., 1998; Shockley & Allen, 2007). I believe at least a portion of the conflicting findings is due to narrow and inconsistent definitions of remote work. For that reason, I broadly defined remote work in this study and focused on the available resources to provide a more fine-grained assessment of why some remote work situations result in lowered work-family conflict while others do not. Drawing on the Scarcity Hypothesis (Goode, 1960) and Conservation of Resources theory (COR; Hobfall, 1989), I hypothesized that autonomy, access to information and interaction with one's supervisor would negatively relate to both directions of work-family conflict. Further, I expected feedback to moderate the relationship between interaction with one's supervisor and work-family conflict.

The results for remote work resources and work-family conflict provided varying levels of support for these hypotheses. Control over work schedule and control over work process were not significantly related to WIF. Contrary to hypotheses but consistent with Golden (2006), both control over work schedule and control over work process were positively related to FIW. The boundary management literature provides a lens for understanding these results. As Ashforth, Kreiner and Fugate (2000) explain, role boundaries can vary from highly segmented, in which each role has a strict location and time, to highly integrated, in which multiple roles can occur within the same location and time. Flexibility in the timing and location of a role encourages high integration with other roles which may open the role to interruptions (Allen, Golden & Shockley, 2015; Ashforth et al., 2000; Spilker, 2014). Further, family members may expect that

employees with a great deal of autonomy in their work role take on more responsibilities in their family role because they have the freedom to do so (Allen et al., 2015). In the present study, salespeople who have more control over their work schedule and process may have a more permeable boundary for their sales roles which allows for disruptions from the family roles and, thus, FIW. In support of this idea, Kossek et al. (2006) found that work and family role integration is positively related to FIW but not significantly related to WIF.

The hypotheses regarding access to information were partially supported; access to information was negatively related to WIF but not significantly related to FIW. In line with hypotheses, these results imply that access to information enables remote salespeople to complete work more efficiently such that they are able to complete work demands while saving time and energy to also meet family demands. However, there was not support to demonstrate that access to information is related to FIW.

Next, the hypotheses regarding interaction with one's supervisor were also partially supported; interaction with one's supervisor was not significantly related to WIF but was negatively related to FIW. There are two possible explanations for this pattern of results. First, supervisors generally only interact with their employees while the employees are at work; for this reason, supervisors are likely to notice when an employee is experiencing FIW but would not notice if an employee is experiencing WIF. Based on the supervisor's perspective on where the employee is experiencing difficulty with conflicting demands, the supervisor may provide insights and advice for dealing with FIW rather than WIF. Alternately, interacting with one's supervisor more frequently may force an employee to choose work demands over family demands when the two conflict. For example, if an employee has a planned customer meeting that the supervisor is attending and she receives a phone call from her child's school that the

child is sick and needs to be picked up, the employee may feel forced to meet the work demand herself while asking her partner to help with the family demand. In this way, remote salespeople with more frequent interactions with their supervisors will simply not allow family to interfere with work because the supervisor would notice.

Further, feedback was hypothesized to moderate the relationship between interaction with one's supervisor and work-family conflict such that feedback would strengthen the value of the employee-supervisor interaction. The results did not support this hypothesis. Interestingly, although it was not included as a resource to mitigate work-family conflict, feedback was the only variable that was negatively related to both directions of work-family conflict. I have not previously seen feedback considered in a study of employees' work-family conflict but recommend that it be included in future research. It is likely that feedback from supervisors enables employees to continue with work tasks that are meeting expectations and delivering results while they are able to adjust work tasks that are not making them more effective. This way, employees are able to focus their time, energy and attention to most efficiently meet work demands while saving resources to meet family demands as well. Similarly, salespeople who receive a lot of feedback are able to prioritize family demands over any unnecessary work demands.

While the results regarding the hypothesized relationships between resources and work-family conflict were mixed, exploratory analyses did demonstrate support for their value in mitigating conflicting demands. Combined, autonomy, access to information and interaction with one's supervisor explained a significant portion of the variance associated with both WIF and FIW. These findings support the value of resources described by Scarcity Hypothesis (Goode, 1970), COR (Hobfall, 1989) and JD-R model (Bakker et al., 2003; Demerouti et al., 2001).

The final hypothesis regarding remote work resources and work-family conflict related to the strength of each resource's relationship with each direction of work-family conflict. Specifically, I hypothesized that each of the resources within remote work would more strongly relate to WIF than to FIW. Contrary to this hypothesis, control over work schedule, control over work process and interaction with one's supervisor were more strongly related to FIW than to WIF. In support of this hypothesis, access to information was more strongly correlated to WIF than to FIW. Because access to information is a work-based resource, this is consistent with the domain specificity hypothesis, which explains that variables within the employee's work domain are more strongly predictive of WIF than of FIW (Byron, 2005; Frone, 2003).

*Exploratory analyses.* In addition to the results of hypothesized relationships, there are a few findings from exploratory analyses worth discussing. Hypotheses were developed based on an examination of remote work resources measured at Time 1 and outcomes measured at Time 2 because the resources are theorized to precede the outcomes. However, it is worth noting that three of the relationships that were significant across time were also significant when captured at a single point in time. Feedback and access to information were both negatively correlated with WIF at Time 1 and at Time 2 and interaction with one's supervisor was negatively correlated with FIW at Time 1 and at Time 2. The significant cross-sectional relationships demonstrate further support for strong relationships between each of these resources and work-family conflict, but do not provide any information about the direction of the relationships. The significant relationships between these resources and work-family conflict at a single point in time could be reflective of several mechanisms. If there is a causal relationship between resources and work-family conflict, the resources available within the job and work-family conflict may be consistent over time such that the relationship stays stable. Alternately,

fluctuations in the available resources may impact work-family conflict immediately such that a causal relationship can be captured with cross-sectional measurement. The significant cross-sectional relationships may also be the result of a reverse causation or a third variable influencing both remote work resources and work-family conflict. Further support for a causal relationship in the hypothesized direction can be found in the correlations between autonomy and FIW. Control over work schedule and control over work process were significantly related to FIW at Time 2 but were not significantly related to FIW at Time 1. The present study was observational and therefore cannot draw any causal conclusions, but stronger relationships between these remote work resources and FIW across time support the consideration of work-family conflict as an outcome of remote work.

Proactive personality was included in the survey as a research question into how it might impact the relationship between remote work resources and job performance. Proactive personality moderated the relationship between interaction with one's supervisor and objective job performance such that interaction with one's supervisor is more strongly related to job performance for less proactive salespeople compared to more proactive salespeople. Based on the extant research on proactive personality (e.g. Bateman & Crant, 1993; Sun & van Emmerick, 2015), this is not surprising. A salesperson with a highly proactive personality is likely to identify opportunities for improvement and make change happen on her own. For this reason, conversations with her supervisor are less likely to have a big impact on sales results; everything that can be done has already been done by the proactive employee. On the other hand, a less proactive employee may benefit more from a conversation with his supervisor regarding additional selling opportunities, new strategies or additional recommendations. For the less proactive salesperson, there may be more room for improvement in sales metrics — and more

frequent interactions with his supervisor can play a role. This explanation for the results is further supported by the positive relationship between proactive personality and subjective job performance, a measure in which salespeople answered questions regarding how they have identified major accounts, sold high-profit margin products and generated sales of new products.

The present study parceled remote work into its resources to better understand its relationships with job performance and work-family conflict. I discussed a few areas of tension within the extant literature earlier in the paper and believe that it is worth discussing each of those questions directly based on the results of this study. First, there have been inconsistent findings regarding the relationship between remote work and job performance. This area of research generally operationalizes remote work as an all or nothing variable and compares the performance between remote workers and non-remote workers. Researchers have found more consistent support for a positive relationship between remote work and job performance (both subjective and supervisor-rated) by studying groups of only remote workers and their remote work intensity (Gajendran et al., 2014; Hartman et al., 1991). The present study supports these findings because remote work intensity was positively related to subjective job performance. Further, the present study expands this area of research by also considering sales metrics as a measure of objective job performance; results show that there was a positive relationship between remote work intensity and objective sales performance. While the subjective and objective measures of job performance demonstrated different relationship patterns with the remote work resources (discussed earlier), they were strongly positively correlated at both Time 1 and Time 2.These findings provide additional evidence for why studies should consider multiple measures of job performance.

There have been similar inconsistencies in the literature regarding the relationship between remote work and work-family conflict. The results of this study support those of Hill et al. (1996), Hill et al. (1998) and Shockley and Allen (2007) — remote work intensity was not related to WIF or FIW. With these results, I echo the recommendations of Allen et al. (2013) and Kossek et al. (2014) that future research should continue to tease apart remote work, rather than only considering remote work intensity, to better understand when and how remote work arrangements can be structured to mitigate work-family conflict.

While not directly related to the thesis of this study, there is value in understanding how work-family conflict relates to job performance. Within the popular literature, there is an effort to demonstrate that encouraging employees to live balanced, conflict-free lives is beneficial to the employer as well. However, in the academic literature, there are mixed findings regarding whether mitigating work-family conflict can improve job performance (Allen, Herst, Bruck & Sutton, 2000). The results of this study do not provide much more clarity on this issue. FIW was negatively related to subjective job performance, but WIF was not and neither direction of work-family conflict was significantly related to objective job performance. These results suggest that job performance is associated more with FIW than with WIF. Understanding that FIW results in work demands not being met due to family demands, this finding is not surprising. Continued, focused research in this area is needed.

Interaction with one's supervisor was hypothesized to positively relate to job performance, but the relationships were not significant. I tested whether the impact of one's interaction with a supervisor on job performance might be better represented with a quadratic or cubic regression line rather than a linear one. Rather than a linear relationship with more frequent interaction with one's supervisor relating to higher job performance, the relationship was better

represented as a quadratic relationship (or reverse-U) in which interaction with one's supervisor has a positive impact on job performance up to a certain point. However, as frequency of interaction with one's supervisor continues to increase, job performance begins to decrease. Strongest, though, was the cubic regression line. Specifically, the relationship between interaction with one's supervisor and job performance is stronger at low and high frequencies of interaction than it is at moderate frequencies of interaction with one's supervisor. Interaction with one's supervisor was predicted to relate to job performance, because supervisors are a source of knowledge, recommendations and support. At low frequencies of interacting, employees may only interact with supervisors when help is needed, therefore having a greater impact on job performance. On the other hand, employees who frequently interact with their supervisor may have a stronger knowledge-sharing and supportive relationship than those who only have occasional interactions.

*Theoretical Implications*

The findings of this study have several theoretical implications. First, this study applies key performance theories to the study of remote work and job performance. Specifically, JCT (Hackman & Oldham, 1976) and the JD-R model (Bakker et al., 2003; Demerouti et al., 2001) explain that jobs with the appropriate resources will encourage high job performance through internally motivating employees. Using these theories as an outline, this study established an innovative method for investigating the relationship between remote work and job performance through the resources available within remote work arrangements. Similarly, the Scarcity Hypothesis (Goode, 1960) and COR (Hobfall, 1989) provide an avenue for understanding how elements of a remote work arrangement can serve as additional resources for employees to better meet the competing demands from the work and family domains. Applying these theories to the

remote work research arena introduces a valuable charter to understand how elements within remote work arrangements, rather than the existence of remote work, relates to work-family conflict. The application of these theories to the remote work literature represents a progressive step in this area of research that has previously been criticized as being atheoretical (Bailey & Kurland, 2002; Bélanger & Collins, 1998; Gajendran & Harrison, 2007).

Next, the present study introduces a valuable avenue for providing a fine-grained analysis of remote work. The extant literature has not demonstrated consistent relationships between remote work and job performance or work-family conflict because remote work arrangements are not all created equal. Much of the extant literature takes resources within remote work arrangements for granted; many hypotheses around why remote work should influence job performance and work-family conflict are based on resources that are assumed to be available in all remote work arrangements (e.g. more autonomy than non-remote work). However, the framework presented in the present study and its results introduce a new mindset to the remote work literature; recognizing the uniqueness of each remote work arrangement by studying the resources within it. The framework also encourages further research into how resources can be optimized to boost job performance and mitigate work-family conflict for remote employees.

Additionally, the present study builds upon the knowledgebase regarding how remote work relates to work-family conflict. The findings from this study demonstrate that varying resources within remote work arrangements relate to how an employee experiences work-family conflict. Specifically, access to information mitigated WIF, interaction with one's supervisor mitigated FIW, and feedback mitigated both directions of work-family conflict. Additionally, control over work schedule and control over work process actually fostered FIW.

Finally, the present study expands the scope of remote work through broadening its definition. Remote workers have previously been constrained to a certain type of employee (one who elects to take advantage of a remote work opportunity) who works in a particular job (white collar, desk-based roles) and works from a particular location (working from home as a "remote office"). The present study extended the definition of remote work to include any circumstances, jobs or locations in which an employee physically completes work away from their manager, coworkers and a shared office location. In doing so, the present study introduces a broader population of people and work arrangements from which to explore the many unique elements of remote work as well as their relationship with outcomes.

*Practical Implications*

The findings of the present study also have practical implications. Based on the introduction of studying remote work resources and associated outcomes, organizations can structure their remote work arrangements to be beneficial for both the organization and employee. Based on the findings of this study, organizations would benefit from paying special attention to employees' autonomy, access to information and interaction with their supervisors within remote work arrangements. Similarly, organizations should establish a virtual resource in which remote employees have easy access to the information, processes and training that they need despite being physically removed from the main office location. Further, organizations that employ remote workers should train supervisors on how to most effectively and efficiently supervise, manage and support remote employees to make the experience beneficial for all parties.

The findings also suggest that supervisors should prioritize making their interactions with employees as constructive as possible. The results indicate that interactions between supervisors

and employees themselves are not associated with positive outcomes; therefore, supervisors should emphasize productive conversations, coaching and recommendations within such interactions. The study further demonstrates that the value of interaction with supervisors differs based on the employee's proactive personality. Based on these results, supervisors would be wise to recognize the individual needs of their employees and tailor conversations to meet the needs of each employee. This idea of situational leadership has been adopted by many companies through training programs and supervisor resources aimed at diagnosing the needs of employees and applying the appropriate leadership style to meet the individual's needs (The Ken Blanchard Company, 2016). Application of these principles within remote work arrangements would be beneficial for supervisor-employee interactions. Further, supervisors would benefit from providing feedback to employees, focusing on employee results, and sharing information and processes that could help the employee improve.

*Limitations*

Despite its contributions, this study also has several limitations related to measurement and statistical power. This study measured job performance in two ways: subjective job performance based on an employee's self-rating and objective job performance based on sales metrics for the given sales period. A limitation in this measurement, however, is that the objective sales performance metric was self-reported by participants. I attempted to deter any inaccurate metric reporting by providing specific instructions for how to answer the question (Please round to two decimal places and do not include the percent symbol, for example 87.46 or 101.25). Additionally, I emphasized my commitment to keeping all participant responses confidential in both invitations to participate in the study and the opening page of the electronic

survey. However, it is possible that participants may have inaccurately reported their sales results to manage impressions or in error.

Additionally, power analyses indicated that the power was lower than ideal for hierarchical moderated regression (Faul, Erdfelder, Lang & Buchner, 2007). A lack of power may have contributed to the study's findings regarding feedback as a moderator on the relationship between interaction with one's supervisor and work-family conflict. It is possible that my conclusion based on the results of the regression is a Type II error, rejecting moderation when it exists. Future researchers are encouraged to study this relationship with a larger sample size in order to improve the power to detect such moderation.

Finally, while I tried to attain a broad array of salespeople as participants, I cannot be sure that the sample made of primarily insurance, finance and CPG salespeople can be generalized to the entire population of remote salespeople. Further, I only included participants who were married/living with a partner or had a dependent child living at home, which may have limited the generalizability of findings as well.

*Future Directions*

The findings of the current study point to a few areas ripe for future research. First, continued exploration of the resources within remote work arrangements is warranted. Given that an employee's perception of work-family conflict is based on a comparison of the demands and available resources from work and family domains (Goode, 1960), it is necessary to understand how remote work can be structured with the appropriate resources for employees to meet demands within both domains. Resources within the job can be helpful in their own right or can act as means to achieve and protect other resources (time, energy and attention; Bakker et al., 2003; Demerouti et al., 2001). Additional resources available within remote work arrangements

should be examined as potential aids to employees' work-family conflict. For example, coworker support, vacation time, training opportunities and childcare support may all impact the resources that a remote employee maintains to deal with demands from both work and family.

Further research is also needed on the supervisor support that remote employees require. General supervisor support is related to job performance (Charoensukmongkol, 2014; Karatepe & Kilic, 2007) and work-family conflict (Beutell, 2010; Clark, 2001; Thomas & Ganster, 1995; Warner, 2011). The support that a supervisor offers to her employees can be tailored to match a desired outcome; for example, family-specific support was more strongly related to employees' work-family conflict than general support (Hammer, Kossek, Yragui, Bodner & Hanson, 2009). Support specific to the needs of employees physically removed from their supervisors, coworkers and central office, then, may be more impactful than general support in driving desired outcomes in remote workers. Research in this area should focus on the unique support needs of remote workers, how supervisors can meet these needs and how organizations can empower supervisors to provide strong support to both remote and non-remote employees.

Another avenue for future research is how individual differences impact remote work outcomes. Research has shown that personality variables are related to outcomes like work-family conflict (Allen et al., 2012) and job performance (Barrick & Mount, 1991). This study has demonstrated that proactive personality impacts how a remote work resource, interaction with one's supervisor, relates to objective job performance. The remote work literature would benefit from additional research into how an employee's individual differences relate to how she experiences job resources like autonomy, supervisor support and feedback. Specifically, both internal locus of control and conscientiousness may impact how an employee takes control over her work schedule and process in order to meet work demands, affecting both WIF and job

performance. Future research should investigate the moderating roles of internal locus of control and conscientiousness in the relationships between autonomy and desired outcomes. Additionally, openness to experience may influence an employee's receptiveness to advice and feedback about how to improve her job performance. Future research should investigate the moderating role of openness to experience in the relationships between supervisor support and job performance as well as feedback and job performance.

Finally, research is needed to investigate person-environment fit within remote work arrangements. Person-environment fit theory explains that an employee experiences stress when there is a mismatch between the employee's values and the job's supplies or between the employee's abilities and the job's demands (Chuang, Shen & Judge, 2016; Edwards & Rothbard, 1999). While remote jobs are not all created equal, there are similar demands on remote employees, such as virtually communicating with supervisors and collaborators and meeting work demands away from central resources. Additional research is needed to understand what abilities an employee needs to fit the demands of remote work. In jobs where remote work is an option offered by employers, it would be beneficial to understand how well an employee's ability meets the needs of the role before initiating a remote work arrangement for her. On the other hand, in a job like sales where remote work is a critical part of the role, companies would benefit from understanding how to mold the demands and supplies of the job to meet the values and abilities of the employees. Further, additional research on remote work resources within the person-environment fit framework could provide direction on how available resources could bolster the employees' abilities (i.e., skills and resources) to meet the role demands.

*Conclusion*

The purpose of this study was to build upon the understanding of whether remote work influences job performance and work-family conflict. Remote work resources were examined to gain in-depth understanding on the relationship between remote work and its outcomes. Motivation, knowledge and feedback were explored as moderators and mediators to provide information on the mechanisms through which remote work resources impact job performance and work-family conflict. Next, evidence was found for the merit of understanding resources within remote work, which reinforces the value of resources discussed in fundamental job performance and work-family conflict theories. Findings demonstrate that resources are related to work-family conflict and call into question the common practice of operationalizing remote work as an "all or none" resource. Finally, the scope of remote work research was challenged through a more inclusive definition of the construct and focus on salespeople as a time-honored remote work population. In conclusion, this study contributes to the remote work literature by outlining resources of remote work and providing a more nuanced look at the relationship between remote work, job performance and work-family conflict.

Tables and Figures

*Figure 1*. Summary of hypothesized relationships between resources within remote work and job performance.

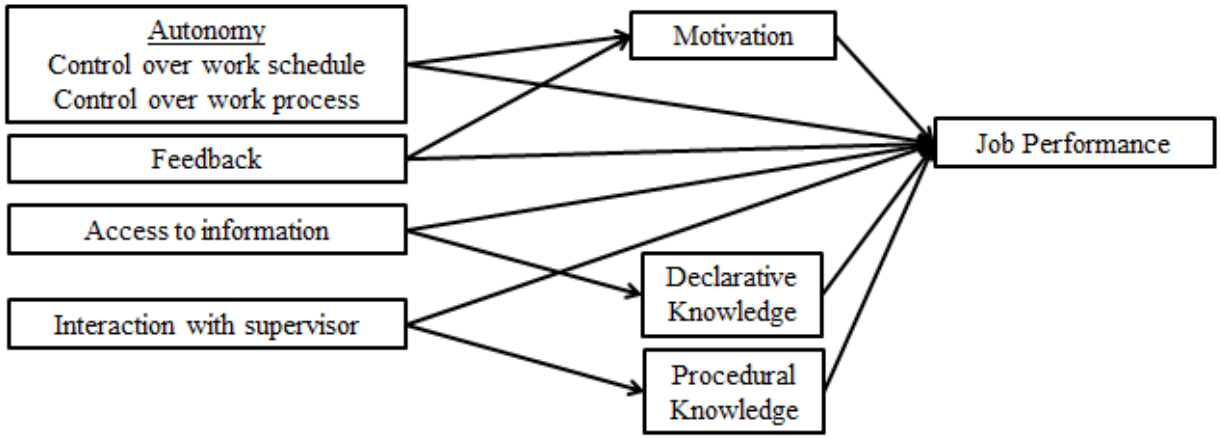



*Figure 2*. Summary of hypothesized relationships between resources within remote work and work-family conflict.

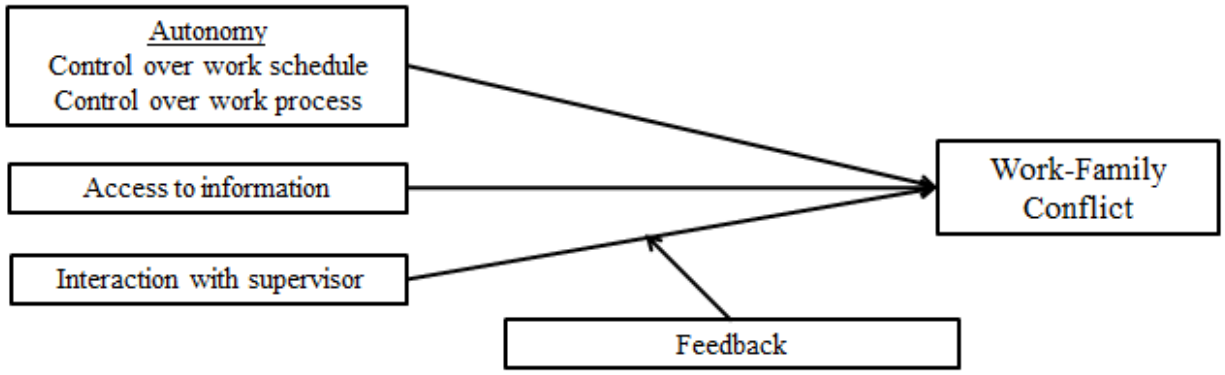


*Figure 3.* Hypothesized relationship between interaction with one's supervisor and work-family conflict.

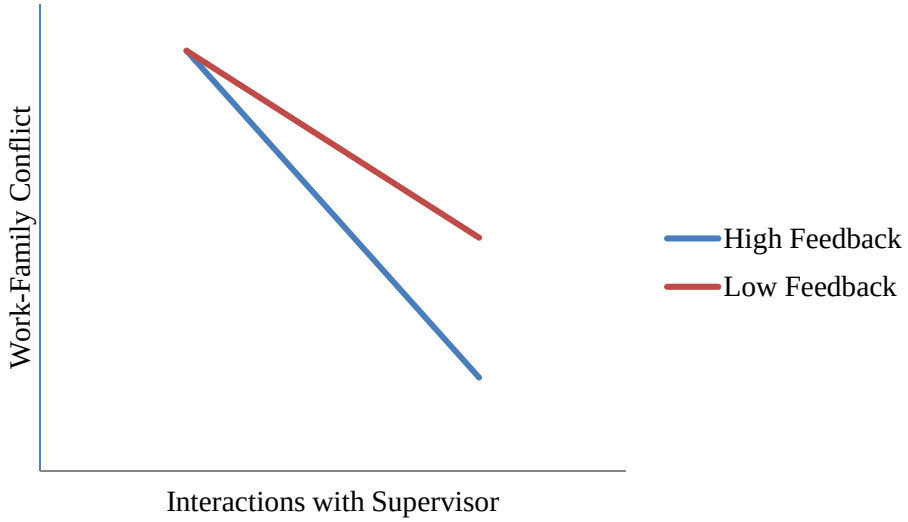


Table 1.
*Intercorrelations between Pilot Study Variables (N=20)*

| | 1 | 2 | 3 |
|---|---|---|---|
| 1. Access to Information | -- | | |
| 2. Ease of Use | .25 | -- | |
| 3. Relative Advantage | .60** | .35 | -- |

*$p < .05$, **$p < .01$

Table 2.
*Outlier Sample Comparisons*

| Sample | *M* | *SD* | Based on 3 SD from Mean | | Obs. Min. | Obs. Max. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|---|
| | | | Outlier Low Cutoff | Outlier High Cutoff | | | | |
| N=152 | 99.69 | 16.64 | 49.77 | 149.61 | 50.50 | 253.41 | 4.93 (.20) | .48.55 (.39) |
| N=151 | 98.67 | 10.96 | | | 50.50 | 135.00 | -.97 (.20) | 4.26 (.39) |

Figure 4.
*Sample with Outlier (N=152)*

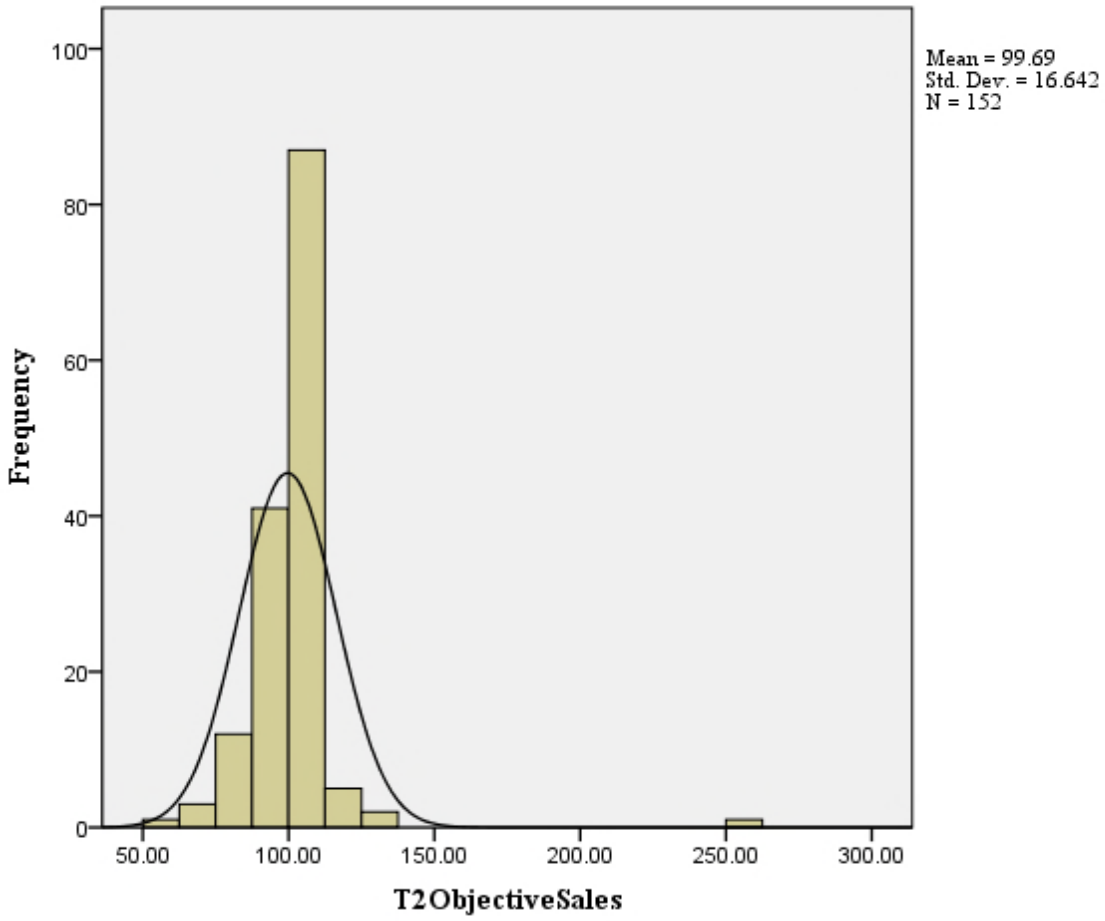


Figure 5.
*Sample with Outlier Removed (N=151)*

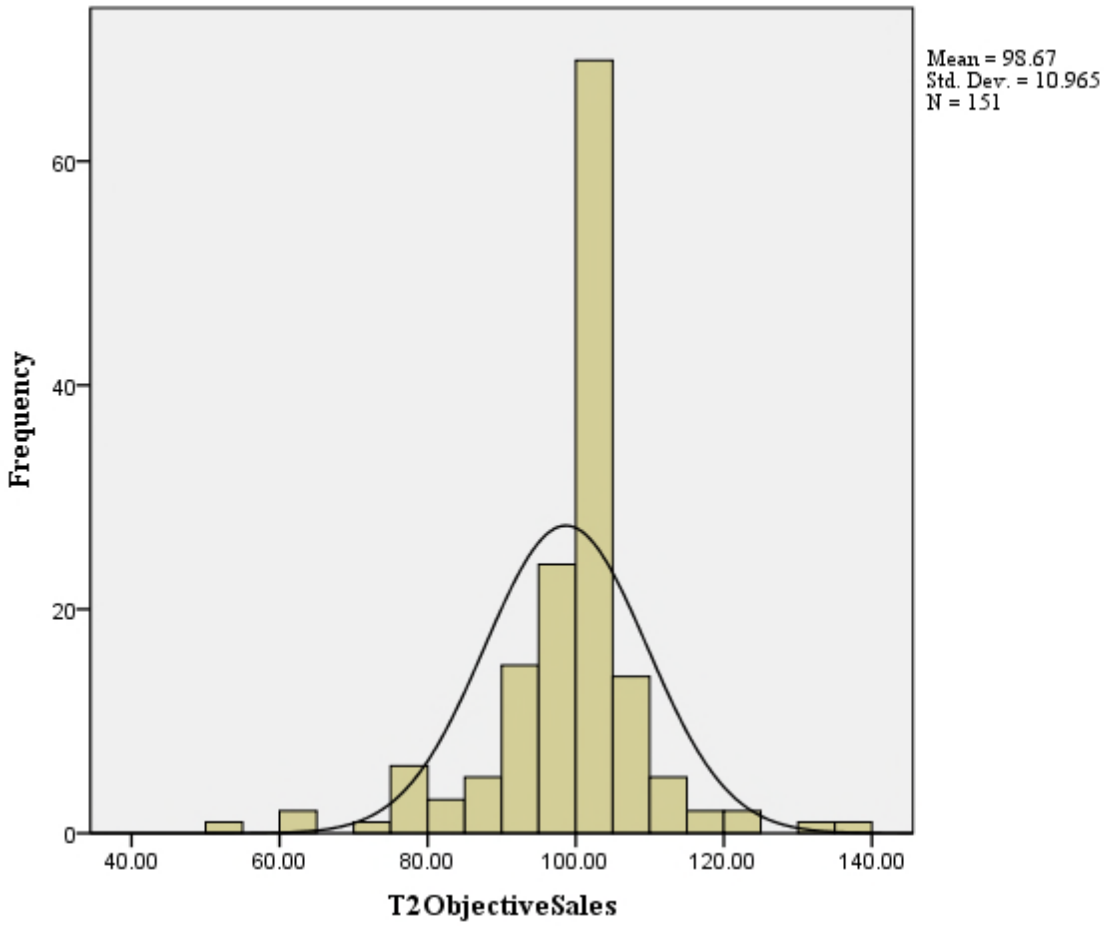


Figure 6.
*Single-Factor Confirmatory Factor Analysis of Remote Work Resources with Standardized Model*

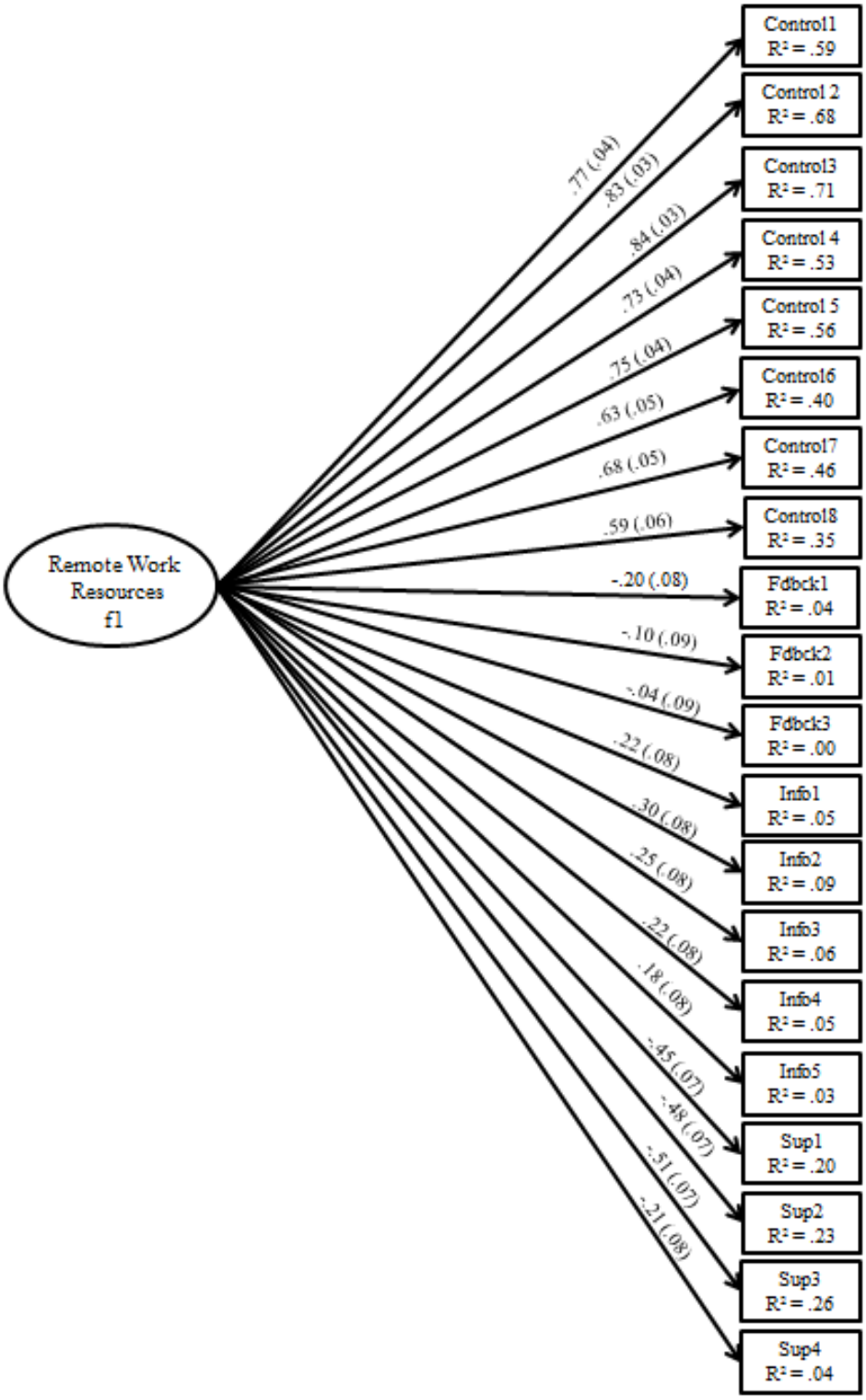


Figure 7.
*Five-Factor Confirmatory Factor Analysis of Remote Work Resources with Standardized Model*

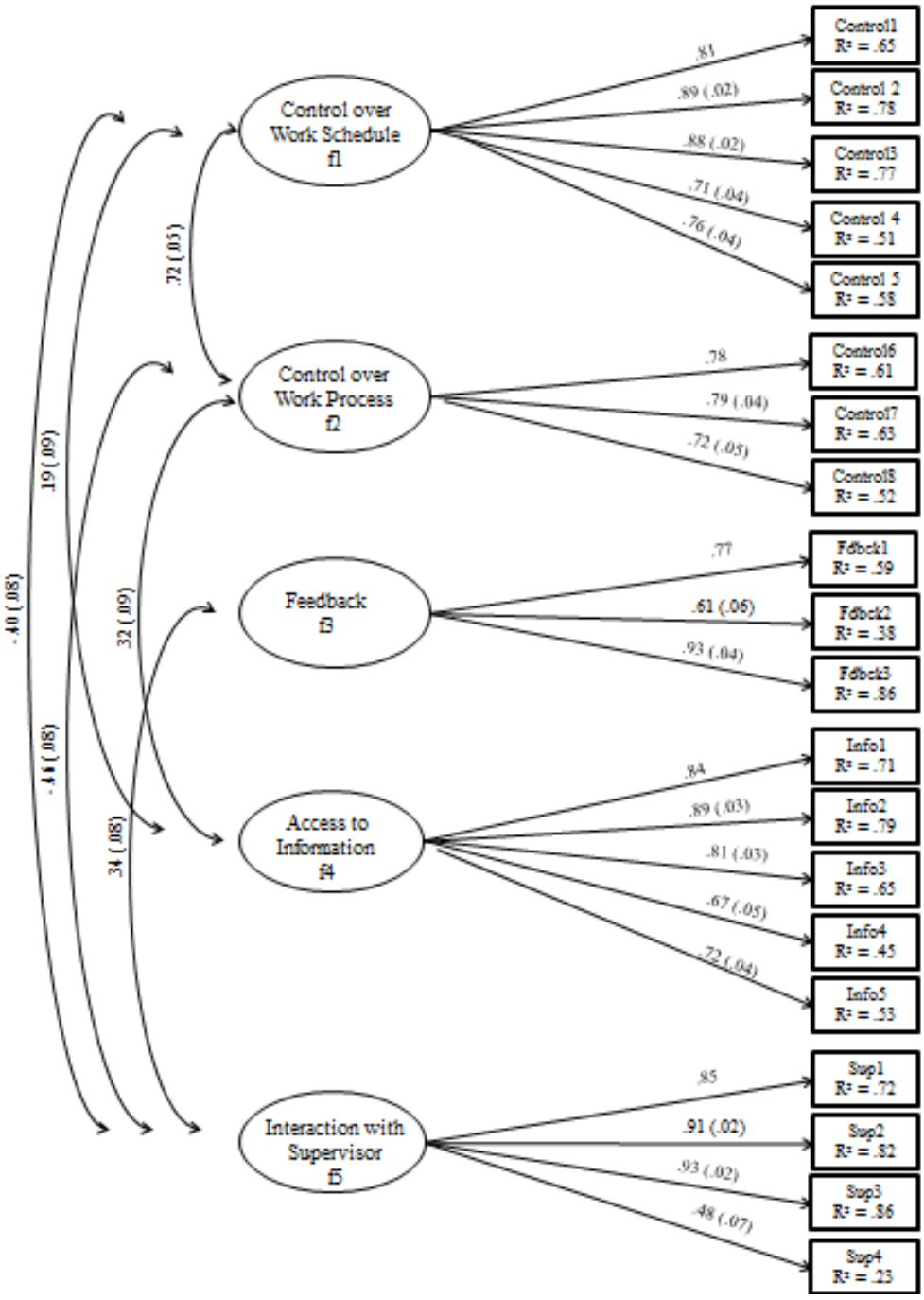


Table 3.
*Comparison of Study Variables at Time 1 and Demographics for Participants with Complete/Incomplete Follow-Up Data*

| | Completed Follow-Up | | Did Not Follow-Up | | |
|---|---|---|---|---|---|
| Variable | *M* | *SD* | *M* | *SD* | *t-value* |
| **Main Study Variables** | | | | | |
| Control over Work Schedule | 3.96 | .74 | 4.00 | .82 | .38 |
| Control over Work Process | 3.56 | .87 | 3.57 | .94 | .06 |
| Feedback | 3.71 | 1.00 | 3.54 | 1.07 | -1.18 |
| Access to Information | 3.64 | .82 | 5.53 | .97 | -.95 |
| Interaction with Supervisor | 2.43 | .96 | 2.29 | .92 | -1.15 |
| Motivation | 4.45 | .59 | 4.42 | .07 | -.42 |
| Proactive Personality | 4.21 | .59 | 4.23 | .55 | .29 |
| Declarative Knowledge | 4.32 | .67 | 4.19 | .92 | -1.33 |
| Procedural Knowledge | 4.34 | .72 | 4.18 | .92 | -1.45 |
| WIF | 2.90 | 1.06 | 2.77 | 1.05 | -.93 |
| FIW | 1.71 | .78 | 1.80 | .78 | .84 |
| Subjective Job Performance | 4.01 | .65 | 4.06 | .73 | .50 |
| Objective Job Performance | 98.04 | 20.44 | 98.64 | 16.04 | .24 |
| **Demographics** | | | | | |
| Age | 28.45 | 10.08 | 28.97 | 9.98 | .38 |
| Income | 6.87 | 1.50 | 7.37 | 1.51 | 2.44* |
| Education | 3.44 | 1.20 | 3.60 | 1.05 | 1.08 |
| Number of Children | 2.17 | 1.13 | 2.39 | 1.12 | 1.41 |
| Remote Work Intensity | 8.01 | 3.63 | 7.62 | 3.71 | -.78 |
| | *%* | | *%* | | $\chi^2$-*value* |
| % Male | 64.7 | | 52.3 | | 3.55 |
| % White | 89.3 | | 83.9 | | 1.47 |
| % Married/living with partner | 96.6 | | 98.8 | | 1.10 |

*Note: N* = 151 for complete follow-up, *N* = 88 for incomplete follow-up for most variables; Several variables were measured on Likert-scales: Income (1= <$15,000, 2= $15,001-$30,000, 3 = $30,001-$45,000, 4 = $45,001-$60,000, 5 = $60,001-$75,000, 6 = $75,001-$90,000, 7 = $90,001-$100,000, 8 = $100,001-$150,000, 9= >$150,000); Education (1=less than high school, 2 = high school/ GED, 3 = some college, 4 = 2-year college degree, 5 = 4-year college degree, 6 = master's degree, 7 = doctoral degree).; Number of Children (1=0, 2=1, 3=2, 4=3, 5=4); Remote Work Intensity (2= less than 10%, 3 = 10-20%, 4 = 21-30%, 5 = 31-40%, 6 = 41-50%, 7 = 51-60%, 8 = 61-70%, 9 = 71-80%, 10 = 81-90%, 11 = 91-99%, 12 = 100). *$p$ <.05 (two-tailed).

Table 4.
*Descriptive Statistics of Main Study Variables (N = 151)*

| Variable | $\alpha$ | *M* | *SD* | Obs. Min. | Obs. Max. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| **Time 1** | | | | | | | |
| Control over Work Schedule | .90 | 3.96 | .74 | 1.20 | 5.00 | -.63 (.20) | .44 (.39) |
| Control over Work Process | .80 | 3.57 | .87 | 1.00 | 5.00 | -.17 (.20) | -.29 (.39) |
| Feedback | .80 | 3.71 | 1.00 | 1.00 | 5.00 | -.39 (.20) | -.62 (.39) |
| Access to Information | .89 | 3.64 | .81 | 1.00 | 5.00 | -.56 (.20) | .11 (.39) |
| Interaction with Supervisor | .87 | 2.43 | .96 | 1.00 | 5.00 | .40 (.20) | -.48 (.39) |
| Motivation | .64 | 4.45 | .59 | 1.00 | 5.00 | -1.79 (.20) | 6.66 (.39) |
| Proactive Personality | .83 | 4.21 | .59 | 1.00 | 5.00 | -1.34 (.20) | 4.74 (.39) |
| Declarative Knowledge | .82 | 4.32 | .67 | 1.00 | 5.00 | -1.15 (.20) | 2.94 (.39) |
| Procedural Knowledge | .82 | 4.34 | .72 | 1.50 | 5.00 | -1.45 (.20) | 2.63 (.39) |
| **Time 2** | | | | | | | |
| WIF | .90 | 2.89 | .98 | 1.00 | 5.00 | .01 (.20) | -.73 (.39) |
| FIW | .90 | 1.74 | .79 | 1.00 | 4.17 | 1.05 (.20) | .37 (.39) |
| Subjective Job Performance | .88 | 3.96 | .72 | 1.50 | 5.00 | -.65 (.20) | .32 (.39) |
| Objective Job Performance | - | 98.67 | 10.96 | 50.50 | 135.00 | -.97 (.20) | 4.26 (.39) |

Note: N=150 for Time 1 subjective job performance & 138 for Time 1 objective job performance

Table 5.
*Descriptive Statistics of Main Study Variables (By Employee Group)*

| | *Insurance/Finance* | | *Consumer Packaged Goods* | | *Other* | |
|---|---|---|---|---|---|---|
| Variable | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| **Time 1** | | | | | | |
| Control over Work Schedule | 4.71 | .41 | 3.81 | .70 | 4.50 | .52 |
| Control over Work Process | 4.62 | .57 | 3.36 | .77 | 4.17 | .84 |
| Feedback | 3.19 | .76 | 3.79 | .99 | 3.78 | 1.49 |
| Access to Information | 4.03 | .71 | 3.55 | .80 | 3.97 | 1.13 |
| Interaction with Supervisor | 1.25 | .50 | 2.63 | .88 | 2.63 | 1.03 |
| Motivation | 4.25 | .95 | 4.48 | .51 | 4.44 | .50 |
| Proactive Personality | 4.09 | 1.05 | 4.22 | .49 | 4.36 | .36 |
| Declarative Knowledge | 4.38 | .59 | 4.32 | .68 | 4.25 | .88 |
| Procedural Knowledge | 4.43 | .66 | 4.31 | .72 | 4.50 | 1.00 |
| **Time 2** | | | | | | |
| WIF | 3.06 | 1.06 | 2.90 | .97 | 2.14 | .59 |
| FIW | 2.45 | 1.00 | 1.61 | .69 | 2.01 | .65 |
| Subjective Job Performance | 3.37 | .97 | 4.07 | .61 | 3.92 | .84 |
| Objective Job Performance | 87.45 | 15.79 | 101.04 | 8.17 | 88.88 | 13.55 |
| **Demographics** | | | | | | |
| Age | 32.48 | 9.99 | 28.06 | 9.79 | 22.50 | 13.28 |
| Income | 6.05 | 2.59 | 7.02 | 1.17 | 6.67 | 1.86 |
| Education | 3.86 | 1.15 | 3.35 | 1.21 | 3.67 | .82 |
| Number of Children | 2.33 | 1.32 | 2.18 | 1.11 | 1.50 | .84 |
| Remote Work Intensity | 4.57 | 3.23 | 8.55 | 3.35 | 8.83 | 4.54 |
| % Male | 66.67 | - | 64.2 | - | 66.70 | - |
| % White | 81.00 | - | 91.1 | - | 83.3 | - |
| % Married/ Living with Partner | 95.3 | - | 96.8 | - | 100.00 | - |

*Note: N* = 21 for insurance, *N* = 124 for CPG *N* = 6 for other salespeople; Several variables were measured on Likert-scales: Income (1= <$15,000, 2= $15,001-$30,000, 3 = $30,001-$45,000, 4 = $45,001-$60,000, 5 = $60,001-$75,000, 6 = $75,001-$90,000, 7 = $90,001-$100,000, 8 = $100,001-$150,000, 9= >$150,000); Education (1=less than high school, 2 = high school/ GED, 3 = some college, 4 = 2-year college degree, 5 = 4-year college degree, 6 = master's degree, 7 = doctoral degree); Number of Children (1=0, 2=1, 3=2, 4=3, 5=4); Remote Work Intensity (2= less than 10%, 3 = 10-20%, 4 = 21-30%, 5 = 31-40%, 6 = 41-50%, 7 = 51-60%, 8 = 61-70%, 9 = 71-80%, 10 = 81-90%, 11 = 91-99%, 12 = 100).*$p$ <.05 (two-tailed).

Table 6.

*Shapiro-Wilk Test of Normality*

| Variable | Statistic | df | *p* |
|---|---|---|---|
| Motivation | .86 | 137 | .00** |
| Proactive Personality | .95 | 137 | .00** |
| Declarative Knowledge | .83 | 137 | .00** |
| Procedural Knowledge | .79 | 137 | .00** |
| FIW | .85 | 137 | .00** |
| Objective Job Performance | .86 | 137 | .00** |

**$p < .01$

Table 7.
*Intercorrelations between Study Variables (N = 151)*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Control over Schedule | -- | | | | | | | | | | | | | | | | | |
| 2. Control over Process | .63*** | -- | | | | | | | | | | | | | | | | |
| 3. Feedback | -.05 | -.11 | -- | | | | | | | | | | | | | | | |
| 4. Access to Information | .18* | .29*** | .13 | -- | | | | | | | | | | | | | | |
| 5. Interaction with Supervisor | -.34*** | -.35*** | .35*** | -.11 | -- | | | | | | | | | | | | | |
| 6. Motivation | -.13 | -.13 | .06 | -.01 | -.01 | -- | | | | | | | | | | | | |
| 7. Proactive Personality | -.03 | .06 | .02 | .06 | .04 | .46*** | -- | | | | | | | | | | | |
| 8. Declarative Knowledge | .01 | .12 | .23** | .44*** | -.08 | .02 | .12 | -- | | | | | | | | | | |
| 9. Procedural Knowledge | .07 | .17* | .10 | .45*** | -.01 | -.06 | .08 | .56** | -- | | | | | | | | | |
| 10. Remote Work Intensity | .04 | -.08 | .01 | -.02 | -.04 | .12 | .06 | .07 | .03 | -- | | | | | | | | |
| 11. WIF (T1) | -.20* | -.22** | -.28*** | -.26*** | -.05 | -.09 | -.05 | -.20* | -.25** | .00 | -- | | | | | | | |
| 12. FIW (T1) | .22** | .20* | -.14 | .03 | -.25*** | -.11 | -.24** | -.11 | -.06 | -.08 | .28*** | -- | | | | | | |
| 13. Subjective Perf. (T1 | -.07 | -.02 | .16* | .06 | .16 | .24** | .33*** | .19* | .24** | .13 | -.22*** | -.12 | -- | | | | | |
| 14. Objective Perf. (T1) | -.17* | -.18* | .08 | -.14 | .13 | .11 | -.10 | -.09 | -.09 | .26*** | -.09 | -.21* | .34*** | -- | | | | |
| 15. WIF (T2) | -.11 | -.13 | -.31*** | -.30*** | -.06 | -.11 | -.10 | -.16 | -.20* | -.03 | .78*** | .21* | -.24** | -.12 | -- | | | |
| 16. FIW (T2) | .28*** | .28*** | -.23** | -.01 | -.34*** | -.07 | -.11 | -.11 | -.04 | -.11 | .16 | .60*** | -.08 | -.14 | .22** | -- | | |
| 17. Subjective Perf. (T2) | -.13 | -.12 | .11 | .04 | .18* | .31** | .30** | .14 | .26** | .19* | -.04 | -.20* | .61*** | .24** | -.07 | -.17* | -- | |
| 18. Objective Perf. (T2) | -.19* | -.18* | .05 | -.10 | .18* | .13 | .14 | .03 | .06 | .24** | .09 | -.11 | .37*** | .29*** | .07 | -.08 | .48*** | -- |

*$p$ < .05, ** $p$ < .01, ***$p$ < .0028; *Note:* N=150 for Time 1 subjective job performance & 138 for Time 1 objective job performance

Table 8.

*Declarative Knowledge Mediator Regression Results with Subjective Sales Performance as Dependent Variable*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Step | Variable | B | SE | β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
| 1 | Access to Information | .04 | .07 | .04 | .63 | .24 | .00 | | |
| 2 | Access to Information | -.02 | .08 | -.03 | .78 | 1.49 | .02 | 2.73 | .02 |
| | Declarative Knowledge | .16 | .10 | .15 | .10 | | | | |

Table 9.

*Declarative Knowledge Mediator Regression Results with Objective Sales Performance as Dependent Variable*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Step | Variable | B | SE | β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
| 1 | Access to Information | -1.35 | 1.10 | -.10 | .22 | 1.51 | .01 | | |
| 2 | Access to Information | -1.84 | 1.22 | -.14 | .13 | 1.19 | .02 | .87 | .01 |
| | Declarative Knowledge | 1.38 | 1.49 | .08 | .35 | | | | |

Table 10.
*Indirect effects on subjective job performance summary*

| Independent Variable | Mediating Variable | Point Estimate | SE | Bias corrected confidence intervals | |
|---|---|---|---|---|---|
| | | | | Lower | Upper |
| Motivation | Control over Work Schedule | -.02 | .03 | -.08 | .03 |
| | Control over Work Process | -.02 | .02 | -.07 | .02 |
| | Feedback | .01 | .02 | -.02 | .05 |
| Declarative Knowledge | Access to Information | .06 | .04 | -.01 | .15 |
| Procedural Knowledge | Interaction with Supervisor | -.00 | .02 | -.04 | .04 |

Each bootstrap sample size = 5000.

Table 11.
*Indirect effects on objective job performance summary*

| Independent Variable | Mediating Variable | Point Estimate | SE | Bias corrected confidence intervals | |
|---|---|---|---|---|---|
| | | | | Lower | Upper |
| Motivation | Control over Work Schedule | -.12 | .20 | -.84 | .10 |
| | Control over Work Process | -.10 | .19 | -.80 | .07 |
| | Feedback | .06 | .11 | -.06 | .41 |
| Declarative Knowledge | Access to Information | .49 | .43 | -.22 | 1.51 |
| Procedural Knowledge | Interaction with Supervisor | -.00 | .10 | -.28 | .16 |

Each bootstrap sample size = 5000.

Table 12.

*Procedural Knowledge Mediator Regression Results with Subjective Sales Performance as Dependent Variable*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Step | Variable | B | SE | β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
| 1 | Interaction with Supervisor | .13 | .06 | .18 | .03 | 4.72* | .03 | | |
| 2 | Interaction with Supervisor | .13 | .06 | .18 | .03 | 7.95*** | .10 | 10.87*** | .07*** |
| | Procedural Knowledge | .26 | .08 | .26 | .00 | | | | |

*$p < .05$, **$p < .01$, ***$p < .0028$

Table 13.

*Procedural Knowledge Mediator Regression Results with Objective Sales Performance as Dependent Variable*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Step | Variable | B | SE | β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
| 1 | Interaction with Supervisor | 2.06 | .92 | .18 | .03 | 5.04* | .03 | | |
| 2 | Interaction with Supervisor | 2.07 | .92 | .18 | .03 | 2.82 | .04 | .62 | .00 |
| | Procedural Knowledge | .97 | 1.23 | .06 | .43 | | | | |

*$p < .05$, **$p < .01$, ***$p < .0028$

Table 14.

*Motivation Mediator Regression Results with Subjective Sales Performance as Dependent Variable*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Step | Variable | B | SE | β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
| 1 | Control over Work Schedule | -.09 | .10 | -.09 | .38 | | | | |
| | Control over Work Process | -.04 | .09 | -.05 | .67 | 1.39 | .03 | | |
| | Feedback | .07 | .06 | .10 | .23 | | | | |
| 2 | Control over Work Schedule | -.07 | .10 | -.07 | .48 | | | | |
| | Control over Work Process | -.02 | .08 | -.02 | .82 | 4.50*** | .11 | 13.48*** | .08*** |
| | Feedback | .06 | .06 | .08 | .29 | | | | |
| | Internal Work Motivation | .35 | .10 | .29 | .00 | | | | |

*$p < .05$, **$p < .01$, ***$p < .0028$

Table 15.

*Motivation Mediator Regression Results with Objective Sales Performance as Dependent Variable*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Step | Variable | B | SE | β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
| 1 | Control over Work Schedule | -1.80 | 1.55 | -.12 | .25 | | | | |
| | Control over Work Process | -1.27 | 1.32 | -.10 | .34 | 2.16 | .04 | | |
| | Feedback | .34 | .89 | .03 | .70 | | | | |
| 2 | Control over Work Schedule | -1.68 | 1.55 | -.11 | .28 | | | | |
| | Control over Work Process | -1.17 | 1.32 | -.09 | .38 | | | | |
| | Feedback | .29 | .89 | .03 | .75 | 2.05 | .05 | 1.68 | .01 |
| | Internal Work Motivation | 1.96 | 1.51 | .11 | .20 | | | | |

Table 16.

*Linear Regression Coefficients for Remote Work Resources on Job Performance*

| DV | | Variable | Unstandardized Coefficient B | Unstandardized Coefficient SE | Standardized Coefficient β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|---|---|---|
| Subjective Job Performance | Step 1 | Remote Work Intensity | .04 | .02 | .19 | .02 | 5.56* | .04 | | |
| | Step 2 | Remote Work Intensity | .04 | .02 | .20 | .02 | 2.17* | .08 | 1.47 | .05 |
| | | Control over Work Schedule | -.09 | .10 | -.09 | .39 | | | | |
| | | Control over Work Process | -.01 | .09 | -.01 | .93 | | | | |
| | | Feedback | .03 | .06 | .04 | .64 | | | | |
| | | Access to Information | .07 | .08 | .07 | .39 | | | | |
| | | Interaction with Supervisor | .11 | .07 | .14 | .13 | | | | |
| Objective Job Performance | Step 1 | Remote Work Intensity | .73 | .24 | .24 | .00 | 9.35** | .06 | | |
| | Step 2 | Remote Work Intensity | .76 | .24 | .25 | .00 | 3.21** | .12 | 1.92 | .06 |
| | | Control over Work Schedule | -1.91 | 1.54 | -.13 | .22 | | | | |
| | | Control over Work Process | -.25 | 1.34 | -.02 | .85 | | | | |
| | | Feedback | -.03 | .94 | -.00 | .98 | | | | |
| | | Access to Information | -.69 | 1.12 | -.05 | .54 | | | | |
| | | Interaction with Supervisor | 1.54 | 1.04 | .14 | .14 | | | | |

*$p < .05$, **$p < .01$

Table 17.

*Linear Regression of Remote Work Resources on Work-Family Conflict*

| DV | | Variable | Unstandardized Coefficient B | Unstandardized Coefficient SE | Standardized Coefficient β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|---|---|---|
| WIF | Step 1 | Remote Work Intensity | -.01 | .02 | -.03 | .74 | | | | |
| | | Number of Children | -.01 | .07 | -.01 | .86 | .09 | .00 | | |
| | | Marital Status | .07 | .20 | .03 | .74 | | | | |
| | Step 2 | Remote Work Intensity | -.01 | .02 | -.04 | .62 | | | | |
| | | Number of Children | -.02 | .07 | -.03 | .73 | | | | |
| | | Marital Status | .06 | .19 | .02 | .77 | | | | |
| | | Control over Work Schedule | -.10 | .14 | -.08 | .43 | 2.60* | .11 | 4.48** | .11** |
| | | Control over Work Process | -.07 | .12 | -.06 | .59 | | | | |
| | | Access to Information | -.34 | .10 | -.29 | .00 | | | | |
| | | Interaction with Supervisor | -.14 | .09 | -.14 | .11 | | | | |
| FIW | Step 1 | Remote Work Intensity | -.02 | .02 | -.11 | .20 | | | | |
| | | Number of Children | -.02 | .06 | -.03 | .73 | .64 | .01 | | |
| | | Marital Status | -.04 | .16 | -.02 | .81 | | | | |
| | Step 2 | Remote Work Intensity | -.02 | .02 | -.11 | .15 | | | | |
| | | Number of Children | -.03 | .05 | -.05 | .55 | | | | |
| | | Marital Status | -.07 | .15 | -.04 | .65 | | | | |
| | | Control over Work Schedule | .15 | .11 | .14 | .18 | 4.58** | .19 | 7.45** | .17** |
| | | Control over Work Process | .12 | .09 | .13 | .22 | | | | |
| | | Access to Information | -.10 | .08 | -.11 | .18 | | | | |
| | | Interaction with Supervisor | -.23 | .07 | -.28 | .00 | | | | |

*$p < .05$, **$p < .01$

Table 18.

*Hierarchical Regression of Feedback and Interaction on WIF*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Step | Variable | B | SE | β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
| 1 | Interaction | .06 | .09 | .06 | .48 | 8.31** | .10 | | |
| | Feedback | -.33 | .08 | -.33 | .00 | | | | |
| 2 | Interaction | .06 | .09 | .06 | .49 | 5.51** | .10 | .02 | .00 |
| | Feedback | -.33 | .08 | -.33 | .00 | | | | |
| | Interaction x Feedback | .01 | .08 | .01 | .89 | | | | |

*$p < .05$, **$p < .01$

Table 19.

*Hierarchical Regression of Feedback and Interaction on FIW*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Step | Variable | B | SE | β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
| 1 | Interaction | -.25 | .07 | -.30 | .00 | 11.25** | .13 | | |
| | Feedback | -.10 | .07 | -.12 | .13 | | | | |
| 2 | Interaction | -.24 | .07 | -.30 | .00 | 7.53** | .13 | .21 | .00 |
| | Feedback | -.10 | .07 | -.13 | .13 | | | | |
| | Interaction x Feedback | -.03 | .07 | -.04 | .65 | | | | |

*$p < .05$, **$p < .01$

Table 20.

*Indirect effects on subjective job performance summary*

| | WIF | FIW | | |
|---|---|---|---|---|
| Independent Variable | Correlation | | Z-score | *p* |
| Control over Work Schedule | -.11 | .28** | -3.91 | .00 |
| Control over Work Process | -.13 | .28** | -4.12 | .00 |
| Access to Information | -.30** | -.01 | -2.92 | .00 |
| Interaction with Supervisor | -.06 | -.34** | 2.85 | .00 |

*$p < .05$, **$p < .01$

Table 21.

*Hierarchical Regression of Proactive Personality and Interaction on Objective Job Performance*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Step | Variable | B | SE | β | *p* | F | $R^2$ | ΔF | $\Delta R^2$ |
| 1 | Interaction with Supervisor | 2.01 | .91 | .18 | .03 | | | | |
| | Proactive Personality | 2.38 | 1.49 | .13 | .11 | 3.82* | .05 | | |
| 2 | Interaction with Supervisor | 2.14 | .91 | .19 | .02 | | | | |
| | Proactive Personality | 1.32 | 1.55 | .07 | .39 | | | | |
| | Interaction x Proactive Personality | -3.01 | 1.37 | -.18 | .03 | 4.24** | .08 | 4.86* | .03* |

*$p < .05$, **$p < .01$

Figure 8.

*Moderating Role of Proactive Personality*

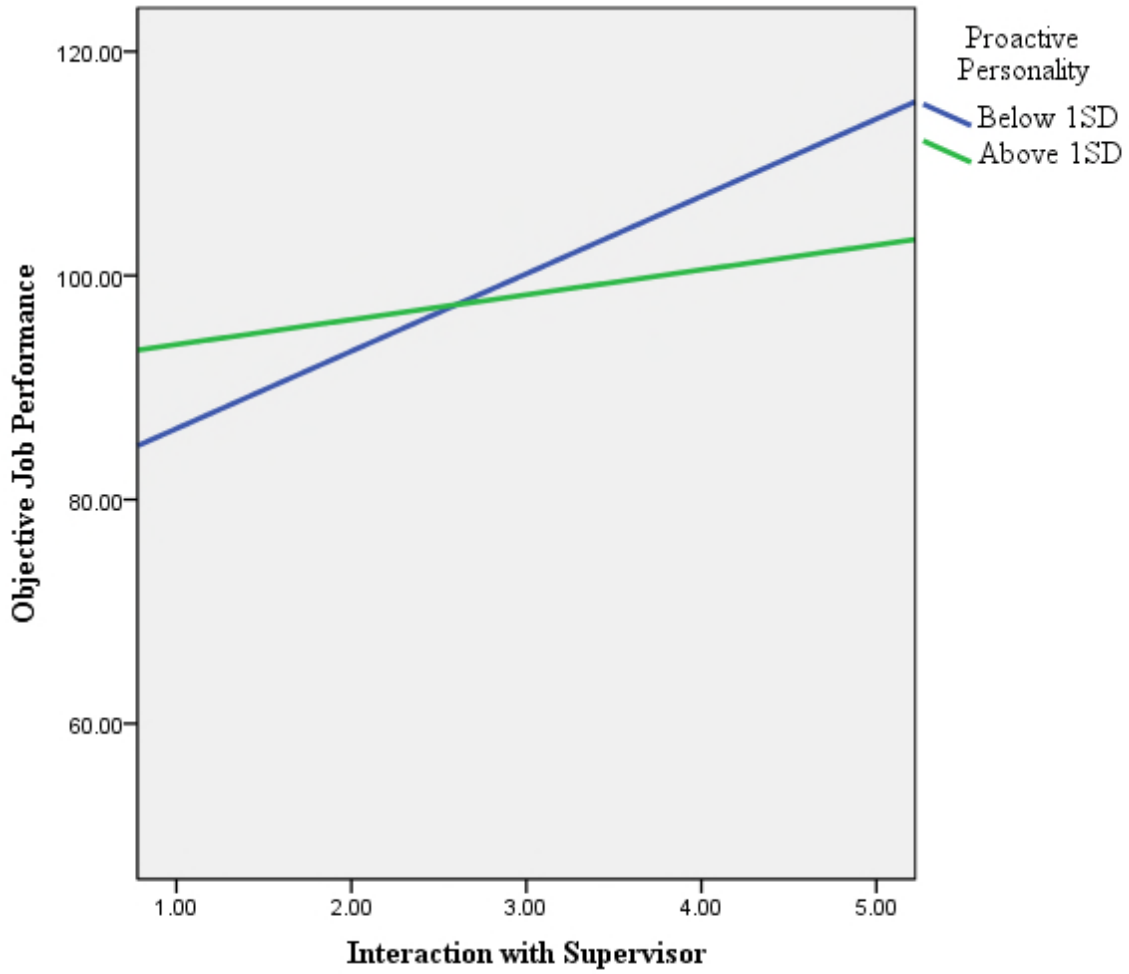


Table 22.

*Moderated Mediation for Interaction with Supervisor and Objective Job Performance*

| Moderating Variable | Mediating Variable | Index | SE | Bias corrected confidence intervals | |
|---|---|---|---|---|---|
| | | | | Lower | Upper |
| Proactive Personality | Declarative Knowledge | .05 | .21 | -.21 | .74 |
| | Procedural Knowledge | .00 | .14 | -.30 | .29 |
| | Motivation | .01 | .11 | -.09 | .42 |

Each bootstrap sample size = 5000.

Table 23.

*Linear Regression on Job Performance*

| DV | Variable | Unstandardized Coefficient | | Standardized Coefficient | | | |
|---|---|---|---|---|---|---|---|
| | | B | SE | β | *p* | F | $R^2$ |
| Subjective Job Performance | Motivation | .40 | .09 | .33 | .00 | 10.17** | .17** |
| | Declarative Knowledge | -.04 | .10 | -.04 | .70 | | |
| | Procedural Knowledge | .30 | .09 | .30 | .00 | | |
| Objective Job Performance | Motivation | 2.59 | 1.52 | .14 | .09 | 1.17 | .02 |
| | Declarative Knowledge | -.44 | 1.62 | -.03 | .79 | | |
| | Procedural Knowledge | 1.32 | 1.50 | .09 | .38 | | |

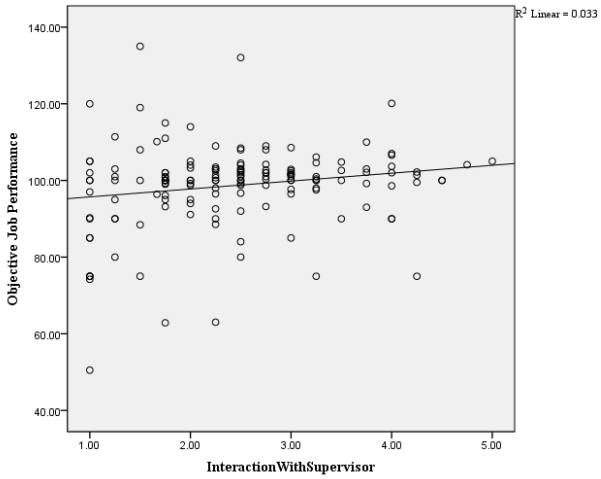
*$p < .05$, **$p < .01$

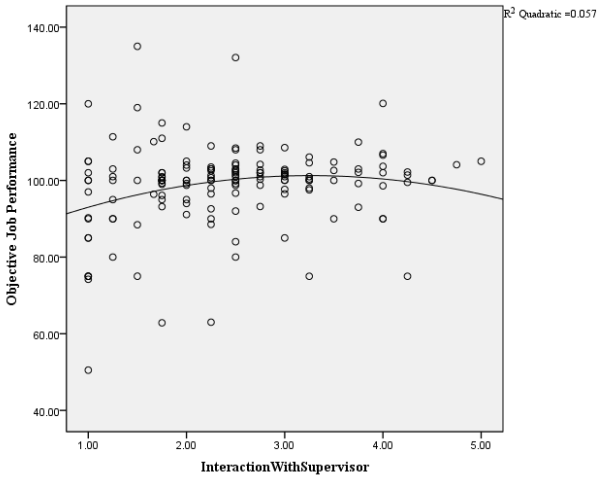
Table 24.
*Curve fit for relationship between interaction with supervisor and job performance*

| | | Unstandardized Coefficient | | Standardized Coefficient | | | |
|---|---|---|---|---|---|---|---|
| DV | Curve | B | SE | β | *p* | F | $R^2$ |
| Objective Job Performance | Linear | 2.06 | .92 | .18 | .03 | 5.04* | .03 |
| | Quadratic | -1.61 | .82 | -.76 | .05 | 4.50* | .06 |
| | Cubic | 1.39 | .78 | 2.99 | .08 | 4.11** | .08 |
| Subjective Job Performance | Linear | .13 | .06 | .18 | .03 | 4.72* | .03 |
| | Quadratic | -.09 | .05 | -.65 | .10 | 3.80* | .05 |
| | Cubic | .09 | .05 | 2.99 | .08 | 3.62* | .07 |

*$p < .05$, **$p < .01$

Figure 9.
*Curve fit for relationship between interaction and objective job performance*



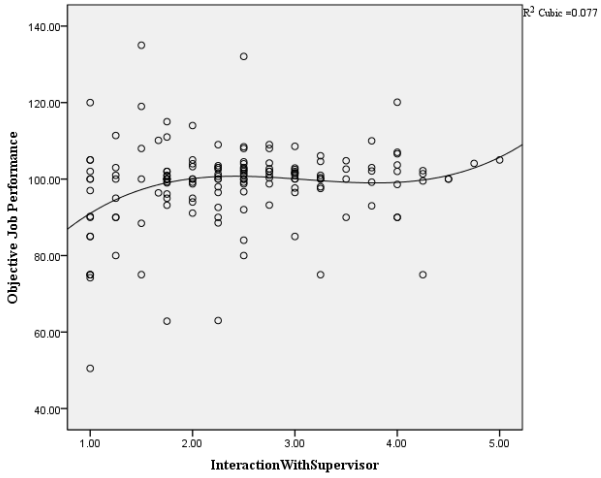
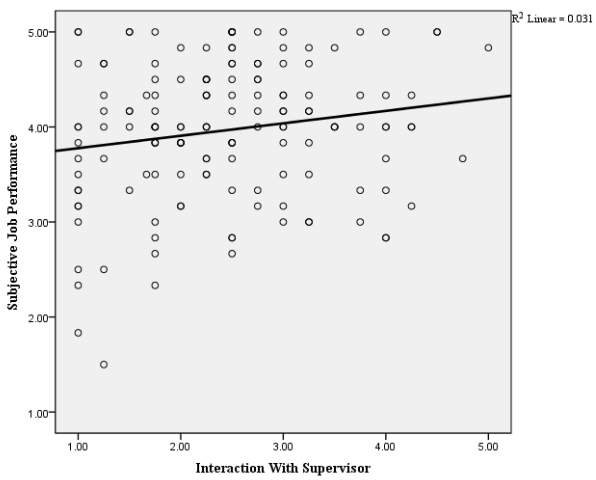
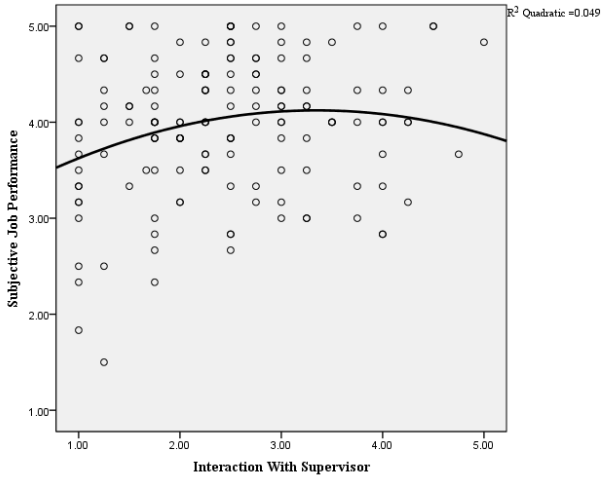
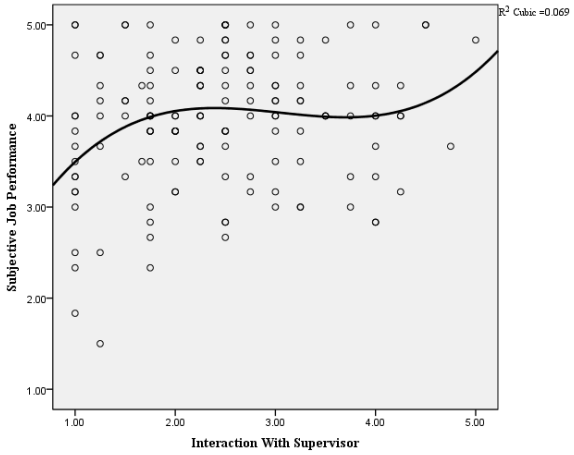



Figure 10.
*Curve fit for relationship between interaction and subjective job performance*



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# Appendices

**Appendix A.** Recruitment E-mail

Hello!

My name is Kaitlin Kiburz and I am completing my doctoral degree at the University of South Florida. My dissertation and final step in school involves the Sales Work Survey and you are being invited to participate because you are a sales professional. Through this study, I am investigating aspects of employee's jobs and associated outcomes (job performance and work-family conflict). I am hoping that you will be interested and willing to participate.

Your participation will involve anonymously completing several questions regarding your general experiences as an employee now (this will take less than 20 minutes) and responding to another short survey about a month later (the follow-up will take less than 10 minutes).

By completing the first survey, you will be entered into a **raffle for one of five $10 Amazon gift cards**. Salespeople who complete both the first and second surveys will be entered into a **raffle for one of ten $25 Amazon gift cards**. The survey will ask for your e-mail address, which will be entered into the raffle and used to send you an electronic gift card if you should win.

The survey can be accessed through the link below.
[Link to online survey available through Survey Monkey]

Please be open and honest when you complete the questions; there are no right or wrong answers. Your participation is completely voluntary and responses will remain confidential. The USF Institutional Research Board has approved this project (eIRB# Pro00021085).

I hope you will accept this invitation to be a part of this research. It would be a huge help to me in my studies and an important contribution to the social sciences. If you have any questions about this research study, please contact me at kkiburz@mail.usf.edu. You may also contact my faculty supervisor, Tammy D. Allen, PhD, at tallen@mail.usf.edu.

Please share this invitation and survey link with your colleagues if you think they may be interested in participating as well.

Thank you in advance for your time!

Kaitlin M. Kiburz
Doctoral Candidate at the University of South Florida

**Appendix B.** Follow-Up E-mail

Hello again!

Thank you for participating in part one of the Sales Work Survey.

I am writing you today to ask you complete the follow-up survey. Your participation will involve anonymously completing several questions regarding your performance and work-family conflict and should take no more than 10 minutes. As a reminder, salespeople who complete both the first and second surveys will be entered into a **raffle for one of ten $25 Amazon gift cards**.

The survey can be accessed through the link below.
[Link to online survey available through Survey Monkey]

Please be open and honest when you complete the questions; there are no right or wrong answers. Your participation is completely voluntary and responses will remain confidential. The USF Institutional Research Board has approved this project (eIRB# Pro00021085).

Thank you again for your participation in this study. It is a huge help to me in my studies and an important contribution to the social sciences. If you have any questions about this research study, please contact me at kkiburz@mail.usf.edu. You may also contact my faculty supervisor, Tammy D. Allen, PhD, at tallen@mail.usf.edu.

Thank you in advance for your time!

Kaitlin M. Kiburz
Doctoral Candidate at the University of South Florida

**Appendix C.** Informed Consent

INFORMED CONSENT TO PARTICIPATE IN RESEARCH
Information to Consider Before Taking Part in this Research Study

IRB Study # Pro00021085

Researchers at the University of South Florida (USF) study many topics. To do this, we need the help of people who agree to take part in a research study. This form tells you about this research study. We are asking you to take part in a research study that is called The Sales Work Survey. The person who is in charge of this research study is Kaitlin Kiburz. This person is called the Principal Investigator.

PURPOSE OF THE STUDY
You are being asked to participate because you are a sales professional. The purpose of this study is to learn more about your work experiences and how they relate to your performance in this role.

STUDY PROCEDURES
If you take part in this study, you will be asked to answer the following questions about your general experiences in your sales role. The survey should take no more than 20 minutes to complete. The study also includes a short follow-up questionnaire (you'll receive an invitation for this after next month). Please be open and honest when you complete the questions. There are no right or wrong answers to any of the questions and responses will remain confidential. Your survey will be linked to the follow-up survey through the unique ID code that you create at the end of this survey. This will also be used to enter you into the raffle. You will be invited to participate in the follow-up survey through the e-mail address that you provide. This will not be connected with your responses.

ALTERNATIVES/VOLUNTARY PARTICIPATION/WITHDRAWAL
You have the alternative to choose not to participate in this research study. Your decision to participate will not affect your job status. You should only take part in this study if you want to volunteer; you are free to participate in this research or withdraw at any time.

BENEFITS and RISKS
There are no direct benefits or known risks to participating in this study.

COMPENSATION
By completing this survey, you will be entered into a raffle for one of five $10 Amazon gift cards. Salespeople who complete both the first and second surveys will be entered into a raffle for one of ten $25 Amazon gift cards

PRIVACY & CONFIDENTIALITY
We must keep your study records as confidential as possible. However, certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are the principal

investigator, advising professor and The University of South Florida Institutional Review Board (IRB).

It is possible, although unlikely, that unauthorized individuals could gain access to your responses because you are responding online. Confidentiality will be maintained to the degree permitted by the technology used. No guarantees can be made regarding the interception of data sent via the Internet. However, your participation in this online survey involves risks similar to a person's everyday use of the Internet. If you complete and submit an anonymous survey and later request your data be withdrawn, this may or may not be possible as the researcher may be unable to extract anonymous data from the data base.

CONTACT INFORMATION
If you have any questions about your rights as a research participant, please contact the USF IRB at 813-974-5638. If you have questions regarding the research, please contact the Principal Investigator at kkiburz@mail.usf.edu. You may also contact the faculty supervisor, Tammy D. Allen, PhD, at tallen@mail.usf.edu.

We may publish what we learn from this study. If we do, we will not let anyone know your name. You can print a copy of this consent form for your records.

I freely give my consent to take part in this study. I understand that by proceeding with this survey that I am agreeing to take part in research and I am 18 years of age or older.

*(Submit consent and continue to survey here)*

**Appendix D.** Pilot Study Measures

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree |

Access to Information (Magazine, 2001)

1. It is easy to obtain the information needed to perform my job tasks.
2. I have reliable and timely access to information needed to perform my job tasks.
3. I have access to the information needed to do my job.
4. My access to information is relatively reliable (free of technical or other difficulties that impair or sever access).
5. The time delay between when I need information and the receipt of the information is reasonable.

Technology Acceptance Model – Ease of Use (Agarwal & Prasad, 1998)

1. I believe that my work technology is cumbersome to use
2. I believe that it is easy to get my work technology to do what I want it to do
3. Learning to operate my work technology is easy for me
4. Using my work technology requires a lot of mental effort
5. My interaction with my work technology is clear and understandable

Technology Acceptance Model - Relative Advantage (Agarwal & Prasad, 1998)

1. Using available job information enables me to process my work more quickly
2. Using available job information makes it easier for me to do my job
3. Using available job information enhances my effectiveness on the job
4. Using available job information gives me greater control over my work
5. Using available job information improves my productivity
6. Using available job information improves the quality of work that I do

**Appendix E.** Autonomy

Please answer the following questions about your job, using the scale below.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Very Little | A Little Bit | Moderate | Quite a Bit | Very Much |

Control over Work Schedule (Pierce & Newstrom, 1983):

1. How much are you left on your own to define your own work schedule?
2. To what extent are you able to act independently of your supervisor in defining your work schedule?
3. To what extent are you able to define your work schedule independently of others?
4. To what extent can you exercise independent thought, judgment and action in determining when you will work?
5. How much discretion can you exercise in defining your own work schedule?

Control over Work Process (Langfred, 2000; Golden, 2006):

6. How much authority do you have in determining tasks to be done?
7. How much control do you have over the pace of your work?
8. How much authority do you have in determining rules and procedures for your own work?

**Appendix F.** Feedback (Hackman & Oldham, 1974)

Please indicate your agreement with the following statements regarding your job, using the scale below. The term “supervisor” refers to your immediate/line manager.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree |

1. My supervisor almost never gives me any feedback about how well I am doing in my work. (R)
2. My supervisor often lets me know how well he/she thinks I am preforming the job.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Very little; my supervisor almost never lets me know how well I am doing | | Moderately; sometimes my supervisor gives me feedback, other times they may not | | Very much; my supervisor provides me with almost constant feedback about how well I am doing |

3. To what extent does your supervisor let you know how well you are doing on your job?

**Appendix G.** Access to information (Magazine, 2001)

Please indicate your agreement with the following statements regarding your job, using the scale below.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree |

1. It is easy to obtain the information needed to perform my job tasks.
2. I have reliable and timely access to information needed to perform my job tasks.
3. I have access to the information needed to do my job.
4. My access to information is reliable (free of technical or other difficulties that impair or sever access).
5. The time delay between when I need information and the receipt of the information is reasonable.

**Appendix H.** Interaction with one's supervisor (McAllister, 1995)

Please answer the following questions about your job, using the scale below. The term "supervisor" refers to your immediate/line manager. Please consider both face-to-face and electronic interactions with your supervisor.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Once or twice per month | Once or twice per week | Several times per week | At least once per day | Many times daily |

1. How frequently does your supervisor initiate work-related interaction with you?
2. How frequently do you initiate work-related interaction with your supervisor?
3. How frequently do you interact with your supervisor during work?
4. How frequently do you interact with your supervisor informally or socially at work?

**Appendix I.** Internal work motivation (Hackman & Oldham, 1974)

Please indicate how you personally feel about your job. Each of the statements below is something that a person might say about his or her job. You are to indicate your own personal feelings about your job by marking how much you agree with each of the following statement, using the scale below.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree |

1. My opinion of myself goes up when I do this job well.
2. I feel a great sense of personal satisfaction when I do this job well.
3. I feel bad and unhappy when I discover that I have performed poorly on this job.
4. My own feelings generally are not affected much one way or the other by how well I do on this job. (R)

**Appendix J.** Subjective job performance

The following questions relate to your performance over the past sales period. Please indicate your level of performance, using the scale below. The term "supervisor" refers to our immediate/line manager.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Poor | Fair | Moderate | Good | Excellent |

1. Identifying major accounts and selling to them
2. Generating a high level of dollar sales
3. Selling high profit-margin products
4. Exceeding sales targets
5. Quickly generating sales of new products
6. Assisting your supervisor meet his/her goals

**Appendix K.** Objective job performance

In consideration of your sales budget/goal for the past sales period, what percentage did you deliver? (Please round to two decimal places and do not include the percent symbol, for example 87.46 or 101.25)

**Appendix L.** Work-Family Conflict (Carlson et al., 2000)

Please indicate your agreement with the following statements about your job, using the scale below.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree |

1. My work keeps me from my family activities more than I would like.
2. The time I must devote to my job keeps me from participating equally in household responsibilities.
3. I have to miss family activities due to the amount of time I must spend on work responsibilities
4. The time I spend on family responsibilities often interferes with my work responsibilities
5. The time I spend with my family often causes me not to spend time in activities at work that could be helpful to my career.
6. I have to miss work activities due to the amount of time I must spend on family responsibilities.
7. When I get home from work I am often too frazzled to participate in family activities/responsibilities.
8. I am often so emotionally drained when I get home from work that it prevents me from contributing to my family.
9. Due to all the pressures at work, sometimes when I come home I am too stressed to do the things I enjoy.
10. Due to stress at home, I am often preoccupied with family matters at work.
11. Because I am often stressed from family responsibilities, I have a hard time concentrating on my work.
12. Tension and anxiety from my family life often weakens my ability to do my job.

**Appendix M.** Proactive Personality (Parker, 1998)

Please indicate your agreement with the following statements about your own personality, using the scale below.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree |

1. If I see something I don't like, I fix it.
2. No matter what the odds, if I believe in something, I will make it happen.
3. I love being a champion for my ideas, even against others' opposition.
4. I am always looking for better ways to do things.
5. If I believe in an idea, no obstacle will prevent me from making it happen
6. I excel at identifying opportunities.

**Appendix N.** Declarative & Procedural Knowledge (based on definition from McCloy, Campbell & Cudeck, 1994)

Please indicate your agreement with the following statements regarding your job, using the scale below.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree |

Declarative Knowledge

1. I know the facts, rules, procedures and principles necessary to perform my job.
2. I have the ability to state the facts, rules, procedures and principles that are necessary to perform well in my job.

Procedural Knowledge

3. I know how to perform all of the tasks and procedures necessary in my job.
4. I am able to successfully perform the tasks necessary to do well in my job.

**Appendix O.** Demographics

Your answers throughout this survey will not be used to identify you and will only be evaluated at the aggregate level.

1. What is your sex? Male/Female
2. What is your age? 18-80
3. What is your ethnicity?
4. What is your job title?
5. What type of sales are you involved with? Consumer Packaged Goods, Insurance, Pharmaceuticals, Automobile, Retail, Technology, Telecom, Services, Other (please indicate)
6. Who is your current employer?
7. How long have you been employed by current employer? (dropdown menu)
8. How long have you been in your current role (either with current employer or other company)? (dropdown menu)
9. What is your salary?
10. What percent of your work is done remotely (physically separate from a shared office with supervisor and coworkers)?
11. What is the highest level of education that you have completed? High school/GED, some college/2-year college degree/4-year college degree/Master's degree/Doctoral degree
12. How many children do you have living at home with you (0-10+)
13. What is your marital status? Single/Living with partner/Married
14. If you are married, is your spouse/partner currently employed? Yes/No

**Appendix P.** Contact Information

1. Please provide your e-mail address so that you can be included in the follow-up survey and entered to win an Amazon gift card for your participation (your e-mail address will not be connected with your responses).
2. Please create a unique ID code. This will be used to link this survey with the follow-up survey. Your unique ID code is your birthday followed by your initials. For example, my birthday is July 15 and my initials are KMK so my unique code would be 0715KMK.

**Appendix Q.** IRB Approval Letter

USF
UNIVERSITY OF
SOUTH FLORIDA

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-7091

April 6, 2015

Kaitlin Kiburz , B.A.
Psychology
4202 East Fowler Ave, PCD4118G,
Tampa , FL 33620

RE: **Expedited Approval for Initial Review**
IRB#: Pro00021085
Title: Sales Rep Work Survey

**Study Approval Period: 4/6/2015 to 4/6/2016**

Dear Ms. Kiburz :

On 4/6/2015 , the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents outlined below.

**Approved Item(s):**
**Protocol Document(s):**
Sales Rep Work Survey Protocol

***Please note no research activities can begin until LOS is uploaded and approved thru the Amendment process.***

**Consent/Assent Document(s)*:**
Consent for Dissertation - Revised 4.2.15.docx ** granted a waiver

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent document(s) are only valid during the approval period indicated at the top of the form(s). **Waivers are not stamped.

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2) involve only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45CFR46.110 and 21 CFR

56.110. The research proposed in this study is categorized under the following expedited review category:

(5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis).

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your study qualifies for a waiver of the requirements for the documentation of informed consent as outlined in the federal regulations at 45CFR46.117(c) which states that an IRB may waive the requirement for the investigator to obtain a signed consent form for some or all subjects if it finds either: (1) That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern; or (2) That the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval by an amendment.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon , Ph.D. , Vice Chairperson
USF Institutional Review Board