

**Smart-Device Use in a COVID-19 World: Exploring Work-Family Conflict,  
Turnover Intentions & Wellbeing**

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## **Abstract**

Life has become more complicated due to technological advancements, and mobile working (mWork) encapsulates how employees' smart-device use (e.g., smartphones, laptops, etc.) may influence working during family time at home, and the associated consequences of this use. Employee outcomes including job and wellbeing are likely to suffer as a result of participating in mWork. mWork is investigated in this dissertation using two empirical studies from 2020 on the New Zealand workforce. Study One (n=419) employees focuses on turnover intentions and work-family conflict, with work-family conflict predicted to mediate the impact on turnover. This study includes gender and parental status as moderators and ultimately, a moderated moderated mediation model is tested. Study Two (n=422) employees focuses on a range of wellbeing outcomes (job anxiety, job depression, and insomnia). Again, work-family conflict is included and predicted to mediate the impact of mWork on wellbeing outcomes. This study includes age as a moderator and ultimately, a mediation model is tested. Overall, mWork diminishes wellbeing and results in higher turnover intentions, typically through blurring the distinction between work and life (via higher work-family and family-work conflict). This dissertation adds to our understanding of mWork and the potential perils of technology around work and life.

*Keywords: mobile work; smartphone use; work-family conflict; family-work conflict; wellbeing; turnover intention; moderators; moderated mediation.*

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### **Attestation of Authorship**

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning

**Signed**

Simon Wilkinson

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Data was obtained by Professor Jarrod Haar (PhD) through two survey panels, respondents were asked to join if they met the qualifications in CINT's database. The data of manuscript one was collected in May 2020 with 419 random New Zealand Participants. The data for manuscript two was collected in December 2020 with 422 random New Zealand Participants. Finally, the research for this dissertation was granted the Ethics Approval number 18/327 on the 3rd of September 2018 by Auckland University of Technology Ethics Committee (AUTEK).

### Contributions to co-authored manuscripts

This dissertation consists of two papers that my primary supervisor and I co-authored. My primary supervisor (Jarrod Haar) supervised me, guided study design, software use, confirmed the data analysis and helped with revision editing.

Manuscript 1: <i>Smart-Device Use in a COVID-19 World: Exploring Work-Family Conflict and Turnover Intentions.</i> This manuscript has been submitted for publication in the <i>Asia Pacific Journal of Human Resources.</i>	Wilkinson S. (90%) Haar J. (10%)
Manuscript 2: A Moderated Mediation Model of Smart-Device Use: Work-Family Conflict and Wellbeing by Age. This manuscript has been submitted for publication in the <i>Evidence-Based Human Resource Management.</i>	Wilkinson S. (90%) Haar J. (10%)

Professor Jarrod Haar

**Primary supervisor**

## Chapter One: Introduction

The COVID-19 pandemic has had significant global impacts and the ripple effects of this can be felt in all facets of life, particularly work and the ability to balance work and family/ life roles. As a result, the pandemic has fundamentally shifted how employees participate in work. The contagious and unpredictable nature of the COVID-19 pandemic has forced remote and flexible working at an unprecedented rate and both employers and employees have discovered that regardless of their present location, they could access their work duties from any place and at any time and this is consistent with the research on working from home (Kossek & Lautsch, 2012). Indeed, in the New Zealand context, Statistics New Zealand (2020) reported that 42 percent of employed people were working-from-home due to the COVID-19 pandemic and associated lockdowns. This represents a 15-times increase because Statistics New Zealand (2019) reported that only 2.8 percent of New Zealand employees were mainly working-from-home before the pandemic. This suggests working-from-home has become much more normal.

Naturally, this movement to widespread digital working and the subsequent facilitation of homes into workspaces for a large number of the New Zealand workforce means the boundary between work and personal life has become blurred. One of the factors contributing to this blurring effect is the increased mobile work and use of digital technology (Cijan et al., 2019; Zhou et al., 2021). Mobile working (mWork) encapsulates how workers might utilise smart devices (e.g., smartphones, laptops, etc.) to assist work during family time at home, as well as the consequences of this usage. The literature suggests that participating in mWork is likely to have detrimental effects on employees, including their wellbeing and work and family roles (Ferguson et al., 2016; Olson-Buchanan & Boswell, 2007). However, such relationships are untested in the new COVID-19 pandemic context. This dissertation asks the following Research Questions:

1. What effect has the influx and growth of working from home done to mWork use?
2. If mWork use has increased, it is still detrimental?
3. Are there any benefits of mWork within a COVID-19 context?
4. Are there demographic factors that change the extent of influence? For example, is mWork significantly different by gender, parental status, or age?

This dissertation will answer these Research Questions with two empirical papers based on New Zealand employee experiences. The first paper examines the impact of mWork on job turnover intentions and includes work-family conflict, with the expectation that work-family conflict would act as a mediator of the effect of mWork on turnover intentions. With the current focus on The Great Resignation (Cook, 2021), access to the foreign labour market is limited in New Zealand within the framework of COVID-19. Indeed, more than 40 percent of the world's workforce is contemplating quitting their current employment this year (Microsoft, 2021). The talent environment has fundamentally transformed, and some suggest flexible employment is here to stay (The Economist, 2020). For others, remote work has opened up new career prospects (The Economist, 2020). However, these changes might potentially cause detrimental effects. According to Macik-Frey et al. (2007), the use of smart devices outside of conventional work hours may contribute to the eroding of the sense of a separate workday. Employers must accept that there may be a scarcity of new personnel – particularly of high-quality people to attract. Beyond the effects of mWork on turnover intentions through work-family conflict, study one also includes gender and parental status as moderators (individually and in combination). These are then all combined to test moderated moderated mediation effects via gender and parental status. Thus, additional insights are provided by testing dual-moderation effects.

The second paper extends the focus away from work outcomes like turnover intentions in study one and addresses employee wellbeing, again including work-family

conflict as a mediator. Significantly, this paper also extends the relationships explored by including age as a moderator, because there is evidence that age differences exist amongst technology users, for example Debreczeni and Bailey (2021) found significant correlations between age and happiness among younger workers. Further, the model is then extended to test a moderated mediation model, with age as a boundary condition. Hence, this allows a more nuanced understanding of the influence of mWork on wellbeing outcomes. This might be especially prevalent in the current COVID-19 context. Despite the potential negative impact the current pandemic and mWork is having on the wellbeing of the New Zealand workforce, paper two makes an important contribution to determine whether any detrimental effects of mWork are universal or differ by age. For example, are older workers less adept at confronting this changing and increasingly digital workspace, which is explored in the wellbeing focus of paper two regarding job anxiety, job depression, and insomnia in the research.

In summary, retaining existing talent and making employee wellbeing a priority is vital to maintaining the New Zealand workforce, economy, and society at large. Research is already showing us that the COVID-19 pandemic is having significant detrimental effects on mental health and one of the main stressors is work (e.g., Shevlin et al., 2020). This is largely due to its introduction to the home as a result of remote working. Not only are the lines of work and personal life being blurred due to the physical lack of separation from office to home, but the requirements of family life are also interfering with work-life balance (Haar et al., 2012). As might be expected, the effects of mWork have been found to have adverse effects on employee wellbeing (Arlinghaus & Nachreiner, 2014). However, despite the literature suggesting negative impacts from mWork, these effects remain largely untested in New Zealand, and especially within the COVID-19 context. This dissertation seeks to examine these effects more closely. To answer the Research Questions above, Table 1.1 below outlines the two studies conducted.

Table 1.1. Dissertation Study Details

<b>Study</b>	<b>Sample Details</b>	<b>Variables</b>	<b>Relationships Tested</b>
Study One	N=419  May 2020.  Random sample of New Zealand employees	<i>Independent variable:</i> mWork <i>Mediators:</i> Work-family conflict Family-work conflict <i>Outcome:</i> Turnover Intentions <i>Moderators:</i> Gender Parental Status	Moderated moderated mediation model.  mWork predicts turnover intentions, with work-family and family-work conflict as mediators. Gender and parental status included as moderators and also moderators of the indirect effect of mWork on turnover intentions via work-family and family-work conflict.
Study Two	N=422  December 2020.  Random sample of New Zealand employees	<i>Independent variable:</i> mWork <i>Mediators:</i> Work-family conflict Family-work conflict <i>Outcomes:</i> Job Anxiety Job Depression Insomnia <i>Moderator:</i> Age	Moderated moderated mediation model.  mWork predicts wellbeing (job anxiety, job depression and insomnia), with work-family and family-work conflict as mediators. Age included as a moderator and also a moderator of the indirect effect of mWork on wellbeing via work-family and family-work conflict.

The present dissertation follows pathway two (by publication) and includes study one and study two, which have been submitted for journal review (details below).

## **Structure of the Dissertation**

This dissertation contains four chapters.

Chapter One introduces the literature and highlights the research questions aimed at mobile working (mWork) and the detrimental effects, which may have been exacerbated due to COVID-19. It considers the enormous worldwide consequences of the pandemic, with repercussions felt in many aspects of life, notably work and the capacity to combine work and family/life duties. The two studies (papers) provided are briefly outlined.

Chapter Two is the first empirical paper. It investigates the influence of mWork on turnover intentions and incorporates work-family conflict, with the idea that work-family conflict will operate as a mediator of mWork's effect on turnover intentions with the present emphasis on the great resignation and access to the overseas labour market in New Zealand being restricted under COVID-19. Due to the potential pressures of mWork at home, gender and parental status are both included as moderators, and ultimately, a moderated moderated mediation model is explored.

Chapter Three is the second empirical paper. Here, the focus shifts away from work outcomes (e.g., turnover intentions in chapter two), and instead emphasises employee wellbeing (anxiety, depression, insomnia), with work-family conflict serving as a mediator once more. This paper broadens the scope of the interactions investigated by including age as a moderator, as there is evidence of age inequalities among technology users. This time a moderated mediation model is examined.

Chapter Four ends the dissertation with a conclusion, which summarises the research findings and analysis of manuscripts one and two. Overall, the dissertation highlights that mWork likely plays a critical role in work and wellbeing outcomes for employees in a Covid-19 context. The implications for employees and employers are explored.

**Smart-Device Use in a COVID-19 World: Exploring Work-Family Conflict and Turnover Intentions**

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Technology has made life more complex, and mobile working (mWork) captures the way employees smart-device use (e.g., smartphones, laptops etc.) can facilitate working during family time at home, and what the effects of this use are. Engaging in mWork is expected to be detrimental to employee outcomes. In this study, mWork is explored towards turnover intentions and work-family conflict, with conflict expected to mediate the influence on turnover. Furthermore, given the potential dynamics of gender and parental status, these are both included as moderators, and ultimately a moderated mediation model is tested. Using data from 419 New Zealand employees just after New Zealand's lockdown finished in May 2020, there is overall strong support found for the direct and mediation hypotheses. Overall, mWork influences turnover intentions by blurring the line between work and personal life (leading to higher work-family and family-work conflict), and these also drive turnover intentions.

*Keywords: mobile work; smartphone use; work-family conflict; family-work conflict; turnover intention.*

## **Introduction**

In the year 2020, the COVID-19 pandemic changed the world including work. Workers were frequently laid off or instructed to work from home. Instantly, meetings were held remotely, with no other employees physically present. Employees found they could access their work tasks from any location and at any time, regardless of their current location (Kossek & Lautsch, 2012). These changes have been hailed, as well as criticised, for blurring the line between work and personal life. One of the driving issues for this blurring effect is the growing usage of digitalization (Cijan et al., 2019; Zhou et al., 2021). Increased flexibility enabled by using smart-devices (e.g., smartphones, laptops, and tablets) offers a variety of significant benefits, one of which is the capacity to combine work and personal responsibilities more effectively (Allen et al., 2013). While it has been demonstrated that smart-device use blurs the lines between work and family life (Jarvenpaa & Lang, 2005), further research is needed to establish whether or not it increases the likelihood of an imbalance between work and non-work roles (Samad et al., 2015) in the COVID-19 era. Consequently, the present study focuses on mWork which refers to the frequency of using smart-devices to conduct work during family time (Ferguson et al., 2016).

The present study focuses on turnover intentions due to recent attention given to The Great Resignation (Cook, 2021), including in New Zealand (Coltman, 2021). Retaining employees, especially talented and skilled employees, is a core issue for Human Resource Management (see Su et al., 2020). Aguinis et al. (2012) terms this *the war for talent*. Indeed, there is over a century of academic research on turnover (Hom et al., 2017), with associated cost and performance being key reasons. Ultimately, there are high costs to an organization when employee turnover, especially if they are highly skilled (e.g., Tillman et al., 2018). The average cost per skilled employee is estimated at around 100 percent of salary (Cascio & Boudreau, 2008). In addition, employee turnover costs might be much higher if an organization loses a star performer (see Aguinis & O'Boyle Jr, 2014). At the firm level, there is meta-analytic evidence that high employee

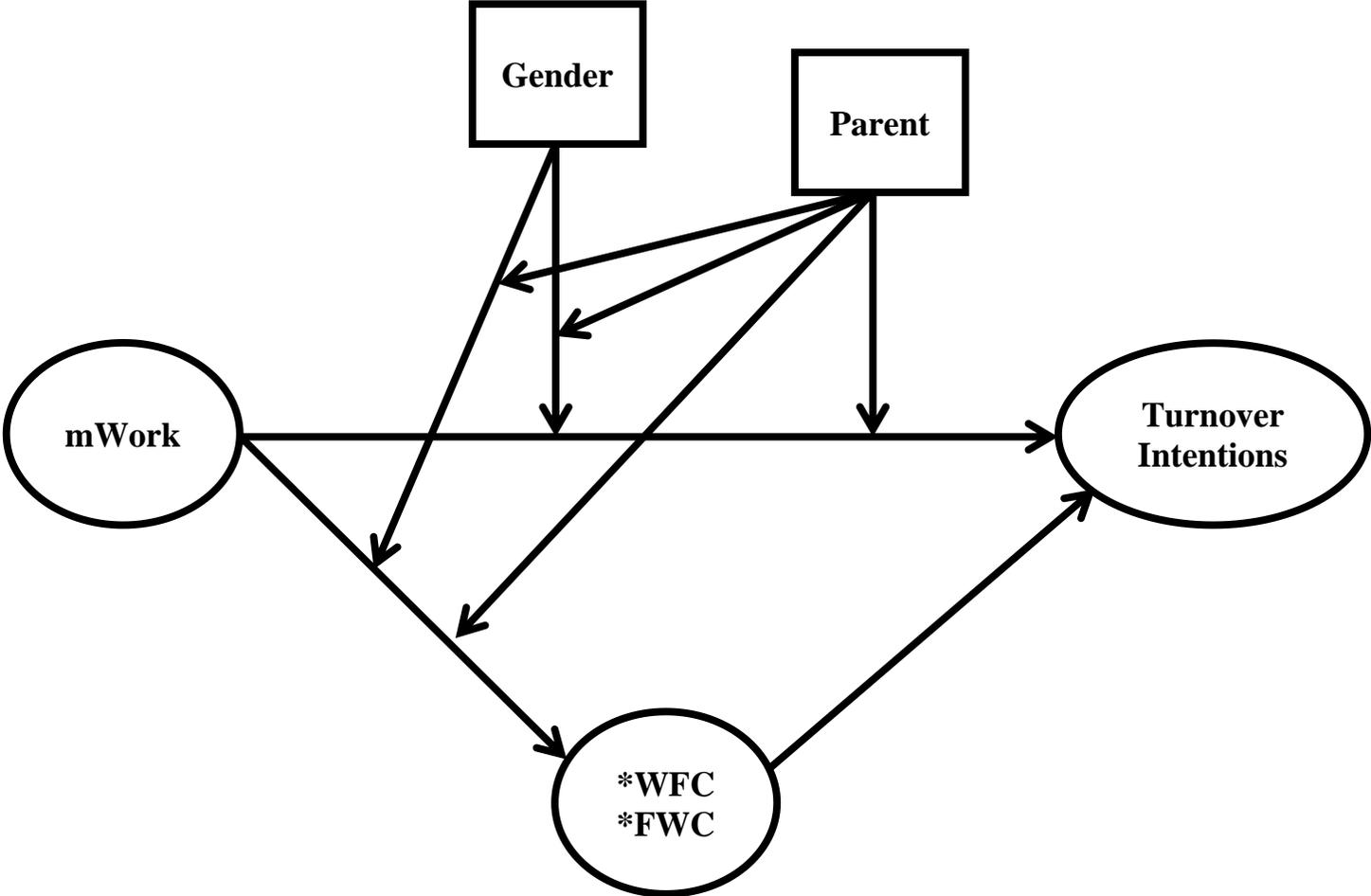
turnover is negatively related to organizational performance (Park & Shaw, 2013). Overall, this makes the study focus on turnover intentions a vital factor to explore, especially in the great resignation context.

Beyond mWork and turnover intentions, the present study explores the work and family interface. Managing work and life roles has become more challenging as employees are expected to be accessible for work outside of regular business hours, resulting in more fluid work-family boundaries (Galinsky et al., 2001). According to Higgins and Duxbury (2005), technology development is a primary source of work-family conflict. COVID-19 has likely exacerbated this issue, with this reflecting conflict between work and life roles occurring due to opposing expectations and difficulties in managing both spheres (Haar, 2013). Unger et al. (2014) study on time allocation between work and home domains emphasizes the critical nature of dedicating uninterrupted evening hours to one's private life. After decades of study on work-family conflict, researchers have concluded that most employees struggle to balance work and family duties; however, not everyone's experiences are not uniform (Higgins & Duxbury, 2005).

Overall, the present study makes three contributions. First, it explores the role of mWork towards turnover intentions, given the value and importance of turnover and the context of The Great Resignation and the COVID-19 pandemic. Second, the conflict between work and family roles is included to contextualize how mWork can shape and interfere with both work and family domains. Finally, given the potential role of gender and parental status on these relationships, both are included as moderators. A moderated moderated mediation model is tested (see Haar et al., 2019), to potentially provide unique insights. The study model is shown below in Figure 2.1.

**Figure 2.1.**

*Study Model*



## **mWork**

As smart-devices become more widespread inside and outside organizations, workers are able to stay connected to their jobs both during typical business hours but also outside these time boundaries. Boswell and Olson-Buchanan (2007) note that smart-devices and associated technology (e.g., Internet) allow employees to perform job-related tasks outside of the traditional office environment and/or work hours. Thus, smart-devices enable employees to engage and communicate with one another and stay on top of work-related tasks throughout the day, potentially enhancing productivity. However, smart-devices have some drawbacks. Employees who work outside office hours may experience negative consequences such as feeling fatigued or experience increased work-family conflict (Derks & Bakker 2014). Further, the connectivity demands may impose additional burdens on employees' time and attention. As a result, smart-devices may act as an 'electronic leash', tethering employees to their employment and reducing employee engagement (Olson-Buchanan & Boswell, 2006; Boswell & Olson-Buchanan, 2007).

Due to these potential issues, businesses need to be concerned about their employees' smart-device use (Day et al., 2010). According to Macik-Frey et al. (2007), smart-device use outside typical work time may contribute to the erosion of the distinct workday concept. As individuals work more during non-work hours, the precise boundary between work and non-work hours may move and blur. As a result, the line between work and personal life may become increasingly blurred and less apparent. Further, increased reliance on and use of smart-devices means employees work-life segmentation may weaken, potentially resulting in a plethora of poor health and wellbeing consequences for employees who use them. It is unknown whether COVID-19 has exacerbated these issues, making mWork an important condition to explore.

The present study extends prior research on the impact of smart-devices on employee outcomes (Boswell & Olson-Buchanan, 2007) by examining the relationship between mWork and turnover intentions, but also considering the role of work-family

conflict. This exploration is important because the arguments for and against smart-devices are mixed. For example, Golden and Geisler (2007) emphasized the importance of smart-devices as a tool for employee control. These and other study streams (Nansen et al., 2010) reveal an intriguing interplay between technology, perceived employee control, and employee wellbeing, as well as the relationship between these processes and work-life balance, work-life demands, and employee responsibilities. Similarly, Matusik and Mickel (2011) examined how workers perceive and make sense of their smart-device use, highlighting the complex web of demands and expectations that employees must navigate to balance and manage work and personal life commitments. By and large, research on this subject illustrates the vital need to understand the complex interplay between humans and technology.

### **Work-Family Conflict**

Greenhaus and Beutell (1985) defined work-family conflict as “a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (p. 77). There is a natural incompatibility between work and family domains, meaning that roles occurring in one that interferes with the other lead to conflict (Haar & Martin, 2021). For example, COR theory has a strong focus on time, including “time for adequate sleep...free time...time for work...time for loved ones” (Hobfoll, 2001, p. 342). In the context of mWork, using smart devices for work does provide more work time but also erodes free time and family time and ultimately represents a conflict between work and family roles. This means mWork is likely to positively influence work-family conflict. Greenhaus and Beutell (1985) also argued that conflict is bi-directional, with conflict occurring in the work domain and entering the family domain, called work-family conflict (WFC). Conversely, conflict from the family domain entering the work domain is called family-work conflict (FWC). Research shows both dimensions can be important (e.g., Haar et al., 2018), including towards turnover intentions (see Haar et al., 2012).

According to Greenhaus and Beutell (1985), there are also three dimensions of work-family conflict: time-based, strain-based, and behavior-based. Time-based conflict reflects that time spent on one activity (checking work emails at home) leaves less time for family engagement. Strain-based conflict reflects the emotional strain from an activity in one domain impeding emotions in the other domain. A FWC example is worrying about a sick child while at work. Finally, behavior-based conflict relates to bringing behaviors from one domain into the other. For example, a parent trying to ‘manage’ their children as they do as a boss at work. Today, employment for many people includes connectivity and blurring the line between work and non-work (Haar et al., 2012). Studies have shown that mWork has a detrimental effect on work-family conflict (Ferguson et al., 2016). Further, Wang et al. (2006) discovered that mWork is distinct from traditional work activities conducted via mobile devices since it happens during personal time. mWork reflects the act of checking work-related emails and doing work while away from the workplace. Increased frequency results in an increased disturbance of family time and the risk of adverse effects (Ferguson et al., 2016). The next section develops specific hypotheses for testing.

### **Conservation of Resources Theory**

The present study uses the conservation of resources theory (Hobfoll, 2001) to understand how smart-devices can lead to detrimental consequences, including elevated work-family conflict and higher turnover intentions. Hobfoll et al. (2018) stated “COR theory is a motivational theory that explains much of human behavior based on the evolutionary need to acquire and conserve resources for survival, which is central to human behavioral genetics” (p. 104). COR theory is widely used to understand why some employees experience stressors differently. Fundamentally, those with more or less resources react differently. For example, mWork reflects the use of technology and smart-devices to work while in family time. Under COR theory, this represents a drain on resources. Hobfoll (2001) argues that resources include quality time for work and family, and thus excessive mWork takes these resources away, leaving the employee more drained. Employees with

fewer resources are ultimately driven to leave their job because they are in a critical state of resource loss.

Hobfoll et al. (2018) details the diversity of resources stating, “resources include object resources (e.g., car, tools for work), condition resources (e.g., employment, tenure, seniority), personal resources (e.g., key skills and personal traits such as self-efficacy and optimism), and energy resources (e.g., credit, knowledge, money)” (p. 105). While smart devices might enable more work, this does drain employees of a vital resource – time – and the linkages with family are especially critical. Ghafoor and Haar (2021) offer the *resource reservoir* as a metaphor for understanding how employees with an abundance of resources are better able to cope with work. In the context of the present studies focus, this would reflect being able to manage work and their retention desires regarding their job. That is, they have low turnover intentions because they have more resources to draw on to make the job appealing. Under COR theory, mWork represents a loss of resources and this flows through to work-family conflict, potentially representing a resource loss cycle. Hobfoll et al. (2018) states “because resource loss is more powerful than resource gain, and because stress occurs when resources are lost, at each iteration of the stress spiral individuals and organizations have fewer resources to offset resource loss, and these loss spirals gain in momentum as well as magnitude” (p. 106).

### **Hypotheses**

Contemporary societies are fraught with difficulties juggling work and family obligations (Kossek & Lambert, 2005; Haar et al., 2012). For example, maintaining a smart-device during non-work hours (high mWork), continuously glancing at it while home on the couch, carrying it around with you in your house at all times, and responding to emails in the evening may influence work-family conflict (Middleton & Cukier, 2006). When it comes to smart-device use, there are a variety of ways mWork can impact work-family conflict. When employees work primarily from their homes in the evenings, time demands (Greenhaus & Beutell, 1985) may be more subtle than long hours at the office. The problem is that smart-devices cannot be spent on care activities, household duties, or

interpersonal relationships with family members. This covert way of extending work hours is particularly intriguing since responding to emails outside of typical office hours appears to be harmless, so that the consequences may go unnoticed.

The smartphone permits reading and responding to work-related messages in the evening, which may raise the risk of WFC. Additionally, the sheer presence of a smartphone in a non-work environment may draw attention to work during previously quiet (family-only) moments. Additionally, it is possible to take work-related phone conversations while the children play in the living room. Under COR theory, the use of smart-devices should take away from quality time resting and with family (Hobfoll, 2001), leading to greater WFC. Indeed, empirical evidence links mWork with WFC (see Chesley, 2005; Boswell & Olson-Buchanan, 2007; Derks & Bakker, 2014). Using a daily-diary study, Derks et al. (2015) found mWork was positively related to WFC. Boswell and Olson-Buchanan (2007) found a positive link between workers' use of work-related technology outside of regular business hours and their WFC, although this was a more global work-life conflict construct. Fenner and Renn (2010), using an approach very similar to mWork, found positive links to WFC.

Despite the theoretical separation of WFC and FWC (Greenhaus & Beutell, 1985), mWork studies typically focus on either WFC alone or a global construct combining both dimensions. For example, using a similar mWork construct, Harris et al. (2011) found positive links to WFC, which included a global construct of both WFC and FWC. While theoretically, WFC and FWC are distinct dimensions, this study found positive links to a global construct capturing both WFC and FWC. However, this combination of WFC and FWC runs the risk of blurring the effects and minimizing the influence of one dimension over another (see Haar et al., 2012). The present study follows the logic of Haar et al. (2012) and explores both WFC and FWC as separate factors. Under COR theory, it is expected that mWork would intrude into family time and lead to WFC and the empirical evidence above supports that. However, the influence of mWork on FWC is likely to be less straightforward. The limited evidence shows that mWork does positively influence

FWC (e.g., Harris et al., 2011; Derks et al., 2015). Here, it is suggested at high levels of mWork, family time is not only interrupted but so too are family dynamics and harmony. Such a disruption might lead family/partners/friends to express dismay at the mWork behaviors, leading employees to experience FWC. Here, mWork encourages FWC as it facilitates and enhances the blurring of boundaries and encourages family to push back against the employee, leading to family issues interfering with work. For example, a partner saying “oh, there goes your phone again!” This might create frustration and a reduction in quality work time, a resource under COR theory (Hobfoll, 2001). This leads to the first Hypotheses.

*Hypothesis 1: mWork will be positively related to (a) WFC and (b) FWC.*

One area largely missing from the mWork literature is the focus on turnover intentions. Often studies explore WFC as an outcome alone (e.g., Harris et al., 2011; Derks et al., 2015). Derks et al. (2014) included mWork as a direct predictor of WFC, but then also extended this towards job burnout. Similarly, Ferguson et al. (2016) explored mWork towards WFC and then included it as a mediator towards turnover intentions. Indeed, that study noted that it was the first mWork study of turnover intentions. Interestingly, that study used WFC only and did not include FWC, making the present study a useful addition to the literature. The present context around COVID-19 also provides a timely re-examination. Ferguson et al. (2016) also used COR theory to understand mWork, stating work issues can trigger turnover behaviors because “job incumbents will invest resources in exploring other job alternatives in order to prevent further resource loss that may occur should they remain with their organization” (pp. 522-3). Hence, in the context of mWork, the loss of resources triggers employees to seek to protect their resources (Hobfoll et al., 2018), encouraging employees to seek an alternative job. The logic here is that the new job will create fewer intrusions into family life via smart-devices (i.e., have low mWork). This leads to the next Hypothesis:

*Hypothesis 2: mWork will be positively related to turnover intentions.*

Cohen (1997) claimed that work-family conflict might cause employees to leave their jobs since the responsibilities and stress acquired at work result in unhappiness at work and home in the family sphere. Employees feel office emotions at home since it is tough to zone out and modify their actions and thoughts due to the short time difference between the two locations. Additionally, workers frequently struggle to forget about the task at hand at the 'workplace' when they get home, such as a pressings report due soon. Other research has examined work-family conflict and the intent to leave in response to familial duties, such as those connected with childcare roles (Cordero et al. 2009). Employees may be needed to make trade-offs and adjustments to their schedules to balance work and family life (Aluko, 2009) and can shape turnover intentions too (Spector et al. 2004). In their meta-analysis, Amstad et al. (2011) found WFC was positively related to turnover intentions (corrected mean correlation .21), while FWC was also significant (correlations mean 0.17). This analysis also found that WFC is explored more often towards turnover intentions than FWC, which also aligns with the mWork literature. Including both WFC and FWC is theoretically aligned and empirically supported. Under COR theory, high work-family conflict reflects a state of resource loss – potentially from both the work domain (WFC) and the family domain (FWC). This is expected to be positively related to turnover intentions. Furthermore, given the evidence that mWork is expected to shape work-family conflict as well as turnover intentions, the potential mediating role of work-family conflict is also explored. Indeed, Ferguson et al. (2016) found WFC played a key role between mWork and turnover intentions. Thus, both WFC and FWC are included which aligns with Haar et al. (2012). This suggests that resource losses under COR theory from mWork leads to greater WFC and FWC, where further resources are lost. Ultimately, then, both WFC/FWC can become drivers of turnover intentions. This leads to the next hypotheses.

*Hypotheses 3: (a) WFC and (b) FWC will be positively related to turnover intentions.*

*Hypotheses 4: (a) WFC and (b) FWC will mediate the influence of mWork on turnover intentions.*

Finally, the moderating roles of gender and parental status are included. Gender is a core aspect of the work-family conflict literature (Shockley et al., 2017), although the effects are mixed. In their meta-analysis of over 250,000 employees (n=350 studies), Shockley et al. (2017) found more evidence of similarity by gender than difference. However, they noted this does change amongst certain conditions including parental status. In their meta-analysis, Fellows et al. (2016) did find parental status played an important role in the effects of WFC. Further, in their meta-analysis around antecedents of WFC/FWC, Michel et al. (2011) suggested gender and parental status would play moderating roles and found potential support for their effects across a wide range of antecedents. The present study similarly uses role theory (see Michel et al., 2011) to understand how the resource drain from mWork (under COR theory) can be complimentary for examining gender and parental status as moderators.

Michel et al. (2011) states that “role theory implies that (1) work and family roles result from the expectations of others” (p. 695), and “role theory suggests that demographic differences will result in incongruent role expectations, role pressures, and subsequent role performance” (p. 700). Thus, the role of being a working mother is expected to produce greater detrimental effects from mWork than a father. It is expected that the influence of mWork will be especially detrimental on outcomes for females and parents, and especially in combination (i.e., mothers). This encourages testing both two-way and three-way effects (mWork by gender and parental status). Further, given the hypotheses include a mediation effect between mWork and turnover intentions (via work-family conflict), a moderated moderated mediation model is ultimately tested (see Hayes, 2018). Such models are rare, although they can provide unique insights (see Haar et al., 2019). Ultimately, this test whether the indirect effect of mWork on turnover intentions through WFC or FWC differs by gender and parental status in combination. This leads to the final set of hypotheses.

*Hypotheses 5: Gender will moderate the effect of mWork on (a) WFC, (b) FWC, and turnover intentions, being more detrimental for females.*

*Hypotheses 6: Parental status will moderate the effect of mWork on (a) WFC, (b) FWC, and turnover intentions, being more detrimental for parents.*

*Hypotheses 7: Gender and parental status will moderate the effect of mWork on (a) WFC, (b) FWC, and (c) turnover intentions, being more detrimental for females and parents.*

*Hypotheses 8: The indirect effect of mWork on turnover intentions via (a) WFC or (b) FWC, will be moderated by gender and parental status (moderated moderated mediation), being most detrimental for female parents (mothers).*

## **Method**

### *Sample and Participants*

A survey panel was used to collect data. New Zealand respondents were asked to join if they met the qualifications in CINT's database (for more details on CINT see Haar, 2021). Participants in this research must be employed, at least 18 years old, and work 20 hours/week minimum. Compared to traditional methods like mail-out surveys, these panels offer access to respondents considerably more quickly and representative samples from various sectors and geographies. As this data collection method has become more popular, Bernerth et al. (2021) have made recommendations, such as screening respondents to determine how much time they spent on the survey; and providing respondents with specific response options. Those that react too quickly, slowly, or inaccurately to these quality controls are removed. These suggestions were followed for the present study. Data from conventional methods and panel studies have been compared in a meta-analysis (Walter et al., 2019), and no significant differences were identified. This suggests such approaches to data collection are robust.

In all, 419 individuals fully completed the survey. Participants ranged in age from 20-68 years, with an average age of 35.6 years (SD=10.1). Just over half were males (51.3%) and parents (52%), with the majority (74.7%) having a partner. Average workweek was 35.1 hours (SD=8.7). Participants came from a wide range of firm sizes: 11.2% micro-sized (10 employees or less), 25.5% small-sized (11-50 employees), 29.1%

medium-sized (51-250 employees), 23.6% large (251-1000 employees) and 10.5% very large (1001+ employees).

### *Measures*

mWork was measured using the three-item construct by Diaz et al. (2012), coded 1= not at all, 5= a lot. A sample item is “To what extent do you use a mobile device to perform your job during family time?” ( $\alpha=.91$ ).

Turnover Intentions was measured using the four-item scale by Kelloway et al. (1999), coded 1=strongly disagree, 5=strongly agree. A sample item is “I am thinking about leaving my organization” ( $\alpha= .92$ ).

Work-family conflict was measured using three-items each for WFC and FWC, coded 1=strongly disagree, 5=strongly agree. Sample items are “I am often so emotionally drained when I get home from work that it prevents me from contributing to my family” (WFC,  $\alpha= .84$ ) and “Tension and anxiety from my family life often weakens my ability to do my job” (FWC,  $\alpha= .91$ ).

Gender was coded 1=female, 0=male.

Parental Status was coded 1=parent, 0=non-parent.

### **Control Variables.**

The following demographic variables were controlled for: Age (in years), Hours Worked (total per week), and Tenure (years). Age and tenure have meta-analytic support towards turnover intentions (Griffeth et al., 2000), while long work hours have meta-analytic links to work-family conflict and other important work outcomes (Ng & Feldman, 2008).

### *Measurement Models*

Constructs were confirmed using CFA with AMOS (version 26) and the data was a good fit:  $\chi^2(df)=104.0(59)$ , CFI=.99, RMSEA=.04 and SRMR=.03. Alternative CFAs were tested, and all other combinations were significantly a poorer fit to the data (all  $p< .001$ , Hair et al., 2010).

### *Analysis*

Hypotheses were tested in SPSS (version 25) using the PROCESS 3.4 program (Hayes, 2018). To test mediation effects, model 4 of PROCESS was used. For moderation and moderated mediation effects, model 12 was used. Recommendations by Hayes (2018) were followed including analysis included bootstrapping (5,000 times), confidence intervals across the 95% intervals, reporting lower limits (LL) and upper limits (UL), and mediation effects confirmed using indirect effects.

## **Results**

Descriptive statistics for the study variables are shown in Table 2.1.

**Table 2.1.***Correlations and Descriptive Statistics of Study Variables*

Variables	M	SD	1	2	3	4	5	6	7	8	9
1. Age	35.64	10.06	--								
2. Hours Worked	35.14	8.71	.03	--							
3. Tenure	4.15	2.53	.49**	.18**	--						
4. mWork	2.60	.98	-.15**	.12*	.08	<b>.80/.92</b>					
5. WFC	3.16	.86	-.10	.21**	.05	.22**	<b>.75/.90</b>				
6. FWC	2.75	.98	-.14**	.13**	-.02	.38**	.56**	<b>.80/.92</b>			
7. Turnover Intention	2.83	1.02	-.18**	.09	-.10	.24**	.40**	.41**	<b>.58/.95</b>		
8. Gender	1.49	.50	.09	-.11*	-.10*	-.29**	-.21**	-.29**	-.10*	--	
9. Parental Status	.59	.57	.25**	.15**	.24**	.08	-.08	-.16**	-.12*	-.08	--

N=419. \*p<.05, \*\*p<.01. The diagonal reports the AVE and Composite Reliability.

Table 2.1 shows that mWork is significantly correlated with age ( $r=-.15$ ,  $p=.002$ ), hours worked ( $r=.12$ ,  $p=.015$ ), WFC ( $r=.22$ ,  $p<.001$ ), FWC ( $r=.38$ ,  $p<.001$ ), and turnover intentions ( $r=.24$ ,  $p<.001$ ). WFC is significantly correlated with hours worked ( $r=.21$ ,  $p<.001$ ), FWC ( $r=.56$ ,  $p<.001$ ), and turnover intentions ( $r=.40$ ,  $p<.001$ ). FWC is significantly correlated with age ( $r=-.14$ ,  $p=.004$ ), hours worked ( $r=.13$ ,  $p=.006$ ), and turnover intentions ( $r=.41$ ,  $p<.001$ ). Finally, turnover intentions are significantly correlated with age ( $r=-.18$ ,  $p<.001$ ). Fornell and Larcker (1981) note the average variance explained (AVE) indicates how well the items explain a construct, and convergent validity is supported. They suggest with an AVE value of 0.5 or higher, and all four constructs exceed this minimum score supporting convergent validity.

Results of the mediation analysis is shown in Figure 2.2.

**Figure 2.2.**

*Mediation Results*

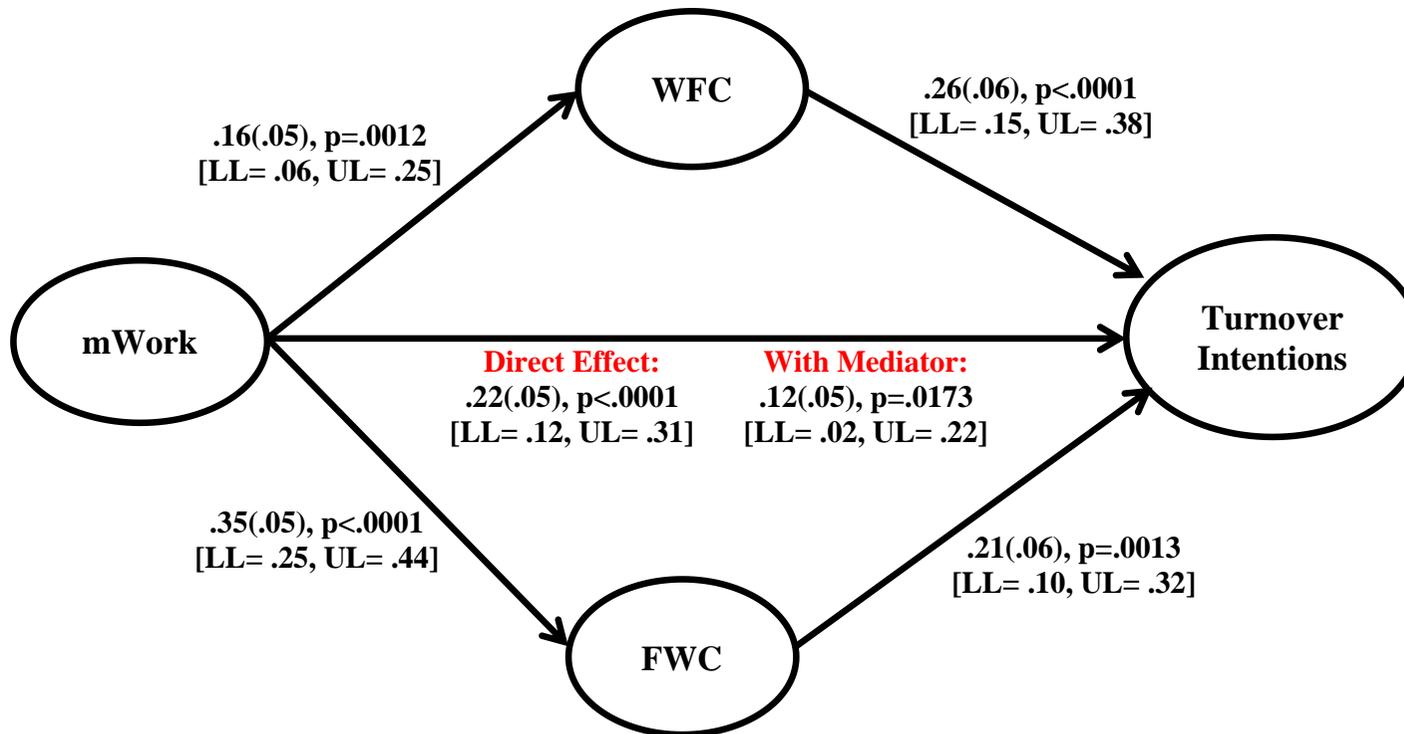


Figure 2.2 shows that mWork is significantly related to WFC ( $\beta=.16(.05)$ ,  $p=.0012$ , [LL= .06, UL= .25]), FWC ( $\beta=.35(.05)$ ,  $p<.0001$ , [LL= .25, UL= .44]), and turnover intentions ( $\beta=.22(.05)$ ,  $p<.0001$ , [LL= .12, UL= .31]). This supports Hypotheses 1a, 1b and 2. WFC is significantly related to turnover intentions ( $\beta=.26(.06)$ ,  $p<.0001$ , [LL= .15, UL= .38]) as is FWC ( $\beta=.21(.06)$ ,  $p=.0013$ , [LL= .10, UL= .32]). This supports Hypotheses 3a and 3b. Hypothesis 4 suggested that WFC and FWC would mediate the influence of mWork, and this was partially supported with the inclusion of WFC/and FWC reducing the direct effect of mWork on turnover intentions ( $\beta=.12(.05)$ ,  $p=.0173$ , [LL= .02, UL= .22]). However, mWork remained a significant predictor and also had a significant indirect effect on turnover intentions through both WFC ( $\beta=.05(.02)$ ,  $p=.0047$ , [LL= .02, UL= .09]) and FWC ( $\beta=.08(.03)$ ,  $p=.0011$ , [LL= .03, UL= .13]). This provides modest support for Hypothesis 4.

Results of the moderation and moderated mediated regression analyses are shown in Table 2.2.

**Table 2.2.***Moderation Results towards WFC and FWC*

Variables	WFC		
	$\beta$ (SE)	Confidence Intervals	p-value
<i>Controls:</i>			
Age	-.01(.01)	LL= -.02, UL= .00	p=.2354
Hours Worked	.02(.01)	LL= .01, UL= .03	p=.0002
Tenure	.02(.02)	LL= -.02, UL= .06	p=.2586
<i>Moderators:</i>			
Gender	-.23(.09)	LL= -.42, UL= -.05	p=.0123
Parental Status	-.27(.10)	LL= -.46, UL= -.08	p=.0047
<i>Interactions:</i>			
mWork x Gender	-.11(.09)	LL= -.30, UL= .07	p=.2340
mWork x Parental Status	.06(.09)	LL= -.12, UL= .55	p=.5070
Gender x Parental Status	-.08(.19)	LL= -.44, UL= .28	p=.6625
mWork x Gender x Parental Status	-.19(.19)	LL= -.56, UL= .18	p=.3102
WFC Total R <sup>2</sup>	.12 (F=5.8003, p<.0001)		
Variables	FWC		
	$\beta$ (SE)	Confidence Intervals	p-value
<i>Controls:</i>			
Age	-.00(.01)	LL= -.01, UL= .01	p=.5591
Hours Worked	.01(.01)	LL= .00, UL= .02	p=.0198
Tenure	-.01(.02)	LL= -.05, UL= .03	p=.7010
<i>Moderators:</i>			
Gender	-.38(.09)	LL= -.56, UL= -.19	p=.0001
Parental Status	-.40(.10)	LL= -.59, UL= -.21	p<.0001
<i>Interactions:</i>			
mWork x Gender	-.15(.09)	LL= -.34, UL= .04	p=.1163
mWork x Parental Status	.12(.10)	LL= -.07, UL= .30	p=.2259
Gender x Parental Status	.37(.19)	LL= .00, UL= .74	p=.0482
mWork x Gender x Parental Status	-.50(.19)	LL= -.87, UL= -.12	p=.0095
FWC Total R <sup>2</sup>	.24 (F=12.7360, p<.0001)		

Two-tailed tests. Unstandardized path coefficient.

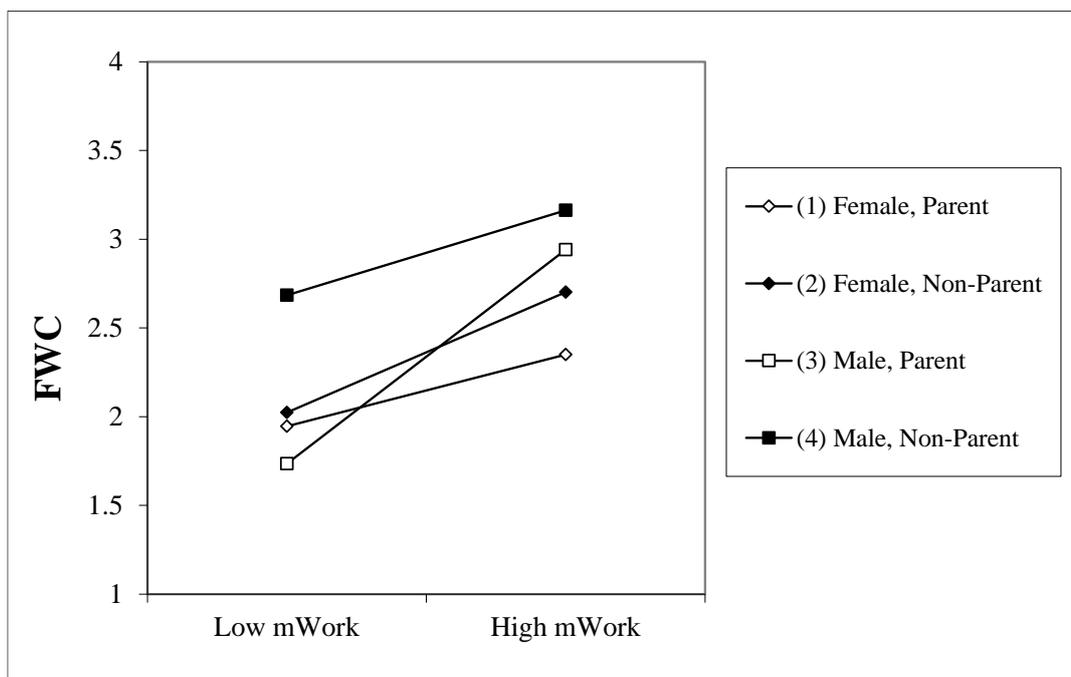
Table 2.2 explores the direct effects of gender and parental status, and their moderating effects with mWork. Towards WFC, gender ( $\beta$ =-.23(.09), p=.0123, [LL= -.42, UL= -.05]) and parental status ( $\beta$ =-.27(.10), p=.0047, [LL= -.46, UL= -.08]) are significant,

but all moderating effects are non-significant. Towards FWC, gender ( $\beta=-.38(.09)$ ,  $p=.0001$ , [LL= -.56, UL= -.19]) and parental status ( $\beta=-.40(.10)$ ,  $p<.0001$ , [LL= -.59, UL= -.21]) are significant. Further, a significant three-way interaction is found between mWork, gender and parental status ( $\beta=-.50(.19)$ ,  $p=.0095$ , [LL= -.87, UL= -.12]). Finally, while gender and parental status are non-significant directly and as moderators towards turnover intentions (all  $p>.05$ ), there is a significant index of moderated mediation through FWC ( $\beta=-.10(.06)$ ,  $p=.0312$ , [LL= -.23, UL= -.02]). These support Hypotheses 7b and 8b only. Overall, all models were significant ( $p<.0001$ ) and accounted for modest amounts of variance for WFC (12%), but larger amounts for FWC (24%) and turnover intentions (25%).

The significant interaction effects are graphed in Figures 2.3 and 2.4.

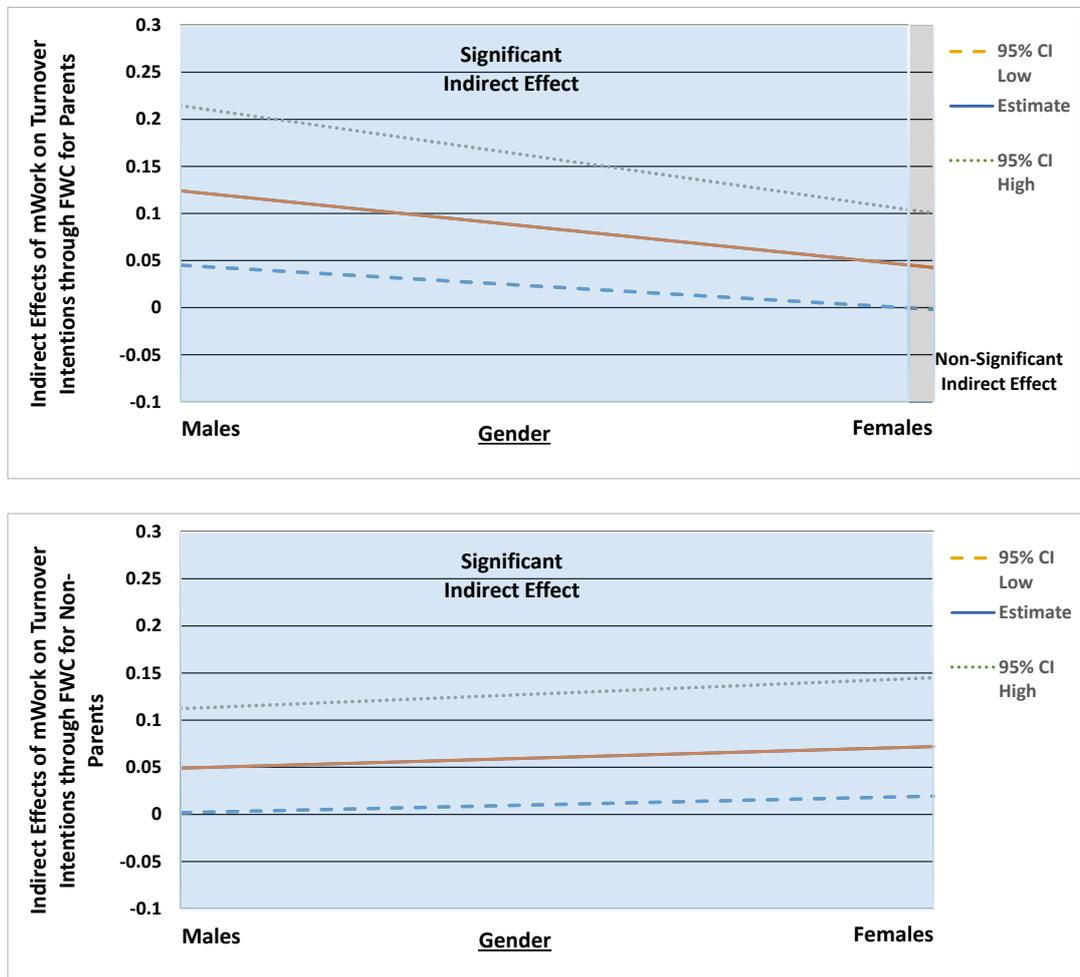
**Figure 2.3.**

*3-Way Interaction of mWork x Gender x Parental Status with FWC as the Dependent Variable*



**Figure 2.4.**

*Indirect Effect of mWork on Turnover Intentions (through FWC) by Gender + Parental Status*



The three-way interaction effects towards FWC (Figure 3) shows surprising results, with males reporting the highest FWC, with non-parent males reporting the highest FWC when mWork is high. Indeed, female parents report the lowest FWC when mWork is high, which is the opposite effect of what was expected. The effects do not support the hypothesis. Figure 4 show the significant moderated mediation effects towards turnover intentions following the analytic approach of Wayne et al. (2017). Here, the indirect effects of mWork on turnover intentions through FWC are probed, conditional on gender (male/female) and parental status (parent/non-parent). The highest significant indirect effect is for male parents ( $\beta = .12(.04)$ ,  $p = .0022$ , [LLCI = .05; ULCI = .21]), while female

parents report a non-significant indirect effect ( $\beta = .04(.03)$ ,  $p = .0518$ , [LLCI =  $-.00$ ; ULCI =  $.10$ ]). Male non-parents also report a significant indirect effect ( $\beta = .05(.03)$ ,  $p = .0406$ , [LLCI =  $.00$ ; ULCI =  $.11$ ]), as do female non-parents ( $\beta = .07(.03)$ ,  $p = .0126$ , [LLCI =  $.02$ ; ULCI =  $.14$ ]).

Thus, the indirect effect of mWork is not significant across the full 95% confidence intervals for parents (top figure in Figure 2.4), showing a positive indirect effect on turnover intentions (through FWC) for males but a non-significant effect for female parents. The bottom figure (Figure 2.4) shows the indirect effect of mWork is significant across the full 95% confidence intervals for non-parents, showing a positive indirect effect on turnover intentions (through FWC), which is higher for male non-parents than female non-parents. This is different than the hypothesis, and thus it is not supported.

### **Discussion**

The purpose of this study was to explore employee turnover due to the growing focus on The Great Resignation and in the current COVID-19 pandemic context. Specifically, the influence of mWork was explored on turnover intentions, and the conflict between work and family roles was included to aid understanding and contextualize how mWork might affect and interfere with work and family domains. The present study contributed to the literature by focusing on turnover intention with mWork an area largely missing from the field (Ferguson et al., 2016). Here, strong support was found for mWork shaping the turnover intentions of workers. The pressures of smart-devices to enable work in family time appears to be a critical driver shaping The Great Resignation, with workers ultimately reacting poorly to their own excessive technology use and thus driving their turnover thoughts.

The present study also confirmed that mWork was positively associated with WFC and FWC as predicted, indicating smart-device use for work increases the demands of work and thus reduces leisure and family time, resulting in a conflict between work and family duties. Interestingly, the literature often examines only WFC (e.g., Chesley, 2005; Derks & Bakker, 2014) or a combination of WFC and FWC (e.g., Harris et al., 2011;

Boswell & Olson-Buchanan, 2007), despite Greenhaus and Beutell (1985) clearly delineating these dimensions theoretically. The present study ensured a more theoretically driven model whereby both WFC and FWC were included, and mWork is found to be positively related to both, providing theoretically nuanced consequences of mWork. Furthermore, both WFC and FWC were positively related to turnover intentions, which supports meta-analytic findings (Amstad et al., 2011). This also contributes to the work-family conflict field because that meta-analysis showed more studies focus on WFC than FWC, which also aligns with the present study's critique of the mWork literature. Interestingly, while there is some evidence of mediation effects from WFC/FWC, mWork retained both significant direct and indirect effects, showing mWork to be a key driver of turnover intentions.

Finally, the present study conducted a moderation analysis of theoretically aligned demographic variables, specifically gender and parental status. Indeed, in the work-family field, the meta-analytic evidence is mixed for gender (Shockley et al., 2017), although parental status does appear important (Fellows et al., 2016), and some suggesting both gender and parental status might play important moderating roles (Michel et al., 2011). Interestingly, gender and parental status were both directly significant to WFC and FWC (but not turnover intentions), with males and non-parents reporting significantly lower levels. However, with mWork, there were no significant two-way moderation effects to either WFC, FWC or turnover intentions. A significant three-way interaction relieved distinct effects, but this showed that male non-parents had the highest FWC, followed by male parents. While different from the hypothesis, this does suggest some clear gender differences from mWork, and being more detrimental for males than females. This builds our understanding of the way mWork might interfere with work-family roles differently for males and females. Under role theory, males might be driven to keep working and thus incur higher mWork or at least, more detrimental outcomes.

Finally, a significant moderated moderated mediation effect was found, which supports the notion that gender and parental status (Michel et al., 2011) might be a key

combination to explore. Importantly, studies testing moderated moderated mediation are rare (see Haar et al., 2019) and provide more complex and potentially unique insights that are otherwise unknown to researchers (Hayes, 2018). The effects show important differences by parental status. For parents, the indirect and detrimental influence of mWork is strongest for males and non-significant for females. However, for non-parents, it is significant for both genders and more detrimental for females than males. While these effects are against the hypothesized direction, the findings do highlight that the influence of mWork on turnover intentions, via FWC, is complex and differs across parents and gender. While distinct from expectations around working mothers, it does align with role theory and how technology use might exacerbate ‘bread-winner’ roles for fathers, making mWork more detrimental. Overall, the implications of these findings are now considered.

#### *Implications*

Our results have substantial practical consequences for individuals. The pervasive nature of being tethered to the office via smart-devices is clearly detrimental (via work-family conflict) and thus should be used with greater moderation. While the mean score of mWork is below the midpoint, the findings reflect those using smart-devices more at home run the risk of greater WFC, FWC, and turnover intentions. Thus, self-policing and ‘unplugging’ (Rosenberg et al., 2019) might be a useful start. This is consistent with the popular press’ widespread perception that mWork bind people to their employment (Day et al., 2010; Boswell & Olson-Buchanan, 2007). As a result, when deciding to supply smart-devices to their staff, managers should exercise caution in setting availability expectations.

Further, HRM implications might include policies around such technology use. While some argue these smart-devices can aid businesses including their HR functions (Zhao et al., 2021), the present study warns this technology can be detrimental to employees’ wellbeing (work-family conflict) and ultimately, their retention. HR departments might want to ‘front foot’ mWork issue by removing weekend or after-hour access to company applications as a way to reduce the potential tethered burden. Of course, this then raises issues around who might require exemptions etc. However, we encourage

firms to explore or trial these actions as a better way to manage employee wellbeing and ultimately retain staff.

#### *Limitations*

While the present study uses self-reported data, which can lead to common method bias (CMB), ad-hoc analysis was conducted to show its effects are likely limited. Podsakoff et al. (2003) recommends Harman's One-Factor Test as a basic CMB test, and the present study found the unrotated factor analysis explained less than half of the variation. Further, significant moderation effects are unlikely with CMB (Evans, 1985), and the present study found significant two-way and three-way moderation effects and a significant moderated moderation mediation effect. Further, the overall sample came from workers across a wide variety of occupations and sectors, providing generalizable results.

#### **Conclusion**

The world of work has changed with the increasing use of digitalization (Cijan et al., 2019), and COVID-19 has likely exacerbated technology use. However, mWork appears to lead to detrimental issues around managing work and family roles and ultimately drives turnover intentions. Thus, the use of smart-devices shows the tethering effect of being connected to work is detrimental. Indeed, as turnover increases due to this use, in the context of 'The Great Resignation', organizations may want to examine their HR policies around technology use more closely. Overall, the findings demonstrate that in today's connected world, both employers and employees must be aware of the potential risks associated with mWork.

Manuscript two focuses on employee wellbeing outcomes rather than job outcomes, in contrast with turnover intentions that were considered in manuscript one. However, both manuscripts include work-family conflict functioning as a mediator. Further, manuscript two considers the role of age differences among technology users and thus, this manuscript broadens the scope of the interactions explored as a result of including age as a moderator. Both manuscript one and two include the influence of mWork on work-family conflict but focus on different outcomes. Both use moderators, but different moderators are explored.

**A Moderated Mediation Model of Smart-Device Use: Work-Family Conflict and Wellbeing by Age**

*[under review at New Technology, Work and Employment. Submitted 3-12-2021]*

Mobile working (mWork) refers to the practice of employee smart-device use to continue working during family time. Here, mWork is examined towards wellbeing outcomes (job anxiety, job depression, and insomnia) with work-family conflict as a mediator. Further, age is included as a moderator, and a moderated mediation model is ultimately tested. Using data from 422 New Zealand workers (end 2020), the direct and mediation hypotheses were strongly supported. In general, mWork reduces wellbeing by further blurring the line between work and life (via higher work-family and family-work conflict). The moderation effects were supported with older employees engaging in greater mWork

to their detriment. Ultimately, the moderated mediation model was supported towards all wellbeing outcomes, and shows age acts as a boundary condition, showing mWork has a significant indirect effect on wellbeing that increasing as worker age gets higher. Organisational implications are discussed.

*Keywords: mobile work; smart-devices; work-family conflict; wellbeing; age; moderated mediation.*

## **Introduction**

The COVID-19 pandemic, which began to affect countries in early 2020 has altered the face of the planet, most notably the office environment. Employees have been laid off or, more likely directed to work remotely. Employees realised they could access their job requirements from any place and at any time, regardless of their present location, and this aligns with the working-from-home literature (Kossek & Lautsch, 2012; Ter Hoeven & Van Zoonen, 2015). As a result of these changing circumstances, the blurring of the borders between work and personal life has been both celebrated and criticised. Increased dependence on digital technology is one component contributing to this blurring effect (Zhou et al., 2021). Ladkin et al. (2016) highlighted how technology via smart-devices (e.g., smartphones, laptops, and tablets) could benefit work and non-work roles. However, others argue that more study is needed to evaluate whether smart-device usage increases the risk of a mismatch between work and non-work roles. The present study focuses on mWork which Ferguson et al. (2016) defines as using mobile devices to accomplish work during family time.

The purpose of this study is to investigate the connection between employee well-being (job anxiety, job depression, and insomnia) and digital work (mWork) as the pandemic may have had a considerable impact on mental health (e.g., Shevlin et al., 2020). Governments throughout the world have implemented lockdowns of cities, regions, or whole countries as a means of limiting the COVID-19 infection which has caused an increase in digitalisation amongst employees (Zhou et al., 2021). The consequences of these lockdown methods are expected to have serious consequences on mental health (Holmes et al., 2020). For example, a Spanish study during the COVID-19 pandemic found individuals reported significant psychological suffering during the early weeks of lockdown (Odriozola-Gonzalez et al., 2020). Combined, this makes exploring the links between mWork and wellbeing amongst employees critical.

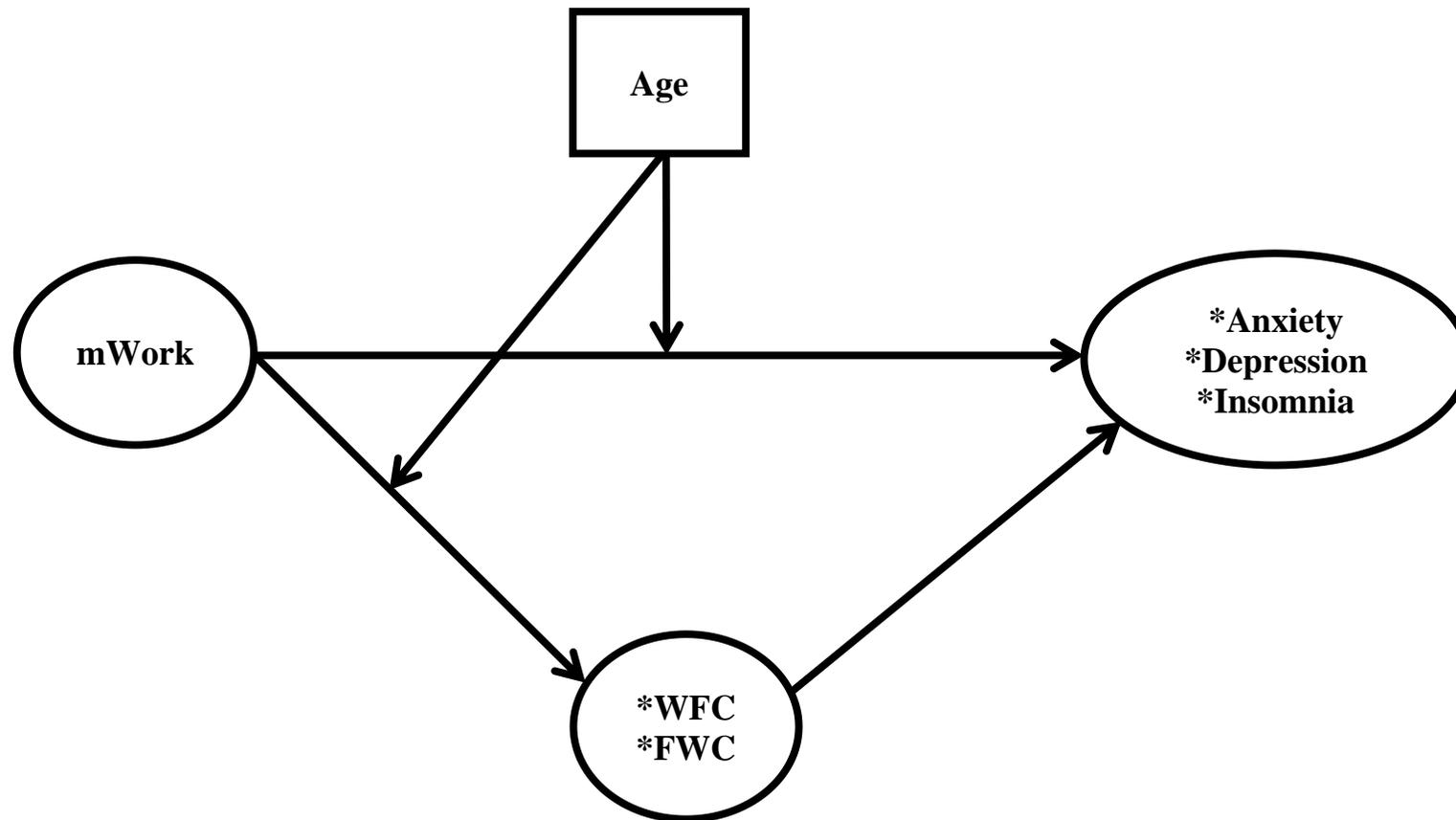
The present study extends the focus of mWork on wellbeing (job anxiety, job depression, and insomnia) by focusing on work-family conflict. Greenhaus and Beutell

(1985) defined work-family conflict as “a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (p. 77). There is increased expectation that employees be accessible for work outside of normal business hours, and thus juggling work and personal duties have become more challenging, resulting in more fluid work-family boundaries (Galinsky et al., 2001). Indeed, some argue this has been heightened due to technology (Hilbrecht et al., 2013; Higgins & Duxbury, 2005). This paper suggests COVID-19 may have exacerbated this issue, since it indicates a conflict between personal and professional roles that results from contradictory expectations and difficulties managing both spheres (Haar et al., 2012). The value of devoting uninterrupted evening hours to one's private life is emphasised by Unger et al. (2014). Despite decades of study, the majority of workers struggle to balance work and family roles (Haar et al., 2012), however, not all employees' experiences are the same (Higgins & Duxbury, 2005). This paper suggests that given the expansion around working-from-home from COVID-19 (see The Economist, 2021), understanding the activity and engagement of mWork and its influence on wellbeing is warranted.

The present research makes a total of three contributions. It starts with an examination of the function of mWork and its impact on wellness. Second, the friction between work and family responsibilities is highlighted to contextualise how mWork may impact and interfere with both work and family domains. This leads to testing a mediation model to better understand the pathway of effect from mWork. Finally, since age may influence technology use (Archer-Brown et al., 2018), it is included as a moderator. Beyond moderation effects, it is included in the mediation model to explore a moderated mediation model (Hayes, 2018), which enables a unique contribution by exploring age as a boundary condition. Figure 3.1 illustrates the research model.

**Figure 3.1.**

*Study Model*



## **mWork**

As smart devices become more extensively used within and outside enterprises, these smart-devices facilitate work at home (e.g., a personal smartphone enables emails, texts, calls, etc.), lengthening the reach of the workplace beyond its physical boundaries. Boswell and Olson-Buchanan (2007) argue that technology enables work-related tasks to be performed outside of the traditional office setting. Consequently, smart-devices enable employees to connect and communicate throughout the day, boosting productivity. However, smart-devices come with a slew of potential disadvantages for those using them for mWork. Specifically, employees who put in long hours at the office may suffer from exhaustion or conflict between work and home roles (Derks & Bakker 2014; Haar, 2006). Additionally, employees may face greater demands on their time and attention as a result of increased connection expectations. The result is that these smart-devices may operate as an ‘electronic leash’, tying people or ‘tethering them’ to their jobs and reducing their well-being (Olson-Buchanan & Boswell, 2006; Boswell & Olson-Buchanan, 2007).

According to Macik-Frey et al. (2007), the erosion of the concept of a distinct workday might be exacerbated by the widespread usage of smart-devices outside of traditional working hours. Further, employee’s ability to distinguish between work and non-work time may get increasingly muddled when non-work time workloads increase. This might lead to a blurring of the lines between work and personal life and lead to more conflict (Haar, 2006) and less wellbeing (Allen et al., 2000). Given earlier attention raising the issue of COVID-19 exacerbated potential issues like mWork, makes examining the links to wellbeing highly relevant. Wellbeing is explored here as the consequences of mWork, which expands past research on the influence of smart gadgets on employee outcomes (Olson-Buchanan & Boswell, 2007). There are conflicting reasons for and against smart devices, and this investigation is critical in order to better understand the debate. Some argue that technology, control, and employee wellbeing are intertwined

(Nansen et al. 2010), suggesting complex relationships. The next section examines the theoretical framework for understanding mWork and its influence on wellbeing outcomes.

### **Conservation of Resources Theory**

The current research employs Hobfoll's (2001) conservation of resources (COR) theory to examine how smart-devices influence wellbeing. According to Hobfoll et al. (2018) "COR theory is a motivational theory that explains much of human behavior based on the evolutionary need to acquire and conserve resources for survival, which is central to human behavioral genetics" (p. 104). COR theory is often used to explain why certain workers react differently to stimuli. For example, two similar employees might engage in smart-device usage differently and thus experience different wellbeing. mWork refers to the use of technology and specifically smart-devices to do business during family time. According to COR theory, this represents a resource drain or loss. In Hobfoll (2001), a number of resources include a time dimension, including quality time for work and quality time for family. Thus, excessive mWork engagement is likely to deplete resources, leaving the employee more physically and emotionally spent.

Hobfoll et al. (2018) further on the variety of materials representing resources stated "resources include object resources (e.g., car, tools for work), condition resources (e.g., employment, tenure, seniority), personal resources (e.g., key skills and personal traits such as self-efficacy and optimism), and energy resources (e.g., credit, knowledge, money)" (p. 105). While smart-devices offer increased productivity, they deplete workers of a fundamental resource – time – and family ties are particularly important. Ghafoor and Haar (2021) use the metaphor of the resource reservoir to illustrate how workers with an abundance of resources are better equipped to deal with work. This would represent their ability to manage the demands of their work and the influence these demands have on wellbeing. Hence, employees with greater resources have fewer mental health issues like job anxiety and depression (see Haar & Brougham, 2020). According to COR theory, mWork signifies a loss of resources, which then results in poorer wellbeing. This might be represented as greater conflict between work and family roles, poor sleep quality, or higher

anxiety and depression. According to Hobfoll et al. (2018) “because resource loss is more powerful than resource gain, and because stress occurs when resources are lost, at each iteration of the stress spiral individuals and organisations have fewer resources to offset resource loss, and these loss spirals gain in momentum as well as magnitude” (p. 106). Hence, the present study seeks to capture a resource loss cycle or spiral through examining mWork and its influence on work-family conflict, and then their combined effect on wellbeing outcomes.

### **Work-Family Conflict**

Work-family conflict reflects that there is a natural mismatch between the work and family spheres, which means that positions in one cause conflict in the other (Haar & Martin, 2021). This is where Greenhaus and Beutell (1985) defined work-family conflict as “a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (p. 77). While it has been suggested that work-family conflict is rising (Haar, 2006), in the context of COVID-19, it might be suggested that employees face a unique context that might make role conflict especially relevant. Theoretically, the work-family conflict literature acknowledges that conflict can occur in both directions (Greenhaus & Beutell, 1985). Hence, conflict that occurs in the work domain (e.g., long work hours) and migrates into the family domain (e.g., missing a special family occasions) is termed work-family conflict (WFC). Alternatively, where the domain of originating conflict is the family (e.g., a sick child leading to missing work) that ultimately interferes with the work domain, such as missing an important work meeting, is termed family-work conflict (FWC).

Both WFC and FWC have been shown in research to be significant (e.g., Haar et al., 2012), including in terms of wellbeing (see Haar et al., 2018). This is an important distinction because much of the mWork literature focuses solely on WFC and not FWC (e.g., Chesley, 2005; Boswell & Olson-Buchanan, 2007; Derks & Bakker, 2014; Derks et al., 2015; Fenner & Renn, 2010). The present study explores both WFC and FWC because this is likely to be influenced by mWork. This is because work-family conflict has three

dimensions covering temporal, strain, and behaviour (Greenhaus & Beutell, 1985). Time-based conflict occurs when time spent on one activity leaves less time for the other. In this study, checking work emails during family time (mWork) leaves less time available for family. Strain-based conflict represents the emotional impairment between the two domains, such as feeling guilty about the aforementioned work at home. Finally, behaviour-based conflict occurs when one role – such as being a professional – impacts on another role (e.g., parent). Combined, this represents a wide array of factors where mWork might impact. The next section develops hypotheses.

### **Hypotheses**

Juggling job and family duties in contemporary society is laden with potential problems (Ter Hoeven & Van Zoonen, 2015; Kossek & Lambert, 2005; Haar et al., 2012). Using a smart-device during non-work hours (mWork), represents constantly checking the device when at home, perhaps on the sofa with family. It might also represent carrying the smart-phone or tablet around with you at all times in your house, and combined, it takes away from the employees' ability to relax, unwind from work, and spend time with family or friends. Under COR theory, working through smart-devices is likely to influence wellbeing. The mWork literature suggests that responding to emails via smart-devices can create work-family conflict (Middleton & Cukier, 2006). Indeed, there is much attention paid between mWork and work-family conflict (e.g., Boswell & Olson-Buchanan, 2007; Derks & Bakker, 2014; Derks et al., 2015; Fenner & Renn, 2010). However, attention towards wellbeing – especially broadly as conducted here – is lacking.

Nam (2014) explored types of mWork towards job stress but this was not found to be related. However, Choroszewicz and Kay (2020) using a qualitative design, found many links from mWork to stress. Chen et al. (2018) found only 12 percent of respondents (n=500 smartphone using workers) who were on vacation were totally unplugged. Those workers engaging more frequently in mWork, reported greater stress. Interestingly, mWork was also found to be positively related to life satisfaction, counter to expectations, but aligned with those earning a higher income. Similarly, Diaz et al. (2012) found that

mWork was positively related to work-family conflict but also work satisfaction, highlighting the complex effects that mWork might influence. Beyond job stress though, there is only a limited focus on wellbeing in the mWork literature.

In their mWork study, Ferguson et al. (2016) found mWork was positively related to job burnout, but only via work-family conflict, while Derks and Bakker (2014) found direct links between mWork and job burnout. This finding aligns with a mWork review by Schlachter et al. (2018), who offered a theoretical model which suggests mWork can influence wellbeing and is likely to do so via long work hours, depletion, and work-family conflict. Indeed, the links to wellbeing are typically based on other factors like workload (Nixon et al., 2011). Using data from over 57,000 employees, Arlinghaus and Nachreiner (2014) specifically looking at mWork type and wellbeing (health), stating “the findings, thus, indicate that even a small amount of supplemental work beyond contractually agreed work hours may increase the risk of work-related health impairments” (p. 1100).

Under COR theory, mWork should be critical and detrimental to wellbeing. It is expected that respondents with high mWork frequency, will report higher job anxiety and job depression. These outcomes exemplify states of low pleasure (Axtell et al., 2002), but with anxiety/depression reflecting high/low mental arousal respectively. In this context, the mWork takes quality rest and family time away making employees more challenged and leaving them with less pleasure but fluctuating arousal. Further, Lanaj et al. (2014) reported links between mWork and sleep quantity, indicating the wellbeing effects might extend to those around sleep. The present study focuses on insomnia, which Greenberg (2006) defined as “difficulty initiating or maintaining sleep for at least 4 weeks” (p. 58). Overall, it is expected that high mWork will be detrimental to wellbeing, leading to higher mental health issues (anxiety and depression) and more insomnia related complaints. This leads to the following hypotheses.

*Hypotheses 1: mWork will be positively related to (a) job anxiety and (b) job depression, and (c) insomnia.*

As noted earlier, the mWork literature pays much more attention to work-family conflict, and thus working during family time with technology is likely to create conflict (Middleton & Cukier, 2006). There is a strong theoretical alignment between COR and work-family conflict. COR theory places a premium on time, including “time for adequate sleep...free time...time for work...time for loved ones” (Hobfoll, 2001, p. 342). In the context of mWork, although utilising smart devices increases work time – which can be beneficial for work outcomes (see Ferguson et al., 2016) – but comes at the cost of reduced free time and family time. Ultimately, under COR theory, this should result in a conflict between work and family duties and several studies provide empirical evidence that mWork leads to greater conflict (Derks & Bakker, 2014; Derks et al., 2015; Fenner & Renn, 2010). The present study extends the mWork literature by focusing on both WFC and FWC. This is an important extension because the focus on WFC alone is the norm (e.g., Chesley, 2005; Boswell & Olson-Buchanan, 2007; Derks & Bakker, 2014), or a global construct including both WFC and FWC combined (e.g., Boswell & Olson-Buchanan, 2007; Harris et al., 2011; Derks et al., 2015). Under COR theory, mWork represents not only time- and strain-based conflict where work interferes with home (WFC), but potentially FWC as well. For example, employees might gain adverse feedback from family members around their use of smart-devices, leading to strain-based FWC, whereby emotions around their smart-device use (e.g., guilt, shame, anger) might also lead to heightened FWC. This leads to the next set of hypotheses.

*Hypotheses 2: mWork will be positively related to (a) WFC and (b) FWC.*

Based on their review of the literature, Schlachter et al. (2018) offered a theoretical model which suggested work-family conflict might play a mediating role. This fits well with COR theory, specifically the *resource caravan* approach. Hobfoll et al. (2018) states that “resources do not exist individually but travel in packs, or caravans, for both individuals and organizations” (p. 106). Hence, examining mWork and WFC and FWC in combination, can more accurately capture the resource losses and potential loss spiral (Hobfoll et al., 2018). The meta-analysis by Amstad et al. (2011) found WFC/FWC were

positively related to depression (corrected mean correlations 0.23/.022) and anxiety (corrected mean correlations 0.14/0.19), with the latter being rare (three studies). Insomnia was not included in that meta-analysis, but a meta-analysis on insomnia did find support for work-family conflict effects (Yang et al., 2018). Under COR theory, high WFC and FWC represent resource losses, and this should lead to greater mental health and sleep issues. Furthermore, given the theoretical model of Schlachter et al. (2018), it is expected that WFC/FWC will mediate the influence of mWork. For example, Ferguson et al. (2016) found WFC played a mediating role between mWork and job burnout. Indeed, the few studies exploring mWork to wellbeing often include mediators (e.g., work strain by Chesley, 2005). Ultimately, it is expected that WFC/FWC will influence wellbeing and mediate the effects of mWork. This leads to the following.

*Hypotheses 3: WFC will be positively related to (a) job anxiety and (b) job depression, and (c) insomnia.*

*Hypotheses 4: FWC will be positively related to (a) job anxiety and (b) job depression, and (c) insomnia.*

*Hypotheses 5: (a) WFC and (b) FWC will mediate the influence of mWork on job anxiety.*

*Hypotheses 6: (a) WFC and (b) FWC will mediate the influence of mWork on job depression.*

*Hypotheses 7: (a) WFC and (b) FWC will mediate the influence of mWork on insomnia.*

Finally, the potential moderating effect of age is explored. In their meta-analysis, Debreczeni and Bailey (2021) found significant links between age and wellbeing, with younger employees reporting superior wellbeing. The present study focuses on mWork and here it is argued that technology usage may align with age, and thus be more plentiful for younger workers but more detrimental for older workers. For example, studies have argued younger employees engage more readily with technology (Archer-Brown et al., 2018), while Morris et al. (2005) stated that age differences had been found around the use of technology, which might align with mWork behaviours. Specifically, they argued that young workers have a significantly higher need for autonomy and thus, may find engaging

in mWork as a natural extension of working autonomously. Indeed, researchers suggest that older workers have different approaches and engagement with technology (Burlacu et al., 2017). Soja and Soja (2017) note that younger workers engage more readily with new technology, and similarly younger workers have been found to be significantly more likely to use new technology at work (Jacobs et al., 2019).

Overall, it is expected that younger workers will be more willing to engage in mWork behaviours, but this makes mWork a more natural and typical aspect of work life. Consequently, the adverse effect of mWork will be more adverse for older workers (greater conflict and poorer wellbeing). Hence, the effect of greater mWork will be more detrimental to older than younger workers. Finally, given the earlier mediation hypotheses whereby the influence of mWork on wellbeing outcomes will be via WFC/FWC, a moderated mediation model is ultimately tested (see Hayes, 2018). This means that age is tested as a boundary condition. It is expected that the strength of the indirect effect of mWork on wellbeing outcomes will be moderated by age, becoming weaker as workers age increases. This leads to the final set of hypotheses.

*Hypotheses 8: Employee age will interact with mWork towards (a) WFC, (b) FWC, (c) job anxiety, (d) job depression, and (e) insomnia, being more detrimental for older workers.*

*Hypotheses 9: The indirect effect of mWork on (a) job anxiety and (b) job depression, and (c) insomnia (via WFC/FWC) will be moderated by employee age (moderated mediation), being most detrimental for older workers.*

## **Method**

### *Sample and Participants*

Data was gathered using a CINT (for more details on CINT see Haar, 2021) in December 2020. New Zealand survey panel. Respondents from across New Zealand were invited if they met the research requirements: being employed, working a minimum of 20 hours/week, and being 18 years old or over. Recommendations from Bernerth et al. (2021) around ways to improve based survey data were followed. This included assessing respondents on how quickly or slowly they completed the survey and providing a test (e.g.,

for this answer, select ‘strongly disagree’) with incorrect answers removed. A meta-analysis by Walter et al. (2019) compared data from panel studies with data using more traditional methods (e.g., mail survey) and found no significant differences. This suggests panel data is a useful mechanism for researchers.

In all, 422 employees fully completed the survey. Participants ranged in age from 20-70 years, with an average age of 34.11 years (SD=9.70). Respondents were more likely to be males (61.8%), be in a relationship (78%), be non-parents (51.4%), and work in the private sector (75.6%). The average workweek was 35.1 hours (SD=8.22). Participants came from a wide range of firm sizes: 9.7% micro-sized (10 employees or less), 19.7% small-sized (11-50 employees), 27.7% medium-sized (51-250 employees), 30.8% large (251-1000 employees) and 12.1% very large (1001+ employees).

#### *Measures*

mWork was measured using the three-item construct by Diaz et al. (2012), coded 1= not at all, 5= a lot. A sample item is “How frequently do you use a mobile device to handle some of your work demands during family time?” ( $\alpha=.87$ ).

Anxiety and Depression were each measured using three items each by Axtell et al. (2002), coded 1=never, 5=all the time. Questions follow the stem “Thinking of the past few weeks, how much of the time has your own job made you feel each of the following?” and respondents are presented with adjectives (e.g., “anxious” for anxiety and “miserable” for depression). Both these measures have been well validated (Haar et al., 2014). A higher score represents greater mental health issues ( $\alpha=.88$  anxiety,  $\alpha=.92$  depression). The distinct nature of these two measures were confirmed via confirmatory factor analysis (CFA) using AMOS (version 26). The two-factor measurement model was the best fit for the data:  $\chi^2(df)= 27.4(8)$ , CFI=.991, RMSEA=.076, and SRMR=.017. An alternative CFA was then conducted where the two measures were combined, but the single factor CFA was a significantly worse fit ( $\chi^2$  difference  $p < .001$ ), confirming the two-factor model is the best fit for the data.

Insomnia was measured using the four-item scale from Greenberg (2006), coded 1 = not at all, 5 = to a great extent agree. Questions followed the stem ‘Indicate the extent to which you have experienced each of the following symptoms over the past month’ with a sample item being “Waking up feeling tired and worn out after one’s usual amount of?” ( $\alpha = .90$ ). This construct has been validated (Ng & Feldman, 2013) including in New Zealand (Haar & Harris, 2021).

Work-family conflict was measured using three-items each for WFC and FWC from Carlson et al. (2000), coded 1=strongly disagree, 5=strongly agree. This was specifically the strain-based dimension of the scale. Sample items are “I am often so emotionally drained when I get home from work that it prevents me from contributing to my family” (WFC) and “Tension and anxiety from my family life often weakens my ability to do my job”. While this measure is well validated (e.g., Mesmer-Magnus & Viswesvaran, 2005) including in New Zealand (e.g., Haar et al., 2012), given the context around COVID-19 and the potential issues around lockdowns etc., each dimension had a contextual item added: “With lockdown, the pressures of working at home make family life difficult” (WFC) and “With lockdown, family pressures intrude constantly into my work time” (FWC).

The distinct nature of these two measures were confirmed via confirmatory factor analysis (CFA) using AMOS (version 26). The two-factor measurement model was the best fit for the data:  $\chi^2(df) = 82.8(19)$ , CFI=.969, RMSEA=.080, and SRMR=.041. An alternative CFA was then conducted where the two measures were combined, but the single factor CFA was a significantly worse fit ( $\chi^2$  difference  $p < .001$ ), confirming the two-factor model is the best fit for the data. Overall, the two measures had good reliability (WFC,  $\alpha = .84$ ; FWC,  $\alpha = .89$ ).

Finally, the moderator Age was calculated in years, recoded as 1=30 years and under, 2=31-40 years, 3=41-50 years, 4=51 years and over.

### **Control Variables.**

Michel et al. (2011), in their meta-analysis of work-family conflict, stated gender is often included because “men and women are believed to experience and react to proposed antecedents differently, and previous research has found support for this assertion” (p. 700). There is some empirical support for this (e.g., Shockley & Singla, 2011). Hence Gender (coded 1=female, 0=male) was controlled for. Given the focus on mWork around working in family time, Parental Status (coded 1=parent, 0=non-parent) was also controlled for. Next, Hours Worked (total per week) and Tenure (years) were controlled for due to long work hours have meta-analytic links to work-family conflict (Ng & Feldman, 2008) and tenure being distinct from age but related to work outcomes (Ng & Feldman, 2010). Finally, meta-analyses (Robertson & Seneviratne, 1995) suggested sector differences might exist and hence Private Sector (1=private sector, 0=all other sectors) was controlled for.

#### *Measurement Models*

Constructs were confirmed using CFA with AMOS (version 26) and the data was a good fit:  $\chi^2(df)=358.3(174)$ , CFI=.971, RMSEA=.050 and SRMR=.034. Alternative CFAs were tested, and all other combinations were significantly a poorer fit to the data (all  $p < .001$ , Hair et al., 2010).

#### *Analysis*

The PROCESS 4.0 software was used to test hypotheses in SPSS (version 26) (Hayes, 2018). Moderation and moderated mediation effects were calculated using PROCESS model 8, while model 4 was used for calculating mediation effects. Recommendations were followed (Hayes, 2018) including bootstrapping (5,000 times), confidence intervals (throughout the 95 percent intervals), reporting of lower limits and upper limits (LL and UL), and confirming mediation effects via indirect effects.

### **Results**

Descriptive statistics for the study variables are shown in Table 3.1.

**Table 3.1.***Correlations and Descriptive Statistics of Study Variables*

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	34.11	9.70	--											
2. Hours Worked	35.06	8.22	.09	--										
3. Tenure	4.30	2.30	.45**	.24**	--									
4. mWork	2.88	1.01	-.18**	.11*	.02	.80/.92								
5. WFC	3.16	.93	-.18**	.06	-.08	.39**	.68/.90							
6. FWC	3.00	1.00	-.18**	.05	-.09	.46**	.77**	.75/.92						
7. Anxiety	2.39	1.08	-.15**	.07	-.04	.32**	.47**	.48**	.81/.93					
8. Depression	2.23	1.19	-.19**	.05	-.01	.33**	.49**	.46**	.82**	.86/.95				
9. Insomnia	2.60	1.10	-.08	.06	-.03	.22**	.49**	.48**	.69**	.64**	.76/.93			
10. Gender	1.38	.49	-.08	-.09	-.16*	-.14**	-.06	-.08	.01	.01	.10*	--		
11. Parental Status	.50	.52	.27**	.14**	.18**	.12*	-.01	.01	-.02	-.01	-.01	-.05	--	
12. Sector	1.30	.57	-.04	-.05	-.12*	-.14**	-.07	-.01	.01	.02	.06	.11*	-.08	--

N=422. \*p<.05, \*\*p<.01. The diagonal reports the AVE and Composite Reliability.

Table 3.1 shows that mWork is significantly correlated with age ( $r=-.18$ ,  $p<.001$ ), hours worked ( $r=.11$ ,  $p=.029$ ), WFC ( $r=.39$ ,  $p<.001$ ), FWC ( $r=.46$ ,  $p<.001$ ), anxiety ( $r=.32$ ,  $p<.001$ ), depression ( $r=.33$ ,  $p<.001$ ) and insomnia ( $r=.22$ ,  $p<.001$ ). WFC is significantly correlated with age ( $r=-.18$ ,  $p<.001$ ), FWC ( $r=.77$ ,  $p<.001$ ), anxiety ( $r=.47$ ,  $p<.001$ ) depression ( $r=.49$ ,  $p<.001$ ) and Insomnia ( $r=.49$ ,  $p<.001$ ). FWC is significantly correlated with age ( $r=-.18$ ,  $p<.001$ ), anxiety ( $r=.48$ ,  $p<.001$ ), depression ( $r=.46$ ,  $p<.001$ ) and insomnia ( $r=.48$ ,  $p<.001$ ). Anxiety is significantly correlated with age ( $r=-.15$ ,  $p=.002$ ) depression ( $r=.82$ ,  $p<.001$ ) and insomnia ( $r=.69$ ,  $p<.001$ ). Depression is significantly correlated age ( $r=-.19$ ,  $p<.001$ ) and insomnia ( $r=.64$ ,  $p<.001$ ). According to Fornell and Larcker (1981), the average variance explained (AVE) reveals how well items explain a concept, implying convergent validity. Those authors suggest an AVE value of 0.5 as the threshold, and all six measures exceed this level, supporting convergent validity.

Figures 3.2-3.4 show the outcome of the direct and mediation analysis to outcomes.

**Figure 3.2**

*Direct and Mediation Results towards Anxiety*

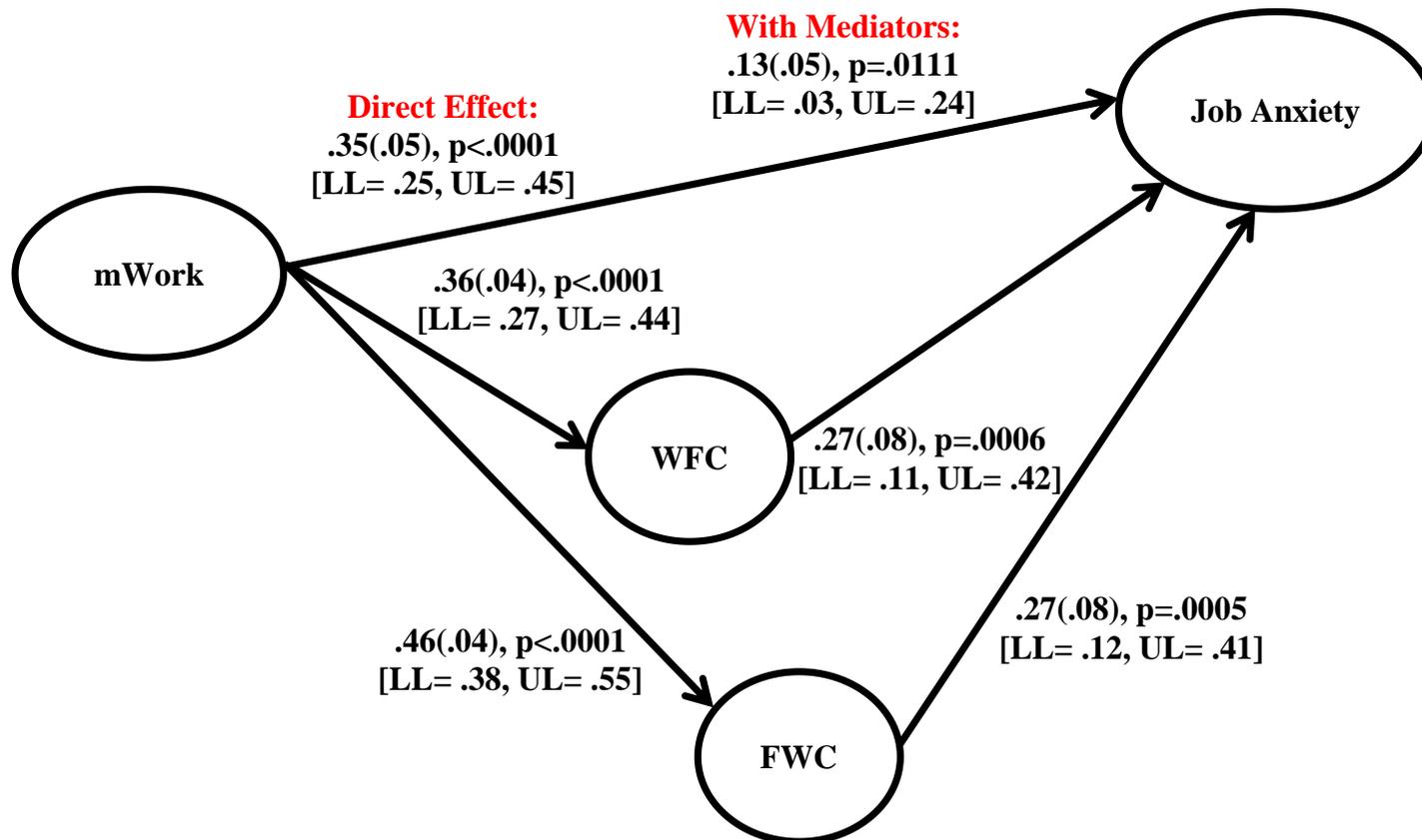


Figure 3.3.

*Direct and Mediation Results towards Depression*

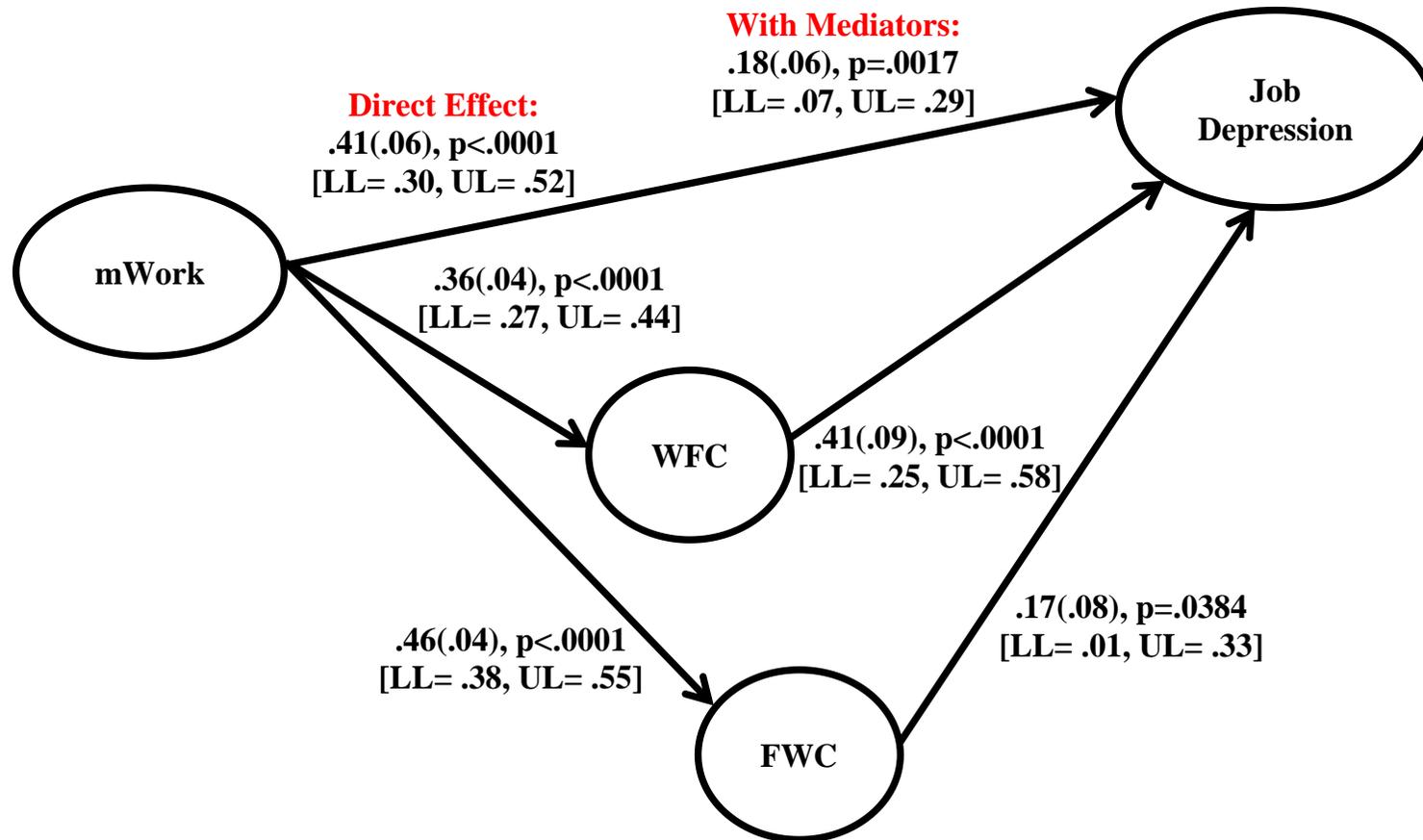


Figure 3.4.

*Direct and Mediation Results towards Insomnia*

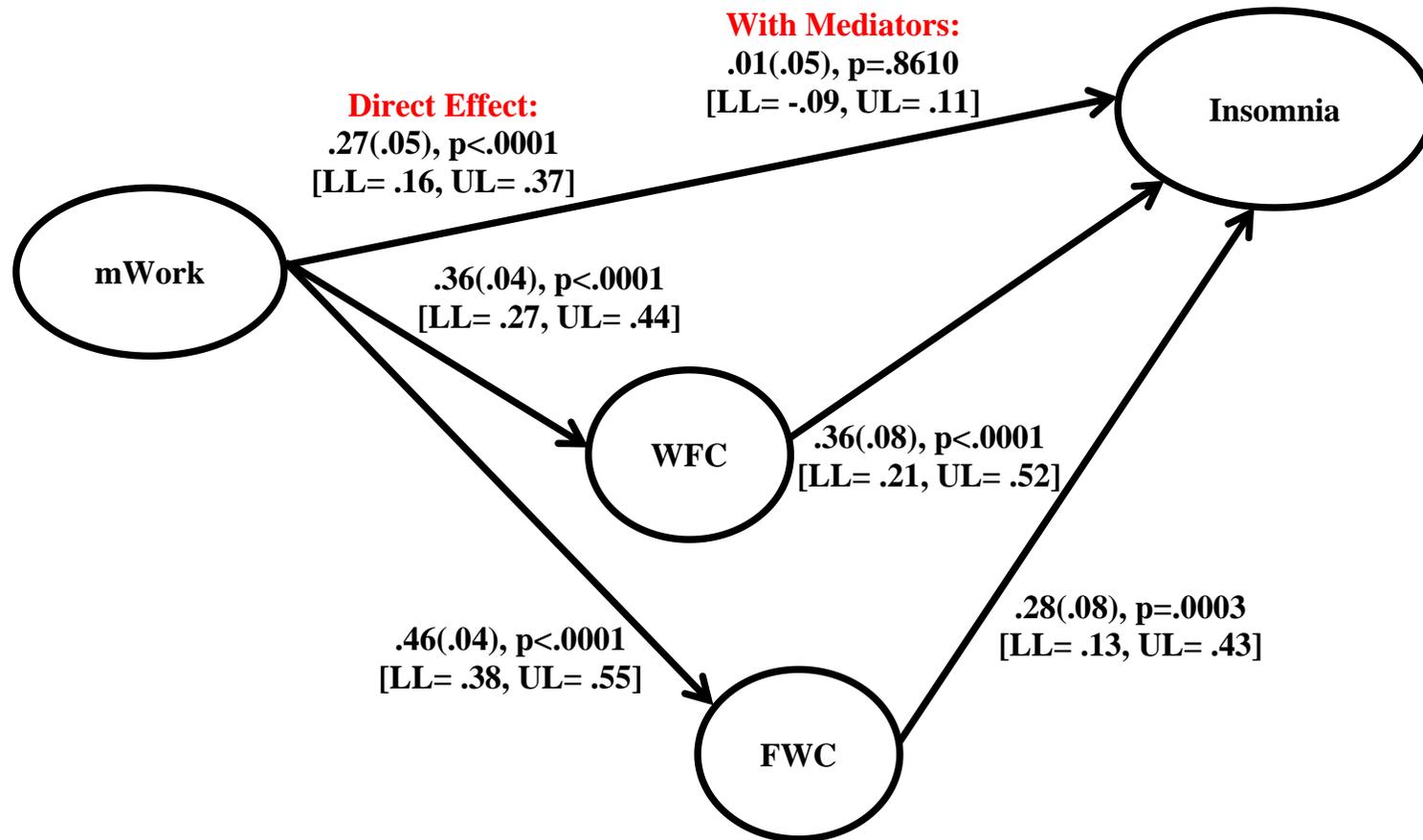


Figure 3.2 shows that mWork is significantly related to job anxiety ( $\beta=.35(.05)$ ,  $p<.0001$ , [LL= .25, UL= .45]), job depression ( $\beta=.41(.06)$ ,  $p<.0001$ , [LL= .30, UL= .52]), and insomnia ( $\beta=.27(.05)$ ,  $p<.0001$ , [LL= .16, UL= .37]), supporting Hypotheses 1a, 1b, and 1c. mWork is also significantly related to WFC ( $\beta=.36(.04)$ ,  $p<.0001$ , [LL= .27, UL= .44]) and FWC ( $\beta=.46(.04)$ ,  $p<.0001$ , [LL= .38, UL= .55]), supporting Hypotheses 2a and 2b. WFC is significantly related to job anxiety ( $\beta=.27(.08)$ ,  $p=.0006$ , [LL= .11, UL= .42]), as is FWC ( $\beta=.27(.08)$ ,  $p=.0005$ , [LL= .12, UL= .41]), supporting Hypotheses 3a and 4a. WFC is also significantly related to job depression ( $\beta=.41(.09)$ ,  $p<.0001$ , [LL= .25, UL= .58]), as is FWC ( $\beta=.17(.08)$ ,  $p=.0384$ , [LL= .01, UL= .33]), supporting Hypotheses 3b and 4b. Finally, WFC is significantly related to insomnia ( $\beta=.36(.08)$ ,  $p<.0001$ , [LL= .21, UL= .52]), as is FWC ( $\beta=.28(.08)$ ,  $p=.0003$ , [LL= .13, UL= .43]), supporting Hypotheses 3c and 4c.

Hypotheses 5-7 relate to WFC and FWC mediating the influence of mWork. The inclusion of these mediators led to a reduction in the direct effect from mWork towards job anxiety ( $\beta=.13(.05)$ ,  $p=.0111$ , [LL= .03, UL= .24]), job depression ( $\beta=.18(.06)$ ,  $p=.0017$ , [LL= .07, UL= .29]), and insomnia ( $\beta=.01(.05)$ ,  $p=.8610$ , [LL= -.09, UL= .11]). This shows that mWork still has a significant direct effect towards anxiety and depression, offering support for mediation, although only partial mediation. Towards insomnia, while the mWork direct effect has become non-significant, examining the indirect effect reveals a significant indirect effect ( $\beta=.26(.04)$ ,  $p<.0001$ , [LL= .19, UL= .33]). Again, this does not support full mediation effects. Overall, these effects support Hypotheses 5-7 but provide no evidence of full mediation.

Results of the moderation and moderated mediated regression analyses are shown in Table 3.2.

**Table 3.2.**  
*Moderation Results towards Outcomes*

Variables	Outcomes		
	$\beta$ (SE)	Confidence Intervals	p-value
<i>Controls:</i>			
Private Sector → FWC	-.21(.10)	LL= -.41, UL= -.01	p=.0368
Gender → Insomnia	.32(.10)	LL= .13, UL= .51	p=.0009
<i>Moderators:</i>			
Age → WFC	-.08(.06)	LL= -.13, UL= .12	p=.8999
Age → FWC	.03(.06)	LL= -.10, UL= .15	p=.6774
Age → Job Anxiety	-.02(.07)	LL= -.15, UL= .11	p=.7837
Age → Job Depression	-.14(.07)	LL= -.28, UL= .01	p=.0651
Age → Insomnia	-.01(.07)	LL= -.14, UL= .12	p=.8878
<i>Two-Way Interactions:</i>			
mWork x Age → WFC	.15(.05)	LL= .06, UL= .25	p=.0011
mWork x Age → FWC	.15(.05)	LL= .06, UL= .25	p=.0019
mWork x Age → Job Anxiety	.05(.05)	LL= -.06, UL= .15	p=.3949
mWork x Age → Job Depression	.06(.06)	LL= -.06, UL= .17	p=.3156
mWork x Age → Insomnia	-.09(.05)	LL= -.19, UL= .01	p=.0836
<i>Index of Moderated Mediation:</i>			
mWork→WFC→Job Anxiety x Age	.04(.02)	LL= .01, UL= .08	p=.0104
mWork→FWC→Job Anxiety x Age	.04(.02)	LL= .01, UL= .08	p=.0142
mWork→WFC→Job Depression x Age	.06(.03)	LL= .02, UL= .12	p=.0078
mWork→FWC→Job Depression x Age	.03(.02)	LL= -.00, UL= .07	p=.0631
mWork→WFC→ Insomnia x Age	.06(.02)	LL= .02, UL= .11	p=.0061
mWork→FWC→ Insomnia x Age	.04(.02)	LL= .01, UL= .09	p=.0115
WFC Total R <sup>2</sup>	.19 (F=12.0985, p<.0001)		
FWC Total R <sup>2</sup>	.25 (F=17.3707, p<.0001)		
Jon Anxiety Total R <sup>2</sup>	.27 (F=15.1718, p<.0001)		
Job Depression Total R <sup>2</sup>	.29 (F=16.5283, p<.0001)		
Insomnia Total R <sup>2</sup>	.30 (F=17.7963, p<.0001)		

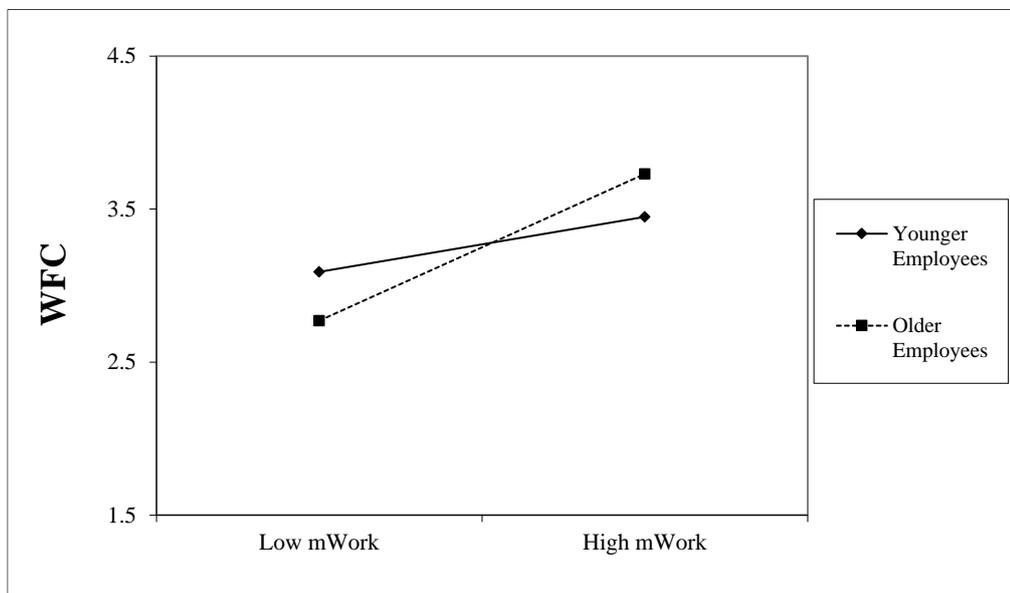
Two-tailed tests. Unstandardized path coefficient.  
Only significant control variables shown.

Table 3.2 shows there are no direct effects from age, but two significant moderating effects. Age interacts significantly with mWork towards WFC ( $\beta=.15(.05)$ ,  $p=.0011$ , [LL= .06, UL= .25]) and FWC ( $\beta=.15(.05)$ ,  $p=.0019$ , [LL= .06, UL= .25]). This supports Hypotheses 8a and 8b, but not 8c-8e (wellbeing outcomes). Finally, the index of moderated mediation is found to be significant towards job anxiety through both WFC

( $p=.0104$ ) and FWC ( $p=.0142$ ), towards job depression through WFC only ( $p=.0078$ ), and towards insomnia through both WFC ( $p=.0061$ ) and FWC ( $p=.0115$ ). This supports Hypotheses 9a-9c. Overall, all models were significant ( $p<.0001$ ) and accounted for moderate amounts of variance for WFC (19%), FWC (25%), job anxiety (27%), job depression (29%) and insomnia (30%). The significant interaction effects are graphed in Figures 3.5-3.8.

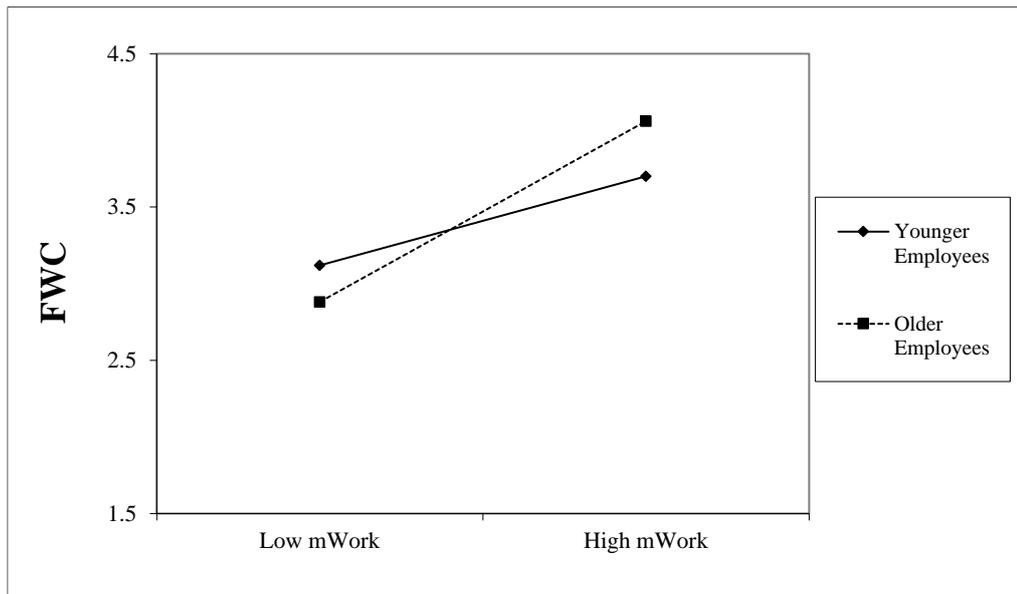
**Figure 3.5.**

*Two-Way Interaction of Age on mWork towards WFC*



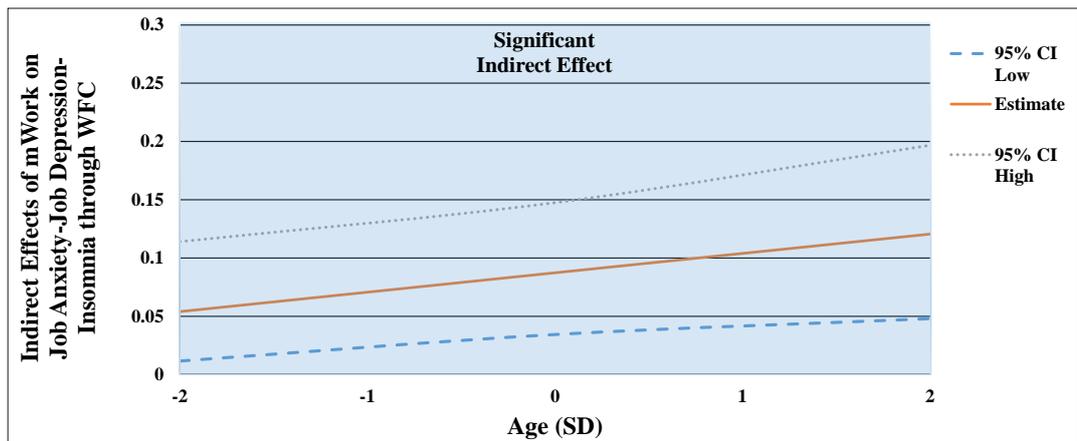
**Figure 3.6.**

*Two-Way Interaction of Age on mWork towards FWC*



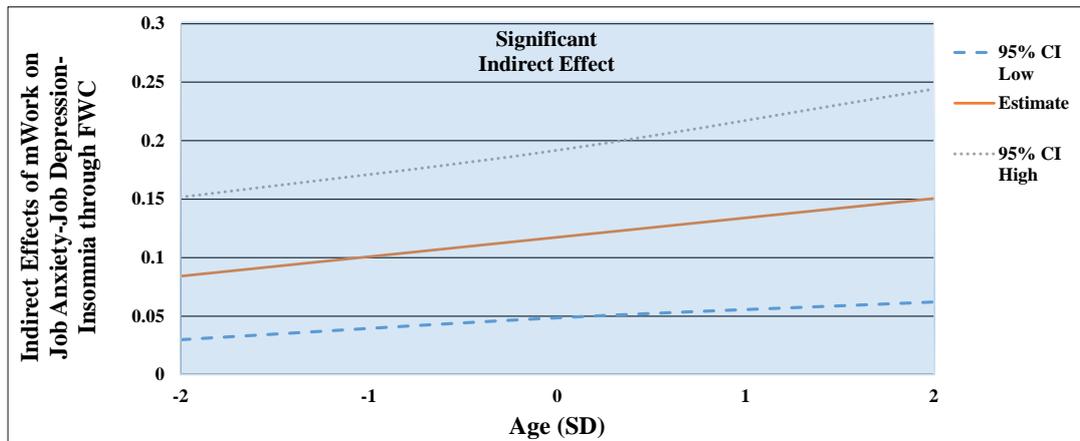
**Figure 3.7.**

*Indirect Effect of mWork on Job Anxiety-Job Depression-Insomnia (through WFC) by age*



**Figure 3.8.**

*Indirect Effect of mWork on Job Anxiety-Insomnia (through FWC) by age*



The two-way interaction effects towards WFC (Figure 3.5) and FWC (Figure 3.6) are reported together because they are similar. They show that at low levels of mWork, older respondents report lower WFC/FWC than younger respondents. However, at high levels of mWork these effects are reversed. Here, older employees report higher WFC/FWC than younger employees which aligns with the arguments, supporting the hypothesised effects. Figures 3.7 and 3.8 shows the significant moderated mediation effects towards wellbeing outcomes following the analytic approach of Wayne et al. (2017). Specifically, the indirect effects of mWork on job anxiety, job depression, and insomnia through WFC (Figure 3.7) and FWC (Figure 3.8) are probed, conditional on age (-2SD, Mean, +2SD). These effects are largely identical for the wellbeing outcomes are thus combined. Below, all indirect effects for each wellbeing outcome are provided, with clear evidence the significant indirect effects become stronger as employees age.

Towards job anxiety, there is a significant indirect effect for younger workers (-2SD) through WFC ( $\beta = .05(.03)$ ,  $p = .0193$ , [LLCI = .01; ULCI = .11]) and through FWC ( $\beta = .08(.03)$ ,  $p = .0035$ , [LLCI = .03; ULCI = .15]). At average (Mean score) age, the indirect effect becomes stronger through WFC ( $\beta = .09(.03)$ ,  $p = .0012$ , [LLCI = .03; ULCI = .15]) and FWC ( $\beta = .12(.04)$ ,  $p = .0007$ , [LLCI = .05; ULCI = .19]). For older workers (+2SD), the indirect effect becomes stronger again both through WFC ( $\beta = .12(.04)$ ,  $p = .0003$ , [LLCI = .03; ULCI = .15]) and FWC ( $\beta = .12(.04)$ ,  $p = .0006$ , [LLCI = .05; ULCI = .19]). Towards job

depression, there is a significant indirect effect through WFC only. For younger workers (-2SD) ( $\beta = .08(.03)$ ,  $p = .0079$ , [LLCI = .02; ULCI = .15]), average (Mean score) aged workers ( $\beta = .13(.04)$ ,  $p = .0001$ , [LLCI = .07; ULCI = .21]) and for older workers (+2SD) ( $\beta = .18(.05)$ ,  $p < .0001$ , [LLCI = .09; ULCI = .29]).

Finally, towards insomnia, there is a significant indirect effect for younger workers (-2SD) through WFC ( $\beta = .08(.03)$ ,  $p = .0089$ , [LLCI = .02; ULCI = .15]) and through FWC ( $\beta = .09(.03)$ ,  $p = .0024$ , [LLCI = .03; ULCI = .16]). At average (Mean score) age, the indirect effect becomes stronger through WFC ( $\beta = .13(.03)$ ,  $p < .0001$ , [LLCI = .07; ULCI = .20]) and FWC ( $\beta = .13(.04)$ ,  $p = .0004$ , [LLCI = .05; ULCI = .20]). For older workers (+2SD), the indirect effect becomes stronger again both through WFC ( $\beta = .17(.04)$ ,  $p < .0001$ , [LLCI = .10; ULCI = .26]) and FWC ( $\beta = .16(.05)$ ,  $p = .0004$ , [LLCI = .07; ULCI = .26]). Overall, the indirect effect of mWork is significant across the full 95% confidence intervals towards all wellbeing outcomes through WFC and towards job anxiety and insomnia through FWC. Aligned with the hypothesis, the indirect effect strengthens as workers age increases, becoming stronger for older workers, which aligns with the hypotheses.

### **Post-hoc Analysis**

The mWork levels are assessed with ANOVA for age only (to compare the age bands). The approach of Haar et al. (2014) was followed and used the Student–Newman–Keuls (SNK) test of difference used. A significant ANOVA was found:  $F = 13.981$ ,  $p < .001$ . The differences showed those aged 51 years and above were significantly lower on mWork ( $M = 1.65$ ) than all other age groups. Specifically, 41-50 years ( $M = 2.69$ ), those aged under 30 years ( $M = 2.90$ ), and those aged 31-40 years ( $M = 3.05$ ), who were not significantly different from each other.

### **Discussion**

The goal of this research was to examine employee's wellbeing (job anxiety, job depression, and insomnia) in light of the increased attention to potential growing mWork usage due to the current ongoing impacts of the COVID-19 pandemic. The impact of

mWork on wellbeing was examined in detail, and the conflict between work and family duties was added to help contextualise and better understand how mWork may affect and interfere with work and family domains. Here, strong evidence was found for mWork influencing employee wellbeing. The growing demands placed on employees to engage in work during family time – facilitated by smart-devices – leads to workers reporting low wellbeing, reflected in higher levels of job anxiety, job depression, and insomnia.

This research also demonstrated that mWork was positively linked with WFC and FWC, showing that using smart devices for work increases work demands and consequently lowers leisure and family time, resulting in a conflict between work and family responsibilities. Interestingly, despite Greenhaus and Beutell (1985) clearly defining the leading role of work and family theoretically, the mWork literature often studies only WFC (e.g., Derks & Bakker, 2014) or a combined measure of WFC and FWC (e.g., Boswell & Olson-Buchanan, 2007). The current research provided a more theoretically grounded model by including both WFC and FWC, and finding that mWork is positively connected to both, offering theoretically nuanced implications for mWork. Additionally, both WFC and FWC were positively associated with decreased wellbeing, aligning with the meta-analysis (Amstad et al., 2011). These findings further add to the work-family conflict literature, since the meta-analysis revealed that more research concentrates on WFC than on FWC, which corresponds to the current study's assessment of the mWork literature.

Finally, this research undertook a moderation analysis of employee age, whereby it was expected that older workers would be more detrimentally affected by mWork. Interestingly, older workers (those 51+ years) reported significantly lowest levels of mWork, but those older workers who engaged in elevated amounts of mWork reported a greater level of WFC and FWC compared to younger employees, which is consistent with the research that Debreczeni and Bailey (2021) discovered substantial correlations between age and happiness in younger workers. This supports the notion that young employees, who have grown up and embrace technology more broadly, are better able to manage the

way the frequency (of mWork) affects their wellbeing. At least specifically towards WFC and FWC. This might also reflect that those younger workers are less likely to have a partner or children. The current data supports this aspect (with 56.3 percent under 30 year olds with a partner compared to 90 percent in all others, and 30.5% under 30 years being parents compared to 58.7% of all other respondents. Overall, the findings do support the notion that mWork usage might differ by age (younger have a higher frequency), but the detrimental effects are more pronounced for older workers. Indeed, the moderated mediation effects show that mWork has a significant indirect effect on job anxiety, job depression, and insomnia, with age being a boundary condition. Again, it is older workers bearing the brunt of more detrimental effects from mWork in the presence of WFC/FWC. This does provide new insights into the role of technology use, wellbeing, and employee age.

### ***Implications***

The findings have significant practical implications, the ubiquitous aspect of being linked to the workplace through smart-devices is plainly negative (via work-family conflict) and should thus be utilised more sparingly. A good place to start is the individual-approach around self-regulation and 'unplugging' (Rosenberg et al., 2019). This is consistent with the prevailing assumption in the popular press that mWork binds individuals to their jobs (Boswell & Olson-Buchanan, 2007). Workers are encouraged to disconnect and limit their work use of smart-devices at home. However, organisations and managers have roles to play. Managers should take care when establishing availability expectations for their personnel when supplying smart devices. Understanding that when they send emails or make contact via smart-devices after hours, they may inadvertently 'pull' workers back into work which is going to ultimately be counter productive for their wellbeing and ultimately, job performance.

Additionally, human resource management implications may include regulations governing such technology usage. While some claim that these smart-devices may benefit employees (Ladkin et al., 2016), this research highlights strong detrimental effects. HR

functions may want to 'front foot' potential mWork problems by eliminating weekend or after-hours access to corporate apps in order to mitigate the associated strain. Indeed, Portugal has recently passed legislation making it illegal for employers to contact employees via email, call, text after work hours (Horowitz & Cotovio, 2021). Thus, organisations might want to be proactive and explore ways to limit access, such as denying server access over weekends for example. This raises questions about employees needing an exemption etc., but organisations are encouraged to consider ways to minimise mWork. Businesses are encouraged to investigate or test these practices as a more effective means of managing employee welfare, aiding employee wellbeing, and facilitating organisational benefits around retention and performance.

### ***Limitations***

This research relies on self-reported data, which may link to issues around common method bias (CMB). However, the ad-hoc analysis revealed that its impacts are likely to be minimal. Podsakoff et al. (2003) advocates Harman's One-Factor Test as a fundamental CMB test, and this research showed that unrotated factor analysis explained less than half of the variance. Furthermore, the use of CFA to confirm the measures used and confirming that alternative CFAs were a poorer fit, also improves confidence in the findings (see Haar et al., 2014). Finally, it has been shown that moderation effects are improbable in the context of CMB (Evans, 1985), meaning the data and findings provide strong confidence. Finally, the sample included people from a diverse range of vocations and industries, ensuring that the findings are generalizable.

### **Conclusion**

The world of work has transformed as a result of increased usage of digitalisation, and COVID-19 almost certainly accelerated this trend. However, the present study shows mWork can be especially harmful around balancing work-family responsibilities and decreasing wellbeing (higher job anxiety, job depression, and insomnia). Thus, the usage of smart-devices demonstrates how damaging the tethering impact of being linked to work can be. Overall, the results indicate that, in today's connected environment, both employers

and workers must be aware of the hazards associated with mWork and this appears especially detrimental to older workers.

## Chapter Four: Summary Conclusion

The COVID-19 pandemic poses new challenges to employees and employers. The pandemic's new laws and procedures compelled businesses to operate remotely to stay afloat. As a result, the government of New Zealand imposed several restrictions, including a total lockdown of the whole nation, in an attempt to manage the virus and stop it from spreading. Organisations were obliged to function remotely at stages three, four and encouraged to work from home at level two. However, I acknowledge that some businesses – restaurants, for example – were severely hampered in their operations by most lockdown levels. Naturally, the transition to ubiquitous digital working and the accompanying facilitation of homes as workstations for a substantial portion of New Zealand's workforce has blurred the line between work and personal life. This appears to have led to an increase in mobile work and usage of digital technologies, which combined, are two elements contributing to this blurring effect between work and home. Organisations have potentially fundamentally changed and flexible work appears like it is here to stay. This research dissertation focused on how this remote employment can potentially result in detrimental effects. It consisted of two studies.

The first study confirmed the influence of mWork on turnover intentions, as well as work-family conflict, and further, work-family conflict was found to act as a mediator of mWork's influence on turnover intentions. While links between mWork and work-family conflict are common, the testing of effects towards turnover intentions adds to the limited literature currently available. But it also contributes to turnover in a COVID-19 context, which is a unique contribution. Access to the overseas labour market in New Zealand is constrained under COVID-19, making turnover intentions an important Human Resource issue to focus on. Further, the current attention on the great resignation, with more than 40% of the global workforce estimated to be considering leaving their present job (Microsoft, 2021), provides additional incentive to explore this outcome.

The hypotheses were tested using data collected in May 2020 from a sample of 419 New Zealand employees. Further, gender and parental status were included as moderators and also moderators of the indirect effect of mWork on turnover intentions via work-family and family-work conflict. The addition of moderators and a moderated moderated mediation model further adds complexity and new insights into the mWork literature. Importantly, the implications from this finding were both useful for organisations and HRM departments and individuals. The pervasive nature of being linked to the office via smart-devices is plainly detrimental (via work-family conflict) and should thus be utilised with greater caution. Hence, individuals and organisations need to safeguard against the overuse of technology for work in family time. The study showed that people who use smart-devices at home are more likely to have higher WFC, FWC, and combined, these all help influence turnover intentions. Thus, self-policing and "unplugging" might be a good place to start. This is consistent with the widely held belief in the popular press that mWork binds individuals to their jobs.

The second study of this dissertation confirmed the outcomes of mWorking on employee well-being, with work-family conflict again serving as a mediator. Importantly, the paper broadened the scope of the interactions investigated by including age as a moderator, as there is evidence of age inequalities among technology users and this is under-explored with mWork. As a result, a more comprehensive understanding of the impact of mWork on wellbeing outcomes was possible. Given the possible negative impact of the present pandemic and mWork on the wellness of the New Zealand workforce, the second paper provided an essential contribution in determining whether the negative impacts of mWork are universal or differ by age.

The hypotheses were tested using data collected in December 2020 from a sample of 422 New Zealand workers. Aligned with the mWork literature, mWork was found to have a detrimental influence on wellbeing, leading to higher job anxiety, job depression and insomnia. In addition, it positively shaped work-family and family-work conflict, which again were found to act as mediators. Hence, study two found that mWork was

positively related to WFC and FWC, indicating that utilising smart devices for work increases work demands while decreasing leisure and family time, resulting in a conflict between work and family duties. The study also explored a moderation analysis of employee age and confirmed older employees would be more negatively affected by mWork. Interestingly, older workers (those 51+ years old) reported significantly lower levels of mWork, but those older workers who engaged in higher levels of mWork reported higher levels of WFC and FWC compared to younger employees. This lends credence to the view that young employees who have matured and embraced technology are generally better able to regulate how the frequency (of mWork) impacts their health. Finally, there was support for a moderated mediation effect with the indirect effect of mWork on wellbeing via work-family and family-work conflict differing by age. Again, such tests provide a more complex and nuanced understanding of mWork and its effects on wellbeing outcomes, building our understanding.

To summarise, both studies showed that keeping current talented staff and prioritising employee well-being is critical to the long-term viability of the New Zealand workforce, economy, and society. The COVID-19 pandemic is already having a negative impact on mental health, and one of the primary stresses is work. This is caused due to the increase in remote working, not only are the barriers between work and personal life being blurred as a result of the lack of physical separation from the office to the house, but the demands of family life are also interfering with work-life balance. Organisations have undergone significant transformations but may be relying too much on technology to help workers achieve work productivity but ultimately, at the cost of turnover and wellbeing. As a result, while considering whether to provide smart-devices to their employees, employers should take prudence in establishing availability expectations.

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## Appendix. Ethics



### Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology  
D-88, Private Bag 92006, Auckland 1142, NZ  
T: +64 9 921 9999 ext. 8316  
E: [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz)  
[www.aut.ac.nz/researchethics](http://www.aut.ac.nz/researchethics)

TE WĀNANGA ARONUI  
O TĀMAKI MĀKAU RAU

3 September 2018

Jarrold Haar  
Faculty of Business Economics and Law

Dear Jarrod

Re Ethics Application: **18/327 Work Experiences Project**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 3 September 2021.

#### Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through <http://www.aut.ac.nz/research/researchethics>.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through <http://www.aut.ac.nz/research/researchethics>.
3. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form: <http://www.aut.ac.nz/research/researchethics>.
4. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

Please quote the application number and title on all future correspondence related to this project.

AUTEC grants ethical approval only. If you require management approval for access for your research from another institution or organisation, then you are responsible for obtaining it. If the research is undertaken outside New Zealand, you need to meet all locality legal and ethical obligations and requirements. You are reminded that it is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

For any enquiries, please contact [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz)

Yours sincerely,

Kate O'Connor  
Executive Manager  
Auckland University of Technology Ethics Committee

Cc: [kravensw@aut.ac.nz](mailto:kravensw@aut.ac.nz)

## WFH Survey 2020

Please confirm you are in paid work (at least 20 hours/week).

- Yes  
 No

*Skip To: Q5 If Please confirm you are in paid work (at least 20 hours/week). = Yes*

*Skip To: End of Survey If Please confirm you are in paid work (at least 20 hours/week). = No*

D1. What is your age?

▼ 18-20... Over 70

D2. Average hours worked in the last week (including overtime) for all paid jobs:

▼ Up to 20 hours... 66 hours or more

D3. What is your gender?

▼ Male Other

D4. What is your relationship and partner status? (tick all that apply)

- Single  
 Cohabiting with partner/spouse  
 No children  
 Child/ren living with me  
 Child/ren but not living with me

D5. How many years have you worked in your current role/job (in years)?

▼ Less than a year ... More than 20 years

Q79 D4. Indicate the extent to which you agree/disagree with the following - as it relates to the past week:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am often so emotionally drained when I get home from work that it prevents me from contributing to my family	<input type="radio"/>				
When I get home from <u>work</u> I am often too frazzled to participate in family responsibilities	<input type="radio"/>				
Due to all the pressures at work, sometimes when I come <u>home</u> I am too stressed to do the things I enjoy	<input type="radio"/>				
Because I am often stressed from family responsibilities, I have a hard time concentrating on my work	<input type="radio"/>				
Tension and anxiety from my family life often weakens my ability to do my job	<input type="radio"/>				
Due to stress at home, I am often preoccupied with family matters at work	<input type="radio"/>				
With lockdown, the pressures of working at home make family life difficult <sup>2</sup>	<input type="radio"/>				
With lockdown, family pressures intrude constantly into my work time <sup>2</sup>	<input type="radio"/>				

<sup>2</sup>=Items in Study Two only

**D6. Indicate the extent to which you engaged in the following in the past week:**

	Not at all	A Small Extent	To Some Extent	Quite A Lot	A Lot
How frequently do you use a mobile device to perform your job during family time?	<input type="radio"/>				
To what extent do you use a mobile device to perform your job during family time?	<input type="radio"/>				
How frequently do you use a mobile device to handle some of your work demands during family time?	<input type="radio"/>				

**Study One Only:** E1. Indicate the extent to which you agree/disagree with the following in the past week:

	Strongly Disagree	Disagree	Neither Disagree <u>or</u> Agree	Agree	Strongly Agree
I am thinking about leaving my organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am planning to look for a new job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to ask people about new job opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't plan to be at my organisation much longer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Study Two Only:** F2. Thinking of the past week, how much of the time has your own job made you feel each of the following?

	Never	Some of the Time	Much of the Time	Most of the Time	Almost all of the Time
Anxious	<input type="radio"/>				
Worried	<input type="radio"/>				
Tense	<input type="radio"/>				
Depressed	<input type="radio"/>				
Gloomy	<input type="radio"/>				
Miserable	<input type="radio"/>				

**Study Two Only:** F3. Indicate the extent to which you have experienced each of the following symptoms over the past week:

	Not at all	A Small Extent	To Some Extent	To a Moderate Extent	To a Great Extent
Difficulty falling asleep	<input type="radio"/>				
Waking up several times per night	<input type="radio"/>				
Difficulty staying asleep (including waking up too early)	<input type="radio"/>				
Waking up feeling tired and worn out after one's usual amount of sleep	<input type="radio"/>				