

Smartdevice 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 as it relates to turnover intentions and work–family and family–work conflict, with conflict expected to mediate the influence on turnover. Furthermore, given the potential dynamics from 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 influence turnover intentions.

Keywords: family–work conflict, mobile work, smart devices, turnover intention, work–family conflict

Key points

- Smart devices were associated with higher work–family conflict and turnover intentions.
- The effects do differ by gender and parental status but not as expected.
- Fathers and non-parent males appear especially prone to detrimental effects.
- HR policies targeting smart-device usage after hours is encouraged.

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

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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 and Lautsch 2012). These changes have been hailed, as well as chastised, 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 we know smart-device use blurs the lines between work and family life (Jarvenpaa and Lang 2005), whether these effects hold under COVID-19 is unknown. Further, understanding what effect this technology use has on blurring the boundaries between work and non-work roles (e.g. Samad, Reaburn and Di Milia 2015) is totally unknown in a COVID-19 context. Consequently, the present study focuses on mWork which captures the use of smart devices to conduct work in family time (Ferguson et al. 2016). Thus, mWork refers to technology that aids work invading personal time.

The present study focuses on turnover intentions due to recent attention given to the Great Resignation (Cook 2021), including in New Zealand (Coltman 2021). This refers to high turnover thoughts and behaviors in several western economies, especially the United States. Retaining employees, especially top talent and skilled employees, is a core issue for human resource management (see Su, Wang and Chen 2020). Aguinis, Gottfredson and Joo (2012) term this *the war for talent*. Indeed, there is more than a century of academic research on turnover (Hom et al. 2017), with associated costs and performance being key reasons for researcher attention. Ultimately, there are high costs to an organization when employees turn over, especially if they are highly skilled (e.g. Tillman et al. 2018). The average cost per skilled employee is estimated at around 100% of salary (Cascio and Boudreau 2008). In addition, employee turnover costs might be much higher if an organization loses a star performer (see Aguinis and O'Boyle Jr 2014). At the firm level, there is meta-analytic evidence that high employee turnover is negatively related to organizational performance (Park and Shaw 2013). The role of technology in influencing turnover in a COVID-19 world is unknown. For example, we do not know if COVID-19 has changed the expected detrimental links to turnover intentions amongst workers. For example, perhaps workers using smart devices in family time has become normalized and thus not detrimental. 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 work–family conflict (WFC), which Greenhaus and Beutell (1985) define as a ‘form of role conflict in which the pressures from work and family domains are mutually incompatible in some respect’ (p. 76). 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, Kim and Bond 2001). According to Higgins and

Duxbury (2005), technology development is a primary source of WFC. What is unknown is whether COVID-19 has exacerbated this issue. Or has it changed expectations, meaning work–family issues are less prominent? Haar (2013) suggests the conflict between work and life roles occurs due to opposing expectations and difficulties in managing both spheres. Unger et al.'s (2014) study on time allocation between work and home domains emphasizes the critical nature of dedicating uninterrupted evening hours to one's private life. Higgins and Duxbury (2005) note that employees experience WFC differently, but how these experiences might be shaped in a COVID-19 context in New Zealand remains untested.

Overall, the present study makes three contributions. First, it explores the role of mWork toward 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. This aligns with our theoretical approach of conservation of resources (COR) theory, especially Hobfoll's (2001) resource caravan approach, which states that 'the retinue of resources tends to travel together over time' (p. 350). Thus, examining resources in combination is theoretically appropriate. 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 provides new insights into the way technology shapes turnover in the current COVID-19 context. The study model is shown in Figure 1.

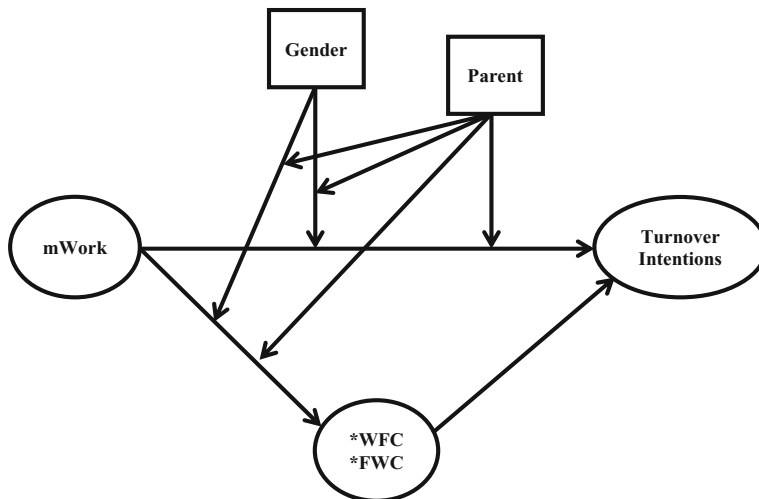


Figure 1 Study model

mWork

As smart devices become more widespread inside and outside organizations, workers are able to stay connected to their jobs not only 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 WFC (Derks and 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', which effectively tethers an employee to their employment and ultimately detrimentally influences employee outcomes (Boswell and Olson-Buchanan 2007; Olson-Buchanan and Boswell 2006).

Due to these potential issues, businesses need to be concerned about their employees' smart-device use (Day, Scott and Kelloway 2010). According to Macik-Frey, Quick and Nelson (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 boundary between work and non-work hours may move and blur, becoming less distinct. 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 well-being consequences for employees who use them (see Adisa, Gbadamosi and Osabutey 2017). Indeed, the context of COVID-19 might have encouraged greater technology use at home, but whether this makes mWork more or less important remains unexplored.

The present study extends prior research on the impact of smart devices on employee outcomes (Boswell and Olson-Buchanan 2007) by examining the relationship between mWork and turnover intentions, but also considering the role of WFC. 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 tools for employee control. These and other study streams (Nansen et al. 2010) reveal an intriguing interplay between technology, perceived employee control and employee well-being, as well as the relationship between these processes and 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 managing their 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

The natural incompatibility between work and family domains means that roles occurring in one domain (e.g. work) that interferes with the other domain (e.g. family) ultimately leads to conflict (Haar and Martin 2022). 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, 342). In the context of mWork, using smart devices for work does provide more work time but in doing so erodes free time and family time and ultimately represents a conflict between work and family roles. This means mWork is likely to positively influence WFC. Greenhaus and Beutell (1985) also argued that conflict is bi-directional, with conflict occurring in the work domain and entering the family domain, called 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, Roche and ten Brummelhuis 2018), including toward turnover intentions (see Haar, Roche and Taylor 2012).

According to Greenhaus and Beutell (1985), there are also three dimensions of WFC: time-based, strain-based and behavior-based. Time-based conflict reflects that time spent on one activity (checking work e-mails 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 their subordinates at work. Today, employment for many people includes connectivity and blurring the line between work and non-work (Haar, Roche and Taylor 2012). Studies have shown that mWork has a detrimental effect on WFC (Ferguson et al. 2016). Further, Wang, Lin and Luarn (2006) discovered that mWork is distinct from traditional work activities conducted via mobile devices since it happens during personal time. An example of mWork is the act of checking work-related e-mails 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 COR theory (Hobfoll 2001) to understand how smart devices can lead to detrimental consequences, including elevated WFC and higher turnover intentions. Hobfoll et al. (2018) stated that ‘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 fewer 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 jobs because they are in a critical state of resource loss. Importantly, COR theory includes the resource caravan approach (Hobfoll 2001), which argues that resources form corteges, and thus exploring resources in combination rather than singularly is more theoretically aligned with the COR approach. This is an unusual theoretical approach because studies typically use boundary theory (Boswell and Olson-Buchanan 2007; Derks et al. 2015) or effort-recovery theory (Derks and Bakker 2014). The use of COR theory here does theoretically encourage using multiple factors (e.g. mWork, WFC etc.) to be assessed and was used by Ferguson et al. (2016).

Hobfoll et al. (2018) detail 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). The effect of smart devices enabling more work remains largely untested (for an exception, see Ferguson et al. 2016), but 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 study’s focus, this would reflect being able to manage work and employees’ retention desires regarding their jobs. That is, employees have low turnover intentions because they have more resources on which to draw to make the job appealing. Under COR theory, mWork represents a loss of resources, and this flows through to WFC, potentially representing a resource loss cycle. Hobfoll et al. (2018) state that ‘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 (Haar, Roche and Taylor 2012; Kossek and Lambert 2005). 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 e-mails in the evening may influence WFC (Middleton and Cukier 2006). When it comes to smart-device use, there are a variety of ways mWork can impact WFC. When employees work primarily from their homes in the evenings, time demands (Greenhaus and Beutell 1985) may be more subtle than long hours at the office. The problem is that time spent working via smart devices is time that 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 e-mails outside of typical office hours appears to be harmless, so that the consequences may go unnoticed. However, in the context of COVID-19, has smart-device use perhaps become viewed as

natural and thus non-detrimental? This makes examining mWork in the context of COVID-19 especially important.

Smartphones permit 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, this represents activities that drain resources. Thus, the use of smart devices should take away from quality time resting and with family – which are resources (Hobfoll 2001) – leaving the employee with fewer resources to manage their work–family issues. This should lead to greater WFC. There is empirical evidence linking mWork with WFC, but these studies are all from pre-COVID-19 times (see Boswell and Olson-Buchanan 2007; Chesley 2005; Derks and Bakker 2014). We do not know whether effects found pre-COVID-19 pandemic hold in the current situation. 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. That is, their measure of conflict combined WFC and FWC items. 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 and Beutell 1985), mWork studies typically focus on either WFC alone or a global construct combining both dimensions. This is a theoretically critical weakness, as the theory of WFC is bi-directional, and thus focusing solely on one direction does not provide a strong theoretical alignment. For example, using a similar mWork construct, Harris, Marett and Harris (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, Roche and Taylor 2012). The present study follows the logic of Haar, Roche and Taylor (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 mentioned above supports that. However, the influence of mWork on FWC is likely to be more complicated. The limited evidence shows that mWork does positively influence FWC (e.g. Derks et al. 2015; Harris, Marett and Harris 2011).

The interference from mWork represents a loss of resources under COR theory. Such a disruption might lead family/partners/friends to express dismay at the mWork behaviors, leading employees to experience FWC. Here, it is suggested that at high levels of mWork, not only family time but also family dynamics and harmony are interrupted. This is because mWork occurs *within* family time and thus represents an intrusion that can lead to disrupted family dynamics that perhaps then encourages family members to insert their issues (i.e. family) into the mWork users' work time, creating heightened FWC. For example, a partner might think it is okay to call their partner to pick up their child during work

time because ‘work is always intruding into our family time!’ It might reset the boundaries between roles. This might create frustration and a reduction in quality work time, a resource under COR theory (Hobfoll 2001). The addition of FWC is theoretically important and also provides a strong addition to the literature. Further, our exploration of both WFC and FWC aligns with the theoretical arguments around resource caravans (Hobfoll 2001), whereby factors challenging resources are likely to affect multiple resources, and thus our addition of FWC improves the theoretical focus of past mWork studies. Again, this is theoretically important given that COR theory and multiple factors are not often tested in the mWork literature. This leads to the first hypothesis.

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. Derks et al. 2015; Harris, Martett and Harris 2011). Derks and Bakker et al. (2014) included mWork as a direct predictor of WFC but then also extended this toward job burnout. Similarly, Ferguson et al. (2016) explored mWork as it relates to WFC and then included it as a mediator toward 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; thus the present study makes a strong addition to the literature. The present context around COVID-19 also provides a timely reexamination because it might be that turnover intentions have different drivers in COVID-19 times. At this stage, we simply do not know the effects of these factors on turnover, especially in the context of the Great Resignation. Theoretically, under the resource caravans (Hobfoll 2001), the addition of turnover intentions highlights that the loss of resources through mWork might spiral out onto multiple factors, beyond WFC, and include employee work behaviors.

Ferguson et al. (2016) also used COR theory to understand mWork, stating that 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. 522–523). Hence, in the context of mWork, the loss of resources through greater use of smart devices in family times might trigger employees to seek to protect their resources (Hobfoll et al. 2018), encouraging them to seek an alternative job. While COVID-19 might have led to more working from home and thus changed the location of work for some, continuing to work, after hours, in family time, with smart devices might be especially detrimental, leading to family members encouraging a change of job. The expectation is that the new job will create fewer intrusions into family life via smart devices (i.e. have low mWork), which might encourage more discussions around finding a new job. This leads to the next hypothesis:

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

Cohen (1997) claimed that WFC 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 when a report is due imminently. Other research has examined WFC and the intent to leave in response to familial duties, such as those connected with childcare roles (Cordero et al. 2009). Employees may need to make trade-offs and adjustments to their schedules to manage work and family life (Aluko 2009), which 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 0.21), while FWC was also significant (corrected mean 0.17). This analysis also found that WFC is explored more often in regard to turnover intentions than is FWC, which also aligns with the mWork literature. Including both WFC and FWC is theoretically aligned and importantly provides new insights in the context of mWork influencing turnover intentions.

Under COR theory, high WFC 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. Under the resource caravan approach with COR theory (Hobfoll 2001), the inclusion of WFC and FWC in addition to mWork provides a more theoretically attuned approach to understanding turnover intentions. Furthermore, given the evidence that mWork is expected to shape WFC as well as turnover intentions, the potential mediating role of WFC 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, Roche and Taylor (2012). This suggests that resource losses under COR theory from mWork lead to greater WFC and FWC, where further resources are lost. Ultimately, then, both WFC and FWC can become drivers of turnover intentions. This leads to the next hypotheses.

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

Hypothesis 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, which have been largely excluded from the mWork literature (e.g. Boswell and Olson-Buchanan 2007; Derks et al. 2015; Derks and Bakker 2014; Ferguson et al. 2016). Gender is a core aspect of the WFC literature (Shockley et al. 2017), although effects are mixed. In their meta-analysis of more than 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 complementary for examining gender and parental status as moderators.

Michel et al. (2011) state 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 the role of being a father. This is because gender role theory might provide fathers with more tolerance around mWork compared with mothers, who would be expected to focus on family roles in family time (under gender role theory). This is why exploring gender *and* parental status might be especially important (see Michel et al. 2011), because these gender roles become intensified in the context of dependents.

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 that the hypotheses include a mediation effect between mWork and turnover intentions (via WFC), 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 tests whether the indirect effect of mWork on turnover intentions through WFC or FWC differs by gender and parental status in combination. This approach provides a more nuanced approach to the way resources operate and affect outcomes. It also aligns well with the resource caravans (Hobfoll 2001), because it not only includes multiple resources simultaneously but also adds to the literature by examining potential differences via interaction and boundary condition tests. This leads to the final set of hypotheses.

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

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

Hypothesis 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.

Hypothesis 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 h/week minimum. Compared with traditional methods such as 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, Aguinis and Taylor (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 to 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 work-week was 35.1 h ($SD = 8.7$). Participants came from a wide range of firm sizes: 11.2% micro-sized (10 employees or fewer), 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

- 1 *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?' ($\alpha = 0.91$).
- 2 *Turnover Intentions* was measured using the four-item scale by Kelloway, Gottlieb and Barham (1999), coded 1 = 'strongly disagree', 5 = 'strongly agree'. A sample item is 'I am thinking about leaving my organization' ($\alpha = 0.92$).
- 3 *Work–family conflict* was measured using three items each from Carlson, Kacmar and Williams (2000) 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, $\alpha = 0.84$) and 'Tension and anxiety from my family life often weakens my ability to do my job' (FWC, $\alpha = 0.91$).

- 4 *Gender* was coded 1 = 'female', 0 = 'male'.
 5 *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 toward turnover intentions (Griffeth, Hom and Gaertner 2000), while long work hours have meta-analytic links to WFC and other important work outcomes (Ng and Feldman 2008).

Measurement models

Constructs were confirmed using CFA with AMOS (version 26), and the data were a good fit: χ^2 (df) = 104.0 (59), CFI = 0.99, RMSEA = 0.04 and SRMR = 0.03. Alternative CFAs were tested, and all other combinations were significantly a poorer fit to the data (all $p < 0.001$, Hair et al. 2010).

Analysis

Our 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 that included bootstrapping (5000 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 1.

Table 1 shows that mWork is significantly correlated with age ($r = -0.15$, $p = 0.002$), hours worked ($r = 0.12$, $p = 0.015$), WFC ($r = 0.22$, $p < 0.001$), FWC ($r = 0.38$, $p < 0.001$) and turnover intentions ($r = 0.24$, $p < 0.001$). WFC is significantly correlated with hours worked ($r = 0.21$, $p < 0.001$), FWC ($r = 0.56$, $p < 0.001$) and turnover intentions ($r = 0.40$, $p < 0.001$). FWC is significantly correlated with age ($r = -0.14$, $p = 0.004$), hours worked ($r = 0.13$, $p = 0.006$) and turnover intentions ($r = 0.41$, $p < 0.001$). Finally, turnover intentions are significantly correlated with age ($r = -0.18$, $p < 0.001$). Fornell and Larcker (1981) note that 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 direct and mediation analyses are shown in Figure 2.

Figure 2 shows that mWork is significantly related to WFC ($\beta = 0.16$ (0.05), $p = 0.0012$, [LL = 0.06, UL = 0.25]), FWC ($\beta = 0.35$ (0.05), $p < 0.0001$, [LL = 0.25, UL = 0.44]) and turnover intentions ($\beta = 0.22$ (0.05), $p < 0.0001$, [LL = 0.12,

Table 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. Gender	.49	.50	.09	-.11*	—						
4. Parental status	.52	.50	.22**	.11*	-.12*	—					
5. Tenure	4.15	2.53	.49**	.18**	-.10*	.25**	—				
6. mWork	2.60	.98	-.15**	.12*	-.29**	.09	.08	.80/.92			
7. WFC	3.16	.86	-.10	.21**	-.19**	-.08	.05	.22**	.75/.90		
8. FWC	2.75	.98	-.14**	.13**	-.28**	-.11*	-.02	.38**	.56**	.80/.92	
9. Turnover intention	2.83	1.02	-.18**	.09	-.10*	-.10*	-.10	.24**	.40**	.41**	.58/.95

N = 419. * $p < 0.05$, ** $p < 0.01$. The diagonal reports the AVE and composite reliability.

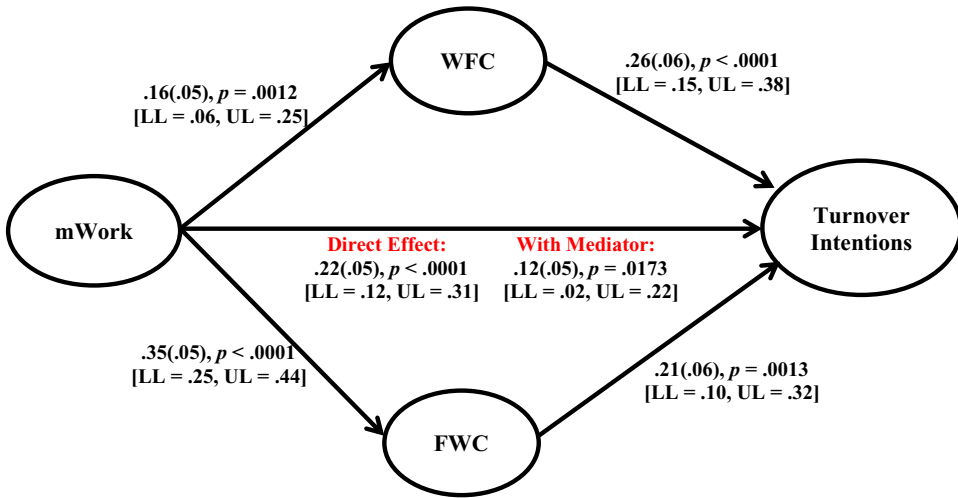


Figure 2 Direct and mediation results [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/1744-7941.12370)]

UL = 0.31]). This supports hypotheses 1a, 1b and 2. WFC is significantly related to turnover intentions ($\beta = 0.26$ (0.06), $p < 0.0001$, [LL = 0.15, UL = 0.38]) as is FWC ($\beta = 0.21$ (0.06), $p = 0.0013$, [LL = 0.10, UL = 0.32]). 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 ($\beta = 0.12$ (0.05), $p = 0.0173$, [LL = 0.02, UL = 0.22]). However, mWork remained a significant predictor and also had a significant indirect effect on turnover intentions through both WFC ($\beta = 0.05$ (0.02), $p = 0.0047$, [LL = 0.02, UL = 0.09]) and FWC ($\beta = 0.08$ (0.03), $p = 0.0011$, [LL = 0.03, UL = 0.13]). This provides modest support for hypothesis 4.

Results of the moderation and moderated mediated regression analyses are shown in Tables 2 and 3.

Table 2 explores the direct effects of gender and parental status and their moderating effects with mWork. Toward WFC, gender ($\beta = -0.23$ (0.09), $p = 0.0123$, [LL = -0.42, UL = -0.05]) and parental status ($\beta = -0.27$ (0.10), $p = 0.0047$, [LL = -0.46, UL = -0.08]) are significant, but all moderating effects are non-significant. Toward FWC, gender ($\beta = -0.38$ (0.09), $p = 0.0001$, [LL = -0.56, UL = -0.19]) and parental status ($\beta = -0.40$ (0.10), $p < 0.0001$, [LL = -0.59, UL = -0.21]) are significant. Further, a significant three-way interaction is found between mWork, gender and parental status ($\beta = -0.50$ (0.19), $p = 0.0095$, [LL = -0.87, UL = -0.12]). Table 3 shows the interaction effects toward turnover intentions, and while gender and parental status are non-significant directly and as moderators toward turnover intentions (all $p > 0.05$), there is a significant index of moderated mediation through FWC ($\beta = -0.10$ (0.06), $p = 0.0312$, [LL = -0.23, UL = -0.02]). These support hypotheses 7b and 8b only.

Table 2 Moderation results toward WFC and FWC

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

Two-tailed tests. Unstandardized path coefficient.

Overall, all models were significant ($p < 0.0001$) 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 3 and 4.

The three-way interaction effects toward FWC (Figure 3) show 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

Table 3 Moderation moderated mediation results toward turnover intentions

Variables	Turnover intentions		
	β (SE)	Confidence intervals	<i>p</i> -Value
Controls			
Age	-.01 (.01)	LL = -.02, UL = .00	.0988
Hours worked	.00 (.01)	LL = -.01, UL = .01	.7945
Tenure	-.02 (.02)	LL = -.06, UL = .02	.2982
Moderators			
Gender	.06 (.13)	LL = -.20, UL = .33	.6390
Parental status	-.10 (.14)	LL = -.37, UL = .17	.4511
Interactions			
mWork \times Gender	-.23 (.14)	LL = -.50, UL = .04	.0919
mWork \times Parental status	.16 (.14)	LL = -.12, UL = .44	.2588
Gender \times Parental status	.05 (.19)	LL = -.32, UL = .42	.7790
mWork \times Gender \times Parental status	.04 (.19)	LL = -.33, UL = .42	.8154
Index of moderated mediation			
mWork \rightarrow WFC \rightarrow Turnover \times Gender	-.05 (.06)	LL = -.18, UL = .06	.1950
mWork \rightarrow FWC \rightarrow Turnover \times Gender	-.10 (.06)	LL = -.23, UL = -.02	.0312
Turnover intentions total R^2	.25 ($F = 11.3395, p < .0001$)		

Two-tailed tests. Unstandardized path coefficient.

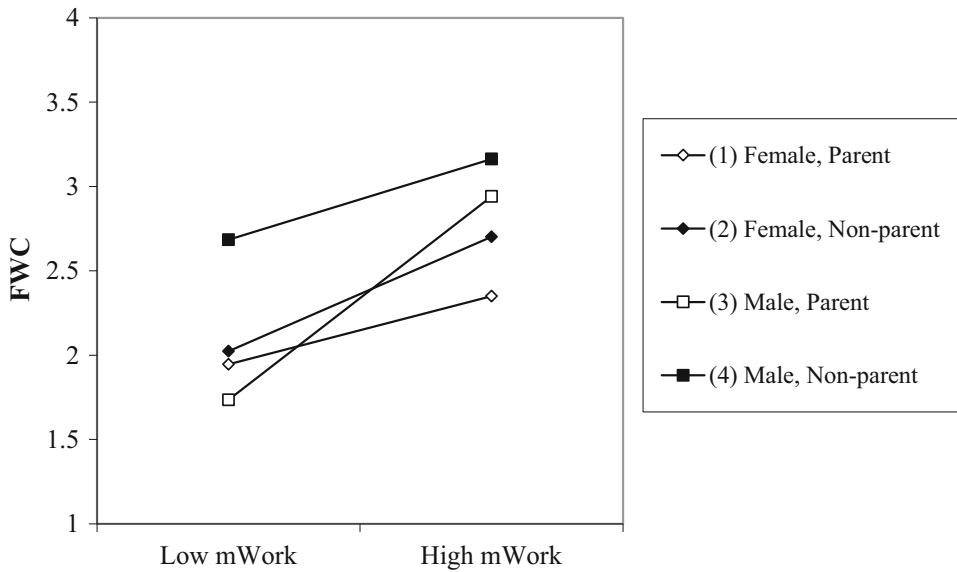


Figure 3 Three-way interaction of mWork \times Gender \times Parental status with FWC as the dependent variable

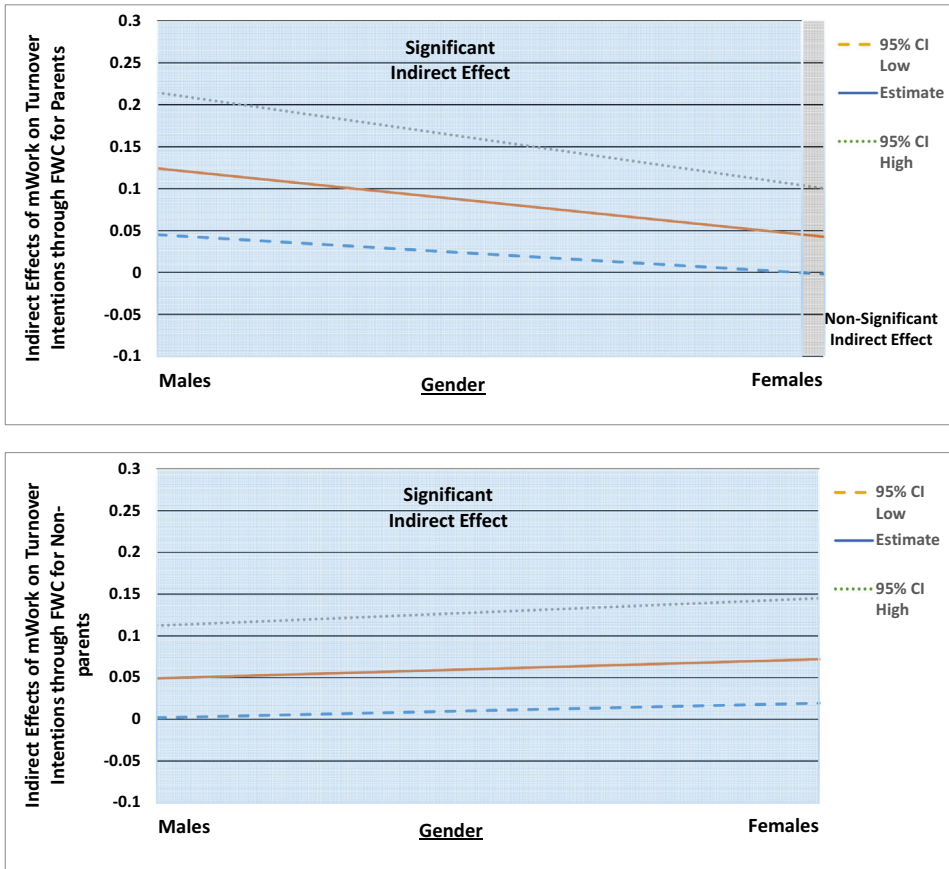


Figure 4 Indirect effect of mWork on turnover intentions (through FWC) by Gender + Parental status [Colour figure can be viewed at wileyonlinelibrary.com]

hypothesis. Figure 4 shows the significant moderated mediation effects toward 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 ($\beta = 0.12$ (0.04), $p = 0.0022$, [LLCI = 0.05; ULCI = 0.21]), while female parents report a non-significant indirect effect ($\beta = 0.04$ (0.03), $p = 0.0518$, [LLCI = -0.00; ULCI = 0.10]). Male non-parents also report a significant indirect effect ($\beta = 0.05$ (0.03), $p = 0.0406$, [LLCI = 0.00; ULCI = 0.11]), as do female non-parents ($\beta = 0.07$ (0.03), $p = 0.0126$, [LLCI = 0.02; ULCI = 0.14]).

Thus, the indirect effect of mWork is not significant across the full 95% confidence intervals for parents (top figure in Figure 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 4) shows that 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). Overall, the mean score for turnover intentions ($M = 2.83$) aligns similarly with other New Zealand studies (e.g. $M = 2.7$, Brougham and Haar 2020; $M = 2.8$, Haar 2020), suggesting the data reflect 'normal levels' of turnover intentions and not the widely 'hyped' Great Resignation. However, the literature indicates retaining skilled workers is an important human resource management (HRM) issue (Su, Wang and Chen 2020), with major costs involved for the organization, making understanding the drivers of turnover still vital. We did find strong support was found for mWork shaping worker turnover intentions, aligning with the work of Ferguson et al. (2016). The pressures of using smart devices to enable work in family time appears to play an important role in influencing turnover thoughts, with workers ultimately reacting poorly to their own excessive technology use and thus driving their turnover intentions.

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 and Bakker 2014) or combines WFC and FWC together (e.g. Boswell and Olson-Buchanan 2007; Harris, Marett and Harris 2011), 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 more theoretically aligned consequences of mWork. Under COR theory, we would expect mWork to reduce resources, making both work and family roles less easy to manage, and thus creating greater conflict. This contributes to the literature by showing technology can play a key role in influencing turnover, even in a COVID-19 context, in which more employees are working from home. Theoretically, it is the use of smart devices in family time that critically drives the intentions to quit, likely affirming that it encourages the family to voice criticism of the job and its 'reach' to the worker (via technology). It further shows that smart devices in family time have not become normalized and still retain the potential for detrimental employee effects.

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 WFC 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. Theoretically, this provides empirical evidence supporting the resource caravan approach of COR theory (Hobfoll 2001) and provides guidance for researchers around capturing more complex relationships, to adequately assess the resources and their effects on key employee outcomes like turnover intentions. In this case, while mWork is clearly detrimental, WFC and FWC provide a theoretically aligned context which is what the resource caravan approach encourages (Hobfoll et al. 2018). The theoretical contribution of this study is ensuring that multiple factors are included, especially those that are theoretically relevant (e.g. WFC and FWC) rather than picking individual factors and ignoring theoretical reasoning (e.g. Greenhaus and Beutell 1985). Further, testing empirical models that consider relevant approaches such as the resource caravan approach (Hobfoll et al. 2018) means that studies can make more theoretically justified empirical contributions.

Beyond the direct and mediation effects, the present study conducted 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), with some suggesting both gender and parental status might play important moderating roles (Michel et al. 2011). Interestingly, gender and parental status were both directly related to WFC and FWC (but not turnover intentions), with males and non-parents having direct and significant effects toward WFC and FWC (i.e. lower scores). However, with mWork, there were no significant two-way moderation effects to 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. Interestingly, female non-parents reported higher FWC than female parents, which is against expectations, although it does also reaffirm the focus on gender *and* parental status. One reason for this might be gender role expectations, in which female parents might be expected to have fewer roles to juggle due to a focus on a large and vital one (dependents), whereas the same might not be said for non-parent females. Perhaps they engage in more roles (e.g. family, friends, sport, communities) that create the potential for mWork to be especially detrimental, thus affecting these roles, resulting in greater conflict between them. This might also apply for male non-parents, who reported the highest FWC. This might reflect that those males without

dependents are engaging similarly in multiple roles, and it is their ability to juggle all these roles that is compounded detrimentally by mWork. Perhaps the after-hours work on smart devices reduces the time available to dedicate to these roles (e.g. sport, friends, activities) and this ultimately leads to conflict and a loss of harmony.

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). This approach, though, does align with the resource caravan approach (Hobfoll et al. 2018) and the broader work–family literature (Michel et al. 2011), making an important contribution. 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.

Theoretical contributions

Our study makes several theoretical contributions. We used Hobfoll et al.’s (2018) COR theory to understand how technology use can affect employee turnover intentions. Theoretically, using technology after hours for work in family time is likely to drain resources sufficiently, which then encourages employees to behave with higher turnover intentions. However, we also included both WFC and FWC to better understand the pathways of resource loss and how this impacts turnover intentions. Indeed, this aligns more closely with Hobfoll’s (2001) resource caravan approach, where resource experiences are likely to occur in combination, rather than singly. Thus, our empirical approach here tests relationships in a theoretically aligned way with COR theory. Further, the use of two-way, three-way, and moderated mediation tests further extend the resource caravan approach (Hobfoll et al. 2018) and provide strong support for COR theory.

As noted above, the overall model provides a strong theoretically grounded model which has useful theoretical implications for researchers. First, the resource caravan approach (Hobfoll 2001) encourages testing several resource factors, and we included both WFC and FWC because this approach is similarly theoretically grounded (Greenhaus and Beutell 1985). The testing of moderated mediation and moderated moderated mediation also makes a theoretical contribution because some relations are complex and nuanced (see Michel et al. 2011) and thus required more sophisticated models to gain deeper insights. This contributes to several literatures including turnover, WFC and mWork, and the testing of such boundary conditions allows researchers to explore effects otherwise

difficult to analyze such as gender and parental status (Michel et al. 2011). This approach makes important contributions to several literatures and the way researchers can test such complex relationships.

Implications

Our results have practical implications for employees. The pervasive nature of being tethered to the office via smart devices is detrimental and needs to be better managed. Such activities lead to greater WFC and enhance turnover intentions, not necessarily a behavior an employee would want to effect themselves. Hence, employees need to know that mWork activities can be pervasive and thus excessive usage should be cautioned. The mean score of mWork is below the midpoint although with a high standard deviation, so most employees are likely not engaging in mWork excessively. But those who are run serious risks around conflict and turnover thoughts. One way to manage the potential technology risks is around self-policing and ‘unplugging’ (Rosenberg 2019). A useful start might be ensuring such work is not conducted at home a few days a week (for those constantly utilizing mWork). Employees could then build up to ‘tech-free days’ and have family members help enforce them. This is consistent with the widespread perception in the popular press that mWork can ‘bind’ people to their employment (Boswell and Olson-Buchanan 2007; Day, Scott and Kelloway 2010). Further, organizations might also embrace ‘tech-free days’ and acknowledge that e-mails and phone contact might be effectively banned after hours and weekends except in emergencies. Organizations might also consider the implications of supplying smart devices to staff, with managers being encouraged to 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 human resource (HR) functions (Zhao, Cooke and Wang 2021), the present study warns this technology can be detrimental to employees’ well-being (WFC) and ultimately, their retention. HR departments might want to ‘front foot’ the 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 try these actions as a better way to manage employee well-being and ultimately retain staff.

Future research might also explore the potential *beneficial* effects of working with smart devices and how this might benefit some groups over others, such as working mothers. For example, perhaps working mothers – who did report the lowest levels of FWC from mWork – enjoy some benefits that working fathers do not enjoy. Further exploration of this potential difference is encouraged, especially through qualitative research to better understand these differences. For example, perhaps working mothers use smart devices to aid their work and family role management, and while excessive usage is ultimately detrimental, it might be that they see more frequent but limited usage as helping them manage roles. Clearly, the findings show some differences by gender and

parental status amongst the relationships tested here, and these findings should encourage researchers to conduct more finer-edged analysis.

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) recommend Harman's one-factor test as a basic CMB test, and the present study found that the unrotated factor analysis explained less than half of the variation (30.9%). 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 moderated mediation effect. We do acknowledge that the study included part-time workers, but hours worked was not significantly correlated to turnover intentions and only modestly ($r = 0.12$) with mWork. Future research might want to focus on full-time workers only. In addition, our sample included younger workers, and future research might want to address potential different life-cycle differences by focusing on older employees, such as those aged 30 years and older. Further, the overall sample came from workers across a wide variety of occupations and sectors, providing generalizable results. Finally, we acknowledge that the New Zealand post-lockdown context of our study is not typical of many countries and economies. Thus, the effects found here are specific to the New Zealand experience at this time.

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 that 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.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships or any other potential conflict of interest.

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Data availability statement

Data are available from the second author on request.

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