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Job characteristics, work-life balance, job motivation and well-being during the COVID-19 Pandemic
The roles of Job Crafting and Strengths Use

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Job characteristics, work-life balance, job motivation and well-being during the COVID-19 Pandemic: The roles of Job Crafting and Strengths Use.

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# Managerial summary

This study focused on the relationships between job characteristics, work-life balance, job motivation and psychological well-being during the COVID-19 pandemic, and on the impact of job crafting and strength use on the effect of job demands and job resources on work-life balance. To establish and explain all relationships and gain a better understanding of what strategies people use, mixed methods were used.

Experiences of employees were gathered using a qualitative study consisting of two focus group discussions in two companies involving a total of 10 employees who worked at home during COVID-19. The focus group discussions were audiotaped and transcribed verbatim. Results were analysed with the grounded theory method using the Job Demands Resources (JD–R) model as a theoretical framework. Also, a quantitative survey study was performed among of a diverse group of 522 respondents from different backgrounds and from different sectors who worked from home during COVID-19. For the quantitative data, two statistical programs (Mplus and SPSS) were used following a structural equation modelling approach.

Results show that job demands are partially negatively related to work-life balance and job resources are partially positively related to work-life balance. Furthermore, high levels of work-life balance partially relate to more job motivation. As hypothesised, a high level of job motivation is related to more psychological well-being. Contrary to expectations, a weak moderating effect for job crafting and no moderation effect for strength use for the relationship of job demands and job resources with work-life balance was found. What could play an important role be that in an exceptional situation such as a pandemic, people display different behavior than they usually do. Being forced to work from home can potentially evoke different types of behaviour, that are hard to explain. It can be concluded that the effects of job crafting and strength use that are normally found (i.e., in a normal situation), were (almost) not significantly found in times of COVID-19. It can be argued that the application of job crafting practices and the deployment of strengths do not outweigh the demands of having to work from home all week. The main reason for this seems to be that working from home only leads to a thinner separation of work and private life, in turn leading to an overlap between work and home demands. Furthermore, an argument could be that people are really conserving their capacity of mental resources and therefore are not able to go the extra mile. So, then they cannot really use their strengths or job craft because it takes extra energy and effort, which they do not have at the moment. No significant differences between single people and those who live

together and/or have children were found. The need for contact with colleagues also remains very important. It seems that being able to meet virtually only is not satisfying enough to experience the job resource of team cohesion. Therefore, being able to meet in person seems to be an important precondition for experiencing contact with colleagues as a resource.

Insights from working at home during COVID-19 can, beyond the immediate context of the pandemic, guide home workers practice after the crisis. New ways of job demand and resources have emerged in times of COVID-19, which are yet to be discovered. This means that someone working at home must deal with different demands and resources. Also, ways can be sought to create a better separation between work and private life. People are seeing their work and their family lives now totally different than before, and it is now becoming more integrated, it is more like an overall experience. People need to be more autonomous, but they also need to change their way of work, or their view on work, because it is not anymore, a traditional 9 to 5 thing, and it is not a 9 to 5 thing going forward. It is probably going to be more of a 24/24, but one should be able to manage it appropriately. The forced nature of working from home due to COVID-19 has generally had a negative effect on employees. It could therefore be argued that employers give employees the choice after COVID-19 to decide for themselves when they work from home, so that this can be done on a voluntary basis.

# Preface

This report is the result of the master thesis project. With this master thesis, I will fulfill my degree of Master of Science in Innovation Management in the Human Performance Management group of the School of Industrial Engineering at the Eindhoven University of Technology. I could not have done this all by myself so that is why I would like to thank some people.

First, I would like to thank my university supervisor Llewellyn van Zyl for his great enthusiasm, guidance, support, and inspiring conversations during my Master thesis project. With your knowledge and expertise, you provided me valuable insights which were very helpful in improving my master thesis. I am also thankful for my second supervisor Pascale Le Blanc for your wisdom and valuable feedback. And at last, I would like to thank Sonja Rispens for your time to assess my thesis.

Furthermore, I want to thank Melissa Jongerius for giving me the opportunity to perform my graduation internship at draaijer+partners and providing me with feedback during our weekly meetings. Many thanks to all employees and everybody who participated in this study by filling in the online survey and participating in the focus group discussions.

I enjoyed gaining, understanding and translating all knowledge. Please enjoy reading the thesis as much as I did while working on it.

Menno Cornelisse
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# Table of Contents

# 1. Introduction

The outbreak of the deadly SARS-Cov-2 virus, also called 'Coronavirus Infectious Disease 2019' (COVID-19), has had a significant impact on the entire world and specifically on the functioning of society (Wilder-Smith et al., 2020). COVID-19 was officially declared a public health emergency of international concern. The COVID-19 pandemic has severely constrained the global community with various economic (e.g., closing stores and cancelling events), political (e.g., introducing regulatory laws), social (such as social distancing and isolation), and psychological (e.g., increase in loneliness and depression) consequences (Kaufman et al., 2020). These consequences are a direct result of the approaches and measures global governments employed to manage the spread of the disease (rather than the disease itself).

Isolation, quarantine, social distancing, and community containment measures are used to control person-to-person transmittable diseases (Wilder-Smith & Freedman 2020; Wilder-Smith et al. 2020). Governments worldwide have taken different measures to stop the COVID-19 virus from spreading, such as closing borders, lockdowns, and curfews (Chaudhry et al., 2020). Moreover, individuals were asked to change their hygiene and social behaviours (e.g., avoiding social gatherings, washing hands more frequently, and avoiding handshakes), and later more rigorous and costly protection measures were taken, such as school and store closures (Fetzer et al., 2020). One consistent measure to decrease the spread of COVID-19 is to request people to stay at home as much as possible (Götz et al., 2021). These governmental interventions may have affected individuals' behaviour, mental health, and social security (Pfefferbaum & North, 2020)

The Netherlands also implemented different policies to keep citizens physically distant from each other (Van Tilburg, Steinmetz, Stolte, van der Roest, & de Vries, 2020), including the measure for people to work from home as much as possible (Kramer & Kramer, 2020). This has led to a radical shift from on-site to virtual collaboration for many people (Waizenegger, McKenna, Cai, & Bendz, 2020). While such a measure is crucial to halt the spread of the infection, this might also have severe drawbacks for the working population, such as difficulties to manage work and family.

The COVID-19 lockdowns provide a unique context that is significantly different from the previous working from home literature (Waizenegger et al., 2020). The main differences are that working from home is enforced, applied to all, and introduces restricted mobilities. Employees who formerly spent all or most of their time working inside their organization's

physical boundaries now had to quickly adjust to remote work environments (Carnevale & Hatak, 2020). This has likely further limited the segmentation between work and private life and led to greater difficulties in "unplugging" from work demands (Chawla, MacGowan, Gabriel, & Podsakoff, 2020).

Before COVID-19, a vast array of academic attention has already been paid to remote e-working. Remote e-working is a term used to describe "work being completed anywhere and at any time regardless of location and to the widening use of technology to aid flexible working practices" (Grant, Wallace, & Spurgeon, 2013, p. 3). Engaging in remote e-working practices can significantly change job demands, autonomy, and relational aspects of work (Wang, Liu, Qian, & Parker, 2020). Studies have emphasised the benefits of working from home and identified that remote e-working frees knowledge workers from office distractions and commuting time, which in turn aids them to concentrate on individual tasks (Kelliher & Anderson, 2010). This increased sense of personal autonomy leads to higher levels of engagement at work and commitment to the organisation (House & Kerr, 1973). Increased work autonomy that allows knowledge workers to have flexibility in their schedule has been reported as one of the key benefits of working from home and a contributor to employees' well-being (Delanoeije, Verbruggen, & Germeys, 2019). Moreover, with the blurring boundaries between the work and home space, remote e-workers have lower work-to-home conflicts (Golden, Veiga, & Simsek, 2006). Because of technology, they can combine home and work demands and achieve work-life fusion (Haeger & Lingham, 2014). Employees are more likely to experience positive emotions of remote e-working, when they are more open to experience, ruminated less, and had more social connections outside their workplace (Anderson et al., 2015).

However, the literature on remote e-working also discusses a wide range of issues, such as blurring work-life boundaries (Golden, 2012), decreasing autonomy (Dimitrova, 2003), and decreasing productivity (Sheehy, 2008). The blurred boundary between home and work causes problems such as the "always-on culture" facilitated by information and communication technologies (ICT). According to Schlachter et al. (2017), individuals who use ICTs for work matters, during non-working hours, may fail to mentally detach and switch off from work. The blurred boundaries and constant connection make it difficult to recover from work (Derks, Bakker, Peters, & Van Wingerden, 2016), and may involve distractions from the home environment and family members (Allen, Golden, & Shockley, 2015). This eventually can translate into poor well-being and health problems (Kompier, Taris, & Van Veldhoven, 2012).

Although these arguments hold under normal circumstances, the forced remote e-working due to COVID-19 may significantly increase employee' job demands and decrease their perceptions of available job resources. Remote e-working in times of COVID-19 may show different effects of job demands and job resources than the ones that have already been described in the literature. Remote e-working now separates people for a long time from important physical and social job-related resources, such as psychical contact with colleagues and supervisors or co-workers (both formal and informal). Job resources are important for enhancing important work-related outcomes like engagement and commitment, the lack thereof may even worsen the effect job demands have on important organisational outcomes. Also, the demands at home have changed substantially (Venkatesh, 2020). Parents can experience the combined demands of the pressure of working at home and simultaneously supporting and raising their children (Venkatesh, 2020). Furthermore, human beings have social needs, and their social interactions and the fulfilment of these needs have been crippled, which can be perceived as demanding. Therefore, remote e-working from home could, in times of COVID-19, be seen as an intolerable job demand, in which workers suffer from increased demands combined with lowered resources.

High demands in combination with a lack of job resources undermine an employee's intrinsic work motivation (Van Yperen, Wörtler, De Jonge, 2016). Intrinsic work motivation has been found to affect organizational commitment (Karatepe, & Tekinkus, 2006; Mohsan et al., 2011) and promotes higher levels of psychological well-being (Deci, & Ryan, 2008). Avery et al. (2007) suggest that greater satisfaction with co-workers provides employees with psychological conditions favourable to job engagement and performance. Other studies also indicate that satisfaction with co-workers enhances a person's commitment at work and, consequently, job performance (Bishop & Scott, 2000; May, Gilson, & Harter, 2004). Therefore, employees' lack of interaction with co-workers could have negative effects on their psychological well-being and performance via low motivation.

Little is known about what resources could help employees' perceptions coping with the job demands as a result of COVID-19. Companies may not be able to provide all the resources people need to manage these demands. Given the COVID-19 recession, companies need to be more frugal and careful about what initiatives they invest in. Firms usually underinvest in employee welfare as labour costs reduces corporate profitability in a way similar to financing costs to ensure that operations go on smoothly (Shan & Tang, 2020). However, if companies want to help their employees in coping with their demands in order to withstand the crisis better, they should focus more on providing their workforce with the right resources.

High levels of stress experienced by employees can be a very costly affair for the organization since it can lead to health-related issues and as a results absenteeism (Cooper and Cartwright, 1997).

One approach that seems to yield the highest returns in times of crisis and stress is helping people deploy their personal resources (Biggs, Brough, & Drummond, 2017; Losada-Baltar et al, 2021). Personal resources are defined as the psychological aspects or characteristics of the self that are generally associated with resiliency and refer to the ability to successfully impact and control one's environment (Hobfoll et al., 2003; Schaufeli, & Taris, 2014). As such, personal resources "(a) are functional in achieving goals, (b) protect from threats and the associated physiological and psychological costs, and (c) stimulate personal growth and development" (Xanthopoulou et al., 2009, p.236). Two examples of these personal resources are job crafting (Demerouti, 2014) and strength use (Govindji & Linley, 2007). Job crafting can be seen as the changes that employees make on the level of job demands and job resources to make their job more engaging, meaningful, and satisfying (Demerouti, 2014). It can be argued that this a way of protecting the self from threats and associated physiological and psychological costs caused during COVID-19. Strength use can contribute to the optimal design of work to reduce the perception of the negative effects of the demands, such as work-life imbalance (Van Woerkom, Oerlemans, & Bakker, 2016), for example by using the strength of good planning capability to efficiently plan working hours in order to avoid overtime. Furthermore, the proper use of strength can be functional in achieving goals and might stimulate personal growth and development. Therefore, job crafting, and strength use could help to improve the work-life balance. A good balance between work and life has been found to lead to greater psychological well-being and more job satisfaction (Kim et al., 2016). And according to Wright and Cropanzano (2004), people who feel psychologically well perform better.

Existing remote e-working literature does not provide a thorough exploration of government-enforced working from home situations (Waizenegger et al., 2020). As COVID-19 forces entire companies to work from home, it is essential to explore how knowledge workers navigate through the challenges of changing working environments and how they can maintain "business as usual" through technological means, in order to investigate the organizational, behavioural, and societal impacts of the pandemic (Ågerfalk, Conboy, & Myers, 2020).

As such, the purpose of this paper is to investigate the relationship between job characteristics, work-life balance, job motivation and psychological well-being during the

COVID-19 pandemic and what is the impact of job crafting and strength use on the relationship of job characteristics on work-life balance. Given the current unique situation, it is not completely clear yet what job demands, and resources people are facing and how people act on them. Exploring this in more detail might yield valuable insights to support workers in these taxing times.

# 2. Literature review

## 2.1. COVID-19 and the "New Normal"

The work situation looked different before the COVID-19 pandemic. In the past 15 years, a trend was already going on towards working from home (Veldhoen, 2005; Blok et al., 2012; Bosua et al., 2013), the so-called "New Ways of Working (NWW)', based on a former study of Lefebvre and Nicholson-Smith (1991) exploring alternative ways of working. The NNW refers to work practices regarding open, flexible, virtual, and paperless offices, which contrasted with the conventional fixed and cellular office spaces of the company (Veldhoen, 2005). The office has a different purpose and is a so-called 'smart building', which is designed to encourage workers to be creative and passionate (Kornberger & Clegg, 2004), and on the other side change to working more from home (Veldhoen, 2005). This enabled organizations to design jobs in different ways and control work performed in remote locations (Wicks, 2002).

Employees could benefit from this new way of working because of better work-life balance due to higher work-time flexibility (Tietze et al., 2009; Tremblay, & Thomsin, 2012), increased job autonomy (Valcour, & Hunter, 2005) and reductions in work-stress (Wheatley, 2012) due to better opportunities for a better allocation of time, and as a result more productivity (Baruch, 2000; Golden and Veiga, 2008). A virtual office provides flexibility to the employees (Zhang, 2016), but to enjoy such a benefit, it also requires a balanced work and life.

Yet, research pointed out this way of working also has negative effects (Zhang, 2016), because it would raise a feeling of isolation (Kurland, & Cooper, 2002; Marschall, Michaels, & Mulki, 2007) due to lack of face-to-face interaction (Wheatley, 2017), and can reduce job quality (Brown et al., 2012). Research by Jones (1997) showed that remote e-working would blur the boundaries between work and life. So, though remote e-working can lead to gains in work-life balance, it can also reduce work-life balance (Dizaho et al., 2017) because employees are more likely to work for longer periods, including weekends and evenings (Valcour, & Hunter, 2005). This can be even more challenging when little children must be managed (Varatharaj, & Vasantha, 2012).

Now, all over the world due to the COVID-19 pandemic, people are being encouraged or forced to work from home instead of commuting to their regular work location (Rubin, Nikolaaeva, Nello-Deakin, & Brömmelstroet, 2020). During the COVID-19 pandemic, people in the Netherlands were requested to work from home if possible, to avoid busy places, stay at

home and get tested when having symptoms of the virus (Dutch Government, 2020). A particularly challenging environment is created for organizations, with for example managers having to quickly venture into the unknown as they strive to help their workforce adapt to and cope with radical changes occurring in the work and social environment (Carnevale, & Hatak, 2020). Managers will also need to remain attentive to employees who might be disproportionately affected by the current work environment. Furthermore, working in times of COVID-19 creates an environment with heightened levels of work autonomy for employees. This has an impact on employees' productivity and may change their work-life balance which in turn could affect their well-being (Carnevale & Hatak, 2020).

## 2.2. Job Characteristics and COVID-19

The Job Demands-Resources (JD-R) model by Bakker and Demerouti (2017) could provide a theoretical framework through which the impact of COVID-19 on employees' working conditions could be interpreted. The assumption is that the job characteristics of every occupation can be classified into two general categories: job demands and job resources (Demerouti et al., 2001; Bakker & Demerouti, 2007).

Job demands consist of physical, psychological, social, or organizational aspects, such as high work pressure and emotionally demanding interactions with clients or customers, that require ongoing physical and/or psychological effort which reduce health and energy (Demerouti et al., 2001). This eventually could lead to severe mental and physical disorders over a period of time and low employee performance (Demerouti & Bakker, 2011). As a result, the additional workload, time pressure and work-life imbalance may eventually lead to burnout which could seriously threaten employee well-being (Bakker, & Demerouti, 2017).

In contrast, job resources involve physical, psychological, social, or organizational aspects, such as autonomy in scheduling work tasks, getting feedback and social support from co-workers, which motivate and give energy to employees and help in achieving work goals, which in turn reduce the consequences of higher job demands (Demerouti & Bakker, 2011).

In short, higher job demands lead to health impairment and strain, whereas higher resources increase motivation and productivity (Demerouti et al., 2001; Schaufeli & Taris, 2014) and lead to higher levels of performance (Parker et al., 2017). During this COVID-19 pandemic, job demands such as work overload are experienced more due to organizational requirements, and the demands placed on them by their children and the home (Lemos, Barbosa, & Monzato, 2021). Moreover, mostly working at home during COVID-19, have led

to fewer social interactions and poor communication both personal and business (Stich, 2020). In the sectors in which work from home is not convenient, employees can experience a lack of job resources such as a lack of job fulfilment and the lack of job security (Karani et al., 2021). On the other hand, COVID-19 has provided home working with job resources such as job autonomy as people are able to organize their work completely themselves.

## 2.3. Job Demands-Resources and Work-Life Balance

Previous research has consistently shown that job resources (e.g., autonomy, opportunities for development, performance feedback and social support) evoke more positive experiences among employees, which could spill over to the home environment (Bakker & Geurts, 2004; Demerouti et al., 2004; Mostert, Cronjé, & Pienaar, 2006). When job demands are high and job resources are low (for example a lack of autonomy and lack of constructive performance feedback from their superiors), employees' freedom to act and take timely decisions in their jobs is limited, which leads to employees' inability to manage work-life balance (Demerouti & Bakker, 2011; Adil, & Baig, 2018).

Work-life balance is the degree to which an individual can simultaneously balance the emotional, behavioural and time demands of both paid work, family and personal duties (Hill, et al., 2001). In simple terms, the definition of work-life balance is divided into two parts, namely 'work', which normally includes paid employment, and 'life', including activities outside work (Guest, 2002). The term 'balance' assumes that there exists a trade-off between the work and life of an employee. However, the two concepts of work and life can overlap with each other (Taylor, 2002), for example when employees take private phone-calls from a family member while working or when working longer hours and working during evenings and weekends. Frone (2003) proposed that work and life are in balance when there is an absence of conflict between work and family or personal roles.

To measure and explain the concept of work-life balance, the concept of work-home interaction is frequently used in the literature (Bakker, Demerouti, & Burke, 2009; Dikkers et al., 2007; Peeters, Montgomery, Bakker, & Schaufeli, 2005). Work-home interaction is defined as a process in which the functioning of a working (behaviour) in one domain (e.g. work) is influenced by (negative or positive) load reactions that have built up in the other domain (e.g. home/life) (Demerouti, Geurts, & Kompier, 2004). Four types of interactions can be distinguished (Demerouti et al., 2004, p.7-8): "(1) *negative WHI* (NWHI), referring to a situation in which negative load effects built up at work hamper functioning at home, (2)

14

*negative HWI* (NHWI), referring to negative load effects that have built up in the home situation and interfere with functioning at work, (3) *positive WHI* (PWHI), defined as positive load effects built up at work that facilitate functioning at home, and (4) positive HWI (PHWI), referring to positive load effects developed in the home domain that facilitates the functioning at work".

Remote e-working can dilute the distinction between work and life because especially mobile/virtual technologies allow, enable, and enhance trans-temporal and trans-spatial communications leading to crossing of the boundary (Arnold, 2003; Golden & Geisler, 2007; Boswell & Olsen-Buchanan, 2007). The use of ICT provided an additional way to access work anytime and anywhere which increases the permeability of work-life boundaries (Haddon & Silverstone, 2000; Valcour & Hunter, 2005). To understand the work-life balance for remote e-working, it is important to be aware of the different demands and (personal) resources (such as one's energy and time) which one can deploy (Lazar, Osoian, & Ratiu, 2010).

According to Taylor (2002), one of the most essential ingredients in organisations is time, which consists of when we work, for how long, and how we can balance working time with our time outside of work. Long working hours have been identified as a signal of commitment, productivity and motivation to the employer (Lazar, Osoian, & Ratiu, 2010). However, long paid working hours can also create a feeling of work overload and limit the amount of time an individual can spend with family members. The shortage of time may make it difficult for employees to do family duties and sustain family relationships satisfactorily. Research by Major, Klein and Ehrhart (2002) revealed a positive relationship between paid work hours and work-to-family conflict.

In the work domain, repeated occupationally induced fatigue, caused by job demands, requires extra effort during every new working period to cope with these demands. When outside work, more fatigue is experienced, due to these demands (De Croon et al., 2004). This also applies the other way around, when home demands require too much effort and time and a lack of home resources to fulfil the task requirements is experienced, this will also negatively affect functioning in the work domain (Geurts & Demerouti, 2003). Therefore, in line with results of Kinman and Jones (2008), demands present at work can have a negative influence on the work-life balance of an employee.

*Hypothesis 1a: Job demands are negatively related to work-life balance.*

In contrast, work can be enjoyable and appealing too when the boundaries between work and leisure are blurred (Sullivan & Lewis 2001). If enough job resources are present during and after working time, high demands in either the job or the home setting will not have adverse health consequences (Geurts et al., 2005). Adequate management of multiple roles, both work and life-related roles, may provide energy (Marks, 1977; Geurts & Demerouti, 2003) and have positive consequences (e.g., skill acquisition and greater self-esteem). Employees' freedom to act (job autonomy) and take timely decisions in their jobs, provide employees with the ability to better manage work-life balance. Some studies showed that the boundary-blurring in remote e-working was related to greater productivity, higher morale, increased flexibility, and more job satisfaction (Hill et al., 1998; Grzywacz & Marks, 2000; Tremblay, 2002). Thus, work-life balance bears a positive impact on individuals with the freedom to manage and organize its own time holding multiple roles in both spheres.

*Hypothesis 1b: Job resources are positively related to work-life balance.*

## 2.4. Effect of Work-Life Balance on Job Motivation

Work-life balance is generally associated with a balance between the amount of effort and time someone devotes to both work and personal activities, to sustain an overall sense of harmony in life. (Clarke et al., 2004). A balance between work and life is associated with the employees' satisfaction and motivation in their jobs (Voydanoff, 2005). Motivation enables action for people to do their job.

Job motivation is defined as the motivation that arises from the obtained pleasure from their job and their resulting greater likelihood to engage in job-related tasks willingly (Hackman & Lawler, 1971; Perry & Porter, 1982; Tietjen & Myers, 1998). Two types of motivation can be classified: intrinsic and extrinsic (Coetsee, 2002; Gagné et al, 2010). Intrinsic motivation is defined as doing something for its own interest because it is enjoyable and interesting (Deci & Ryan, 2000). Intrinsic motivation is driven by emotions that emerge while engaging in the activity (Gagné et al, 2010). In contrast, extrinsic motivation is triggered via separable internalizations such as tangible or verbal rewards. For this type of motivation, satisfaction does not come forward from the activity itself but rather from the extrinsic consequences to which the activity leads (Gagné & Deci, 2005). The instrumental reasons for extrinsic motivation can differ, depending on how internalized the motivation is. Internalization can differ in terms of how well it is incorporated within a person's existing self-regulation, such as values and interests that this person already holds (Gagné et al, 2010).

Different levels of internalisation can be distinguished, namely: identified regulation (doing an activity because one identifies with its meaning or value), introjected regulation (behaviour through self-worth contingencies, which are things that people believe they need to be or do to have worth as a person (Crocker and Knight, 2005)) and external regulation (doing an activity in order to obtain rewards or avoid punishments) (Gagné et al., 2010).

Job motivation can be considered a positive emotion (Pinder, 2008) and is different for each person. High work motivation has been found to relate to high job satisfaction, feelings of personal accomplishments, and low turnover intentions (Wegge et al., 2006). Gagné et al. (2010) found motivation differences based on the type of work people do. For example, public sector employees are significantly more motivated by a balanced work-family relationship compared to private-sector employees (Buelens & Van den Broeck, 2007), because public sector employees are less inclined than private-sector employees to relocate their family for a better job (Posner and Schmidt, 1996). According to Byrne (2005), the achievement of a better work-life balance can result in more job motivation, less stress and higher productivity.

*Hypothesis 2: A high level of work-life balance is related to more job motivation.*

## 2.5. Effect of Job Motivation on Psychological Well-being

Psychological well-being (PWB) is usually conceptualised as some combination of a hedonic perspective, referring to a positive affective state such as happiness (Deci & Ryan, 2008), and a eudemonic perspective, referring to fulfilment and perception of a meaningful life (Chen et al., 2013). PWB involves multiple facets, consisting of a positive evaluation of oneself and one past (self-acceptance), a sense of continued development and growth as a person (environmental mastery), the belief that one's life is meaningful and purposeful (purpose in life), qualitative relations with others (positive relations with others), the capacity to manage one's life and surrounding world effectively (personal growth), and a sense of self-determination (autonomy) (Ryff 1989; Ryff & Keyes 1995; Ryff & Singer 2008).

High work motivation relates to high job satisfaction, feelings of personal accomplishments, and low turnover intentions (Wegge et al., 2006). Furthermore, need fulfilment enhances employees' intrinsic motivation and stimulates full internalization of extrinsic motivation which in turn could lead to better psychological well-being (Gagné & Deci, 2005).

Whereas a high level of work-life balance is hypothesized to lead to more job motivation, employees who perceive a stronger work-life imbalance are more likely to retaliate with negative job attitudes (Gould-Williams, 2007; Gould-Williams & Davies, 2005). People who believe that their perceived work-life imbalance is caused by their job demands or lack of job resources are more likely to experience job dissatisfaction, lowered job motivation, a lack of organizational commitment, and a perception that their firms care less about their well-being. Overall, a high level of employee work motivation can affect their psychological well-being, such as lower health complaints and low emotional exhaustion (Blais et al., 1993; Wegge et al., 2006).

*Hypothesis 3: A high level of job motivation is related to more psychological well-being (PWB).*

## 2.6. Personal Resources: The Moderating effect of Job Crafting and Strength Use

Personal resources refer to a person's belief about how much impact and control they think they have over their environment (Bakker, & Demerouti, 2017). Personal resources are related to stress resilience and are expected to lessen the undesirable impact of job demands (Xanthopoulou et al., 2007). Individuals who proactively build a resourceful and challenging work environment for themselves will have the personal resources that can lead to diverse positive outcomes which are crucial to their health and well-being (Greenblatt, 2002; Vogt et al., 2016). Higher levels of personal resources provide a better mastery to deal more effectively with demanding conditions, and in turn prevent negative outcomes, such as exhaustion (Pierce & Gardner, 2004; Mäkikangas & Kinnunen, 2003). Furthermore, heightened personal resources provide the ability to achieve a good work-life balance, which may contribute to enhanced retention and reduced burnout (Greenblatt, 2002). An employee could use job crafting and strength use to design its work in such a way that a balance between job demands and job resources can be found, and the work-life balance can be better handled.

Wrzesniewski and Dutton (2001) introduced the concept of job crafting to refer to a process in which employees shape their jobs. Job crafting is defined as the proactive changes that employees make regarding their job demands and job resources to obtain and optimize their personal work goals (Tims, Bakker, & Derks, 2012), to make their job more meaningful, engaging, and satisfying (Demerouti, 2014). The use of job crafting behaviours in combination with higher levels of job resources, due to their (intrinsic and extrinsic) motivational potential (Xanthopoulou et al., 2007), could lead to higher levels of motivation (Bakker, & Demerouti,

2017). To modify the job demands, an employee could use job crafting to design his/her work in such a way that the work-life balance can be better handled (for example, when working from home, by taking more breaks or by changing place to better isolated workplaces in the house).

> *Hypothesis 4a: The relationship between job demands and work-life balance (NWHI/NHWI/PWHI/PHWI) is moderated by job crafting.*
>
> *Hypothesis 4b: The relationship between job resources and work-life balance (NWHI/NHWI/PWHI/PHWI) is moderated by job crafting.*

The use of strengths may help individuals to function well in a specific work context and keep the work-life balanced (Van Woerkom, Oerlemans, & Bakker, 2016). Theoretically, strengths are understood to be natural capacities that we use to enable authentic expression (Govindji & Linley, 2007), and to give more energy (Linley & Harrington, 2006). This allows people to perform at their personal best (Wood et al., 2011). Also, according to the Conservation of Resources (COR) theory (Hobfoll, 2001), people yearn to build, protect, and retain energizing personal conditions that enable them to cope with job demands. Strength use can be seen as a proxy for understanding what one's strengths is (identification), knowing what its function is and when it is appropriate to activate it (knowledge). Therefore, strength use can be seen as an internal personal resource.

Research has shown that strengths use leads to a reduced level of stress, greater self-esteem, better well-being (Wood et al., 2011; Harzer & Ruch, 2012; van Woerkom & Meyers, 2015). Examples of strength use, when working at home, are to plan working hours to avoid overtime or better-transferring work to other employees, when possible, to avoid high levels of workload. Strength use is a way to reduce the level of absenteeism when someone experiences both high workload and high emotional demands, even when it is difficult to redesign the job demands (Van Woerkom, Bakker, & Nishii, 2016). So, strengths help to protect the psychological and physical well-being, which individuals use to serve as indispensable elements of their "stress resistance armamentarium" (Hobfoll, 2002, p. 312).

> *Hypothesis 5a: The relationship between job demands and work-life balance (NWHI/NHWI/PWHI/PHWI) is moderated by strength use.*
>
> *Hypothesis 5b: The relationship between job resources and work-life balance (NWHI/NHWI/PWHI/PHWI) is moderated by strength use.*

Literature doesn't provide information of how people experience working at home during a pandemic, craft their jobs and use their strengths and in times of COVID-19. Therefore, information will be gathered on what strategies people are utilising and how they are utilising their strengths. The results can provide insights and can yield practical implications to help people to better manage working for home in the future.

# 3. Research Objective

The purpose of this paper is to investigate the relationship between job characteristics, work-life balance, job motivation and psychological well-being during the COVID-19 pandemic. Specifically, it aims to determine the impact job crafting and strength use has on the effect of job demands and job resources on work-life balance. Given this unique situation, it is not clear what job demands, and resources people are currently facing and how they act on them. Therefore, the experiences of employees are inquired to gain a better understanding and better fit this in the COVID-19 situation. The result of this research provides more insight into how people deal with working from home and how this in turn affects their well-being. The conceptual framework of this study is presented in Figure 1.
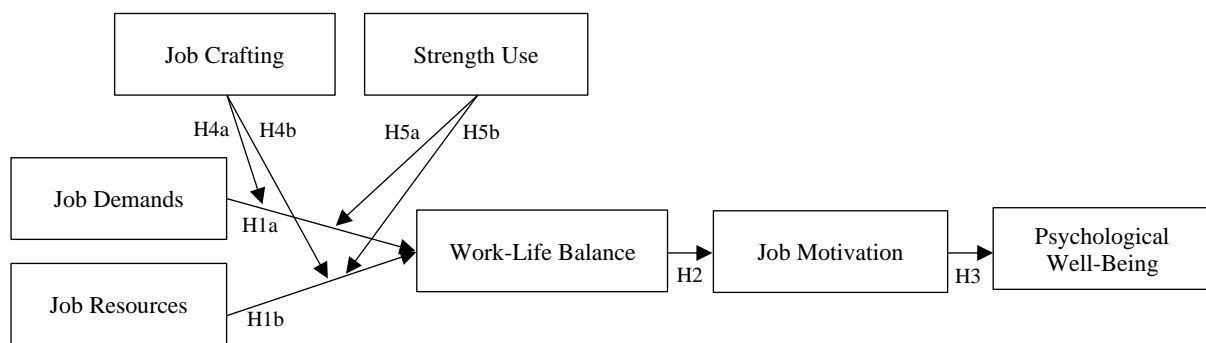


*Figure 1. Conceptual framework*

# 4. Research Methodology

During this research, insights were gathered about the effects of working from home during COVID-19. Various research methods were used. First, the approach is presented to provide the reasoning of the research procedure. Second, the sample selection and data collection procedure are described. Third, the measuring instruments are presented. Finally, the methods employed to process the data are discussed.

## 4.1. Research approach

A sequential mixed-methods design was used to assess the relations within the conceptual framework. Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e. g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (Schoonenboom, & Johnson, 2017). The overall goal of mixed methods research, of combining qualitative and quantitative research components, is to expand and strengthen a study's conclusions and, therefore, contribute to the published literature. Mixed methods research is about heightened knowledge and validity.

Qualitative methods are used to gain understanding about the investigated phenomenon (Van Aken, Berends, & Van der Bij, 2007). The used qualitative data collection method is a focus groups discussion. The goal was to determine job and personal characteristics, in terms of job demands, job resources, job crafting, strength use that influence work-life balance and how these in turn influence job motivation and well-being.

Quantitative methods are used to test the statistical significance of the proposed relationships. A cross-sectional design can be used to collect data to make inferences about the population of interest (universe) at one point in time (Lavrakas, 2008).

## 4.2. Sample Size and Sampling method

In the case of any type of research, it is desirable to test the entire population, but in most cases, this is not possible and therefore a manageable representative group, called the sample, is taken from the population (Etikan, Musa, & Alkassim, 2016). In this research, convenience sampling is used for both qualitative as quantitative research. Convenience sampling is a type of nonprobability where people from the target population that meet specific practical criteria, such as easy geographical proximity, accessibility, or the willingness to participate, are

included for the purpose of the study (Dörnyei, 2007). A criterion for this study is practising an office job and working remotely from home since the start of COVID-19.

In terms of sample size for the qualitative study, a focus group discussion should be anywhere between 5-10 participants depending on the study (Hennink, 2013), since adding more participants could lead to data saturation (Hancock, Amankwaa, Revell, & Mueller, 2016). Data saturation is best described as data adequacy meaning no new information is obtained (Kerr, Nixon, and Wild, 2010). Two focus groups were performed consisting of 6 people (3 male, 3 female) for draaijer+partners and 4 people (1 male, 3 female) for Q3Consultants.

In quantitative research, larger samples mostly produce more stable solutions and give better goodness-of-fit indexes, but according to Hair et al. (2014), sample size decisions must be made based on a set of five factors (multivariate normality of the data, estimation technique, model complexity, the amount of missing data, and the average error variance among the reflective indicators). Power analysis for a one sample t-test was conducted using the G-POWER software (Faul et al., 2009) to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, a medium effect size ($d = 0.5$), and two tails was performed. Based on the before-mentioned assumptions, the desired sample size is 300. Therefore, the desired sample size for this research was at least $N = 300$ to be able to perform Structural Equation Modelling (SEM). SEM is a name for a large set of techniques based on the general linear model (Ullman & Bentler, 2003).

A total of 522 participants ($N = 522$) were recruited for filling in an online survey. Participants' ages ranged from 18 years to 80 years. The mean age of participants was 40.93 (SD = 12.73). Most participants (35,4%) worked in Higher Education & Scientific Research. The biographical characteristics of the participants are shown in

Table 1.

*Table 1. Characteristics of the participants (N = 522)*

| Item | Category | Frequency (*f*) | Percentage (%) |
|---|---|---|---|
| Gender | Male | 250 | 47,9 |
| | Female | 270 | 51,7 |
| | Unknown | 2 | 0,4 |
| | | | |
| Age | 18 to 25 | 54 | 10,3 |
| | 26 to 30 | 57 | 11 |
| | 31 to 35 | 92 | 17,6 |
| | 36 to 40 | 89 | 17 |
| | 41 to 45 | 58 | 11,1 |
| | 46 to 50 | 49 | 9,4 |
| | 51 to 55 | 44 | 8,5 |
| | 56 to 66 | 62 | 11,8 |
| | 67+ | 17 | 3,3 |

| Item | Category | Frequency (*f*) | Percentage (%) |
|---|---|---|---|
| Highest qualification | High school | 48 | 9,2 |
| | Bachelor's degree | 88 | 16,9 |
| | University bachelors's degree | 70 | 13,4 |
| | University master's degree | 147 | 28,2 |
| | Ph.D. or higher | 163 | 31,2 |
| | Prefer not to say | 6 | 1,1 |
| Language | African | 71 | 13.6 |
| | Dutch | 139 | 26.6 |
| | English | 169 | 32.4 |
| | German | 61 | 11.7 |
| | Spanish | 14 | 2.7 |
| | French | 5 | 1.0 |
| | Portuguese | 11 | 2.1 |
| | Finnish | 5 | 1.0 |
| | Italian | 7 | 1.3 |
| | Other | 40 | 7.7 |
| Living with people (18+) | I don't live with other people | 74 | 14.2 |
| | 1 | 198 | 37.9 |
| | 2 | 87 | 16.7 |
| | 3 | 87 | 16.7 |
| | 4 | 57 | 10.9 |
| | 5 or more | 19 | 3.6 |
| Number of children (18-) | I don't live with children | 322 | 61.9 |
| | 1 or more | 198 | 38.1 |
| Industry | Administration | 5 | 1.0 |
| | Arts, Culture and Entertainment | 7 | 1.3 |
| | Consulting | 56 | 10.7 |
| | eCommerce | 6 | 1.1 |
| | Energy | 8 | 1.5 |
| | Engineering | 8 | 1.5 |
| | Financial services | 28 | 5.4 |
| | Government | 10 | 1.9 |
| | Health Care | 30 | 5.7 |
| | Higher Education & Scientific Research | 185 | 35.4 |
| | Human Resources | 14 | 2.7 |
| | Information Technology | 47 | 9.0 |
| | Marketing and Market Research | 11 | 2.1 |
| | Professional Services - Psychologist | 9 | 1.7 |
| | Project management | 7 | 1.3 |
| | Real Estate & Building Management | 20 | 3.8 |
| | Retail & Sales | 13 | 2.5 |
| | Scientific Publishing | 5 | 1.0 |
| | Secondary Education | 6 | 1.1 |
| | Student / Intern | 9 | 1.7 |
| | Transport Logistics | 6 | 1.1 |
| | Travel and Tourism | 6 | 1.1 |
| | Other | 26 | 5.0 |

## 4.3. Research Procedure

Explorative focus groups discussions were performed with various employees of draaijer+partners and Q3Consultants to analyse various characteristics such as job demands and resources in the working at home situation. Due to the COVID-19 measures, employees are forced to work from home. Therefore, the focus group discussions are held virtually with

the use of the video calling software of Microsoft Teams. A random selection is made out of all employees, taking into account socio-demographic representativeness (for example age, sex, educational level, etc.).

The questionnaire was distributed within the Draaijer group (consisting of several Dutch companies specialized in strategic housing advice) and Q3Consultants. Furthermore, the questionnaire was also distributed online via LinkedIn and e-mail to gain a higher number of responses. Employees of participants companies were invited by e-mail to take part in the survey. Everybody meeting the criterion of having an office job and working at home during COVID-19 was able to fill in the questionnaire. To promote truthful responses, all possible respondents were promised confidentiality and anonymity. The software of Qualtrics was used to make and distribute the questionnaire.

## 4.4. Measuring Instruments

The research model included seven constructs namely, job demands, job resources, work-life balance, job crafting, strength use, motivation and employee well-being. As described earlier, the information was collected employing qualitative and quantitative methods. Here it is described how the different constructs were assessed.

### 4.4.1. Qualitative – Focus group discussion

A semi-structured guide was used in the focus group discussion. A semi-structured guide has been found to be successful in being able to improvise follow-up questions based on participant′s responses (Ruben, & Ruben, 2012).

Each focus group discussion was audio-recorded, transcribed verbatim and anonymized. Participants were asked for approval to record the focus group discussion. Audio-recordings were made with the built-in recording function in the before mentioned video calling software. These recordings were used in data analysis. A grounded theory approach is used to systematically analyse the textual data produced from the focus group discussions. The grounded theory approach is a structured approach and can be used for the analysis of unfamiliar territory (Van Aken, Berends, & van der Bij, 2007).

The discussion guide and topic list are designed based on the Job-Demands Resource model (Bakker & Demerouti, 2017). Topics include perceived job resources, perceived job demands, job crafting, strength use, and work-life balance, which are shown in .

Table 2.

As an icebreaker question, participants were first asked to tell about their first associations with working at home in general. Second, the definition of job demands, and job resources based on the literature were explained during the focus group discussion between the opening question and first topic to ensure the theoretic background and understanding of the topic for the focus group discussion is clear. Third, the first topic was introduced by asking the participants how they experience working from home since the start of COVID-19. The formulation of this question is open-ended and allows participants to report anything which comes to mind. Participants were asked to elaborate on their experiences and to give examples if possible. If only one of the two topics (either job demands or job resources) is mentioned, the other topic were also asked about. Fourth, it was asked what the participant had changed during COVID-19 concerning working at home. The aim was to find out what the participant itself has done to shape the work differently to for example stay motivated. Lastly, it was asked how the participant experienced work-life balance and how this has influenced his/her motivation and psychological well-being since the start of COVID-19 until now.

The focus group discussion process was structured using a guideline of questions (see.

Table 2) that served as guidance for ensuring that all the relevant aspects were covered during the focus group meeting. The focus group defined relevant job characteristics, job crafting and strength use examples from the perspective of the target group. The variables of work motivation and psychological well-being have been excluded from the focus group discussion.

*Table 2. Focus group discussions guideline*

| Topic | # | Questions | Variable name |
|---|---|---|---|
| General | 1 | What are your associations with the words 'working from home' | |
| Home-situation | 2 | What does your average working day at home look like? | |
| Job Characteristics | 3 | How does your work look like? | Job Demands / Job Resources |
| Working from home | *3a* | *What costs you energy?* | Job Demands |
| Working from home | *3b* | *What gives you energy?* | Job Resources |
| Changes in work | 4 | What has changed about your way of working from home compared to the start of COVID-19? | Job Crafting |
| Changes in work | *4a* | *What did/didn't you do differently?* | Job Crafting |
| Changes in work | *4b* | *What would you like to do differently?* | Job Crafting |
| Changes in work | *4c* | *Why did you/didn't you change this?* | Job Crafting |
| Productivity in work | *4d* | *How do you keep yourself productive?* | Job Crafting |
| Work-life balance | 5 | How do you balance your work and private life? | Work-life balance |
| Strengths | 6 | What are you good at? | Strength use |
| Strengths | *6a* | *What are your positive qualities?* | Strength use |
| Strengths | *6b* | *Why do these qualities help you?* | Strength use |
| Applying strengths | *6c* | *In what way have you tried to use your strengths while working from home?* | Strength use |

## 4.4.2. Quantitative – Questionnaires

The questionnaire consisted of some control questions, socio-demographic questions, and different scales to assess the various study variables. The control questions were included to check whether someone met the criteria for completing the questionnaire: practising an office job and working at home since start COVID-19, and whether the level of English is sufficient (comprehensibility of the questionnaire by the respondent). Due to the large number of items to measure the various variables, which may have influenced the amount of completed responses, some of the questions per scale (indicated by how many per scale) have been deleted. The selection of the questions is based on the choice for the highest factor loading. The final selection of questions used can be found in Appendix A – Questionnaire.

The *Job Demands-Resources Scale (JDRS)* (Jackson & Rothmann, 2005) is administrated to assess participants' self-reported job demands and job resources. The instrument is comprised of 45 items, but 19 items with highest factor loadings reported in the study of Jackson and Rothmann (2005) were used. Instead of using the proposed 4-point Likert type scale ranging from 1 (never) to 4 (always), a 5-point Likert type scale ranging from 1 (never) to 5 (always) was used. Adding an extra (middle) option gives a wider spread in data distribution and generally concurred to improve reliability and validity (Dawes, 2008). Examples of items are "Do you work under time pressure?" (job demands) and "Does your work give you the feeling that you can achieve something?" (job resources). The Cronbach Alpha's in this study (after removal of questions from the total instrument) are 0.81 for work overload, 0.76 for organizational support, 0.93 for growth opportunities, 0.96 for job security, and 0.83 for advancement showing a good fit.

The *'Survey Work-home Interaction – NijmeGen' (SWING)* (Geurts et al., 2005) was employed to measure work-life balance. The instrument measures 22 items, of which 16 items were used, based on a 4-point Likert type scale ranging from 0 (never) to 3 (always). To measure the concept of work-life balance, a 5-point Likert scale was used ranging from 1 (never) to 5 (always). It is comprised of items such as "You do not fully enjoy your work because you worry about your home situation?". The Cronbach Alpha's in this study (after removal of questions from the total instrument) are 0.86 for Negative Work-Home Interference, 0.85 for Negative Home-Work Interference, 0.73 for Positive Work-Home Interference, and 0.88 for Positive Home-Work Interference showing a good fit.

The *Multidimensional Work Motivation Scale (MWMS)* (Gagné et al., 2015) was administrated to assess participants' self-reported job motivation. The sub-scale of intrinsic motivation measuring 3 items based on a 7-point Likert type scale ranging from 1 (not at all) to 7 (completely). It is comprised of items such as "Because I have fun doing my job.". The Cronbach Alpha's for intrinsic motivation is 0.94 showing an excellent fit.

The *Mental Health Continuum-Short Form (MHC-SF)* (Keyes, 2008) was used to test for psychological well-being. The sub-scale psychological well-being was used consisting of 6 items based on a 6-point Likert type scale ranging from 1 (never) to 6 (every day). It is comprised of items such as "In the past month, how often did you feel that you liked most parts of your personality". The subscale of psychological well-being shows a good fit with a Cronbach Alpha of 0.86.

The *Job Crafting Questionnaire (JCQ)* (Tims, Bakker, & Derks, 2012) was employed to measure the job crafting ability of employees, consisting of four conceptually different

dimensions, namely: 1) increasing structural job resources (ISR), 2) increasing social job resources (ISJR), 3) increasing challenging job demands (ICJD), and 4) decreasing hindering job demands (DHJD). The instrument measures 21 items based on a 5-point Likert type scale ranging from 1 (totally disagree) to 5 (totally agree). It is comprised of items such as "I organize my work in such a way to make sure that I do not have to concentrate for too long a period at once." The instrument has shown high levels of internal consistency with Cronbach Alphas of 0.83 for ISR, 0.82 for ISJR, 0.81 for ICJD, and 0.83 for DHJD.

The *Strength Use Scale* (Govindji & Linsey, 2007) is used to measure the strength use of employees. The instrument measures 14 items based on a 7-point Likert type scale ranging from 1 (strongly disagree) to 7 (strongly agree). It is comprised of items such as "I always try to use my strengths". Reliability analysis of the 14 items showed a very good internal consistency with a Cronbach Alpha of 0.94.

Table 3 provides an overview of the questionnaires that are employed in this study.

*Table 3. Overview of measurement scales*

| Variable name | Measurement Scale | Author(s) | Number of items | Scale items |
|---|---|---|---|---|
| *Job Demands* | Job Demands-Resources Scale (JDRS) | Jackson & Rothmann (2005) | 4 | '1 = never' to '5 = always' |
| *Job Resources* | Job Demands-Resources Scale (JDRS) | Jackson & Rothmann (2005) | 15 | '1 = never' to '5 = always' |
| *Work-Life Balance* | 'Survey Work-home Interaction – NijmeGen' (SWING) | Geurts et al. (2005) | 16 | '1 = never' to '5 = always' |
| *Job Motivation* | Multidimensional Work Motivation Scale (MWMS) | Gagné et al. (2015) | 3 | '1 = not at all' to '7 = completely' |
| *Psychological Well-Being* | Mental Health Continuum-Short Form (MHC-SF) | Keyes et al. (2008) | 6 | '1 = never' to '6 = every day' |
| *Job Crafting* | Job Crafting Questionnaire (JCQ) | Tims, Bakker, & Derks (2012) | 21 | '1 = totally disagree' to '5 = totally agree' |
| *Strength Use* | Strength Use Scale | Govindji & Linsey (2007) | 14 | '1 = strongly disagree' to '7 = strongly agree' |

## 4.5. Data analysis

Both qualitative and quantitative data analyses techniques were employed to process the data. Both techniques require a different approach which is described below.

The collection of qualitative data via focus group discussions creates a pile of raw textual data. Focus group discussion data must not be presented using percentages but must be presented in descriptive form highlighting differing individual beliefs (Kitzinger, 1995; Manoranjitham and Jacob, 2007). For reporting the data, the raw data in the form of a transcript was loaded into the software of Microsoft Excel and was processed using a grounded theory approach.

Firstly, before starting the grounded theory procedures, the data was cleaned by removing responses that are partial or contain irrelevant information. Secondly, a thorough overview of the data was compiled whereby the researchers read through the information to obtain a 'general feel for the data' (Creswell, 2013). Thirdly, starting with the first grounded theory procedure called open coding, fragments of the discussion text were labelled to develop a conceptual framework of concepts. The aim is to develop substantial codes naming, describing or classifying the phenomenon under consideration. Fourthly, with theoretical coding, the highlighted concepts were compared and linked to discover relationships between these concepts. For example, associated keywords for job demands could indicate negative expressions or emotions such as "this takes away my energy", associated keywords for job resources could indicate positive expressions or emotions such as "which makes my job much easier". At last, with selective coding, the concepts were elaborated, not to the development of new concepts but to crystalize the results. With the analysis of the coding and concepts frequency, which is an overview of the number of times the codes and concept occur in the discussion, insight can be gathered into which job demands and job resources are present in the COVID-19 working situation and how workers deal with this.

To process the quantitative data, a series of multivariate statistical techniques was employed and processed via Mplus 8.5 (Muthén, & Muthén, 2020), SPSS v.27 (IBM, 2020) and the Hayes' (2013) PROCESS Macro for SPSS.

First, descriptive statistics (means, standard deviation, skewness, and kurtosis) were used to provide a descriptive overview of the data and to determine multivariate normality. Significance should be checked with a p-value lower than 0.05 to test whether data are multivariate normal or not before carrying on with parametric multivariate analyses because it is required for many parametric multivariate statistical methods (Korkmaz, Goksuluk, & Zararsiz, 2014). The values of skewness and kurtosis should as a rule of thumb range between -1 and 1 as cut-off values to assume the distribution is approximately normal (Hair et al., 2014).

Second, through structural equation modelling (SEM) with the maximum likelihood estimator (ML) the model fit was assessed for both the competing measurement models and final structural model (Muthén and Muthén 2020). The model fit was determined with cut-off

by Wang and Wang (2012) through: (1) absolute fit indices (Chi-square: nonsignificant, Root Mean Square Error of Approximation (RMSEA: $< 0.08$, but $> 0.01$ and be nonsignificant)) and the Standardized Root Mean Residual (SRMR: $< 0.08$, but $> 0.01$), (2) incremental fit indices (Tucker-Lewis index (TLI: $> 0.90$, but $< 0.99$) and the Comparative Fit Index (CFI: $> 0.90$, but $< 0.99$) and (3) comparative fit indices (Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC)). Based on the best-fitting measurement model a structural model was estimated. Thereafter, relationships between the study variables were tested (Hypothesis H1a, H1b, H2 and H3). Multiple regression analysis allows for analyzing the relationship between a single dependent variable and several independent variables (Joseph, 2006). This analysis is used to analyze the relationship of job demands, job resources with work-life balance. Internal consistency was established through Cronbach's alpha (lower-bound: $\alpha > 0.70$; Nunnally & Bernstein, 1994). Pearson/Spearman's correlation coefficients test the relationships for statistically significant ($p < 0.05$) and small ($r > 0.10$), medium ($r > 0.30$) or large ($r > 0.50$) effect sizes (Steyn, 2002). Furthermore, the indirect effects of work-life balance and job motivation were assessed used the bias-corrected bootstrapping (BCB) method, according to the procedure of Preacher et al. (2010), by computing 50,000 iterations to generate two-sided bias-corrected confidence intervals (CI) at the 95% marker.

Finally, the PROCESS Macro for SPSS of Hayes (2013) was used to analyse the moderating effect of job crafting and strength use with ordinary least squares regression-based path analysis (Hypothesis H4a, H4b, H5a and H5b). The macro is used because it simplifies the implementation of the moderation process analysis with observed variables. A number of 5,000 bootstrap iterations was computed to generate two-sided bias-corrected confidence intervals (CI) at the 95% marker. Bootstrapping is used to reduce the risk of finding relations by chance, because mediations are sensitive, particularly in small to medium samples.

# 5. Results

This chapter gives an overview of the results of the data analyses. The results of the focus group discussions are first presented, followed by the results of the survey.

## 5.1. Qualitative analysis

These results describe the findings from the two focus groups (draaijer+partners and Q3 Consultants). The analysis of the focus group discussions has led to several themes for each variable. A thematic map was created for both focus groups to structure the topics in relation to working at home during COVID-19. These themes relate to the variables mentioned in the conceptual framework shown in Figure 1 and relate to working at home during COVID-19.

**Job Demands/Resources**

In the focus group discussion, the job resource of job autonomy can be recognized *("You just have to get your work done. Then you can think for yourself how", "I think everyone likes that, that autonomy to determine that for themselves", "... because I think we like autonomy, and we also like to be and can be autonomous to", "you want to be able to steer yourself").* Individuals' well-being and performance benefit from job autonomy, as higher levels of job autonomy could balance work and rest and provide employees with choosing the most productive ways to do their work (Wang et al., 2020).

The lack for certain job resources is also recognized. The work is less diverse, which results in a lack of task variety *("Sitting behind the screen is not what gives you energy. That takes a lot more energy", "we like variety, ... now we're suddenly "locked up at home" as it were", "And certain consultations are on location and certain are not and now we no longer have that choice, now everything has to be done from home").* This is strongly reflected in the fact that people do not experience variety in their work by working behind a screen all day.

Furthermore, even though people interact all day long, people experience a lack of team cohesion *("I also think when I talk to my team within draaijer+partners that there is a need for connection. We actually want to have physical contact with each other again", "all it always comes down to is contact with colleagues", "all it always comes down to is contact with colleagues").* Working from home alone does not fulfil the need to physically see colleagues. There is a need for connection and being able to meet physically. One of the reasons given for this is that unplanned meetings and conversations are missed and don't happen in

online meetings (*"if you're in the office, ... you'll make that talk. Then you are very busy, but you still have a cup of coffee with someone for 5 minutes"*).

The participants mentioned several job demands. For example, higher work pressure is experienced *("we are all very busy"*, *"apparently working behind the screen requires a lot more concentration than what we normally do ... then you lose energy, and you just feel it"*, *"well, I mean, you can't just keep going because you just don't hold on at some point. You also notice that when you sit behind our screen. You just can't keep up with that."*, *"that resilience is a bit out"*). By eliminating travel time, people can spend more time working. This means people uses this traveling time to do more work in a day and therefore work more.

Even though autonomy, which is mentioned above, is recognized as a job resources, also a lack of autonomy can be noticed ("*that we are actually forced to do everything from home ... that you have the choice again to do certain things at home and certain things such as contact not at home.*", *"I just have periods of Teams consultations in succession, no five minutes break in between, you have to say 'can I go to the toilet or can I get some coffee?'"*). Since all meetings can take place online, people should now be more available and online meetings are continuously scheduled one after the other which results in a feeling of having to be always available.

**Work-life balance**

A smaller separation between work and private life is experienced. By no longer having to travel, switching off from work is experienced in a different way *("What you also miss is that you normally drive home from work and that was just that moment when you could close your work and go to private."*, *"Now you walk down, with your head still half in your work. And young children who also just want attention")*. Where people normally use the travel time to, for example, make a telephone call or switch off from work, this time is now used as working time. It is seen as efficient by participants because they do not lose travel time and can therefore do more in a day. However, this has also a downside because there is less time for recovery from work.

*Switching rooms*

People experience different feelings regarding work and private life for each type of space in the house. An office is seen and perceived as a working area and the living room for private space *("My office is just my work and downstairs is a bit more relaxed"*, *"I actually really*

*liked the balance I had before corona, that you could do certain things at home and certain things at the office").*

*Work-Home Interference*

Participants mentioned that they experienced struggles with home-to-work interference (HWI) and work-to-home interference (WHI). Working at home means more interruptions from family, which may negatively influence work effectiveness. For example, interruptions and the teaching of children at home because schools in had been shut down during the COVID-19 outbreak *("If you have children at home, you have little time left, so what you have left over and still want to work well, then you have a problem.", "You want to be able to steer yourself, you are limited in all kinds of ways, because then I have to be present for the children"),* but also a partner could also influence the working life of the participant *("Yes, your home situation is very different. I don't have children, that doesn't bother me, but I do have a partner who does work from home").* The home situation can therefore influence how the balance is experienced.

**Job crafting**

Several job crafting examples were mentioned during the focus group. Due to the disappearance of the travel time, this time is used in a different way *("I've resolved to use all the travel time of an hour, an hour and a half a day to use it when I'm not traveling that day to walk and make phone calls.", "Or sometimes I think, then just drive the car, because then I can make all my calls, then I'll talk to someone again.").*

Also, the topic of lunch has also been discussed several times. Participants indicated that while having a lunch break normally went without saying at the office, this is no longer the case. It was indicated that as a solution the lunch break should be planned in the agenda because *("planned my lunch for half an hour, because I noticed that it disappeared too.").*

Furthermore, the home environment is adapted to the type of work *("If I see 'I really have a day that I really want to shut down', then I look for a new workplace somewhere in my area that I can actually do that", "I do notice that what I do is different, I am more aware of my agenda and in terms of 'what do I need focus time for', so that I also create that environment for that", "Put on music when you need to concentrate", "During the summer I also had a screen downstairs on my kitchen table, so I would occasionally sit downstairs and occasionally upstairs in my study/workroom. So yeah, I do vary that a bit").* The environment depends on the type of activity *("So looking at your agenda differently from 'what do I need for which activity?', I have become even more conscious.").* A certain environment in the home may not

be the right incentive for a certain type of work. *("I sat there looking at the piles of laundry. That is thought 'that is not very inspiring'"*). It is also mentioned that a space that previously did not function as an office has now been converted *("the small room that we have extra, which is basically more of a junk room, has been converted into a kind of office").*

An example of adapting the working environment is to look for the workplace outside to simulate a normal working day *("I have a niece ... she couldn't stand having to work from home at all, so what she does now is, she cycles to her parents ... and she goes to work there ... in the afternoon she cycles home. And then it's just like a normal working day").* Another example that has been mentioned is that when the grandparents come to babysit, the participant starts working in the grandparents' house for a peaceful work environment and to escape the noises of home *("So, what I do with when grandpa and grandma come here, I go there").*

**Strength use**

A strength that is often mentioned is that of planning. This is a recurring topic (*"I am more aware of my agenda", "you can now easily schedule your appointments", "... so now you have to plan it and that is something new").* Advantages mentioned in terms of planning are efficiency and productivity *("you can also see that we have become a lot more efficient", "we are much more productive, best turnover ever made last year during corona", "For an hour of such meeting to go through the practical matters ... I find that quite efficient, I also find that quite nice, because it saves a lot of time", "The fact that you occasionally do Teams meetings from home is very nice and then you do not have to be on the road for every meeting.").* Only conducting meetings online has also led to new problems *("I just have periods of Teams consultation in a row, no five-minute break in between", "... that is a disadvantage that things are implanted very quickly one after the other", "I notice that people just throw that in and your agenda is no longer taken into account").* Some solutions have also been devised here by scheduling breaks between meetings and scheduling work blocks.

By dealing with time and planning in a different way, time can be made for the children *("I get up an hour earlier in the morning than the rest, so when everyone is still asleep, so that I can check my mail and so know how my day is going and can read documents", "In the evening I also have concentration when they are in bed and because of that curfew you are not allowed to go out too late").*

A shift from regular hours to personal flexible working hours is sometimes mentioned *("End of the afternoon, depending on how busy or how restless I feel, hold my day", "For me, days are not from 9 to 5", "then I sit down for a while and that can just be between eleven and*

*twelve").* On the other side, it is also mentioned that regular times are adhered to. *("I notice that I have regained my eight to six mentality even more last year.").* So, it could very much depend on the person what is experienced as pleasant.

Strengths that are also mentioned are continuing (not) to use creativity *("the fact that things are slightly different doesn't mean that we don't start looking for 'how can we get it done?'", "I'm not very creative right now, solution-oriented.")* and flexibility *("I'm building houses of cards all the time.").* However, despite the desire to find creative solutions, it is not always possible for others by experiencing work pressure *("I notice in myself that the energy, because it is all so much, I no longer have the energy to have creative solutions for this").*

## 5.2. Quantitative analysis

As was described in the method section of this study, the quantitative data is collected via a survey. In total, the survey was filled in by 522 home workers during COVID-19. This results section describes the results found in the survey. First, the descriptive statistics and correlations are presented. Second, the measurement models are discussed. Third, the structural model is analyzed and presented. Finally, based on the outcomes of these analyses, the hypotheses are tested and summarized in the final section of this chapter.

### 5.2.1. Descriptive statistics

The descriptive statistics, scale reliabilities and Pearson Correlations are shown in Table 4. The Pearson Correlations showed statistically significant relationships amongst most of the variables ($p < 0.01$).

*Table 4. Descriptive statistics, and Pearson Correlations (N = 522)*

| Construct | μ | σ | α | SK | Rku | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Work Overload | 3.82 | .72 | .81 | -.59 | .53 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 2. Organizational Support | 3.83 | .74 | .76 | -.37 | -.39 | .16** | – | – | – | – | – | – | – | – | – | – | – | – |
| 3. Growth Opportunities | 4.37 | .99 | .93 | -.31 | .15 | -.10* | .46** | – | – | – | – | – | – | – | – | – | – | – |
| 4. Job Security | 3.57 | 1.25 | .96 | -.59 | -.78 | .02 | .20** | .18** | – | – | – | – | – | – | – | – | – | – |
| 5. Advancement | 3.66 | .91 | .83 | -.62 | -.07 | -.05 | .32** | .22** | .34** | – | – | – | – | – | – | – | – | – |
| 6. NWHI | 2.90 | .88 | .86 | .06 | -.44 | .54** | -.07 | -.13** | -.22** | -.21** | – | – | – | – | – | – | – | – |
| 7. NHWI | 1.96 | .79 | .85 | .88 | .65 | .12** | -.18** | -.18** | -.41** | -.24** | .45** | – | – | – | – | – | – | – |
| 8. PWHI | 3.07 | .78 | .73 | -.19 | -.25 | -.03 | .29** | .16** | -.15** | .04 | -.09* | .02 | – | – | – | – | – | – |
| 9. PHWI | 2.86 | 1.03 | .88 | -.11 | -.78 | -.06 | .13** | .09* | -.27** | -.03 | -.04 | .08 | .65** | – | – | – | – | – |
| 10. Intrinsic Motivation | 4.89 | 1.43 | .94 | -.53 | -.01 | .15** | .60** | .34** | .17** | .30** | -.05 | -.17** | .24** | .07 | – | – | – | – |
| 11. Psychological Well-being | 4.28 | .98 | .87 | -.47 | -.13 | .05 | .43** | .31** | .19** | .19** | -.18** | -.30** | .28** | .15** | .46** | – | – | – |
| 12. Job Crafting | 3.39 | .46 | .79 | -.03 | .65 | .05 | .27** | .17** | -.22** | .05 | -.05 | .03 | .39** | .36** | .30** | .34** | – | – |
| 13. Strength Use | 5.54 | .86 | .94 | -.81 | 1.13 | .13** | .48** | .34** | .19** | .20** | -.09* | -.26** | .31** | .19** | .55** | .62** | .34** | – |

µ mean, σ standard deviation, α Cronbach's alpha, *SK* skewness, *Rku* kurtosis, NWHI Negative Work-Home Interference, NHWI Negative Home-Work interference, PWHI Positive Work-Home Interference, PHWI Positive Home-Work Interference

\*\*. Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

## 5.2.2. Comparing Competing Measurement Models

A competing measurement modelling strategy employing a structural equation modelling analytical approach was used to determine the best fitting model for the current data. For this approach, observed variables were treated as indicators for first order latent variables. No items or error terms were correlated or removed to improve model-fit.

Table 5 provides an overview of the values of the fit indices.

*Table 5. Fit of Measurement models*

| Model | $\chi^2$ | df | $\chi^2 / df$ | CFI | TLI | RMSEA | | SRMR | AIC | BIC | aBIC | Meets Criteria |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model 1 | 6.851,26 | 809 | 8,47 | 0,54 | 0,51 | 0,12 | [.12 -.12] | 0,14 | 57.784,88 | 58.363,92 | 57.932,23 | No |
| Model 2 | 1.410,76 | 764 | 1,85 | 0,95 | 0,94 | 0,04 | [.04-.04] | 0,05 | 52.434,37 | 53.205,01 | 52.630,47 | Yes |
| Model 3 | 13.859,11 | 861 | 16,1 | 0,94 | 0,93 | 0,05 | [.04-.05] | 0,08 | 52.599,80 | 53.272,51 | 52.770,99 | Yes |
| Model 4 | 13.859,11 | 861 | 16,1 | 0,93 | 0,92 | 0,05 | [.05-.05] | 0,05 | 52.710,05 | 53.335,92 | 52.869,31 | Yes |
| Model 5 | 13.859,11 | 861 | 16,1 | 0,91 | 0,90 | 0,05 | [.05-.06] | 0,11 | 52.986,07 | 53.599,17 | 53.142,08 | No |
| Model 6 | 13.859,11 | 861 | 16,1 | 0,94 | 0,93 | 0,04 | [.04-.05] | 0,07 | 52.557,67 | 53.255,92 | 52.735,35 | Yes |
| Model 7 | 13.859,11 | 861 | 16,1 | 0,92 | 0,91 | 0,05 | [.05-.05] | 0,09 | 52.815,34 | 53.517,85 | 52.994,11 | No |

| Cut-off values | Lowest comparative value between measurement models | < 5 | > 0.90 but < 0.99 | > 0.90 but < 0.99 | < 0.08 but > 0.01 | < 0.08 but > 0.01 | Lowest comparative value between measurement models | Lowest comparative value between measurement models |
|---|---|---|---|---|---|---|---|---|

Five measurement models were computed and systematically compared:

- Model 1. A one factor model for all five variables were fitted to the data. Work overload consisted of four items, job resources of thirteen items, work-life balance of twelve items, job motivation of three items and psychological well-being of six items.

- Model 2. A one factor model for work overload were fitted to the data consisting of four items. A one factor model for organizational support (3 items), grow opportunities (4 items), job security (3 items) and advancement (3 items) were fitted to the data. A one factor model for NWHI, NHWI, PWHI, and PHWI were fitted to the data consisting of four items each. Job motivation consisted of three items and psychological well-being of six items.

- Model 3. Similar factors apply as to model 2, however the second order factor job resources consisting of organizational support, grow opportunities, job security and advancement is separately added to the model.

- Model 4. Similar factors apply as to model 3, however a split of factor work-life balance is added to the model consisting of a positive factor consisting of PWHI and PHWI and a negative factor consisting of NWHI and NHWI.

- Model 5. A one factor model for work overload (4 items), organizational support (3 items), grow opportunities (4 items), job security (3 items) and advancement (3 items) were fitted to the data. A second order factor job resources consisting of organizational support, grow opportunities, job security and advancement is separately added to the model. A one factor model for NWHI, NHWI, PWHI, and PHWI were fitted to the data consisting of four items each. A separate second order factor for work-life balance was added consisting of NWHI, NHWI, PWHI, and PHWI. Job motivation consisted of three items and psychological well-being of six items.

- Model 6. A one factor model for work overload (4 items), organizational support (3 items), grow opportunities (4 items), job security (3 items) and advancement (3 items) were fitted to the data. A one factor model for NWHI, NHWI, PWHI, and PHWI were fitted to the data consisting of four items each. Job motivation consisted of three items and psychological well-being of six items. Two second order factors consisting of a positive (PHWI and PWHI) and negative (NHWI and NWHI) factor were added to the model.

- Model 7. A one factor model for work overload (4 items), organizational support (3 items), grow opportunities (4 items), job security (3 items) and advancement (3 items) were fitted to the data. A one factor model for NWHI, NHWI, PWHI, and PHWI were fitted to the data consisting of four items each. Job motivation consisted of three items and psychological well-being of six items. Two second order factor were created consisting of home influence (NHWI and PHWI) and work influence (NWHI and PWHI) and added to the model.

## 5.2.3. Developing the Structural Model

A structural path model was estimated based for the best fitting measurement model (Model 2), as it showed to be the most parsimonious and it most accurately represented the data. The structural model for Model 2 (c.f. Figure 2: $\chi2(764) = 1.410,756$, $p < 0.0001$; TLI = 0.944; CFI = 0.95; RMSEA = 0.04; SRMR = 0.049) showed acceptable fit. It should be noted that only the significant paths are depicted in Figure 2.
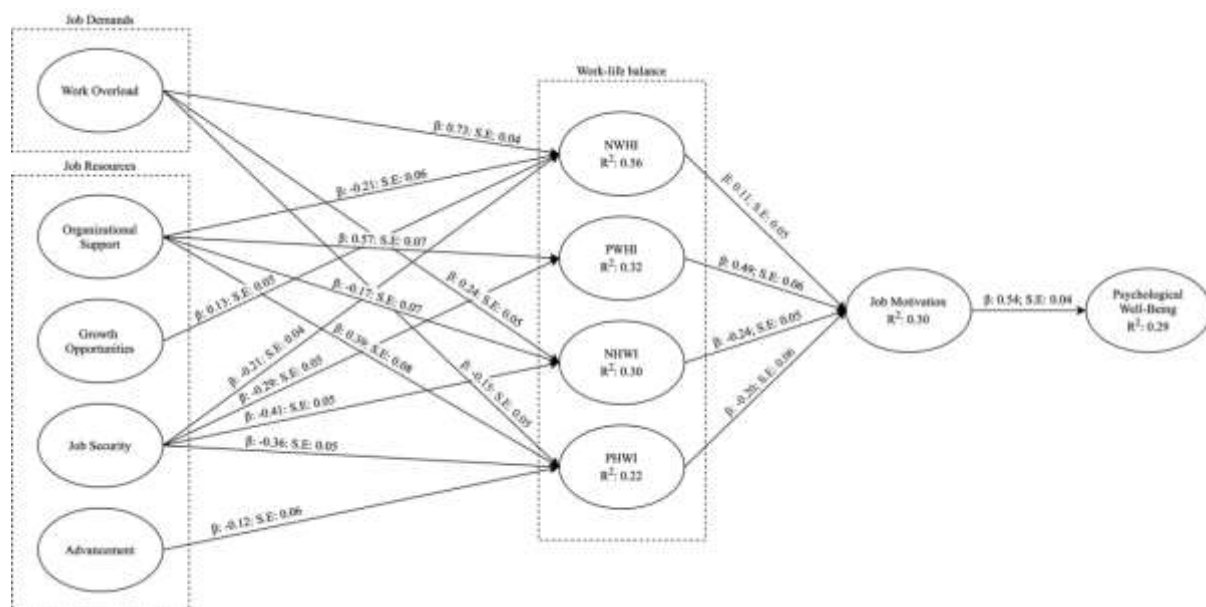


*Figure 2. Structural Model – Model 2*

## 5.2.4. Assessing the Direct Effects

To test the various hypotheses, the path coefficients of the individual relationships were examined. When all separate relationships are found to be statistically significant, the hypothesis is accepted. When some relationships are statistically significant and others are not, it is partially accepted. If no statically significant relationships are found, the hypothesis is

rejected. No control variables were used in the analysis since the models didn't converge and the model would have too little degrees of freedom.

Regarding the direct effects of job demands and resources on work-life balance, multiple paths are found to be significant. First, work overload ($\beta$: 0.73; S.E: 0.04; $p < 0.01$), organizational support ($\beta$: -0.21; S.E: 0.06; $p < 0.01$), growth opportunities ($\beta$: 0.13; S.E: 0.05; $p < 0.05$) and job security ($\beta$: -0.21; S.E: 0.04; $p < 0.01$) statistically significantly predicted 56% of the total variance in NWHI. Second, organizational support ($\beta$: 0.57; S.E: 0.07; $p < 0.01$) and job security ($\beta$: -0.29; S.E: 0.05; $p < 0.01$) statistically significantly predicted 32% of the total variance in PWHI. Third, work overload ($\beta$: 0.24; S.E: 0.05; $p < 0.01$), organizational support ($\beta$: -0.17; S.E: 0.07; $p < 0.01$), and job security ($\beta$: -0.41; S.E: 0.05; $p < 0.01$) statistically significantly predicted 30% of the total variance in NHWI. Finally, work overload ($\beta$: -0.15; S.E: 0.05; $p < 0.01$), organizational support ($\beta$: 0.39; S.E: 0.08; $p < 0.01$), job security ($\beta$: -0.36; S.E: 0.05; $p < 0.01$) and advancement ($\beta$: -0.12; S.E: 0.06; $p < 0.05$) statistically significantly predicted 22% of the total variance in PHWI.

The variable work overload was used as an indicator job demands. The results showed that work overload was significantly related to NWHI ($\beta$: 0.73; S.E: 0.04; $p < 0.01$), NHWI ($\beta$: 0.24; S.E: 0.05; $p < 0.01$), meaning that an increase in work overload is related to an increase in NWHI and NHWI, which is negative in terms of work-life balance, because more negative home to work and work to home interference is experienced. Furthermore, work overload was significantly related to PHWI ($\beta$: -0.15; S.E: 0.05; $p < 0.01$), meaning that an increase in work overload would decrease PHWI, which is also negative in terms of work-life balance, because less positive home to work interference is experienced. No statistically significant relationship was found for PWHI. Therefore, hypothesis 1a is partially accepted.

> *Hypothesis 1a: Job demands (work overload) are negatively related to work-life balance.*

For testing job resources, four variables were used (organizational support, growth opportunities, job security and advancement).

The results showed that organizational support was significantly related to NWHI ($\beta$: -0.21; S.E: 0.06; $p < 0.01$), PWHI ($\beta$: 0.57; S.E: 0.07; $p < 0.01$), NHWI ($\beta$: -0.17; S.E: 0.07; $p < 0.01$), and PHWI ($\beta$: 0.39; S.E: 0.08; $p < 0.01$). For NWHI and NHWI this means that an increase in organizational support is related to a decrease NWHI and NHWI, which is positive in terms of work-life balance, because less negative home to work interference and work to

home interference is experienced. For PWHI and PHWI this means that an increase in organizational support was related to an increase in PWHI and PHWI, which is positive in terms of work-life balance because more positive work to home and home to work interferences are experienced.

For growth opportunities only a significant relationship with NWHI ($\beta$: 0.13; S.E: 0.05; $p < 0.05$) was found. For NWHI this means that an increase in growth opportunities is related to an increase in NWHI, which is negative in terms of work-life balance, because more negative home to work interference is experienced.

Job security is significantly related to NWHI ($\beta$: -0.21; S.E: 0.04; $p < 0.01$), PWHI ($\beta$: -0.29; S.E: 0.05; $p < 0.01$), NHWI ($\beta$: -0.41; S.E: 0.05; $p < 0.01$) and PHWI ($\beta$: -0.36; S.E: 0.05; $p < 0.01$). For NHWI and NWHI this means that an increase in job security is related to a decrease NHWI and NWHI, which is positive in terms of work-life balance, because less negative work to home and home to work interferences is experienced. For PWHI and PHWI this means that an increase in job security is related to a decrease PWHI and PHWI too, which is negative in terms of work-life balance, because less positive work to home and home to work interferences are experienced.

Advancement was only significantly related to PHWI ($\beta$: -0.12; S.E: 0.06; $p < 0.05$). This means that an increase in advancement is related to a decrease in PHWI, which is negative in terms of work-life balance, because less positive home to work interference is experienced.

Most significant relationships are in line with hypothesis 1b. However, since several relationships growth opportunities, job security and advancement show opposite results, hypothesis 1b is partially accepted.

*Hypothesis 1b: Job resources (organizational support, growth opportunities, job security, and advancement) are positively related to work-life balance.*

For assessing the relationship between work-life balance to job motivation, the relations of NWHI, NHWI, PWHI and PHWI with job motivation were examined. The results showed that all paths were statistically significant with values from NWHI ($\beta$: 0.11; S.E: 0.06; $p < 0.05$), PWHI ($\beta$: 0.49; S.E: 0.06; $p < 0.01$), NHWI ($\beta$: -0.24; S.E: 0.06; $p < 0.05$), and PHWI ($\beta$: -0.20; S.E: 0.06; $p < 0.05$) to job motivation. For the relationship between PHWI and NHWI to job motivation the relationships found were in line with the hypotheses. However, the relationships of NWHI and PHWI with job motivation results are contradictory. Since all paths were statistically significant but opposite effects for NWHI and PHWI were found, hypothesis 2 is partially accepted.

41

*Hypothesis 2: A high level of work-life balance is related to more job motivation.*

At last, the direct effect of job motivation to psychological well-being was examined. Results showed that job motivation was significantly related to psychological well-being (β: 0.54; S.E: 0.04; $p < 0.01$). This means that an increase in job motivation was related to an increase in one's psychological well-being. Therefore, hypothesis 3 is accepted.

*Hypothesis 3: A high level of job motivation is related to more psychological well-being (PWB).*

### 5.2.5. Assessing the Indirect Effect of Work-Life Balance

Based on the structural model, the procedure of Preacher et al. (2010) was employed to assess whether work-life balance mediates the relationship between job demands/resources and job motivation. The bias-corrected bootstrapping (BCB) method with 50,000 iterations was computed to generate two-sided bias-corrected confidence intervals (CI) at the 95% marker. An overview of the two-tailed p-values is shown in Table 6.

*Job demands*

The results showed a statistically significant ($p < .05$) indirect effect between work overload, NHWI and job motivation at the 95% confidence interval (lower = -0.22 to upper = -0.02). As the confidence intervals between work overload and job motivation through NHWI did not include zero, work overload indirectly effected job motivation via NHWI. No statistically significant indirect effects of workload on job motivation were found for the other work-life balance variables (NWHI, PWHI, and PHWI).

*Job resources*

As shown in Table 6, no statistically significant indirect effects were found for any of the job resources.

*Table 6. Two-tailed p-values for (specific) indirect effects for work-life balance*

| | Estimate | SE | p | 95% BC CI |
|---|---|---|---|---|
| **Effect from Work overload to Job motivation** | | | | |
| Sum of indirect effects | 0.12 | 0.10 | 0.20 | [-0.06, 0.30] |
| NHWI | -0.09 | 0.05 | 0.05 | [-0.22, -0.02] |
| NWHI | 0.12 | 0.09 | 0.18 | [-0.06, 0.29] |
| PHWI | 0.09 | 0.07 | 0.18 | [0.01, 0.31] |
| | | | | |
| **Effect from Organizational support to Job motivation** | | | | |
| Sum of indirect effects | 0.97 | 2.42 | 0.69 | [0.37, 7.11] |
| NHWI | 0.05 | 0.05 | 0.31 | [-0.01, 0.19] |
| NWHI | -0.03 | 0.06 | 0.54 | [-0.18, 0.02] |
| PHWI | -0.25 | 3.81 | 0.95 | [-13.23, -0.09] |
| PWHI | 1.21 | 6.19 | 0.85 | [0.49, 18.80] |
| | | | | |
| **Effect from Growth opportunities to Job motivation** | | | | |
| Sum of indirect effects | 0.02 | 0.04 | 0.50 | [-0.02, 0.10] |
| NHWI | 0.01 | 0.02 | 0.84 | [-0.04, 0.06] |
| NWHI | 0.02 | 0.03 | 0.49 | [-0.01, 0.09] |
| | | | | |
| **Effect from Job security to Job motivation** | | | | |
| Sum of indirect effects | -0.17 | 0.12 | 0.16 | [-0.50, 0.04] |
| NWHI | -0.02 | 0.02 | 0.22 | [-0.06, 0.01] |
| PHWI | 0.12 | 0.33 | 0.71 | [0.05, 1.12] |
| PWHI | -0.28 | 0.37 | 0.46 | [-1.45, 0.08] |
| | | | | |
| **Effect from Advancement to Job motivation** | | | | |
| Indirect | 0,07 | 1,31 | 0,96 | [-0.01, 4.09] |

NWHI Negative Work-Home Interference, NHWI Negative Home-Work interference, PWHI Positive Work-Home Interference, PHWI Positive Home-Work Interference

*SE,* standard error*; BC CI,* bias-corrected confidence interval.

## 5.2.6. Assessing the Indirect Effect of Job Motivation

The procedure of Preacher et al. (2010) was again employed to assess whether job motivation mediates the relationship between work-life balance and psychological well-being. The bias-corrected bootstrapping (BCB) method with 50,000 iterations was computed to generate two-sided bias-corrected confidence intervals (CI) at the 95% marker. An overview of the two-tailed p-values is shown in Table 7.

The results showed a statistically significant ($p < .05$) indirect effect between NHWI, job motivation and psychological well-being at the 95% confidence interval (lower = -0.34 to upper

= -0.02). As the confidence intervals between NHWI and psychological well-being through job motivation did not include zero, NHWI is indirectly related to psychological well-being via job motivation. As is shown in Table 7, no statistically significant indirect effects were found for the other work-life balance variables (NWHI, PWHI, and PHWI).

*Table 7. Two-tailed p-values for indirect effects of job motivation*

| | Estimate | SE | p | 95% BC CI |
|---|---|---|---|---|
| **Effect from NHWI to Psychological well-being** | | | | |
| Indirect | -0.17 | 0.08 | 0.03 | [-0.34, -0.02] |
| | | | | |
| **Effect from NWHI to Psychological well-being** | | | | |
| Indirect | 0.05 | 0.04 | 0.19 | [0.51, 3.44] |
| | | | | |
| **Effect from PHWI to Psychological well-being** | | | | |
| Indirect | -0.13 | 0.29 | 0.64 | [-0.03, 0.13] |
| | | | | |
| **Effect from PWHI to Psychological well-being** | | | | |
| Indirect | 1.20 | 1.05 | 0.26 | [-0.92, -0.06] |

NWHI Negative Work-Home Interference, NHWI Negative Home-Work interference, PWHI Positive Work-Home Interference, PHWI Positive Home-Work Interference

*SE,* standard error*; BC CI,* bias-corrected confidence interval.

### 5.2.7. Assessing the Moderating Effect of Job Crafting

The PROCESS Macro for SPSS of Hayes (2013) was used to analyse the moderating effect of job crafting and strength use for relationships between job demands and job resources to work-life balance. A number of 5,000 bootstrap iterations was computed to generate two-sided bias-corrected confidence intervals (CI) at the 95% marker. First, the moderating effect of job crafting for the different relationships is described, followed by the moderating effects of strength use.

**Moderation of the effect of Job Demands on Work-life balance by Job Crafting**

To determine the moderating effect of job crafting for the relationship of job demands with work-life balance, the job demands work overload was examined.

*Work overload*

Figure 3 depicts the moderating effect of job crafting on the relationship of work overload with NHWI.

*Figure 3. Moderating effect of job crafting on the relationship of work overload with NHWI*

As can be seen in Table 8, the overall model for NHWI including all three variables (job crafting, work overload, and interaction) was significant, $F(3, 476) = 4.289$, $p < .005$, $R^2 = .03$. This means that 3% of the variance in NWHI could be explained by work overload, job crafting and their interaction term.

For low job crafting, work overload $b = .24$, $t(476) = 3.54$, $p = .00$ – So, for low job crafting, an increase in work overload was related to a significant increase in NHWI.

For average job crafting, work overload $b = .12$, $t(476) = 2.50$, $p = .01$. So, for average job crafting, an increase in work overload was related to a significant increase in NHWI.

For high job crafting, work overload $b = .01$, $t(476) = 0.10$, $p = .92$. So, for high job crafting, there was no significant relationship between work overload and NHWI.

*Table 8. Moderating effect of job crafting on the relationship of work overload with NHWI*

| Outcome -> | | NHWI | | |
|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* |
| Intercept | | 1,97 | 0,00 | 0,04 |
| Work overload | $b_1$ -> | 0,12 | 0,01 | 0,05 |
| Job crafting | $b_2$ -> | 0,03 | 0,72 | 0,08 |
| Work overload x Job crafting | $b_3$ -> | -0,25 | 0,02 | 0,11 |
| Model $R^2$ | | 0,03 | | |
| *F* | | 4,29 | 0,01 | |

*N = 480 respondents*

No moderating effect of job crafting on the relationship of work overload with NWHI, PHWI, and PWHI was found (see Appendix B).

The moderating effect of job crafting on the relationship between job demands and work-life balance was examined. Results show only a significant moderating effect of job crafting on the relationship of workload with NHWI. Therefore, hypothesis 4a is partially accepted.

> *Hypothesis 4a: The relationship between job demands (work overload) and work-life balance (NWHI, NHWI, PWHI and PHWI) is moderated by job crafting.*

**Moderation of the effect of Job Resources and Work-life balance at values of the moderator Job crafting**

To determine the moderating effect of job crafting for the relationship of job resources with work-life balance, the job resources organizational support, growth opportunities, job security and advancement were examined.

*Job security*

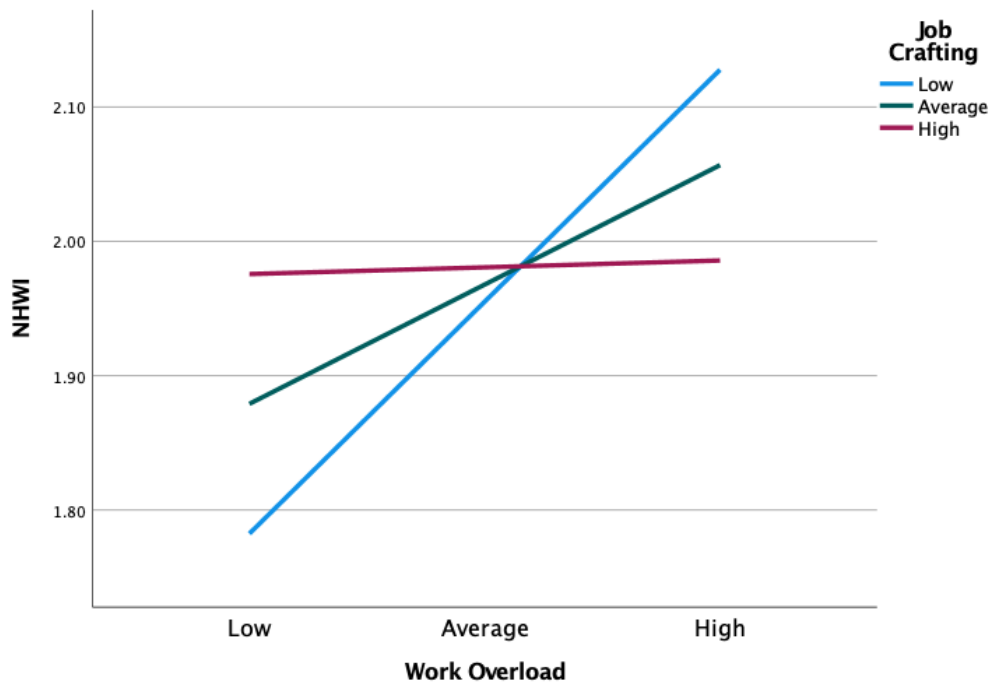Figure 4 depicts the moderating effect of job crafting on the relationship of work overload with NHWI.
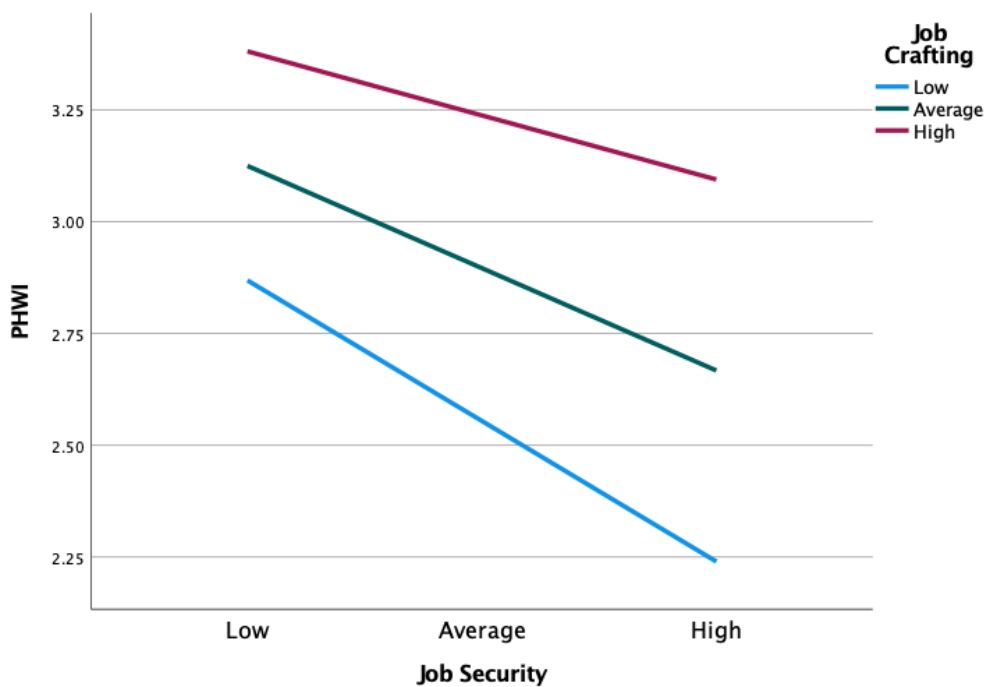


*Figure 4. Moderating effect of job crafting on the relationship of job security with PHWI*

As can be seen in Table 9, the overall model for PHWI including all three variables (job crafting, job security, and interaction) was significant, $F(3, 430) = 35.55$, $p < .001$, $R^2 = .20$. This means the moderating effect of job crafting on the relationship of work overload with PHWI 20% of the variance can be explained.

> For low job crafting, job security $b = .25$, $t(434) = -5.16$, $p = .00$ − for low job crafting, for every unit increase in job security the PHWI decreases with -.25
>
> For average job crafting, work overload $b = .18$, $t(434) = -5.12$, $p = .00$ − for average job crafting, for every unit increase in job security the PHWI decreases with -.18
>
> For high job crafting, work overload $b = .11$, $t(474) = -2.48$, $p = .01$ − for high job crafting, for every unit increase in job security the PHWI decreases with -.11

As shown in appendix B, no moderating effect of job crafting on the relationship of job security with NHWI, NWHI, and PWHI was found.

*Table 9. Moderating effect of job crafting on the relationship of job security with PHWI*

| Outcome -> | | PHWI | | |
|---|---|---|---|---|
| **Predictor** | | B | p | SE |
| Intercept | | 2,90 | 0,00 | 0,04 |
| Job security | $b_1$ -> | -0,18 | 0,00 | 0,04 |
| Job crafting | $b_2$ -> | 0,76 | 0,00 | 0,10 |
| Job security x Job crafting | $b_3$ -> | 0,15 | 0,03 | 0,07 |
| Model $R^2$ | | 0,20 | | |
| F | | 35,55 | 0,00 | |

*N = 434 respondents*

No moderating effect of job crafting was found for any of the relationships of organizational support, growth opportunities and advancement with NHWI, NWHI, PHWI, and PWHI. Results can be found in appendix B.

The moderating effect of job crafting on the relationship between job resources and work-life balance was examined. Results show only a significant moderating effect of job crafting on the relationship of organizational support with NWHI (B = -0,21, p = 0.05) and the relationship of job security with PHWI (B = 0,15, p = 0.03). Since for all other relationships of job resources with work-life balance no statistically significant moderation effect was found, hypothesis 4b is partially accepted.

*Hypothesis 4b: The relationship between job resources (organizational support, growth opportunities, job security, and advancement) and work-life balance (NWHI, NHWI, PWHI and PHWI) is moderated by job crafting.*

## 5.2.8. Assessing the Moderating Effect of Strength use

The moderating effect of strength use for the relationship between job demands and work-life balance was examined. Results, which can be found in appendix B, show no significant moderating effect of strength use on the relationship of job demands with work-life balance. Therefore, hypothesis 5a is found to be rejected.

*Hypothesis 5a: The relationship between job demands (work overload) and work-life balance (NWHI, NHWI, PWHI and PHWI) is moderated by strength use.*

Also, the moderating effect of strength use on the relationship between job resources and work-life balance was examined. Results, which can be found in appendix B, show no significant moderating effect of strength use on the relationship of job resources with work-life balance. Therefore, hypothesis 5b is rejected.

*Hypothesis 5b: The relationship between job resources (organizational support, growth opportunities, job security, and advancement) and work-life balance (NWHI, NHWI, PWHI and PHWI) is moderated by strength use.*

An overview all tested hypotheses is depicted in Table 10.

*Table 10. Hypotheses testing*

| Hypothesis | Description | Result |
|---|---|---|
| **H1a** | Job demands (work overload) are negatively related to work-life balance. | Partially accepted |
| **H1b** | Job resources (organizational support, growth opportunities, job security, and advancement) are positively related to work-life balance. | Partially accepted |
| **H2** | A high level of work-life balance is related to more job motivation. | Partially accepted |
| **H3** | A high level of job motivation is related to more psychological well-being (PWB). | Accepted |
| **H4a** | The relationship between job demands (work overload) and work-life balance (NWHI, NHWI, PWHI and PHWI) is moderated by job crafting. | Partially accepted |
| **H4b** | The relationship between job resources (organizational support, growth opportunities, job security, and advancement) and work-life balance (NWHI, NHWI, PWHI and PHWI) is moderated by job crafting. | Partially accepted |
| **H5a** | The relationship between job demands (work overload) and work-life balance (NWHI, NHWI, PWHI and PHWI) is moderated by strength use. | Rejected |
| **H5b** | The relationship between job resources (organizational support, growth opportunities, job security, and advancement) and work-life balance (NWHI, NHWI, PWHI and PHWI) is moderated by strength use. | Rejected |

# 6. Discussion and conclusion

In this chapter, the findings of this study are discussed, and the conclusions are presented regarding the relationships between job demands, job resources, work-life balance, job motivation and psychological well-being during the COVID-19 pandemic, and the moderating role of job crafting and strength use for the relationship of job demands and resources with work-life balance.

## 6.1. General discussion

The COVID-19 outbreak has created a unique context in which many employees were forced to work from home intensively. One of the main aims of this study was to determine the impact job crafting and strength use on the relationships of job demands and job resources with work-life balance. Due to this unique situation of a pandemic, it was not clear what job demands and resources people are currently facing and how they act on them. The experiences of employees were gathered to gain a better understanding. The current study consisted of two parts, a qualitative focus group discussion study and a quantitative online survey. Both types of results are used to get a complete understanding.

*The direct effect of job demands and job resources on work-life balance*

The relationship between job demands and work-life balance was studied by using the variable of work overload as an indicator of job demands. Findings show that work overload is positively related to NWHI and NHWI and negatively related to PHWI. No statistically significant path was found for PWHI. This is in line with literature by Geurts et al. (2007), results indicate that when an employee experiences higher levels of work overload more negative home to work and work to home interferences are experienced and less positive home to work interferences.

For analyzing the relationships between job resources and work-life balance, the variables organizational support, growth opportunities, job security and advancement were used as indicators of job resources. The separate relationships are discussed for a clearer interpretation of the results. First, findings show a negative relationship of organizational support with NWHI and NHWI, and a positive relationship to PWHI and PHWI. This is in line with literature by Geurts et al. (2007), meaning that the job resource organizational support is related to less negative work to home and home to work interference and more positive work to home and home to work interference. Second, for growth opportunities, only a relationship

with NWHI was found, which is a positive relationship too. This is contrary to expectations because according to theory (Demerouti, Geurts, & Kompier, 2004) a job resource should weaken a negative outcome. However, the result show that the job resource growth opportunities is related to more instead of negative work to home interference. Such a contrary results is not very unlikely since Bakker and Geurts (2004) also found such a positive relationship of job resources with NWHI. Third, for job security, negative relationships with NWHI, PWHI, NHWI and PHWI were found. For NWHI and NHWI this is in line with theory (Demerouti, Geurts, & Kompier 2004) indicating that when an employee experiences higher levels of job security this weakens the effect of negative home to work and work to home interferences. However, for PWHI and PHWI this negative relationship is contradictory because despite experiencing job security, interferences that occur at work have a negative effect on the home situation and the other way around. The same explanation of Bakker and Geurts (2004) as for growth opportunities could be applicable to explain this contradictory finding in the results. However, a person with little job security works harder in order not to lose its job. Therefore, the positive interferences could still have a negative effect. Finally, findings showed a negative relationship for advancement with PHWI. This negative relationship is also contradictory, because despite experiencing advancement, interferences that occur at home have a negative effect on the work situation. Literature does not provide a understanding of why this negative effect occurred for the relationship of advancement with PHWI.

*The direct effect of work-life balance on job motivation*

The relation between work-life balance to job motivation was examined. Findings show a positive relationship of NWHI and PWHI with job motivation and a negative relationship of NHWI and PHWI with job motivation. The relationship of PHWI and NHWI with job motivation values are in line with theory by Demerouti, Geurts, and Kompier (2004). However, for the relationship of NWHI and PHWI with job motivation, results do not show the expected effect, since NWHI should decrease job motivation and PHWI should increase job motivation. A possible explanation for this is that perceived boundaries between work and private life due to only working from home during COVID-19 have become so small because they take place only in the same physical location (separation between private home and work at the office) that different behavior than expected was found. The focus group discussions showed that where normally travel time to the office functioned to switch off from work, this time at home has become so short that the separation between work and private life has become very small.

From the workplace to home is now almost only just a door or stairs. However, despite the possible explanation, it is not clear why this behavior only applies for the relationship of NWHI and PHWI.

*The direct effect of job motivation on psychological well-being*
As expected, results show a positive significant relationship between job motivation and psychological well-being. In line with theory by Deci and Ryan (2008), higher job motivation leads to more psychological well-being.

*The moderating effects of job crafting and strength use*
Moderating effects of job crafting and strength use on the relationships between job characteristics and work home interference were hypothesized. First, the results of the quantitative data are discussed.

Results show a significant moderating effect only for 3 of the 40 relationships studied, of which only moderating effects of job crafting. No significant moderating effects for strength use were found. For the relationship of work overload to NHWI, if one experiences higher levels of work overload, that is going to increase the experience of negative things that happens at home because one is already stressed at work and therefore all the negative things happening at the house can increase the level of stress even more. Job crafting can buffer against this because it helps people manage the workload a little bit better.

For the relationship of organizational support to NWHI, if one experiences higher levels of organizational support, the interference of negative things happening at work taken home decreases. Job crafting was found to weaken this effect. One could argue that in times of COVID-19 there are not enough mental resources for using job crafting, which therefore instead of providing one with extra resources, it reduces the positive effect on NWHI. For the direct relationship of job security to PHWI, if one experiences higher levels of job security, that is going to decrease the interferences of positive things happening at home taken to work. Job crafting was found to strengthen this effect which results in the experiences of even fewer positive things taken from home to work. Also here, the explanation could be that people cannot actually job craft because it takes extra energy and effort, which people don't have at the moment and therefore the consumption of resources make people focusing less on the positive things taken from home to work. People are more inclined for negative things because they are more conditioned to think about negativity and be more focused on it. Furthermore, for people,

things happening at work and home play such a big role now because of experiencing thinner separation between the two of them, which interchangeably influences work and home.

An explanation why only a moderating effect of job crafting on organizational support and job security was found and not for growth opportunities and advancement is because due to the uncertain time, people focus on survival and basic need for organizational support and job security within the company, whereas growth opportunities and advancement focus on development and given the pandemic, there may be less organizational resources available for that.

Despite very small effects were found in the quantitative data, several examples of job crafting and strength use were given in the focus groups discussions which may provide additional insights.

A good example of a job crafting practice is that people have started to use rooms in the house for different purposes. If concentrated work must be done or a lot of calls are made, people withdraw to a quiet room for this. However, when creative work must be done, which in the opinion of participants of the focus group requires an inspiring work environment, it is moved to another room. In this way, different spaces are used for different types of work.

Another example is that people have started working from home in other places to imitate travelling and working in another place. As a result, there is a clearer psychological separation between work and private life. This can be, for example, in the home of parents.

An important strength that is needed when working from home in times of COVID-19 is that of planning. One experiences a feeling that everything must be planned because otherwise, this will not happen naturally. For example, walks should be planned for the necessary exercise and lunch should be planned so as not to be forgotten. However, when it comes to working hours, these are not scheduled between regular times. Because private activities take place during the day (for example, due to the closure of schools or gyms), other activities are done during the day and this time is made up in the evening. As a result, private life and work are even more intertwined.

## 6.2. Theoretical contributions

This study contributes to the scientific literature by adding insight into the JD-R model in the context of a pandemic, specifically COVID-19, as it focused particularly on how employees respond to job demands and resources in this new situation. It is interesting to see

how these job factors influence work-life balance and motivation sometimes differently than expected. Where people experience benefits of certain resources under normal circumstances, these were found to have a different effect in times of COVID-19. From the job crafting and strength use perspective, unlike other studies, and in the COVID-19 situation, due to limited resources job crafting plays a small role and strength use don't play a role at all. Despite the use of these strategies, the benefits are not always as expected.

Also, work-home integration plays a different role in people's lives in times of COVID-19 and a major theoretical contribution is now that because work-home integration is different, people's perception of work and life has changed. A working day is less framed between certain times and is experienced differently due to interferences from home to work and vice versa.

One of the biggest theoretical contributions found is that people need to be physically present of others, as in the way of working before COVID-19, being in contact physically with people helps to get the resources that people need, to craft jobs and use strengths a lot more. Only remote e-working doesn't provide people with the right contact to experience the contact as resource. It can be stated that a certain amount of physical contact between colleagues is required to make use of the contact, rather than just virtually talking to each other.

In short, where people experience benefits of applying job crafting and strength use strategies under normal circumstances, these were found to have a different effect in times of COVID-19. A different work-home integration is applying for home workers and physical contact with colleagues is needed to replenish the resources.

## 6.3. Limitations and future research

Despite the contributions of this study, it also entails several limitations that should be kept in mind when interpreting the findings. First, the sample of this research is too small to say something about different sectors of the labour market. The current sample contains jobs with high job security with could be different in other economically insecure industries. Also, the sample size and composition did not allow a generalization of outcomes to all working sectors since the sample is quite specific (higher education & scientific research). Second, this research makes use of self-report scales. Self-report measures are known to be volatile and sensitive to momentary changes in the environment (Conner, & Barrett, 2012), because the measure relies on participants' evaluation of their own responsiveness, which makes it a relatively indirect measure (Bress, & Hajcak, 2012). Third, this research did not control for factors like the number of children, number of housemates, sector currently working in, or type of function

(f.e. employee or manager) since the models did not converge, and the model would have too little degrees of freedom. Adding these factors as covariates artificially inflects or deflects the results. Fourth, in terms of job demands and resources, this research did only control for work-related demands and resources but did not test for home-related demands and resources. This may have an influence when assessing the effects of home to work interference. However, because the current job/home demands and resources in COVID-19 are so novel, they may need to be explored first. Finally, the research was conducted in an extraordinary context, specifically during the COVID-19 pandemic. Due to this situation, the current models may not be (fully) applicable or may be incomplete for the COVID situation. For example, job resources were assessed with previously developed and validated scales for already known job resources (organizational support, growth opportunities, job security and advancement). However, due to the extraordinary context of COVID-19, new job resources may apply which have not yet been explored and therefore are not included in the survey. Although this can be seen as a limitation, this situation also provides a unique opportunity to address theoretical gaps and expand theory.

## 6.4. Practical implications

From the findings in this study, several practical implications for people working at home could be derived. Insights from working at home during COVID-19 can, beyond the immediate context of the pandemic, guide home workers practice after the crisis.

A clear implication is that new ways of job demand and resources have emerged in times of COVID-19, which are yet to be discovered. This means that someone working at home must deal with different demands and resources that may be themes for follow-up research. It can be argued that job demands, and job resources need revision.

Another implication is that ways can be sought to create a better separation between work and private life. For example, it could be ensured that there is more time between switching off from work and going back to the private environment by, for example, simulating a walk or another way of travel to simulate a feeling of travel time. Also, temporarily working with someone familiar can help to mimic a feeling of being on the road as a working day before COVID-19. The way of managing the work-life balance for the new way of working would have to be rethought. People are seeing their work and their family lives now totally different than before, and it's now becoming more integrated, it is more like an overall experience. People need to be more autonomous, but they also need to change their way of work, or their

view on work, because it is not anymore, a traditional 9 to 5 thing, and it's not a 9 to 5 thing going forward. It is probably going to be more of a 24/24, but one should be able to manage it appropriately. Moreover, because people have less energy because of higher demands, one needs to figure out how to help them to adjust to the new situation. People need more autonomy in their lives and at work, for them to manage their home and work simultaneously. They need the skills and capabilities to integrate work a lot more in their life, and not necessarily to balance between them. In other words, a working day can be arranged differently and instead of a clear separation between work and private time, ways can be found to better integrate working time and thus alternate according to one's own discretion.

Finally, results showed that that the forced nature of working from home due to COVID-19 has generally had a negative effect on employees. It could therefore be argued that employers give employees the choice after COVID-19 to decide for themselves when they work from home, so that this can be done on a voluntary basis. Social relationships with colleagues were found to also play a big role, i.e. being able to physically meet with other people.

## 6.5. Conclusion

This study focused on the relationships between job characteristics, work-life balance, job motivation and psychological well-being during the COVID-19 pandemic and specifically the moderating roles of job crafting and strength use on the effect of job demands and job resources with work-life balance. Most of the proposed hypotheses were as expected. However, also some of the results found that are not in line with current theory. What could play an important role be that in an exceptional situation such as a pandemic, people show different behavior than usual. Being forced to work from home can potentially evoke different behaviour, for example because people who are not used to this before, must plan their working hours themselves (high job autonomy) and must think of how people want to organize work and private life. Therefore, contradictory behavior can be found which is difficult to explain. It can be concluded that where specific effects of job crafting and strength use are found in a normal situation, these effects are absent in times of COVID-19. It can be argued that despite the application of job crafting practices and the deployment of strengths, this does not outweigh the demands of being able to work from home all week. The main reason for this seems to be that through a thinner separation of work and private life due to only working from home, the demands of the two overlap too much. Furthermore, an argument could be that people are really consuming their

capacity of mental resources and don't have anything extra to give. So, then they can't really use their strengths or job craft because it takes extra energy and effort, which people don't have now. There seems to be no difference between single people and those who live together and/or have children. The need for contact with colleagues also remains very important. It seems that having to meet virtually only is not satisfying enough to experience the job resource of team cohesion. Therefore, being able to meet in person seems to be an important precondition for experiencing contact with colleagues as a resource. The positive factors of working from home in times of COVID-19 were searched for in this research. Exploratory research has shown how people deal with this and provided several examples. However, this showed that the temporary nature of the situation was an important factor and working at home a full working week is not a desired situation for the long term because of the high demands of only working at home, which was neither confirmed nor completely rejected with quantitative research. Additional research may be required to generalize and confirm the results on a larger scale.

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# Appendix A – Questionnaire

**Job demands**

*Work Overload*
1. Do you have too much work to do?
2. Do you work under time pressure?
3. Do you have to be attentive to many things at the same time?
4. Do you have to remember many things in your work?

**Job resources**

*Organisational Support*
5. Does your job offer you opportunities for personal growth and development?
6. Does your work give you the feeling that you can achieve something?
7. Does your job offer you the possibility of independent thought and action?
8. Do you have influence in the planning of your work activities?

*Growth Opportunities*
9. Do you get on well with your colleagues?
10. In your work, do you feel appreciated by your supervisor?
11. Does your direct supervisor inform you about important issues within your department/organisation?
12. Can you discuss work problems with your direct supervisor?

*Job Insecurity*
13. Do you need to be more secure that you will still be working in one year's time?
14. Do you need to be more secure that you will keep your current job in the next year?
15. Do you need to be more secure that next year you will keep the same function level as currently?

*Advancement*
16. Do you think that your organisation pays good salaries?
17. Can you live comfortably on your pay?
18. Do you think you are paid enough for the work that you do?
19. Does your job offer you the possibility to progress financially?

**Work-life balance**

Instruction
"How often does it happen that…"

*Negative WHI (NWHI)*
1. You find it difficult to fulfil your domestic obligations because you are constantly thinking about your work?
2. You do not have the energy to engage in leisure activities with your spouse/family/friends because of your job?
3. You have to work so hard that you do not have time for any of your hobbies?
4. Your work obligations make it difficult for you to feel relaxed at home?

*Negative HWI (NHWI)*
5. The situation at home makes you so irritable that you take your frustrations out on your colleagues?
6. You do not fully enjoy your work because you worry about your home situation?
7. You have difficulty concentrating on your work because you are preoccupied with domestic matters?
8. Problems with your spouse/family/friends affect your job performance?

*Positive WHI (PWHI)*
9. After a pleasant working day/working week, you feel more in the mood to engage in activities with your spouse/family/ friends?
10. You fulfil your domestic obligations better because of the things you have learned on your job?
11. You are better able to keep appointments at home because your job requires this as well?
12. You manage your time at home more efficiently as a result of the way you do your job?

*Positive HWI (PHWI)*
13. You take your responsibilities at work more seriously because you are required to do the same at home?
14. You are better able to keep appointments at work because your are required to do the same at home?
15. You manage your time at work more efficiently because at home you have to do that as well?
16. You have greater self-confidence at work because you have your home life well organized?

## Job motivation

*Intrinsic motivation*
1. Because I have fun doing my job.
2. Because what I do in my work is exciting.
3. Because the work I do is interesting.

## Psychological well-being

Instruction
"In the past month, how often did you feel…"

*Self-acceptance*
1. That you liked most parts of your personality
*Mastery*
2. Good at managing the responsibilities of your daily life
*Positive relations*
3. That you had warm and trusting relationships with others
*Personal growth*
4. That you have experiences that challenge you to grow and become a better person
*Autonomy*
5. Confident to think or express your own ideas and opinions
*Purpose in life*

*6.* That your life has a sense of direction or meaning to it

## Job crafting

*Increasing structural job resources*
   *1.* I try to develop my capabilities
   *2.* I try to develop myself professionally
   *3.* I try to learn new things at work
   *4.* I make sure that I use my capacities to the fullest
   *5.* I decide on my own how I do things

*Decreasing hindering job demands*
   *6.* I make sure that my work is mentally less intense
   *7.* I try to ensure that my work is emotionally less intense
   *8.* I manage my work so that I try to minimize contact with people whose problems affect me emotionally
   *9.* I organize my work so as to minimize contact with people whose expectations are unrealistic
   *10.* I try to ensure that I do not have to make many difficult decisions at work
   *11.* I organize my work in such a way to make sure that I do not have to concentrate for too long a period at once

*Increasing social job resources*
   *12.* I ask my supervisor to coach me
   *13.* I ask whether my supervisor is satisfied with my work
   *14.* I look to my supervisor for inspiration
   *15.* I ask others for feedback on my job performance
   *16.* I ask colleagues for advice

*Increasing challenging job demands*
   *17.* When an interesting project comes along, I offer myself proactively as project co-worker
   *18.* If there are new developments, I am one of the first to learn about them and try them out
   *19.* When there is not much to do at work, I see it as a chance to start new projects
   *20.* I regularly take on extra tasks even though I do not receive extra salary for them
   *21.* I try to make my work more challenging by examining the underlying relationships between aspects of my job

## Strength use

Instruction
'The following questions ask you about your strengths, that is, the things that you are able to do well or do best'

   *1.* I am regularly able to do what I do best
   *2.* I pursue goals and activities that are aligned to my strengths
   *3.* I always try to use my strengths
   *4.* I achieve what I want by using my strengths
   *5.* I use my strengths everyday

6. *I use my strengths to get what I want out of life*
7. *My work gives me lots of opportunities to use my strengths*
8. *My life presents me with lots of different ways to use my strengths*
9. *Using my strengths comes naturally to me*
10. *I find it easy to use my strengths in the things I do*
11. *I am able to use my strengths in lots of different situations*
12. *Most of my time is spent doing the things that I am good at doing*
13. *Using my strengths is something I am familiar with*
14. *I am able to use my strengths in lots of different ways*

# Appendix B – Moderating effects

**Moderation of the effect of Job Demands on Work-life balance by Job Crafting**

*Work overload*
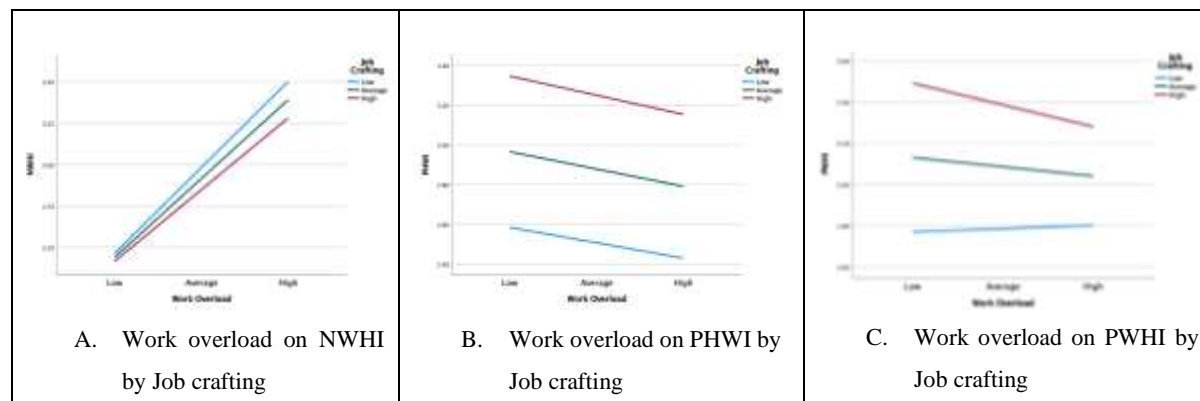


| A. Work overload on NWHI by Job crafting | B. Work overload on PHWI by Job crafting | C. Work overload on PWHI by Job crafting |

A. The overall model for NWHI including all three variables (job crafting, work overload, and interaction) was significant, $F(3, 476) = 68,80$, $p < .001$, $R^2 = .06$. However, with a $p = .20$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of work overload with NWHI.

B. The overall model for PHWI including all three variables (job crafting, work overload, and interaction) was significant, $F(3, 476) = 24.87$, $p < .001$, $R^2 = .04$. However, with a $p = .83$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of work overload with PHWI.

C. The overall model for PWHI including all three variables (job crafting, work overload, and interaction) was significant, $F(3, 476) = 30.32$, $p < .001$, $R^2 = .040$. However, with a $p = .06$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of work overload with PWHI.

| Outcome -> | | NWHI | | | PHWI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* |
| Intercept | | 2,92 | 0,00 | 0,03 | 2,88 | 0,00 | 0,04 | 3,09 | 0,00 | 0,03 |
| Work overload | $b_1$ -> | 0,66 | 0,00 | 0,05 | -0,12 | 0,05 | 0,06 | -0,06 | 0,17 | 0,05 |
| Job crafting | $b_2$ -> | -0,15 | 0,05 | 0,07 | 0,81 | 0,00 | 0,10 | 0,66 | 0,00 | 0,07 |
| Work overload x Job crafting | $b_3$ -> | -0,13 | 0,20 | 0,10 | -0,03 | 0,83 | 0,13 | -0,18 | 0,06 | 0,10 |
| Model $R^2$ | | 0,30 | | | 0,14 | | | 0,16 | | |
| F | | 68,80 | 0,00 | | 24,78 | 0,00 | | 30,32 | 0,00 | |

*N = 480 respondents*

**Moderation of the effect of Job Resources and Work-life balance at values of the moderator Job crafting**

*Organizational support*



A.   Organizational Support on NHWI by Job crafting

B.   Organizational Support on NWHI by Job crafting

C.   Organizational Support on PHWI by Job crafting

D.   Organizational Support on PWHI by Job crafting

A.  The overall model for NHWI including all three variables (job crafting, organizational support, and interaction) was significant, $F(3, 476) = 5.93, p < .001, R^2 = .04$ . However, with a $p = .66$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of organizational support with NHWI.

B.  The overall model for NWHI including all three variables (job crafting, organizational support, and interaction) was not significant, $F(3, 476) = 2.39, p = .07, R^2 = .02$. Even though the interaction term was significant with a $p = .05$, no moderating effect of job crafting for the on the relationship growth opportunities with NWHI was found since the overall model was not significant.

C. The overall model for PHWI including all three variables (job crafting, organizational support, and interaction) was significant, $F(3, 476) = 23.53$, $p < .001$, $R^2 = .13$. However, with a $p = .55$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of organizational support with PHWI.
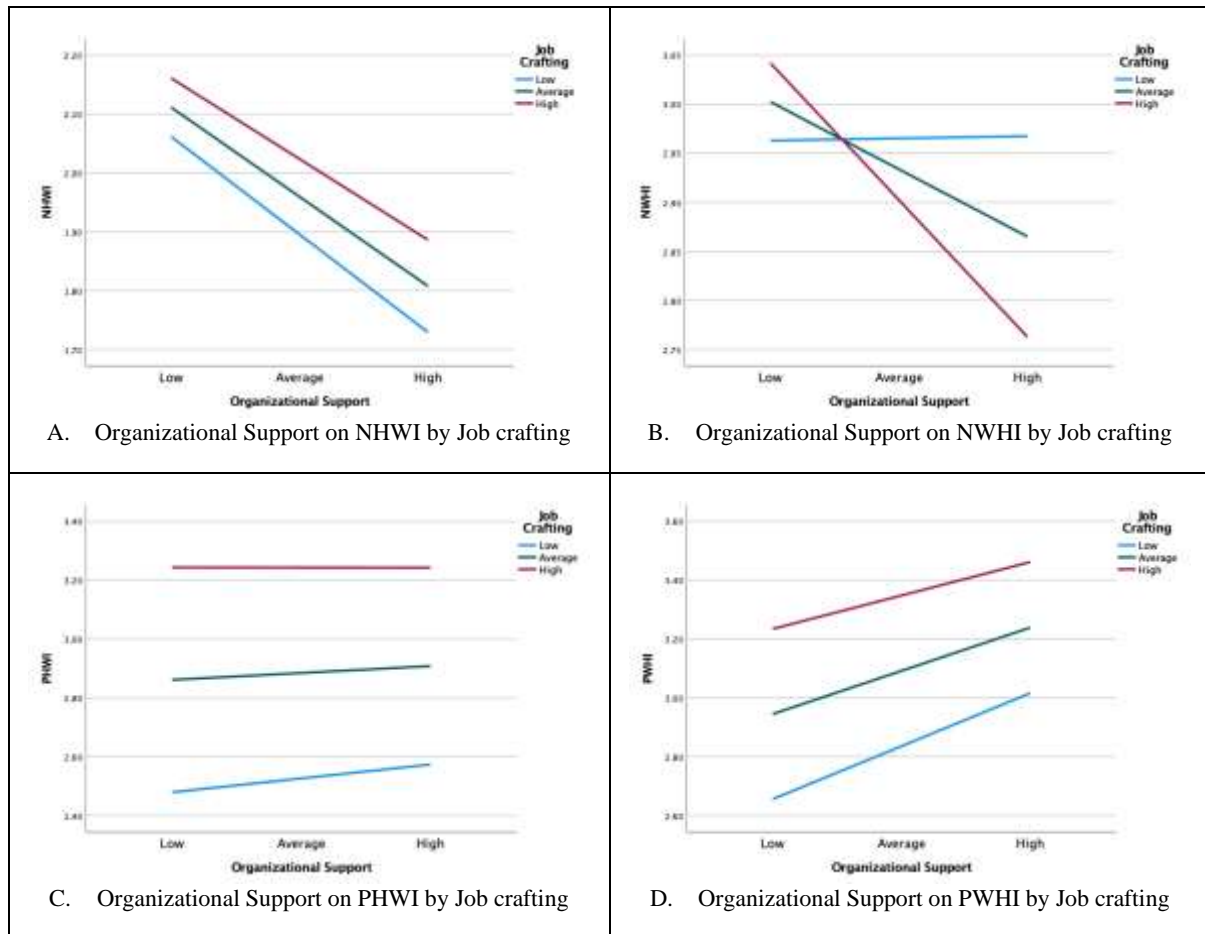
D. The overall model for PWHI including all three variables (job crafting, organizational support, and interaction) was significant, $F(3, 476) = 36.77$, $p < .001$, $R^2 = .19$. However, with a $p = .26$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of organizational support with PWHI.

| Outcome -> | | NHWI | | | NWHI | | | PHWI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* |
| Intercept | | 1,96 | 0,00 | 0,04 | 2,93 | 0,00 | 0,04 | 2,89 | 0,00 | 0,05 | 3,09 | 0,00 | 0,03 |
| Organizational Support | $b_1$ -> | -0,21 | 0,00 | 0,05 | -0,09 | 0,10 | 0,06 | 0,03 | 0,61 | 0,06 | 0,20 | 0,00 | 0,05 |
| Job crafting | $b_2$ -> | 0,14 | 0,08 | 0,08 | -0,07 | 0,45 | 0,09 | 0,78 | 0,00 | 0,10 | 0,56 | 0,00 | 0,07 |
| Organizational Support x Job crafting | $b_3$ -> | 0,04 | 0,66 | 0,10 | -0,21 | 0,05 | 0,11 | -0,07 | 0,55 | 0,12 | -0,10 | 0,26 | 0,09 |
| Model $R^2$ | | 0,04 | | | 0,02 | | | 0,13 | | | 0,19 | | |
| F | | 5,93 | 0,00 | | 2,39 | 0,07 | | 23,53 | 0,00 | | 36,77 | 0,00 | |

*N = 480 respondents*

*Growth Opportunities*



| A. Growth opportunities on NHWI by Job crafting | B. Growth opportunities on NWHI by Job crafting |
| C. Growth opportunities on PHWI by Job crafting | D. Growth opportunities on PWHI by Job crafting |

A. The overall model for NHWI including all three variables (job crafting, growth opportunities, and interaction) was significant, $F(3, 476) = 5.39$, $p < .001$, $R^2 = .03$ . However, with a $p = .98$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of growth opportunities with NHWI.

B. The overall model for NWHI including all three variables (job crafting, growth opportunities, and interaction) was significant, $F(3, 476) = 2.80$, $p < .05$, $R^2 = .02$. However, with a $p = .09$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of growth opportunities with NWHI.
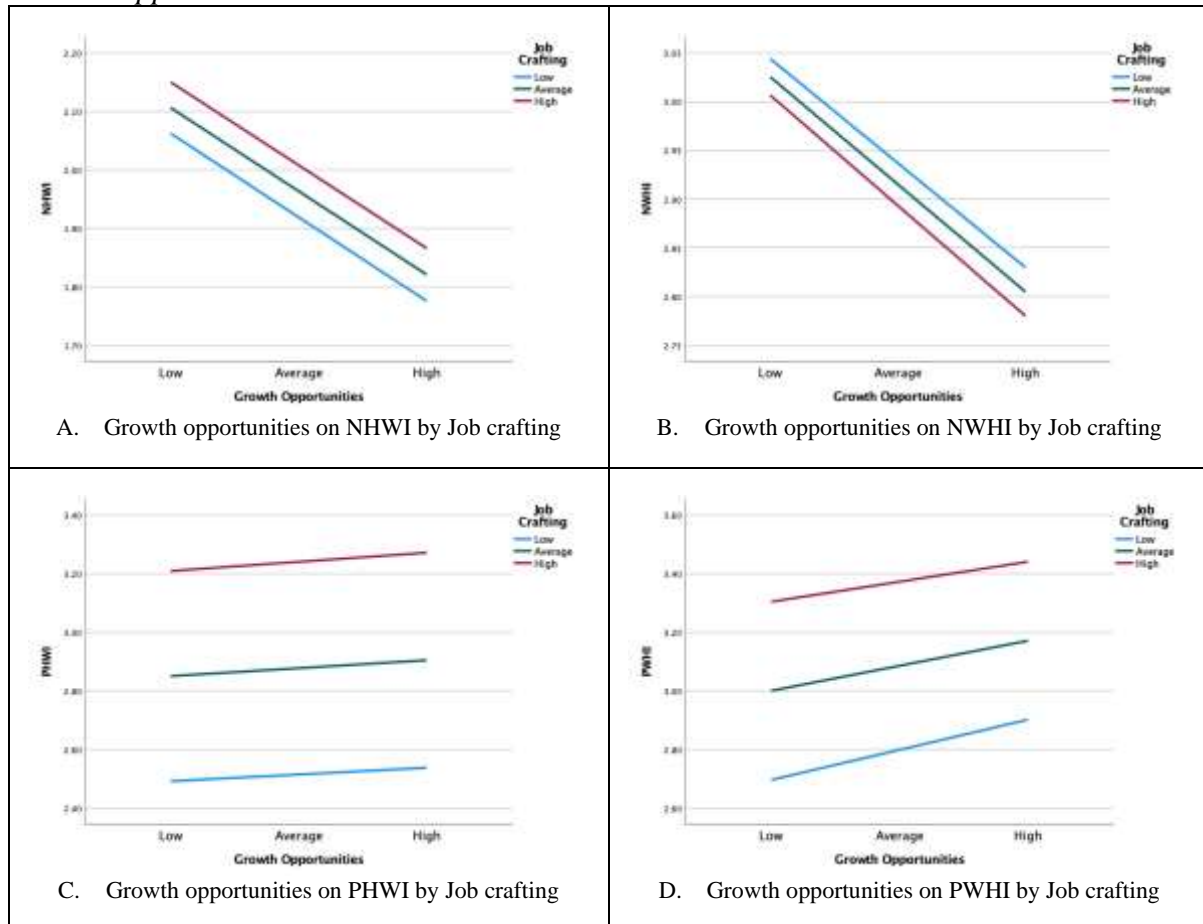
C. The overall model for PHWI including all three variables (job crafting, growth opportunities, and interaction) was not significant, $F(3, 476) = 23.42$, $p < .001$, $R^2 = .13$. Furthermore, with a $p = .92$ the interaction term was not significant. This means
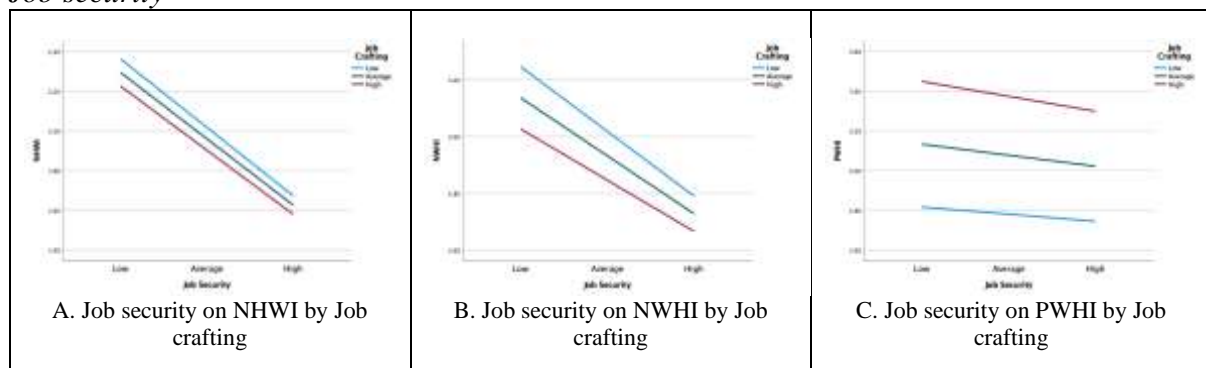
there was no moderating effect of job crafting on the relationship of growth opportunities with PHWI.

D. The overall model for PWHI including all three variables (job crafting, growth opportunities, and interaction) was significant, $F(3, 476) = 31.30$, $p < .001$, $R^2 = .17$. However, with a $p = .57$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of growth opportunities with PWHI.

| Outcome -> | | NHWI | | | NWHI | | | PHWI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* |
| Intercept | | 1,96 | 0,00 | 0,04 | 2,92 | 0,00 | 0,04 | 2,88 | 0,00 | 0,05 | 3,09 | 0,00 | 0,03 |
| Growth Opportunities | $b_1$ -> | -0,14 | 0,00 | 0,04 | -0,11 | 0,01 | 0,04 | 0,03 | 0,55 | 0,05 | -0,06 | 0,10 | 0,03 |
| Job crafting | $b_2$ -> | 0,10 | 0,22 | 0,08 | -0,05 | 0,59 | 0,09 | 0,80 | 0,00 | 0,10 | 0,66 | 0,00 | 0,07 |
| Growth Opportunities x Job crafting | $b_3$ -> | 0,00 | 0,98 | 0,07 | -0,01 | 0,93 | 0,08 | 0,01 | 0,92 | 0,09 | -0,18 | 0,57 | 0,07 |
| Model $R^2$ | | 0,03 | | | 0,02 | | | 0,13 | | | 0,17 | | |
| F | | 5,39 | 0,00 | | 2,80 | 0,04 | | 23,42 | 0,00 | | 31,30 | 0,00 | |

*N = 480 respondents*

*Job security*



| A. Job security on NHWI by Job crafting | B. Job security on NWHI by Job crafting | C. Job security on PWHI by Job crafting |

A. The overall model for NHWI including all three variables (job crafting, job security, and interaction) was significant, $F(3, 430) = 30.52$, $p < .001$, $R^2 = .18$. However, with a $p = .72$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of job security with NHWI.

B. The overall model for NWHI including all three variables (job crafting, job security, and interaction) was significant, $F(3, 430) = 8.39$, $p < .001$, $R^2 = .06$. However, with a

$p = .20$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of job security with NWHI.

C. The overall model for PWHI including all three variables (job crafting, job security, and interaction) was significant, $F(3, 430) = 30.22$, $p < .001$, $R^2 = .17$. However, with a $p = .51$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of job security with PWHI.

| Outcome -> | | NHWI | | | NWHI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* |
| Intercept | | 1,96 | 0,00 | 0,04 | 2,93 | 0,00 | 0,04 | 3,08 | 0,00 | 0,03 |
| Job security | $b_1$ -> | -0,26 | 0,00 | 0,03 | -0,16 | 0,00 | 0,03 | -0,04 | 0,11 | 0,03 |
| Job crafting | $b_2$ -> | -0,13 | 0,10 | 0,08 | -0,19 | 0,05 | 0,09 | 0,66 | 0,00 | 0,08 |
| Job security x Job crafting | $b_3$ -> | 0,02 | 0,72 | 0,05 | 0,04 | 0,20 | 0,06 | -0,03 | 0,51 | 0,05 |
| Model $R^2$ | | 0,18 | | | 0,06 | | | 0,17 | | |
| *F* | | 30,52 | 0,00 | | 8,39 | 0,00 | | 30,22 | 0,00 | |

*N = 434 respondents*

*Advancement*



A.  Advancement on NHWI by Job crafting

B.  Advancement on NWHI by Job crafting

C.  Advancement on PHWI by Job crafting

D.  Advancement on PWHI by Job crafting

A. The overall model for NHWI including all three variables (job crafting, advancement, and interaction) was significant, $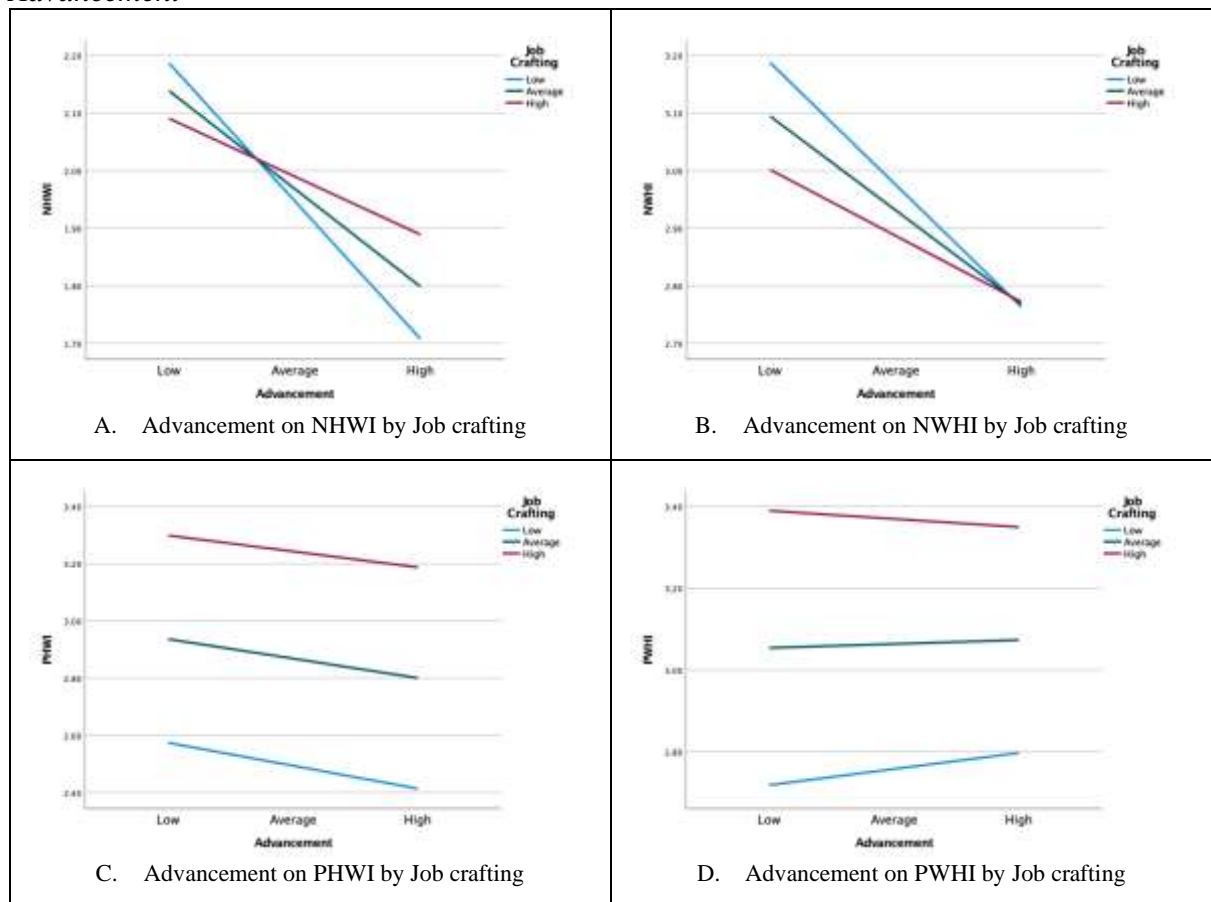F(3, 432) = 8.19$, $p < .001$, $R^2 = .05$ . However, with a $p = .06$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of advancement with NHWI.

B. The overall model for NWHI including all three variables (job crafting, advancement, and interaction) was significant, $F(3, 432) = 6.16$, $p < .001$, $R^2 = .04$. However, with a $p = .24$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of advancement with NWHI.

C. The overall model for PHWI including all three variables (job crafting, advancement, and interaction) was not significant, $F(3, 432) = 23.20$, $p < .001$, $R^2 = .14$. Furthermore, with a $p = .79$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of advancement with PHWI.
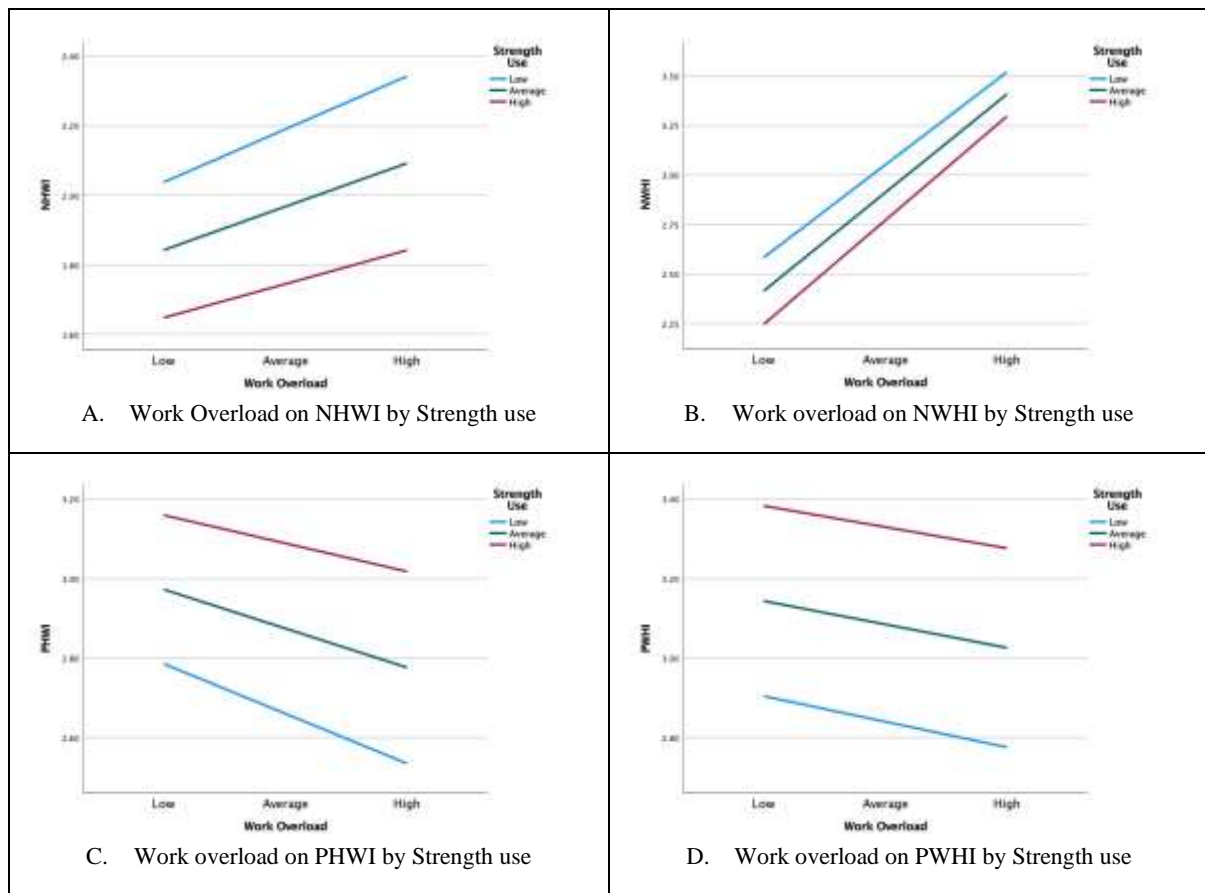
D. The overall model for PWHI including all three variables (job crafting, advancement, and interaction) was significant, $F(3, 432) = 27.43$, $p < .001$, $R^2 = .16$. However, with a $p = .39$ the interaction term was not significant. This means there was no moderating effect of job crafting on the relationship of advancement with PWHI.

| Outcome -> | | NHWI | | | NWHI | | | PHWI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* |
| Intercept | | 1,97 | 0,00 | 0,04 | 2,93 | 0,00 | 0,04 | 2,88 | 0,00 | 0,05 | 3,06 | 0,00 | 0,03 |
| Advancement | $b_1$ -> | -0,19 | 0,00 | 0,04 | -0.18 | 0,00 | 0,05 | -0,12 | 0,14 | 0,05 | 0,11 | 0,78 | 0,04 |
| Job crafting | $b_2$ -> | 0,05 | 0,56 | 0,08 | -0,10 | 0,28 | 0,09 | 0,81 | 0,00 | 0,10 | 0,66 | 0,00 | 0,07 |
| Advancement x Job crafting | $b_3$ -> | 0,16 | 0,06 | 0,09 | 0.12 | 0,24 | 0,10 | 0,03 | 0,79 | 0,11 | -0,07 | 0,39 | 0,08 |
| Model $R^2$ | | 0,05 | | | 0,04 | | | 0,14 | | | 0,16 | | |
| *F* | | 8,19 | 0,00 | | 6,16 | 0,00 | | 23,20 | 0,00 | | 27,43 | 0,00 | |

*N = 436 respondents*

**Moderation of the effect of Job Demands and Work-life balance at values of the moderator Strength use**

*Work overload*



A.  Work Overload on NHWI by Strength use
B.  Work overload on NWHI by Strength use
C.  Work overload on PHWI by Strength use
D.  Work overload on PWHI by Strength use

A.  The overall model for NHWI including all three variables (strength use, work overload, and interaction) was significant, $F(3, 476) = 15.67$, $p < .001$, $R^2 = .09$ . However, with a $p = .35$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of work overload with NHWI.

B.  The overall model for NWHI including all three variables (strength use, work overload, and interaction) was significant, $F(3, 476) = 76.56$, $p < .001$, $R^2 = .33$. However, with a $p = .32$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of work overload with NWHI.

C.  The overall model for PHWI including all three variables (strength use, work overload, and interaction) was not significant, $F(3, 476) = 7.53$, $p < .001$, $R^2 = .05$. Furthermore,

with a $p = .49$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of work overload with PHWI.

D. The overall model for PWHI including all three variables (strength use, work overload, and interaction) was significant, $F(3, 476) = 17.31$, $p < .001$, $R^2 = .10$. However, with a $p = .85$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of work overload with PWHI.

| Outcome -> | | NHWI | | | NWHI | | | PHWI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* |
| Intercept | | 1,97 | 0,00 | 0,04 | 2,91 | 0,00 | 0,03 | 2,88 | 0,00 | 0,05 | 3,09 | 0,00 | 0,04 |
| Work overload | $b_1$ -> | 0,17 | 0,00 | 0,05 | 0,68 | 0,00 | 0,05 | -0,14 | 0,04 | 0,07 | -0,08 | 0,09 | 0,05 |
| Strength use | $b_2$ -> | -0,26 | 0,00 | 0,04 | -0,16 | 0,00 | 0,04 | 0,25 | 0,00 | 0,06 | 0,29 | 0,00 | 0,04 |
| Work overload x Strength use | $b_3$ -> | -0,04 | 0,35 | 0,05 | 0,05 | 0,32 | 0,05 | 0,04 | 0,50 | 0,06 | 0,01 | 0,85 | 0,05 |
| Model $R^2$ | | 0,09 | | | 0,33 | | | 0,05 | | | 0,10 | | |
| F | | 15,67 | 0,00 | | 76,56 | 0,00 | | 7,53 | 0,00 | | 17,31 | 0,00 | |

*N = 480 respondents*

**Moderation of the effect of Job resources and Work-life balance at values of the moderator Strength use**

*Organizational support*



A.  Organizational support on NHWI by Strength use

B.  Organizational support on NWHI by Strength use

C.  Organizational support on PHWI by Strength use

D.  Organizational support on PWHI by Strength use

A.  The overall model for NHWI including all three variables (strength use, organizational support, and interaction) was significant, $F(3, 472) = 11.95$, $p < .001$, $R^2 = .07$ . However, with a $p = .42$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of organizational support with NHWI.
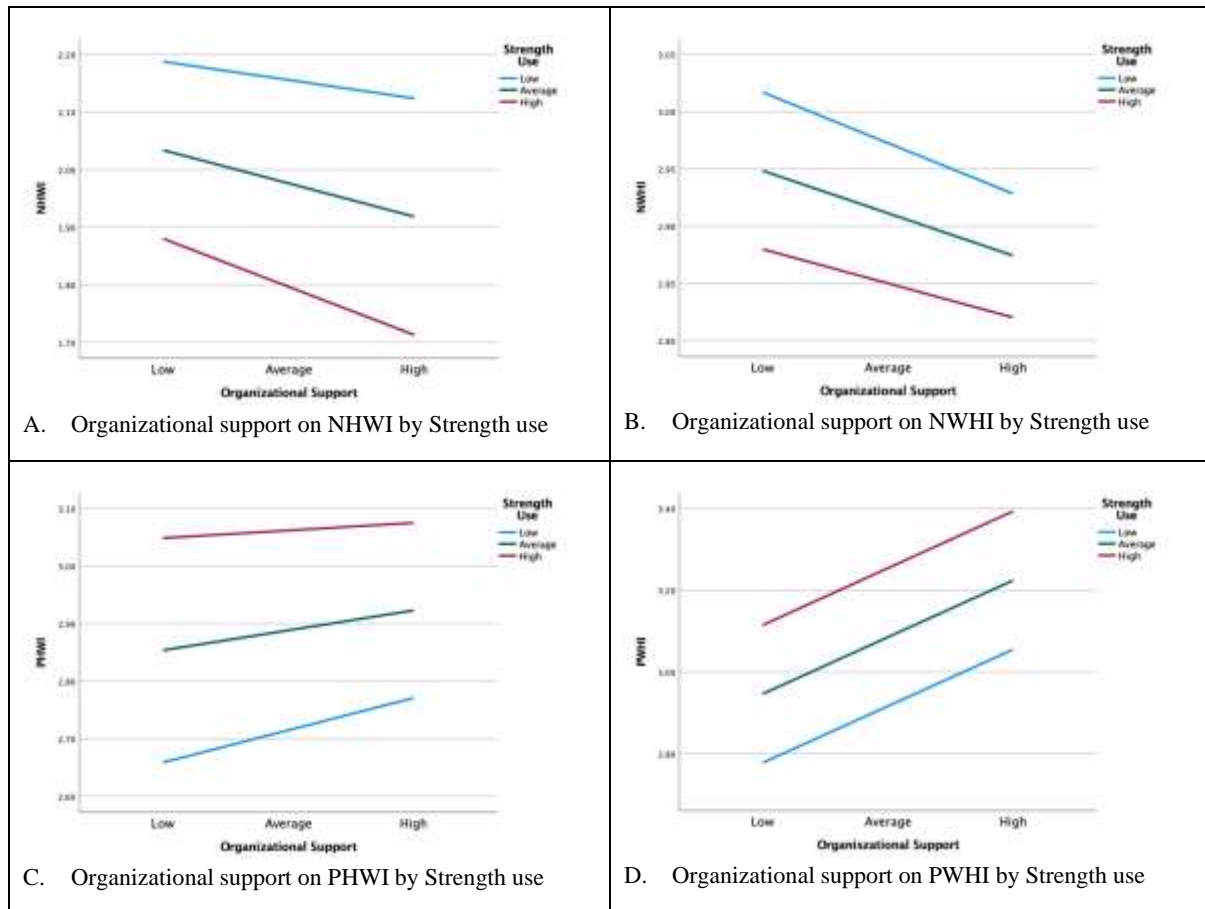
B.  The overall model for NWHI including all three variables (strength use, organizational support, and interaction) was not significant, $F(3, 472) = 1.59$, $p = .19$, $R^2 = .01$. Furthermore, with a $p = .85$ the interaction term was not significant. This means there was no moderating effect of strength use for the ef on the relationship of organizational support with NWHI.

C. The overall model for PHWI including all three variables (strength use, organizational support, and interaction) was not significant, $F(3, 472) = 6.15$, $p = .04$, $R^2 = .13$. Furthermore, with a $p = .62$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of organizational support with PHWI.
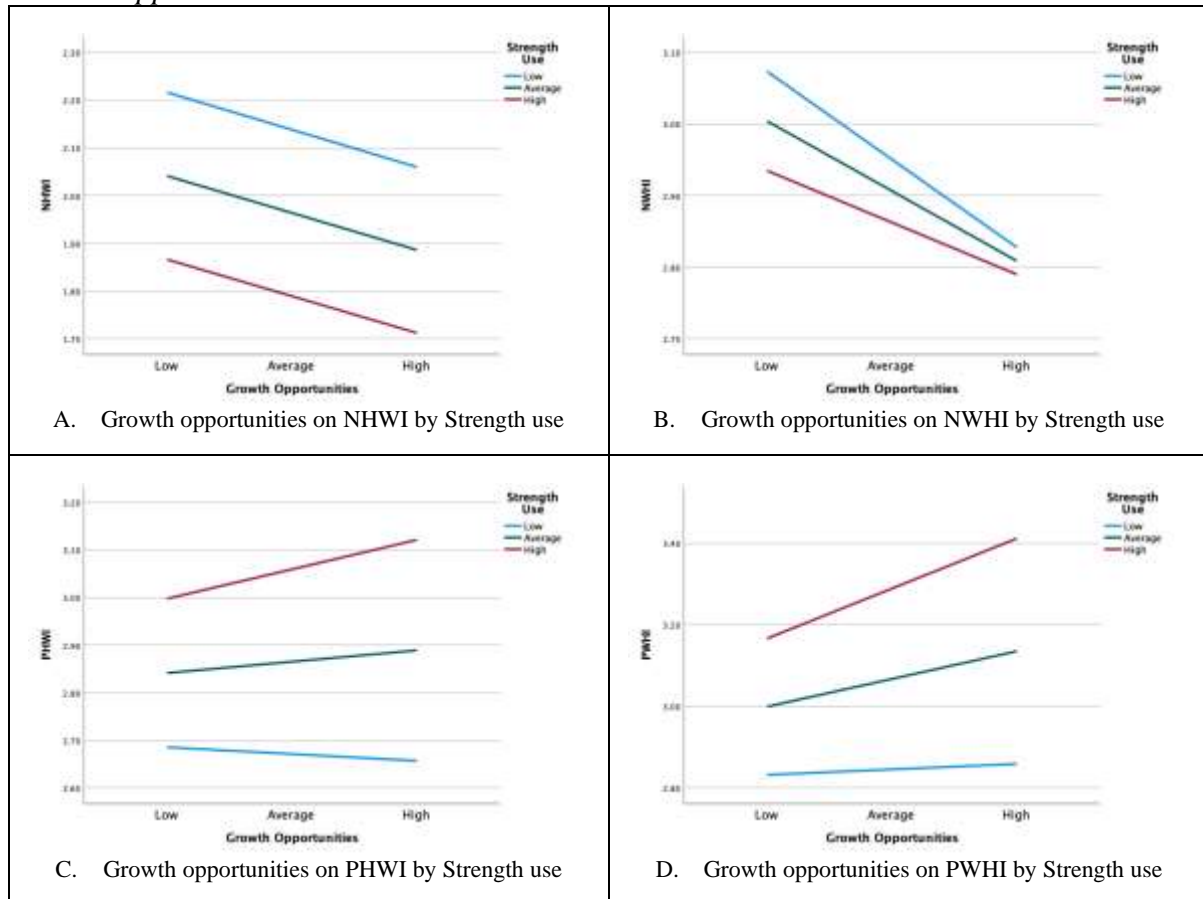
D. The overall model for PWHI including all three variables (strength use, organizational support, and interaction) was significant, $F(3, 472) = 21.10$, $p < .001$, $R^2 = .12$. However, with a $p = .99$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of organizational support with PWHI.

| Outcome -> | | NHWI | | | NWHI | | | PHWI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* |
| Intercept | | 1,98 | 0,00 | 0,04 | 2,91 | 0,00 | 0,04 | 2,89 | 0,00 | 0,05 | 3,09 | 0,00 | 0,04 |
| Organizational Support | $b_1$-> | -0,08 | 0,15 | 0,05 | -0,05 | 0,42 | 0,06 | 0,05 | 0,52 | 0,07 | 0,19 | 0,00 | 0,05 |
| Strength use | $b_2$-> | -0,21 | 0,00 | 0,05 | -0,07 | 0,19 | 0,06 | 0,20 | 0,00 | 0,06 | 0,20 | 0,00 | 0,05 |
| Organizational Support x Strength use | $b_3$-> | 0,04 | 0,42 | 0,05 | 0,01 | 0,85 | 0,06 | -0,03 | 0,62 | 0,07 | 0,00 | 0,99 | 0,05 |
| Model $R^2$ | | 0,07 | | | 0,01 | | | 0,4 | | | 0,12 | | |
| F | | 11,95 | 0,00 | | 1,59 | 0,19 | | 6,15 | 0,00 | | 21,10 | 0,00 | |

*N = 476 respondents*

*Growth Opportunities*



A.  Growth opportunities on NHWI by Strength use

B.  Growth opportunities on NWHI by Strength use

C.  Growth opportunities on PHWI by Strength use

D.  Growth opportunities on PWHI by Strength use

A.  The overall model for NHWI including all three variables (strength use, growth opportunities, and interaction) was significant, $F(3, 472) = 12.53$, $p < .001$, $R^2 = .07$ . However, with a $p = .98$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of growth opportunities with NHWI.

B.  The overall model for NWHI including all three variables (strength use, growth opportunities, and interaction) was significant, $F(3, 472) = 3.32$, $p < .05$, $R^2 = .02$. However, with a $p = .49$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of growth opportunities with NWHI.

C.  The overall model for PHWI including all three variables (strength use, growth opportunities, and interaction) was significant, $F(3, 472) = 6.26$, $p < .001$, $R^2 = .04$. However, with a $p = .37$ the interaction term was not significant. This means there was
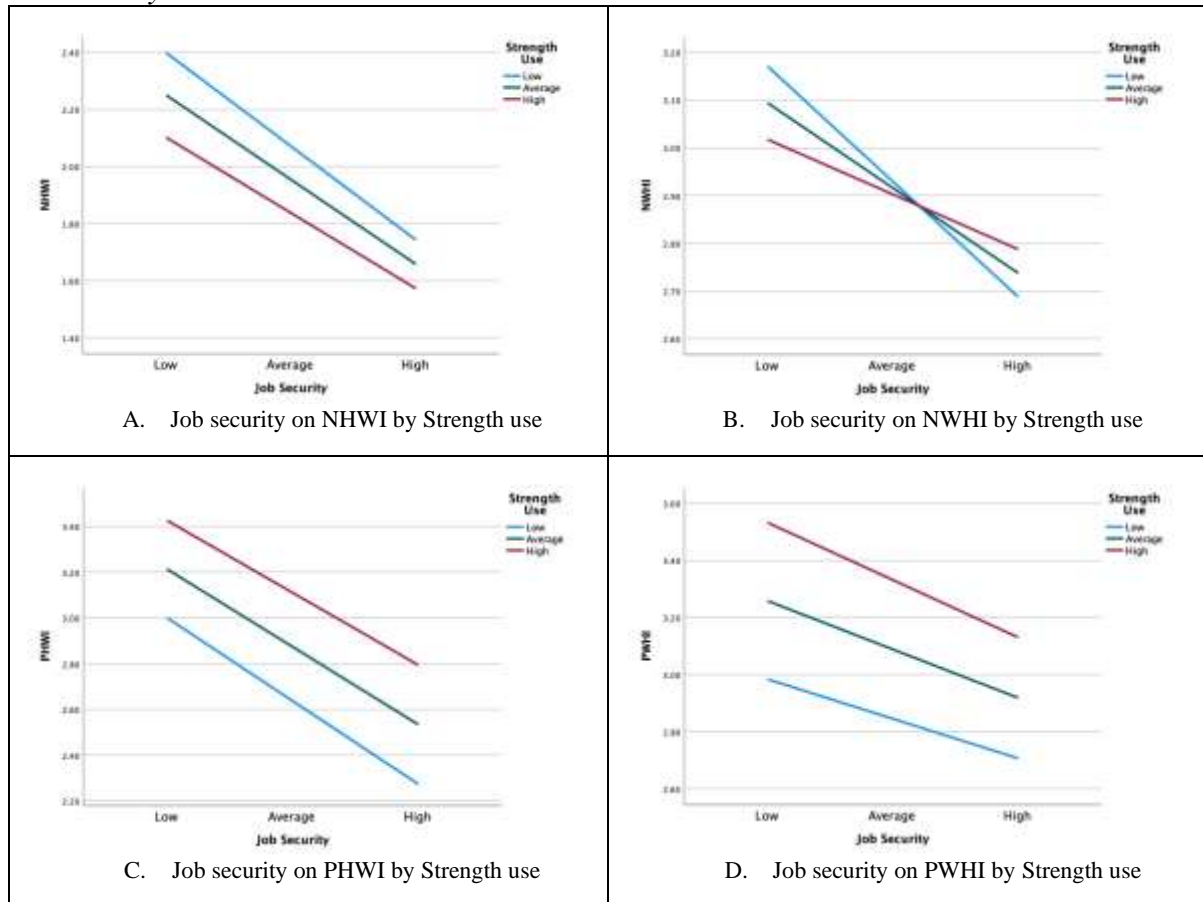
no moderating effect of strength use on the relationship of growth opportunities with PHWI.

D. The overall model for PWHI including all three variables (strength use, growth opportunities, and interaction) was significant, $F(3, 472) = 18.65$, $p < .001$, $R^2 = .11$. However, with a $p = .08$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of growth opportunities with PWHI.

| Outcome -> | | NHWI | | | NWHI | | | PHWI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* |
| Intercept | | 1,96 | 0,00 | 0,04 | 2,91 | 0,00 | 0,04 | 2,87 | 0,00 | 0,05 | 3,07 | 0,00 | 0,04 |
| Growth Opportunities | $b_1$ -> | -0,08 | 0,04 | 0,04 | -0,10 | 0,02 | 0,04 | 0,02 | 0,63 | 0,05 | 0,07 | 0,06 | 0,04 |
| Strength Use | $b_2$ -> | -0,20 | 0,00 | 0,04 | -0,05 | 0,30 | 0,05 | 0,23 | 0,00 | 0,06 | 0,26 | 0,00 | 0,04 |
| Growth Opportunities x Strength Use | $b_3$ -> | 0,00 | 0,99 | 0,04 | 0,03 | 0,49 | 0,04 | 0,04 | 0,37 | 0,05 | 0,06 | 0,08 | 0,04 |
| Model $R^2$ | | 0,07 | | | 0,02 | | | 0,04 | | | 0,11 | | |
| *F* | | 12,53 | 0,00 | | 3,32 | 0,02 | | 6,26 | 0,00 | | 18,65 | 0,00 | |

*N = 476 respondents*

*Job security*



A.    Job security on NHWI by Strength use



B.    Job security on NWHI by Strength use



C.    Job security on PHWI by Strength use



D.    Job security on PWHI by Strength use

A.  The overall model for NHWI including all three variables (strength use, job security, and interaction) was significant, $F(3, 428) = 34.62$, $p < .001$, $R^2 = .20$ . However, with a $p = .31$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of job security with NHWI.

B.  The overall model for NWHI including all three variables (strength use, job security, and interaction) was significant, $F(3, 428) = 7.95$, $p < .001$, $R^2 = .05$. However, with a $p = .09$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of job security with NWHI.
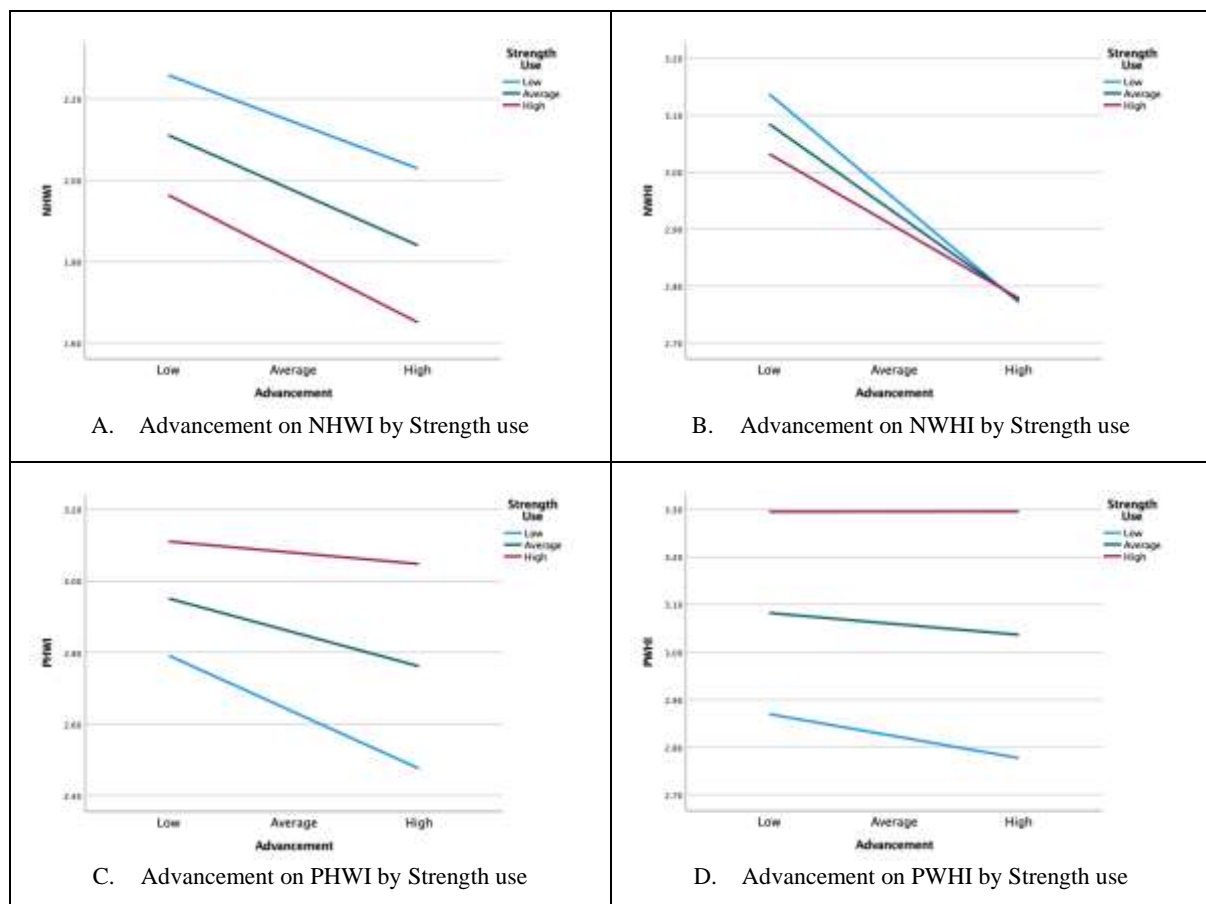
C.  The overall model for PHWI including all three variables (strength use, job security, and interaction) was significant, $F(3, 428) = 22.74$, $p < .001$, $R^2 = .14$. However, with a $p = .57$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of job security with PHWI.

D. The overall model for PWHI including all three variables (strength use, job security, and interaction) was significant, $F(3, 428) = 21.27$, $p < .001$, $R^2 = .13$. However, with a $p = .32$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of job security with PWHI.

| Outcome -> | | NHWI | | | NWHI | | | PHWI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* | *B* | *p* | *SE* |
| Intercept | | 1,96 | 0,00 | 0,03 | 2,92 | 0,00 | 0,04 | 2,87 | 0,00 | 0,05 | 3,09 | 0,00 | 0,04 |
| Job security | $b_1$ -> | -0,23 | 0,00 | 0,03 | -0,14 | 0,00 | 0,03 | -0,27 | 0,00 | 0,04 | -0,13 | 0,00 | 0,03 |
| Strength use | $b_2$ -> | -0,14 | 0,00 | 0,04 | -0,02 | 0,75 | 0,05 | 0,28 | 0,00 | 0,05 | 0,28 | 0,00 | 0,04 |
| Job security x Strength use | $b_3$ -> | 0,03 | 0,31 | 0,03 | 0,06 | 0,09 | 0,04 | 0,02 | 0,57 | 0,04 | -0,03 | 0,32 | 0,03 |
| Model $R^2$ | | 0,20 | | | 0,05 | | | 0,14 | | | 0,13 | | |
| *F* | | 34,62 | 0,00 | | 7,95 | 0,00 | | 22,74 | 0,00 | | 21,27 | 0,00 | |

*N = 432 respondent*

*Advancement*



A. Advancement on NHWI by Strength use

B. Advancement on NWHI by Strength use

C. Advancement on PHWI by Strength use

D. Advancement on PWHI by Strength use

A. The overall model for NHWI including all three variables (strength use, advancement, and interaction) was significant, $F(3, 429) = 14.23$, $p < .001$, $R^2 = .09$ . However, with

a $p = .52$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of advancement with NHWI.

B.  The overall model for NWHI including all three variables (strength use, advancement, and interaction) was significant, $F(3, 429) = 5.47$, $p < .001$, $R^2 = .04$. However, with a $p = .45$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of advancement with NWHI.

C.  The overall model for PHWI including all three variables (strength use, advancement, and interaction) was significant, $F(3, 429) = 7.36$, $p < .001$, $R^2 = .05$. However, with a $p = .15$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of advancement with PHWI.

D.  The overall model for PWHI including all three variables (strength use, advancement, and interaction) was significant, $F(3, 429) = 14.17$, $p < .001$, $R^2 = .09$. However, with a $p = .47$ the interaction term was not significant. This means there was no moderating effect of strength use on the relationship of advancement with PWHI.

| Outcome -> | | NHWI | | | NWHI | | | PHWI | | | PWHI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Predictor** | | $B$ | $p$ | $SE$ | $B$ | $p$ | $SE$ | $B$ | $p$ | $SE$ | $B$ | $p$ | $SE$ |
| Intercept | | 1,98 | 0,00 | 0,04 | 2,93 | 0,00 | 0,04 | 2,86 | 0,00 | 0,05 | 3,06 | 0,00 | 0,04 |
| Advancement | $b_1$ -> | -0,15 | 0,00 | 0,04 | -0.17 | 0,00 | 0,05 | -0,10 | 0,05 | 0,05 | -0.03 | 0,52 | 0,04 |
| Strength use | $b_2$ -> | -0,20 | 0,00 | 0,04 | -0,03 | 0,56 | 0,05 | 0,26 | 0,00 | 0,06 | 0,28 | 0,00 | 0,04 |
| Advancement x Strength use | $b_3$ -> | -0,03 | 0,52 | 0,04 | 0.04 | 0,45 | 0,05 | 0,08 | 0,15 | 0,06 | 0,03 | 0,47 | 0,04 |
| Model $R^2$ | | 0,09 | | | 0,04 | | | 0,05 | | | 0,09 | | |
| $F$ | | 14,23 | 0,00 | | 5,47 | 0,00 | | 7,36 | 0,00 | | 14,17 | 0,00 | |

*N = 433 respondents*