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Teamwork in flexible work environments

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Teamwork in flexible work environments

Analysing the perception of team member availability

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Erklärung zur Verfassung der Arbeit

Florian Boigner, BSc.

Hiermit erkläre ich, dass ich diese Arbeit selbständig verfasst habe, dass ich die verwendeten Quellen und Hilfsmittel vollständig angegeben habe und dass ich die Stellen der Arbeit – einschließlich Tabellen, Karten und Abbildungen –, die anderen Werken oder dem Internet im Wortlaut oder dem Sinn nach entnommen sind, auf jeden Fall unter Angabe der Quelle als Entlehnung kenntlich gemacht habe.

Wien, 3. Mai 2023

Florian Boigner

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Although knowing better and contrary to the advice of my classmates and colleagues, I decided to postpone my thesis and enter the full-time work life at the end of my studies. Fast forward a few years, I still had not written my thesis. At that point I decided to take on what would become a two and a half year long journey.

First and foremost, I want to thank my partner Fiorella, who helped to convince me to start this project and regularly encouraged me to stay on track. Without her I would not have finished.

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Kurzfassung

Flexibles Arbeiten ist heutzutage wichtiger denn je und ein fester Bestandteil unserer zunehmend hybriden Arbeitswelt geworden. Spätestens seit der COVID-19 Pandemie und der weitgehenden Verbreitung von Informations- und Kommunikationstechnologie ist es von zentraler Bedeutung, die Auswirkungen von flexiblem Arbeiten auf Mitarbeiter und Teams genauer zu verstehen. Während einige Aspekte bereits ausgiebig behandelt wurden, sind andere noch weitgehend unerforscht. Ein solches Beispiel ist die Verfügbarkeit von Mitarbeitern, die ein wichtiger Faktor für eine erfolgreiche Zusammenarbeit sein kann. In dieser Arbeit wird daher untersucht, ob sich flexibles Arbeiten auf die wahrgenommene Verfügbarkeit von Teammitgliedern auswirkt, und welche Rolle der Einflussfaktor von Interdependenz im Team spielt. Ich prüfe meine Hypothese auf Grundlage einer quantitativen Studie unter Arbeitnehmern (N=524), die Teil von flexiblen Arbeitsteams sind (N=92). Die Ergebnisse zeigen keine signifikanten Zusammenhänge zwischen zeitlicher und örtlicher Flexibilität mit wahrgenommener Verfügbarkeit, deuten aber darauf hin, dass Telearbeit auf individueller Ebene positiv mit wahrgenommener Verfügbarkeit zusammenhängt. Der moderierende Effekt von Interdependenz konnte nicht bestätigt werden, und auf Gruppenebene wurden keine signifikanten Zusammenhänge gefunden. Die Ergebnisse deuten auf die Existenz der beobachteten Beziehung hin, weitere Forschung ist jedoch erforderlich, um aussagekräftigere Ergebnisse zu erhalten. Unter anderem sollten unterschiedliche Definitionen von Verfügbarkeit kontrolliert und verschiedene Einflussfaktoren wie Kommunikationsmethoden und IKT-Nutzung berücksichtigt werden.

Abstract

Flexible work is nowadays more important than ever before and an inherent part of our increasingly hybrid work environments. Especially since the COVID-19 pandemic and the ubiquitous pervasiveness of information and communication technology, it has become key to fully understand the impact of flexible work on employees and teams. While some aspects have been extensively researched, others remain largely unexplored: such as the availability of co-workers which can play an important factor for successful collaboration. This thesis therefore not only examines whether flexible working impacts perceived availability of team members, but also the influencing factor of interdependence within the team. I test my hypothesis based on a quantitative study amongst employees (N=524) who are part of flexible working teams (N=92). The findings do not support a significant relationship between temporal and spatial flexibility with perceived availability but do suggest that remote work is positively related to perceived availability on individual level. The moderating effect of interdependence could not be confirmed, and no significant interactions were found on group-level. The results suggest the prevalence of the observed relationship. However, further research is needed to provide more conclusive results, controlling for different definitions of availability together with more details on impacting factors such as communication methods and use of ICT.

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CHAPTER 1

Introduction

With increased virtualisation of the workplace, the rules of how people work together are changing. In recent years, there has been a shift towards an increase in Flexible Work Arrangements (FWA), supported through new developments in the space of Information and Communication Technology (ICT) (Clarke & Holdsworth, 2017) and their importance as a motivational and employee retention factor has grown (Bal & De Lange, 2015). The COVID-19 pandemic further led to a significant boost, making it a subject on top of everyone's mind. A related report from the Boston Consulting Group (BCG) suggests, that up to 80% of Europe's office workers have worked from home since the beginning of the pandemic (Ferreira et al., 2020).

Workplace flexibility is defined as „the ability of workers to make choices influencing when, where and for how long they engage in work-related tasks" (Jeffrey Hill et al., 2008, p. 152). While some might see this as an opportunity to have more control and balance the responsibilities of their personal and work life, others have a more sceptical view, arguing that it leads to a loss of transparency in what everyone is doing and makes it more difficult to connect to your colleagues. Most certainly it significantly changes the way people work and interact with their co-workers, leading to a wide range of consequences - both positive and negative. On the one hand FWAs have been found to lead to lower turnover (Gajendran & Harrison, 2007), higher job satisfaction (Bailey & Kurland, 2002) and increased engagement and performance (Bal & De Lange, 2015). On the other hand it can lead to work intensification and blurred boundaries between personal and work life (Beauregard & Henry, 2009).

When looking at FWAs, especially while working in teams, one of the core aspects is how an colleague can be reached. While until about two decades ago the main communication method would have been the phone and e-mail, nowadays new technologies emerged. Starting with the introduction of the BlackBerry and other smartphone devices, employees were able to use their e-mail from the phone and one could observe a shift towards increased availability for work, also outside of the regular workplace and working hours. Software

technologies like virtual private networks (VPN), enabling computers to connect to the company network from anywhere in the world, made it easier for companies to offer remote working options. Further developments in communication software, together with increased availability of broadband internet, allowed for high quality video and conference calls. Lastly, new cross-platform collaboration tools emerged, bundling synchronous and asynchronous communication options together (video calls, chat, document exchange etc.), which facilitated new ways of working in teams, from any location.

One of the aspects that potentially raises uncertainty and has not been extensively researched, is the availability of co-workers in flexible working teams - which becomes less tangible if you are not working at the same place or time and which has even been mentioned as a requirement for flexibility (Bergman & Gardiner, 2007). Especially when having multiple team members in FWAs, it might not always be easy to reach each other. At the same time, the use of modern ICT makes it easier to work remotely and to be available. A recent online poll by the Austrian online career portal Karriere.at even suggests that 54% of the workforce is always or almost always reachable (Linhart, 2021). However, it is also important to consider the impact on well-being on personal life, as it often comes hand in hand with constant connectivity and longer working hours. This is where organisational policies and supervisor support is important, as they moderate the consequences of flexible work (Rice, 2017).

Existing research focuses mainly on the question if an individual is available outside of their regular working hours, primarily in the context of ICT. There is a lack of understanding in the perception of co-workers, which plays a critical role in the intra-team relationship, the quality of communication and arguably in being successful at work. It is important to know that one can rely on their team members and perceive them as reachable for communication and support when required: even more so with increasing interdependence between co-workers. If this perception is impaired, one might look at different options, even if the counterpart would be available, which could potentially have far reaching impact. Especially as co-workers collaborate more closely and are interdependent in their tasks, availability becomes imperative.

The goal of this work is to focus on the role of perceived availability of co-workers in flexible working teams. It also looks at how it is influenced by team member interdependence, while providing a better understanding of the theoretical concepts behind it and how they relate to each other. This will contribute to the overall understanding of the consequences of flexible work and why availability plays a significant role, while discussing consequences and influencing factors in today's world.

CHAPTER 2

Theoretical background

Before taking a closer look at the research question and the derived hypothesis, it is important to understand the theoretical background. Why is flexible work such an important topic? What does availability really mean? Why is there a connection between the two and why should we care about it? To answer these questions, I will summarise some of the most important literature around these topics, while putting it into context.

Throughout the theory it is important to keep in mind these two aspects: the individual level, and the group level effects. Not every research is however covering both aspects; in fact, most will not discuss the differences and hence, focus only on the individual level. Therefore, I will specifically point out any group level effects, while all other can be assumed to be in the context of individual perspective. I will however highlight the latter when of specific interest.

2.1 The changing nature of work

Taking a closer look at the topic of flexible work and its effects on organisations and employees, one will find that numerous studies have been conducted in this field. Previous research includes the impact of remote work on teams, exploring situations in which part of the employees work remote and others remain in the office (T. Golden, 2007), supervision in the context of telecommuting (Lautsch et al., 2009), work performance (Coenen & Kok, 2014; Gajendran & Harrison, 2007; T. D. Golden et al., 2008) and job satisfaction (Kelliher & Anderson, 2008). Most recently, the new subject of hybrid work has emerged as a popular research topic, a new type of flexible work.

Considering all the different categories in the area of flexible work, there is a significant amount of literature highlighting both positive and negative aspects. In this section I am

going to give an introduction to the subject and its key aspects, while also explaining why it is relevant and making the connection to the perceived availability of co-workers.

2.1.1 Why should we care about flexible work?

In recent years, flexibility and autonomy in the workplace is becoming increasingly important, especially amongst white collar workers. Employees rely on flexibility in the workplace to manage the demands of personal and professional life in parallel and younger generations see it as a benefit, some even as a requirement when considering applying for a job (Weideman & Hofmeyr, 2020). Modern technologies supported through improved internet availability and bandwidth offer new ways to collaborate and stay connected. Organisations started realizing this and proceeded in implementing flexibility as a tool for employee attraction and retention (Bailey & Kurland, 2002).

The recent COVID-19 pandemic accelerated the adoption of collaboration tools and flexible working arrangements, forcing most companies into full remote work for at least a certain period. According to a survey in the European Union, this was largely well received by employees, who got used to the new way of working and wanted to keep the flexibility of choosing between working at home or in the office (Eurofund, 2020). Even after the lockdown periods, most organisations kept a certain level of flexibility and moved into a *hybrid work* state, in which employees have some flexibility in choosing between work in the office or from home. This led to a work environment where frequently meetings would need to accommodate for both people working from home or on-site, supported through revised conference room setups and video call technology. Organisations might even adapt some of their company policies, making meetings increasingly hybrid to give employees the flexibility of joining in person or remotely (McKinsey & Company, 2021).

While flexible work has been a practice for a long time, hybrid work is a new manifestation with the aim to make it available more broadly and offer standardisation. It can be defined as combining „the physical work arrangement and the remote work system“ (Cook et al., 2020, p. 29), meaning it merges the concepts of working at the office or remotely and removes boundaries. *Where* someone is working becomes less relevant, if employees are performing their work and remain available to their colleagues, often also leading to different working times. This also requires the need for a shift in workplace culture.

Beno (2021) explored hybrid work effects through a case study in Austria (Beno, 2021). In a mix of quantitative and qualitative research methods, they surveyed across the dimensions of support, caring, rewards, forgiveness and inspirations. Most hybrid working employees expressed good experiences, suggesting a positive effect on the workplace environment and culture, while also increasing effectiveness. For instance, co-workers in a hybrid environment indicated that they were helping and caring for each other and would feel more rewarded by the work they were doing, quite contrary to what office workers responded. It is worthwhile to note, that these results could also have been influenced

by the timing of the study during the pandemic, which makes it important to further investigate how flexible working can best be managed.

Hybrid work is here to stay, and it pushes organisations further to implement various forms of flexibility or to extend and standardise existing practices. It always comes back to the core concept of flexible work, which is why it is key to fully understand it, including its positive and negative consequences. The next section will address this in more detail.

2.1.2 The rise of ICT and constant connectivity

One of the major enablers of flexible and hybrid work, was the rise of Information and Communication Technology (ICT). Berkowsky (2013) describes ICT as „any computer-based or computer-assisted device or application used for the purposes of communication and dissemination of information“ (Berkowsky, 2013, p. 520), giving examples of internet devices such as computers or mobile phones. The use of internet enabled technology rose significantly over the past decades and the use of ICT increased, both in the personal and in the workspace. Nowadays, already most preschool children know how to navigate a smartphone and play games or watch online videos.

The dissemination of ICT further made it possible for organisations to offer constant connectivity (or total availability) as part of the service to their clients. This brings employees in a situation where, even if working in a flexible environment, they have less control over their work conditions and constantly put themselves in a situation of availability to succeed at their workplace (Mazmanian & Erickson, 2014). This situation is also described by the *autonomy paradox*, which states that employees using mobile devices for communication tend to restrict their own autonomy by working more, being more available (Mazmanian et al., 2013).

One of the major factors that made constant connectivity possible in the first place was again the evolution of mobile devices and its use for communication. These patterns emerged originally with the introduction of BlackBerrys, which became an easy way to access e-mails from everywhere and which consequences have been studied in numerous studies (Mazmanian et al., 2013; Mazmanian et al., 2006; Towers et al., 2006).

With the goal to better understand how these devices influence the workplace, questions around their helpfulness and potential consequences of use were raised. An important research in this area was conducted by Mazmanian and colleagues (2013), who found that although everyone reported enhanced flexibility and control over their work patterns, this came at the cost of increased expectations of availability and blurred lines between work and private life. They identified usage patterns, that showed how the professional used their mobile phones as primary tool for e-mail communication and developed a habit of constantly monitoring it, even beyond working hours. Professionals remained constantly connected, increasing their availability and responsiveness. However, at the same time

it was widely seen as boosting flexibility and control over when and where to engage in communication, therefore increasing the autonomy.

As a consequence of such patterns, the *autonomy paradox* was introduced as a result of an empirical study, interviewing knowledge professionals in the law and investment sector. „By individually engaging with a device that enabled them to work anywhere/anytime (thus enhancing their autonomy), the professionals enacted a collective dynamic of working everywhere/all the time (thus diminishing their autonomy)“ (Mazmanian et al., 2013, p. 9). The individual mobile device use patterns created the assumption that others would be using them in a similar way, i.e. frequently checking their mails, leading to expectations of increased availability and loss of autonomy. This led to a vicious circle, increasing stress, and blurring the boundaries between work and private life. Interestingly, the participants responded to those collective consequences by justifying themselves, arguing that the usage patterns are related to them being motivated and hard-working, wanting to perform exceptionally. Checking the e-mails was also described rather as an impulse than a decision. Although they realized the consequences, it was not seen as limiting their autonomy. Mazmanian and colleagues (2013) also highlight the relation between autonomy and interdependence, stating that it might be influenced by using mobile devices and emphasizing that the participants of the study worked in highly interdependent teams.

A later study by Zoonen and colleagues (2023) tries to shed light on the relation between after-work connectivity and autonomy. They find in a first study that connectivity outside of regular working hours increases autonomy, while decreasing exhaustion as a result, however, could not confirm it in a second wave. Testing whether autonomy leads to after-hour connectivity, was equally not supported (Zoonen et al., 2023).

With technical evolution this reached a new level, as nowadays one can use their smartphone with many collaboration enabling software tools like WhatsApp, Slack, Microsoft Teams and more. While the tools and capabilities evolved, the key patterns stayed the same. The use of mobile devices allows for permanent availability, resulting in employees checking and responding to work requests beyond regular working hours. As everyone is constantly connected and easily reachable (through phone, e-mail and/or chat), it also increases communication and coordination beyond the strictly necessary, even for minor issues during off-work time periods (Prasopoulou et al., 2006). The boundaries between work and non-work time disappear. Interestingly, Prasopoulou and colleagues (2006) state that they suggest people getting aware of this issue, especially after periods of increased usage, and taking active measures to protect their personal time.

In their work on constant connectivity, Mazmanian and Erickson (2014) highlight that other research on the topic is not taking into consideration the economic aspects, referring to the economic value of time. It is suggested, that organisations (which sell elite professional services) increasingly adopt a new market for „total (24/7) availability“, instead of selling a specific product (Mazmanian & Erickson, 2014). Employees accept the availability requirement, as they aspire to be successful. Being available outside of working hours is not an exception anymore, it is taken for granted and is normalised.

2.1.3 Understanding flexible work

Taking a step back from the topic of ICT, let us look at the related concept of *flexible work*. The term flexible work is used in a lot of different contexts, from remote working, to flexible or reduced hours as well as different types of contracts, with the common theme that employees have a choice (flexibility) in some aspects of their work (Kelliher & Anderson, 2008).

In order to clarify the definition and meaning of flexible work, I like to begin with the research of Gajendran and Harrison (2007), who systematically investigated the effects of telecommuting consequences, defining it as „an alternative work arrangement in which employees perform tasks elsewhere that are normally done in a primary or central workplace, for at least some portion of their work schedule, using electronic media to interact with others inside and outside the organisation“ (Gajendran & Harrison, 2007, p. 1525). They highlight that *elsewhere* in the context of the definition is typically to be understand as home, but could also describe other remote locations, such as remote offices or co-working spaces. Henceforth, I will use the term remote work as a synonym of telecommuting or spatial flexibility.

I find this definition very fitting for remote work as it is still very much applicable in 2023, however it does not include the time component. Nowadays working at least partially in a flexible time schedule is equally as important as the location, which is why it is necessary to get an understanding of both spatial (remote work) and temporal flexibility (flextime). Thus, a more complete description is Flexible Work Arrangements (FWA), which is defined as work options that allow flexibility in terms of where (place) and/or when (time) work is completed (T. D. Allen et al., 2013; Rau & Hyland, 2002).

Bal and Izak (2021) most recently reviewed literature of workplace flexibility as a whole and distinguished between four different types of flexibility: organisational flexibility, employee flexibility, flexible work and FWAs (Bal & Izak, 2021). While these terms are frequently appearing in research on the topic, it is important to understand that they can be interpreted differently. For this work, the first two are not directly related, however the latter two are important to differentiate as their meaning is not evident if one is not close to the subject. According to Bal and Izak (2021), flexible work refers more to the *type of contract* (e.g. part or full time), whereas FWAs focus on the behaviours describing the *actual way of working*. In practice however, I noticed that the terms are not often differentiated in the literature and refer to the same topic. I think the term flexible work as an umbrella term is still the most common and understandable one, hence if not specified otherwise, I will also use the terms flexible work when referring to FWAs, which will act as the general term for both remote work and flextime.

An important part of the remote work definition is also that it involves tasks „that are normally done in a primary or central workplace“ (Gajendran & Harrison, 2007,

p. 1525). Gajendran and Harrison (2007) specifically distinct remote work from work during business trips as part of the organisational role, work performed remotely through contractors (i.e., through service companies) who are not part of the organisation and other similar arrangements. In their work they mention three main themes as part of the remote work literature which equally apply to FWAs in general, the first one being about control and perceived autonomy, the second about the effects on the work-family life and the third about the consequences on work relations and communication. While summarising both positive and negative consequences, they state that they appear to be „mutually incompatible for employees“ and suggesting that on the individual level, FWAs seem to have mostly positive consequences. Essentially, they raise the question how sometimes contradictory consequences found in the literature can coexist by looking at the interplay of three main themes forming a „telecommuting paradox“ (Gajendran & Harrison, 2007).

- *Perceived autonomy* refers to the psychological perception of control, having as sense of control over when and where I am working. It is typically seen as a positive consequence of flexible work.
- The *effects on work-family conflict* describe the impact on personal life, such as the blurred boundaries between work and home. It can be seen positively as improving work-family relationships, or negatively as blurring the boundaries between work and home.
- *Consequences on work relations and communications* explain how the interactions with co-workers change, when not working at the same location. The impact might vary depending on the environment.

In the following section I will discuss consequences of FWAs along these lines.

2.2 Consequences of flexible work arrangements

FWAs are undoubtedly a controversial topic, as many organisations favour them while others defend the standpoint that it harms productivity. From a research point of view, it has been a subject of great interest with countless quantitative and qualitative studies, exploring its nuances. FWAs are generally seen as a way to provide flexibility to employees (Clarke & Holdsworth, 2017), having significant benefits for both employees and organisations and it seems that up to seventy percent of studies support the positive impact of flexible work on employees and organisations as they improve well-being, help to retain talent and lead to greater performance (Bal & Izak, 2021). Especially newer generations increasingly take flexibility into considerations and tend to give it a high value when looking for work. Thus, it has become more and more a tool for human resources to attract and retain quality talent, while using it for their competitive advantage (Bailey

& Kurland, 2002; Beauregard & Henry, 2009; Carlson et al., 2010; Weideman & Hofmeyr, 2020). In fact, it has even been suggested by the society of Human Resource Management that 91% find that FWAs have positive effects on employee behaviour (Kossek et al., 2014).

Numerous studies suggest favourable effects of flexible working that are valued by organisations, such as lower absence (Kossek et al., 2014), lower turnover (Gajendran & Harrison, 2007), higher morale (Weideman & Hofmeyr, 2020) and higher job satisfaction (Bailey & Kurland, 2002; Felstead & Henseke, 2017; Gajendran & Harrison, 2007; Kelliher & Anderson, 2008). Another important factor is increased engagement and organisational commitment, which is also a recurring theme in literature (Bailey & Kurland, 2002; Bal & De Lange, 2015; Clarke & Holdsworth, 2017; Felstead & Henseke, 2017; Kelliher & Anderson, 2008; Weideman & Hofmeyr, 2020). Before discussing the three themes, I want to highlight productivity and performance as one of the consequences also mentioned by Gajendran and Harrison (2007), which is probably one of the most researched topics in FWAs.

2.2.1 Productivity and performance

When thinking of implementing FWAs, a potential concern of management is most likely related to productivity and performance, which is probably why it has repeatedly been a topic of interest in studies around the topic for many years (Hill et al., 1998). It is one of the measures that also makes sense to be observed on both individual and team level, although many studies will focus on either one or the other. Overall, a vast amount of studies see a positive impact of FWAs on productivity and/or performance (Bal & De Lange, 2015; Beauregard & Henry, 2009; Clarke & Holdsworth, 2017; Coenen & Kok, 2014; Fogarty et al., 2011; Gajendran & Harrison, 2007; Kossek et al., 2014; Weideman & Hofmeyr, 2020), but also negative effects have been noted (van der Lippe & Lippényi, 2020).

Gajendran and Harrison (2007) argue that remote work might be positively related to performance, amongst other due to less distractions and time saved through not commuting. They indeed found the relationship to be significant for supervisor-rated performance, interestingly it was not the case when having employees rate themselves (Gajendran & Harrison, 2007).

Beauregard and Henry (2009) analysed performance more from an organisational perspective. They examine the topic from an individual and team level perspective and suggest that previous research finds improved productivity and additional spare time lead to increased productivity. This has however to be seen independently of any effects on work-family conflict, which can in either case be positive or negative. A point of attention might be that many study results can not be generalised for all organisations, but even if there is only a small positive impact the business case is definitely in favour

of FWAs (Beauregard & Henry, 2009). On an individual level, employees can be more focused and organized as they are less distracted, which increases their effectiveness. They also have a positive influence on others, improving productivity on team level as well (Clarke & Holdsworth, 2017).

Bal and DeLange (2015) test in an extensive study how the availability of FWAs relate to employee engagement and job performance and find a positive relationship. In the second part of their study (quantitative) they find that the actual use of FWAs is not significant for engagement, however confirms the increase in performance (Bal & De Lange, 2015). They also outlined the differences between age groups and highlight the equal benefit for older workers.

However, findings are not all positive. Research has also suggested that performance is lower when co-workers work from home, both for individuals and groups. Van der Lippe and Lippényi (2020) surveyed flexible working teams focusing not only on the individual, but also on the working practices of their co-workers and how they would affect remote working employees compared to office workers, as well as for teams with increasing flexible work exertion. Employees performed better when their colleagues were not working from home, also showing negative effects for co-workers (van der Lippe & Lippényi, 2020).

2.2.2 Perceived autonomy

Increased autonomy is undeniably one of the major benefits of flexible work. Being more flexible and deciding when to go physically to the workplace allows employees to safe time on their commute, arrange their personal life (for example personal appointments) around work and be less dependent on strict working arrangements. It empowers everyone to manage the demands of work and family, but requires a certain level of self-management skills, to ensure that job demands are met.

Gajendran and Harrison (2007) tested twelve different hypotheses in the context of remote work and some of which are worth to point out in this section. They assumed that remote work improves the perceived autonomy, whilst also testing the hypotheses that its intensity will moderate the relationship (Gajendran & Harrison, 2007). The results of their analysis show the positive relation of remote work on perceived autonomy and control, however the moderation of intensity was not supported. This means they found no influence of the amount of remote work for the relationship between remote work and increased positive perception of autonomy. This seems plausible, as the moment that one has partially the choice of going to the workplace or staying at home, the personal commitments can be planned around that, and an additional day would only have minimal impact when flexibility is already high.

Another interesting angle on the topic of autonomy is the one of the potentially non-flexibly working colleagues. While remote workers have the positive perception of

increased independence and autonomy, their co-workers might actually experience the opposite together with a feeling of injustice (T. Golden, 2007). This highlights the importance of equality in terms of FWAs and that it is important to find a way to keep personal interactions and foster collaboration in a hybrid working context.

On an individual level, one must think especially of the benefits when being out of sight and spending less time in meetings. remote work reduces distractions, helps to keep the focus, which can also lead to greater productivity. The time saved from commuting is available for work and reduces stress. It can also be interesting from an organisational perspective, as employees can also leverage their flexibility for work-related matters (Clarke & Holdsworth, 2017).

2.2.3 Work-family conflict

The impact of flexible work on work-family conflict is a recurring theme in the literature, as it is controversial and brings both positive and negative consequences, dependent on the point of view and personal context. It comes down to the fact that work can interfere with family, and family can interfere with work (T. D. Allen et al., 2013). While initially, flexible working was thought to reduce work-family conflict, positive effects seem minimal. There are many examples of families; for instance, one partner spends an excessive amount of time at work, either at the office or travelling, resulting in little time with the family. On the other hand, family situations and commitments might interfere with work, especially when working from home, the most known example being when your partner or kids are interrupting a meeting. In both cases, the result is a conflict between work and family. It is therefore important to distinguish the direction of the conflict and be specific on the type of FWA. One of the reasons that research resulted in inconsistent results in this area, is the lack of differentiation between remote work and flextime (T. Allen & Shockley, 2009).

Allen and colleagues (2013) explain the conflict by stating that every person has a finite amount of energy, attention and time which need to be allocated to both work and family. Thus, everyone needs to be able to manage it in a way that ideally both are equally satisfied, for which FWAs can be a powerful tool. Having the autonomy to allocate the resources flexibly allows one to do so, but it is understandably challenging and might not always be possible, which can be a reason for controversial research results (T. D. Allen et al., 2013). In that context, an important benefit is the time that can be saved and used otherwise. Not commuting to work due to being able of working from home, or commuting outside of rush hours thanks to a flexible working schedule can have a significant impact on exhaustion and recovery, as employees save a lot of time and energy on their commute (Sardeshmukh et al., 2012). This is also a point in which the topic of autonomy and work-family conflict are closely linked.

While the positive effects are often put in the spotlight, it is also important to note some

negative consequences, first and foremost work intensification. As a side effect of flexibility, blurred lines between personal and work life, saved time by removing the commute and higher motivation, employees tend to work harder and longer (Beauregard & Henry, 2009; Chung & Lippe, 2020; Clarke & Holdsworth, 2017; Gajendran et al., 2015; Hill et al., 1998; Kelliher & Anderson, 2008). Longer working days can also lead to increased stress (Towers et al., 2006) and impact the ability to switch off (Felstead & Henseke, 2017). Notably, there are also differences between genders in terms of consequences, as they would use flexible work distinctively. While women incline (or are expected) to use it for domestic responsibilities, men would be more likely to spend that time for work related matters, leading to unequal ramifications. This is even stronger in contexts where traditional gender roles are more prevalent (Chung & Lippe, 2020).

2.2.4 Work relations and communications

The third theme is probably the most interesting one in the context of this thesis, as it discusses the impact on work relations and communication, which are often impacted by the availability of co-workers.

Gajendran and Harrison (2007) tested whether remote work will negatively impact the relationship between team members, again moderated by its intensity (Gajendran & Harrison, 2007). They did not find remote work having a negative impact, in contrary, the relationship quality with the supervisor improved. They also found that the intensity of remote work mattered. While in a low-intensity situation there was no significant impact on the relationship, it was supported for high-intensity remote work. There are however also examples of negative impact on the relationship. Golden (2007) found that remote work impacts interpersonal work relationships, in fact the more an employee works remotely, the lower the satisfaction of their co-workers with said employee (T. Golden, 2007).

Fogarty and colleagues (2011) investigated the effects of flexible work on communication and productivity and found divided views amongst interviewed participants. Challenges emerged as some colleagues were less easily reachable, due to missing information about who was working where or when and not appropriately using the technology at hand. Nonetheless, the consensus was that the problems were relatively minor (Fogarty et al., 2011). It however highlights the fact how important it is that everyone is aware how and when a flexibly working employee can be reached. Nowadays, technology makes it very easy to communicate and be reachable, but the appropriate use of these tools is essential.

It has also been suggested that there is a difference between full-time and partial remote workers. Negative effects would be stronger for full-time remote arrangements, as the nature of communication itself changes and people might not be used to it. Less opportunities for informal interactions can add to misunderstandings (Clarke & Holdsworth, 2017).

One recurring topic is also the importance of regular face-to-face communication. It was suggested that the implementation of FWAs also require support mechanisms such as personal interaction to contrast negative effects (Konradt et al., 2000). If conversing solely through ICT, this can impact the quality of communication and information exchange (O'Kane et al., 2007) and more face-to-face interaction increases satisfaction, hence improving the relationship with co-workers (T. Golden, 2007).

Another challenge that emerged in the context of flexible working and work relations is job isolation. Probably most prominent amongst workers who work remotely most of the times, the issue is that isolation can lead to reduced communication and lower performance (T. D. Golden et al., 2008). Maintaining a good relationship and regular touch points with one's co-workers is important to being successful at work. Job isolation also leads to employees feeling less strongly connected to their co-workers. More autonomy means also more independence, more remote work can therefore lead to the negative consequence of lower job engagement (Sardeshmukh et al., 2012).

2.2.5 Being available to others and its impact on personal life

One of the core aspects of this thesis is the concept of availability in the sense of being accessible and reachable by one's colleagues, which is discussed in detail in a later section (see 2.4 Availability of co-workers in flexible work environments). There can however also be other meanings to *availability* which should not be confused with each other, one of them being the focus of this section, namely *extended availability*.

An important pattern of ICT and the resulting constant connectivity is how it enables employees to work flexibly at different working hours, but as a consequence will lead to availability outside of working hours. The concept of extended availability was introduced by Dettmers and colleagues (2016) who build on the work of Bergman and Gardiner (2007) and Middleton (2007) and define it as „a condition during off-job time in which employees are flexibly accessible to supervisors, co-workers, or customers and are required either explicitly or implicitly to respond to work requests" (Dettmers et al., 2016, p. 5). They argue, that due to the capabilities of ICT and flexible work, expectations towards employees availability outside of their regular work environment and hours increase (Dettmers & Biemelt, 2018).

As a result, ICT comes with a lot of advantages, such as increased flexibility and productivity and helping to manage work and personal demands. But it can also lead to challenges like longer working hours and blurred boundaries between work and family-life. It is shaping the ways of working, by giving individuals and organisations the power to adapt practices that fit best their lifestyle, but at the same time increases expectations and workload (Cooper & Lu, 2019; Towers et al., 2006).

Although Bergman and Gardiner (2007) introduced the term extended availability, there had already been extensive research on the impact of ICT usage beforehand. Middleton

(2007) had researched on the use of BlackBerrys and concluded that while users are pleased with the flexibility and advantages that come with such a tool, this comes at the price of increased expectations of availability and work-family conflict (Middleton, 2007). The negative impact on well-being has also been shown by various other studies (Arlinghaus & Nachreiner, 2013; Derks et al., 2014).

Now most of the previous research had been applied to a specific, limited target group and one thing that had not been considered before, was that every person would be affected differently; in other words, the personal characteristics of a person might also play a role and moderate the negative effects of extended availability (Dettmers et al., 2016; Pangert & Schuepbach, 2013). This has been further explored by Dettmers and colleagues (2016), who found that while increased extended availability will lead to higher impaired well-being, resources (for example control over job contracts, predictability, equipment adequacy) can help with reduced exhaustion and better recovery.

The perception of control also plays an important factor. Having the ability to influence how and when you are available combined with proper boundary management between work and family, will positively impact individual well-being (Kossek et al., 2006). A second study confirmed the consequences of extended availability in terms of impaired well-being, while showing that specific individual characteristics will influence the intensity (Dettmers & Biemelt, 2018).

Extended availability is however not always just negative. Conflicting findings on connectivity and availability outside work have been researched already for more than two decades. Jarvenpaa and Lang (2005) look at the use of ICT and the consequences of being „always on“. They introduce an *empowerment / enslavement paradox* as part of their research on paradoxes of mobile technology, working with focus groups (Jarvenpaa & Lang, 2005). Their study also suggests increased productivity and flexibility, while mentioning an intensified work environment with blurred boundaries between work and personal life. A second interesting paradox is described as *independence / dependence*. While for some, a mobile device means autonomy and freedom, others might develop a strong dependence.

This is further taken on by Schlachter and colleagues (2017), who perform a narrative synthesis on the topic of voluntary work-related ICT use, combining findings from quantitative and qualitative research. Next to the empowerment / enslavement paradox, they identify four other themes on the topic (Schlachter et al., 2017). First they mention how *social-normative organisational context* plays a big role in reasoning why people remain available after working hours. Perceived pressure depends on the work environment and its sources (number of sources and specificity) (Matusik & Mickel, 2011). Voluntary ICT use is further influenced by organisational culture (Maliszewski, 2013; Towers et al., 2006) and dedication to work (Y. Park et al., 2011). *Job-related characteristics* suggest the use of ICT leads to the perception of increased flexibility and control, while being associated with longer working hours. Findings are mainly reported through qualitative studies, while quantitative studies report more inconclusive results. This is further influenced by *personal characteristics*, indicating that the personal choice plays

an important role as well. The perception that voluntary use of ICT outside of work will be positively recognised by the organisation equally plays a role. Finally, *designated non-work time and well-being* deals with work-life boundaries and its consequences.

A variation of extended availability and constant connectivity (section 2.1.2) was introduced by Cooper and Lu (2019), namely *Excessive Availability for Work (EAW)*, focusing on increasing organisational demands and overwork. They discus underlying motivations and explain, that the negative impact evolved to manifest itself not only by extending availability, but mention sickness *presenteeism*, *leavism*, *remote work* and long working hours as examples (Cooper & Lu, 2019). Sickness presenteeism is described as continuing to work despite sickness (Aronsson, 2000) and leavism as taking regular leave instead of sick leave when they actually cannot work (Hesketh & Cooper, 2014). While remote working (supported through ICT) brings a lot of advantages in terms of flexibility, research has shown the negative impact in terms of blurred boundaries between work and personal life (see also 2.2.3 Work-family conflict). EAW mentions another issue, referred to as „invisible“ working hours, which describes the time where employees are answering work related queries during personal time by the means of ICT. Flexible working and blurred boundaries come at the cost of differences between work and non-work interactions not even being noticed due to constant connectivity. Important to mention is that, according to Cooper and Lu (2019), a key factor in determining the positive or negative outcomes is not the behaviour of EAW itself, but rather the individual motivations behind it. While controlled motivation would lead to detrimental consequences, it would not be the case for autonomous motivation.

2.3 The influencing factor of interdependence

Depending on the nature of their work, team members might highly depend on each other (for example when working together on the same project), or very little (for example a sales team where each employee is working with different customers). This is also true in flexible work environments, in which it will strongly influence the collaboration, communication and coordination patterns of the team, such as the frequency of interactions, urgency and type of requests. For a highly *interdependent* team, (perceived) availability of team members will arguably play a much more important role which will also influence and be influenced by flexible work practices. For employees who are more autonomous, they might be more isolated which will also affect how easily they are reachable. In this section, I want to take a closer look into previous research on the topic and present relevant literature.

Interdependence has been the topic of many studies already before the context with flexible work became a subject of interest, as it also plays a role in traditional work environments. It can also be split into different categories that have a distinguished focus, with two coming up regularly: Task and goal interdependence. Task interdependence can be seen as a characteristic on both the team or individual level. „Team members are task interdependent when they must share materials, information or expertise in order to achieve the desired performance or output“ (Vegt et al., 2001, p. 52) or as defined by Guzzo and Shea (1992), it represents the extent to which interaction and coordination are required to complete tasks in teams (Guzzo & Shea, 1992). The degree will depend on multiple factors, such as the complexity of the task and whether single tasks can be completed individually. Goal interdependence is more prominent on the group level and states that everyone has a common goal that they want to achieve. The tasks needed to achieve the goal, might however be solved fully independently. In this thesis I am focusing on how team members depend on each other to complete their work while working flexibly; therefore when mentioning interdependence, I am primarily referring to task interdependence.

Rico and Cohen (2005) investigated the effects of task interdependence in virtual teams in an experimental setup (Rico & Cohen, 2005). A virtual team is defined as being a group of people who work together, however are not meeting face-to-face and rather communicate via ICT. While this frequently refers to geographically dispersed teams, it can also translate to employees using FWAs full time. By reviewing existing literature, they come to the conclusion that different type of communication can be suitable for different types of interdependence. They refer to synchronicity of communication to the degree to which technology allows to collaborate at the same time and space. To illustrate an example, asynchronous communication can be beneficial in generation tasks where people do not need to work at the same moment, while face-to-face (synchronous) communication benefits negotiations and similar activities. The higher the interdependence between team members, the more frequent is the need for communication (Chudoba & Maznevski, 2000). At the same time, a task can usually be performed on different levels of interdependence (Wageman, 1995), which will also impact collaboration patterns.

Their study shows that there is a positive relationship between task interdependence and communication, specifically suggesting the advantages of synchronous communication technologies in situations of high interdependence. The results showed that in virtual teams, complex tasks with a high degree of interdependence were performed better using synchronous communication tools. Analogously, they performed worse using asynchronous methods. Overall synchronous communication methods seemed to be better suited for interdependent tasks, allowing for more frequent exchanges.

The moderating role of task interdependence was also researched in different team contexts. Rico and colleagues (2009) explored the communication behaviours and trust within virtual teams, showing how interdependence can affect the group relationship in different phases of the project, comparing early and later project phases (Rico et al., 2009). In the first half of the project, trust was associated with task-oriented and enthusiastic communication in low interdependent situations. In the second half of the project trust was positively associated with predictable and substantive communication in settings of high interdependence.

In a later study, interdependence was tested whether it moderates how organisational citizenship behaviour impacts team performance alongside virtuality, which is referred to as the extent to which virtual tools / ICT are being used as well as the informational value and synchronicity they provide (Rico et al., 2011). They found a positive relationship in situations of low virtuality and high interdependence as well as high virtuality and low interdependence, while also showing that a negative relationship in opposed settings. This indicates a similar behaviour than non-virtual teams, as it would suggest that a higher degree of interdependence would require a more classical approach to collaboration (meaning face-to-face). Low interdependence allows for team members to work more autonomously and therefore they can benefit from working remotely. This suggests a significant effect of interdependence on intra-team relationships and shows why it is important to consider it in the analysis of flexible working teams.

The influence of task interdependence was further explored by Langfred (2005), who observed the relationship between autonomy and team performance and highlights the differences between the individual and group level. He notes that teams require to have efficient communication in place to achieve autonomy, which in turn also helps for interdependent tasks (Langfred, 2005). Hence, the processes that need to be in place to perform highly interdependent tasks within a team would also benefit team autonomy and the other way around. If an employee collaborates well with their colleagues, they will know how to effectively share required information and can work more autonomously to get there. This was shown by Langfred's study, as there was a positive relationship between team autonomy and team performance in high interdependent settings. In contrast, a low interdependence lead to a negative relationship. However, this is reversed on an individual level, where a high degree of autonomy is positively influenced through low task interdependence. This is argued through the increased communication effort required, which will hurt individual autonomy, despite benefiting autonomy for the team. His assumptions were confirmed in the study: individual autonomy was positively

associated to team performance at low interdependence, and negative when it was high.

Golden and Gajendran (2019) further explore the effects of remote work on job performance, including the role of interdependence. They highlight how a higher levels of interdependence require more intense communication and test their assumptions that it moderates the relationship between remote work and job performance, such as lower interdependence would increase the positive impact of the effects. Low interdependence was indeed found to support higher performance, however contrary to their expectations, in situations with high interdependence job performance did not suffer as remote work increased. Amongst other, they argue that the participants were potentially able to adapt to the situation by effectively using ICT and communicate more efficiently (T. D. Golden & Gajendran, 2019).

This relation between communication and coordination with interdependence in teams is very important and needs to be considered in any influenced relationship. It is logical that high interdependence goes hand in hand with increased communication, which can also be an important factor. Take for example the research of Vidyarthi and colleagues (2016) on idiosyncratic deals (individual employee benefits) in the workplace. Generally, these kinds of benefits are seen as a motivating factor which should increase performance. In high interdependent teams however, employees communicate more (including about non-project related topics), which results in interdependence having a negative effect on performance, as some team members may feel treated unfairly after learning from their colleagues benefits (Vidyarthi et al., 2016). Communication and interdependence in teams are highly interconnected, which I presume to also have an effect on the relationship between flexible work and availability, which are equally entangled with it.

2.4 Availability of co-workers in flexible work environments

The core aspect of this thesis is to examine the role of availability of co-workers in flexible working teams, whether they are reachable when their help is needed and how it influences team dynamics. This section aims to provide an overview of existing theory and literature on the concept of availability.

2.4.1 The concept of availability

The concept of *availability* as used in my study was first defined by Bergman and Gardiner (2007), who define it as „to be accessible in time and space and responsive to the needs and wants of others, for example one's employer or family" (Bergman & Gardiner, 2007). This is in line with my definition to flexible work, where I also distinguish between temporal and spatial flexibility. While there is a relation between availability and flexibility, the former is relevant in all kinds of personal and work related situations, while the latter is a concept that exists specifically at the workplace. According to Bergman and Gardiner (2007), flexibility requires availability of the actors and is a prominent example of its occurrence. In other words, one could say availability is needed for FWAs to be successful. An important characteristic of availability is, that it can be applied in two directions. Someone else can be available to me, or I can be available to another person. This is fundamental when looking at teams and team member perception.

Bergman and Gardiner (2007) explored the concept of availability by validating their theory in an empirical research (using a quantitative study) based on three Swedish organisations. While they highlight that it might not be representative enough to generalise about availability patterns, their findings are an important contribution to the understanding of the implications of flexible work.

As part of the data analysis they distinguish between temporal and spatial availability. A third measure is the availability for family, which is only relevant in the context of work-family life and therefore relevant for this work. Similar to how I distinguish between temporal and spatial flexibility, they describe temporal availability as *availability in time*, for example in terms of working hours, overtime or contracted hours, as well as spatial availability referring to the boundaries of the office location (Bergman & Gardiner, 2007). In my work I do not further distinguish between availability types, as I measure the perception of availability separately from flexibility (see section 2.4.2).

One of the most common adoptions of availability is in the context of being available outside of working hours. It introduces extensions and variations such as the autonomy paradox, extended availability, constant connectivity and more. These are prominent ways of availability and flexible work coming together; being available outside of regular working hours implies flexible working, whether it is because an employee is working on

a flexible schedule or due to work intensification (see work intensification in section 2.2.3 Work-family conflict). It is however again important to highlight that this is not the focus of my thesis. My interest is primarily to understand whether one's co-workers are perceived to be available when needed, and not whether they are available after working hours. These are two very different angles. Nonetheless, it can be a reason for which someone is perceived as available, hence it has an influence that is worth mentioning.

2.4.2 Distinguishing perceived availability

To further refine the term of availability, I want to introduce *perceived availability* as differentiation from availability as a general term. In the context of this thesis perceived availability means to perceive (someone) or to be perceived (by someone) as being accessible and responsive to the need of others in a timely manner, while working flexibly. In accordance with Bergman and Gardiner (2007), it can be observed in two directions, either as how an employee is viewed by their colleagues or the other way around, as how someone perceives their colleagues. It is also essential to put it in perspective of time, as nowadays there are many ways to communicate. For example, if I call a colleague and they do not pick up their phone, but contact me via chat a few minutes later because they are in a situation where they cannot talk, I would still perceive them as being available to me. Nowadays a lot of communications happens asynchronously, and an immediate reply is not always expected. *In a timely manner* can therefore be understood as a variable time frame that is appropriate to the type of request and gives the initiating person the feeling that the other individual is dedicating time and attention (meaning available) to the request.

Existing research on the topic is limited and focuses mainly on the question if and when an individual is available, or in the context of being available outside of regular working hours, however there is a lack of understanding in the perception of co-workers. When working in a flexible team, perception plays arguably an equally critical role in the relationship between team members and quality of interactions, as it is a driver for effective communication (Amodu, 2007). When working together in a team, people usually communicate regularly, which can happen in the form of meetings, but also outside through informal and spontaneous (often asynchronous) communication. As we learned, this is especially relevant for flexibly working teams with task interdependence (Fogarty et al., 2011; Rico & Cohen, 2005; Vidyarthi et al., 2016). If I have a question or need help and contact someone, the average time of their response will determine if I perceive them as available. It will also influence if I feel someone is reliable and will on the long-term influence my relationship and frequency of communication. If this perception is impaired, one might look at different options, even if the counterpart would actually be available, which could potentially have far-reaching impact.

Cohen and Wills (1985) discuss this concept in the context of stress and social support. They review different measures for perceived support from different personas and how

it can act as a buffering effect, as already the perceived support shown via availability might be helpful in acute stress cases (Cohen & Wills, 1985). In the context of FWAs this helps to support my argument above, as the perception of my colleagues availability will be sufficient in most non-critical situations and allow for a certain time frame in which the answer is expected. To frame it in a concrete example again: if I know my colleague can help me, I usually do not mind whether they answer in 5 minutes or 30 minutes.

2.4.3 Social support

In the work-related context, social relations have been researched extensively to get a better understanding of their presence and influence on FWAs, remote work and virtual teams. How are the relationships between employees influencing their performance, commitment, and job satisfaction? What is contributing positively or negatively to their success and well-being? Hence, a topic that is of high interest is the concept of social support, which is also closely related to availability of your co-workers, primarily on an individual level.

While it can have different meanings, in the context of remote working two fitting definitions describe it as „the availability of helping relationships and the quality of those relationships“ (Leavy, 1983, p. 5) and that it „reflects the degree to which a job provides opportunities for advice and assistance from others“ (Morgeson & Humphrey, 2006, p. 1324). These interpretations propose that social support represent whether someone is available to help and support you when in need of information or a service.

A good illustration is the research from Kirkman and colleagues (2002) who describe the use case of the company Sabre, which switched to a working model of virtual teams in the late 1990s. The research discusses five challenges and lessons learned, one of them being the importance of interpersonal skills due to reduced face-to-face interactions. They suggest that the ability to communicate and willingness to contribute through teamwork were crucial to make virtual collaboration a success. Trust within the teams was strengthened through reliable and fast responses (supported through ICT) and further developed through (informal) virtual meetings (Kirkman et al., 2002). This hints how important availability is for the success of flexible working.

More generally, research suggests that relationships with co-workers change when working remotely most of the time and that those employees will form social support relationships with some colleagues, while distancing themselves from others. While this might lead to a higher degree of isolation, it can also help to focus on relationships that are valuable and cut out negative influences (Collins et al., 2016). This is an important benefit, as co-workers can have an important supportive or antagonistic influence and impact on the experience at work (Chiaburu & Harrison, 2008). Findings indicate important benefits from support relationships, such as reduced role conflict and overload, higher

job satisfaction and organisational commitment (Chiaburu & Harrison, 2008), higher job control and lower depression (K.-O. Park, 2004). It was also suggested, that remote work leads to more meaningful relationships and interactions with co-workers, as discussions can be longer and more intimate when calling from a home setting compared to the discussions in the office (Halford, 2005). A hybrid setting can allow to add to this the advantages of occasional face-to-face exchanges.

Social support has also been reported to improve job performance. Multiple studies have suggested a positive relationship between the two (Amarneh & Abualrub, 2009 K.-O. Park, 2004), which is comprehensible as workers who feel supported will get their questions answered and also feel more confident asking for help when needed. It has also been found to be significantly related when distinguishing between a supervisor and colleague perspective for both in-role (task) and extra-role (contextual) job performance (Aydın & Kalemci Tüzün, 2019). There is however also inconsistent evidence, as other studies did not find a significant relationship between co-worker support and performance (Pelin & Osoian, 2021).

Collins and colleagues (2016) further look at differences between remote workers and office-based workers and suggest that interactions between the groups would lessen over time, as the former become more individualistic and tend to approach each other for social support, while the latter noted that it is difficult to form a relationship without knowing the other (remote working) person (Collins et al., 2016).

Summarising, social support is a concept that describes whether someone has access to information and help from other people, which is key when working in distributed teams as people are getting more isolated and personal interactions are reduced. Regular face-to-face interactions have been reported to be essential to meet the need for socialisation (Konradt et al., 2000), however, it has also been noted that fewer interactions can also have a positive effect, as it allows employees to reduce distractions (Fonner & Roloff, 2010). It was also suggested that the perceived availability of social support is actually the most important aspect (Cohen & Wills, 1985) and that the amount of support is less important, but rather its presence or absence is key (T. D. Golden & Gajendran, 2019). The core message is that social interactions will change and most likely diminish when leveraging FWAs, the important part is that employees continue (perceive) to have support available to them, when needed.

2.4.4 Influencing factors on availability

In previous sections I highlighted how ICT leads to constant connectivity (see 2.1.2 The rise of ICT and constant connectivity) and other consequences impacting availability such as extended availability (see 2.2.5 Being available to others and its impact on personal life). ICT is in fact the enabler that allows individuals to be always reachable, anytime and anywhere, for both work and personal matters (Berkowsky, 2013). It is also key to

note, that independent of any consequences of its use, the technology itself is „neutral with respect to promoting access to individuals across time and space“ (Chesley, 2005, p. 1238), meaning it can be controlled and calls do not need to be answered and e-mails can be turned off temporarily. Thus, it is important to consider why they are used a certain way that seems to blur the boundaries of the professional and personal aspects of life and leading to longer working hours, which in turn contribute to people being more available overall.

To start, I want to look at the research of Schepers and Wetzels (2007), who analyse technology acceptance and propose a conceptual model, explaining the drivers of its use. They showed the importance of subjective norms, which will influence behavioural aspects and actual use (Schepers & Wetzels, 2007). In other words, if others would approve of something and use it, others would be more likely to do the same. Or in the current context, if someone uses ICT to be available, their co-workers would be more likely to adapt a similar behaviour. This was later investigated in a study on smartphone use during leisure time, testing whether colleagues would influence each other's behaviours. The results indicated patterns the expected direction however without significant results (Derks et al., 2015).

This leads to another important factor: While I already discussed the perception, it is also interesting to consider availability expectations. Mobile devices and ICT in general allow for continuous availability, anytime and anywhere (Berkowsky, 2013; Middleton, 2007). Taken together with social norms of smartphone use, this leads to the expectations that everyone is in fact available at any time, both in and outside of work context, assuming that people will self-regulate when required (Green, 2001). Workers will therefore adapt their behaviour to what they think others (supervisors, colleagues) do and expect from them, meaning they will use technology to be available, „because anyone else does and they want to be part of the group“ (Derks et al., 2015, p. 159). Similar conclusions were drawn by Mazmanian and colleagues (2006), who mentioned that even if the organisation did not mandate checking e-mails outside of work, it still became the norm and expected from everyone (Mazmanian et al., 2006). While availability expectations are often discussed in the context of extended availability, the concept can apply to any flexible work environment.

Of course, one can never generalise, and it is also important to consider how everyone can adapt and react differently, which is why individual differences in characteristics should also be mentioned. While social norms can play an important role in individual and group behaviour, there will always be differences. For flexible work, this is for example investigated by looking at segmentation preferences, meaning to preference of merging or separating work and private life. It has been suggested that people who are more consequent in separation, while experiencing the same availability expectations, will be more resistant, experience less detrimental effects and might use their smartphone less (Kondrysova et al., 2022).

In terms of whether someone can offer social support (be available), can also depend on engagement and potential distractions, impacting so called psychological availability

for work. Personal characteristics and differences in terms of resources that one brings to work (physical, emotional and cognitive) might play a role and influence whether someone is psychologically available, which are not the same for everyone. The same is true for outside factors such as other jobs and activities that might use some of those resources. Stress, exhaustion and distractions can all affect work and the ability to deal with the own tasks as well as helping others. May and colleagues (2004) investigated these concepts in a study and found that resources were positively related with psychological availability, while outside activities were negatively related (May et al., 2004). This is in line with the research of Dettmers and colleagues (2016), who found that personal characteristics play a role when dealing with consequences of flexible work (Dettmers et al., 2016; Dettmers & Biemelt, 2018) (see section 2.2.5 Being available to others and its impact on personal life).

2.5 Hypothesis Development

As part of the previous sections I explained the importance of availability and its relation to FWAs and interdependence. I highlighted how increasingly important it can be, as flexible work is on the rise and we shift into a hybrid work routine. I want therefore to answer „How does work flexibility in time and space relate to the perceived availability of team members in a flexible work environment?“.

By answering this question, I want to contribute to the flexible work literature and improve the understanding of availability and its impact on FWAs. As explained in the previous sections, availability is core to every flexible working team. Every communication and interaction with co-workers require their availability, which can be expected as ubiquitous in an office environment in which everyone is present and working at the same time. However, the moment that everyone potentially works at different location and times, availability can become a bottleneck for successful collaboration. Arguably, this becomes even more relevant when the interdependence between team members increases. Availability is also critical in form of social support, which can strengthen co-worker relationships and improve job performance. By formalizing and testing these relationships, I can bring new insights to a subject that has not yet been comprehensively researched, identifying potential risks and success factors.

The use of ICT for work and team related communications increased significantly in recent years and became ubiquitous, acting as an enabler for flexible work. In fact, it enables workers to be available anytime and anywhere (Berkowsky, 2013) for both work and personal matters. Research suggests that employees voluntarily use ICT to increase their availability during non-work time (Mazmanian et al., 2013; Schlachter et al., 2017) and that it also increases the expectations of others towards one's availability (Bergman & Gardiner, 2007; Derks et al., 2015; Dettmers & Biemelt, 2018; Middleton, 2007). The latter is also true for supervisors, who might expect increased availability when not being physically present. Employees wanting to show high performance and organisational citizenship might voluntarily take work home or remain available, positively contributing to overall team performance (Clarke & Holdsworth, 2017).

This can also be argued through the autonomy paradox (Mazmanian et al., 2013), which suggests that when looking at individual mobile device use patterns, professionals use them to stay constantly connected and reachable even beyond working hours (diminishing autonomy and boosting availability), while perceiving its use as enhancing control and flexibility over communication practices (increasing autonomy) (Mazmanian et al., 2013). Organisations have embraced these effects of ICT use and some offer it as a service through constant connectivity.

Availability is also boosted as a result of increased collaboration. Workers who receive a lot of communication are more likely to adapt such behaviour themselves, staying available and responding to queries (Fender, 2010; Schlachter et al., 2017). Therefore the perception that one should be available is likely to result in adhering to those expectations, while at the same time being perceived as available by others.

A related contributor to availability can be social norms, which suggest that employees will likely be influenced by the behaviour of their co-workers. For example, experiencing a colleague using ICT to be continuously available might also affect their behaviour and lead to them doing the same (Schepers & Wetzels, 2007). This is especially relevant for teams, as individual patterns can lead to the entire group behaving the same way.

As a side effect of this increased ICT use and general tendency to be available for work during off-work time, EAW prevails in its various forms as part of a flexible working environment (Cooper & Lu, 2019). One of its most noticeable and relatable forms is for example presenteeism, a situation where employees continue to work while being sick, instead of taking time off (Aronsson, 2000).

When applying these arguments to present-day ICT enabled workplaces, I would expect that as work flexibility (and the use of ICT) increases, employees will increase their availability. Working flexibly also means in practice, that one is adapting their schedule to others when needed and adhering to other's expectations. Technology helps to stay connected and available and respond to the needs of others. I would expect both on an individual and on a group level (team), that flexible working positively impacts perceived availability, which leads to my first hypothesis.

> *Hypothesis 1: Flexibility and perceived availability of colleagues are positively related on the (a) individual and the (b) group level.*

Measuring flexibility as a general concept, means including both the temporal and spatial components. However, for example in the context for work-family conflict it was suggested that there might be differences between the two (T. Allen & Shockley, 2009) and a lot of research focuses specifically on remote work and virtual teams. This might be because some aspects are more prominent when it comes to the location, as it makes the use of ICT more important (if not essential), and therefore might have a stronger prevalence of the consequences of its use, such as extended availability.

In some instances, it was also suggested that remote work might improve the interactions with co-workers (Halford, 2005), which I would argue also increases availability, as one would be more likely to be reachable for colleagues with whom one has a good relationship. It was also reported that remote working increases transparency when it comes to contactability and availability (Fogarty et al., 2011). And the time saved from commuting (which is specific to spatial flexibility) could be used for work-related matters, also potentially increasing availability (Clarke & Holdsworth, 2017). It would therefore make sense to look at remote work separately, where I would equally expect a positive impact on availability.

> *Hypothesis 2: Remote work and perceived availability of colleagues are positively related on the (a) individual and the (b) group level.*

Investigating other influencing factors on availability, next to ICT use, collaboration and communication is a recurring theme and consequently the interdependence to co-workers. As highlighted earlier, increased contact has been found to trigger availability and responsiveness (Fender, 2010). Thus, interdependence, which comes with increased needs for coordination, should positively influence availability in the team.

Rico and Cohen (2005) find a relation between task interdependence and communication when looking at the performance of virtual teams. Teams using synchronous communication methods seemed to perform better in situations of high interdependence, while analogously asynchronous conversation would lead to poorer team level performance when comparing situations of low and high interdependence (Rico & Cohen, 2005). This supports the argument, that interdependence influences the team relationship and communication in a flexible work environment.

Langfred (2005) studied interdependence and its impact on autonomy and performance, providing compelling insight for individual and group level effects. He confirms that high interdependence in teams leads to increased performance and finds that high task interdependence leads to a positive relation between team autonomy and team performance, while having a negative impact on individual autonomy and performance (Langfred, 2005). This suggests a different behaviour on individual and on team level. In line with the previous statements, interdependence would positively affect a relationship when looking at team level. Coming back to the research around the autonomy paradox, it was noted that participants of the study were working in highly interdependent teams (Mazmanian et al., 2013). Thus, I would argue that bringing both together, the shared assumptions of other's use of mobile devices resulting in increased availability would also support a positive relationship of interdependence and availability on group level.

When taking all of this into consideration, mapped to the research question, I would assume on group level that as interdependence increases, the relationship between flexible work and perceived availability will be positive; while low interdependence would lead to a negative relationship. In other words, as team members depend more on each other, they will work more together and will perceive everyone as available, as they need to make each other available due to the collaborative environment. Everyone will need to accommodate for flexibility to complete the tasks at hand.

> *Hypothesis 3a: Interdependence moderates the relationship between flexibility and perceived availability on group level, such that it is positively associated in situations of high interdependence and negative when interdependence is low.*

On the individual level however, higher interdependence would have a negative effect on the relationship between autonomy and performance (Langfred, 2005). This can be seen through the argument that if an individual works more autonomous this can have negative impact on overall team results. In the case of the present study, being dependent on others can also impact individual behaviour when working flexibly. I need to make myself available based on the schedule and the expectations of others, and as I work more

flexibly to do so (for example through varying schedules and work locations), I might be perceived as less available during certain times. This can also be argued through Golden and Gajendran (2019), who find that low interdependence positively moderates the relationship between remote work and job performance (T. D. Golden & Gajendran, 2019).

Therefore, based on Langfred's research we have an inverted situation on individual level, where high interdependence leads to a negative relation between flexibility and perceived availability. Meaning in reverse, that the less an individual depends on other team members, the more they will be autonomous and be able to work flexibly, while being able to easier make themselves available. The higher the interdependence with others, the more an individual needs to adapt their schedule respectively and might be perceived as less available during certain times.

> *Hypothesis 3b: Interdependence moderates the relationship between flexibility and perceived availability on individual level, such that it is negatively associated in situations of high interdependence and positive when interdependence is low.*

CHAPTER 3

Empirical part

3.1 Empirical study

For the purpose of answering my research question and testing my hypothesis, I used data that was collected in a joined corporation with the University of Graz and the Technical University of Vienna, to which I contributed as part of the project team for this thesis.

The study targeted teams and consists of two survey parts, one for team leaders (aka. manager) and one for team members (aka. employees) with an estimated completion time of 10 to 15 minutes. The employee survey which was used in my analysis consists of 59 items representing 16 scales on flexible work and team behavior. The surveys were anonymous and linked together to form a team through a unique code which was generated upon completion of the first survey. Teams who completed the survey, receive individualized feedback based on the team's responses after participation, comparing the results with a benchmark based on a previous study as well as providing recommendations for improving the collaboration based on scientific literature. The aim of the feedback was to provide an incentive for participation and increase the motivation amongst interested teams. A prerequisite of study participation was, that the team was working in a (at least partially) flexible environment.

3.1.1 Participants

The survey sampled a variety of teams across industries with most participants working in Austria, but also including teams spread around Europe. A total of 116 team leaders participated with 566 employees belonging to the teams.

The final data sample comprised a total of 92 teams and 524 employee responses, after removing all employee and manager responses of teams that had less than 3 employees

responses, resulting in a usable rate of 81%. The median team size was nine and an average of 5.7 employees participated per team. The respondents were 55.2% male, 41.1% female and 3.7% did not disclose their gender. The average age was 38.5 with average weekly working hours of 37.1 (median 38.5).

3.1.2 Description of relevant measures

In the following section I will give a detailed overview of the measures that were part of the study and which were used in the data analysis. The measures that were part of the survey, but not used as part of the data analysis in this work will not be covered. Only the measures for employees are relevant for this work.

Remote Work. The measure consists of two items, which are meant to capture if and how much the survey participants are working remotely (virtually). The first item captured if it was possible (Lapierre & Allen, 2006) („Does your organisation allow for working from home, a virtual office (i.e., work from anywhere), or a satellite office/telework center during regular office hours?“). The second item was dependent on the first answer and measured how much time (hours) were worked outside of the regular workplace during regular working hours („If yes, how many hours do you work outside your regular workplace during your regular working hours in an average working week?“), adapted from Gajendran et. al (2015) who adapted from Thatcher and Zhu (2006) (Gajendran et al., 2015; Thatcher & Zhu, 2006). This item will be used in hypothesis H2 to calculate the percentage of remote work compared to the total weekly working hours („How many hours do you usually work per week?“).

Temporal and spatial Flexibility (use). While the first two measures about flexibility are being used to get an understanding of the organisational practices and guidance, this measure is important to understand the actual behaviour of the participants. Four items, two on temporal flexibility („I change the beginning and the end of my working hours according to my personal preferences and needs“ and „I vary my work schedule“) and two on spatial flexibility („I change my place of work so that it is adapted to my personal preferences and needs“ and „I work wherever is best for me—either at home or at the office“), are evaluated on a 5-item Likert scale from 1 (entirely not true) to 5 (entirely true) (Shockley & Allen, 2007). These items will be used as Flexibility measure to test my hypothesis H1.

Team Member Interdependence. Interdependence is measured with three items, on a Likert scale from 1 (completely disagree) to 5 (completely agree) based on the research on patterns of interdependence in work teams (Vegt et al., 2001). It is used to evaluate how much team members depend on each other for work (Hypothesis H3). The times include „I have to obtain information and advice from my colleagues in order to complete my work“, „I depend on my colleagues for the completion of my work“ and „I have to work closely with my colleagues to do my work properly“.

Perceived Availability. The measure about team member availability was used to ask participants about how easy or difficult it is to reach other team members when help or information is needed. It consists of four items rated on a Likert scale from 1 (highly inaccurate) to 5 (highly accurate). Item 1 to 3 were adapted from coaching availability, which was introduced as part of Team Diagnostic Survey (TDS), a conceptual model to measure team effectiveness in organisational teams (Wageman et al., 2005). Coaching Availability was one of two measures around team coaching, with the aim of surveying availability of experts. Item 4 („I can reach my team members easily if I need something spontaneously“) was self-developed. This measure will be my dependent variable. The items include „When I have trouble working, there is no one available to help me out“ (Reverted), „I have access to team members who can give me necessary information or advice“, „Other team members are readily available to me in case I need them to complete my tasks“ and „I can reach my team members easily if I need something spontaneously“.

Demographics. In addition to the measures being used to test my hypotheses, I use multiple demographics to control for the output. I chose four of the available variables, specifically the age of the participants, gender (1 = female, 2 = male, 3 = no information), tenure (the time having worked at the company) and team size (the overall size of the team the participant is working in).

3.2 Analytical approach

To prepare and analyse the data, I use various tools for the different steps of the process, which are proven industry standards. Data cleansing and exploration is usually the first step in any data analysis, which is the process of explore and visualize the data to get a better understanding and identify patterns. It also helps to discover problems within the dataset, such as missing data, formatting problems and more.

I used Microsoft Power BI Desktop for data exploration and the build-in Power Query tools for data cleansing. It is a free application and allows you to connect to, transform and visualize data in different ways (Microsoft, n.d. a). Power Query is an engine for data transformation and preparation which is also used in other common tools such as Microsoft Excel. It allows to perform ETL (extract, transform, load) processes using a graphical interface or code (Microsoft, n.d. b). Power BI Desktop was used in version 2.106.582.0 64-bit (June 2022).

EFA and MMR was done using IBM SPSS Statistic, an advanced statistical analysis tool with build-in Structural Equation Modelling (SEM) functionality („SPSS Software“, 2022). SPSS Statistics was used in version 29.0.0.0 (241). CFA was performed using IBM SPSS AMOS (Barnidge & Gil de Zúñiga, 2017) in version 26.0.0 (Build 2233004).

3.2.1 Factor Analysis

Before performing the actual data analysis, it is common to carry out various steps to test assumptions about the data and do a pre-analysis. One of those steps is to check whether the different variables can be aggregated to a single factor per measure to simplify the analysis by reducing the total number of items. Applied on the current dataset, one important check is to determine if flexibility in time and space need to be considered separately, or if they can be joined to a single output variable. At the same time, I want to explore the quality of the variables for Perceived Availability and Interdependence. This can be achieved by the means of factor analysis, which is „a collection of methods used to examine how underlying constructs influence the responses on a number of measured variables“ (DeCoster, 1998). They can be divided into two major groups, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

EFA is typically used when there is the need to explore a theory, i.e. having potentially an assumption about the correlation and how the data is behaving, but having the goal of getting a better understanding and validating the assumptions.

On the other hand, CFA is used when there is already a good existing knowledge about the data, and it is required to confirm this theory before doing further analysis. In the dataset used in this work, there are four items related to flexible work: two referring to spatial flexibility and two regarding flexibility in time. I assume that there is a strong correlation and that they will behave similarly, hence I will perform a Confirmatory

Factor Analysis (CFA) for all factors to determine whether they can be combine for further analysis.

3.2.2 Moderated Multiple Regression

There are a lot of different ways how data can be analysed, depending on what specific aspects should be considered. In this work, I want to analyse the effects of my independent variable (Flexibility) on my dependent variable (Perceived Availability), including the effects of moderators (Interdependence). Moderated Multiple Regression (MMR) is commonly used for this purpose and will allow to analyse the interactions between my variables.

MMR consists of the comparison of two least-squares regression to determine the effect of an independent variable on the dependent variable, while adding a moderator variable influencing the relationship. For this, the product between the independent variable and the moderator term is calculated and added in a second step of the regression. MMR is the preferred method to analyse moderation effects (Aguinis, 1995). As the goal is to analyse both individual and group level statistics, I performed it twice: once on the entire population and once aggregated to group level for further comparison.

3.3 Data Analysis

Data preparation

For the purpose of the data analysis I used the raw data of the survey, which was overall of acceptable quality, but required cleansing for certain numerical fields that did not have data entry validation as well as removal of incomplete data. To make the data usable for analysis, a few further steps had to be taken due to the nature of some of the questions and missing data input validations.

Incomplete data All incomplete survey responses were identified and initially removed from the employee data. This was only necessary for teams that did not reach the minimum of three responses, a further reduction in the data sample was not necessary.

Fixing missing data validations There were survey fields gathering demographics and general data, which did not have data entry validation. This resulted in some data being entered in text instead of a numerical format and participants providing ranges instead of a specific value. The affected fields were primarily Ten_year (tenure), Hours (working per week). Following rules were applied during data cleansing for the demographic data:

1. Replaced empty values with 0
2. Replaced entries of type „6 months“ or „1 3/4“ with corresponding decimal value
3. Replaced entries of type „40 - 50“ with middle value, in this case „45“
4. Replaced entries of type „>40“ with next smaller or higher value, in this case „41“

The data cleansing was only necessary for the demographic data, the variables used for the core analysis were complete and in perfect quality.

To analyse the relative impact of the extent of remote work, I calculated the Remote Percent measure as remote hours divided by total working hours. In some cases, survey participants indicated higher remote hours compared to total working hours, in this case I corrected the value to 1 (100 percent).

3.4 Preliminary Analysis

3.4.1 Exploratory Factor Analysis

The data that used for the analysis included three measures, that is Flexibility (four items), Perceived Availability (four items) and Interdependence (three items) with a total of 11 items. To test whether I can combine the items to the respective scale, I performed a EFA and subsequently CFA. This is especially important for Flexibility, since the four items are split into two logical variables for temporal flexibility (item 1 and 3) and two for spatial flexibility (item 2 and 4). The tests confirm with how many measures I have to work in the multi-group analysis.

As I used AMOS for the CFA and further anlaysis which leverages the Maximum-Likelihood method, chose the same for the EFA. Part of the EFA are a series of tests to asses if the data is suitable for factor analysis. The sample size is an important first indicator, which in my case was well fitting with 524.

The first two outputs of the analysis are the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Barlett's Test of Sphericity.

Table 3.1: KMO and Barlett's Test

Kaiser-Meyer-Olkin Measure		.692
Barlett's Test	Approx. Chi-Square	1830.493
	df	55
	Sig.	<.001

The results are acceptable, with the Barlett's test being significant ($< .05$) and the KMO being above the minimum value of .50. I further produced a pattern matrix converging in four rotations and confirming the three factors for Flexibility, Perceived Availability and Interdependence. The results were not ideal, but all individual loadings were above .5 averaging above .7, except for availability averaging at .632. Comparing the outcome using Principal Component analysis instead of Maximum-Likelihood, the results improved. For further reinforcement I conducted a reliability analysis on all three factors, confirming the EFA results through significant Cronbach's Alpha, which in every case demonstrated to be higher compared to the deleting of individual items.

Table 3.2: Pattern matrix and reliability analysis

Measure	Avg. Loading (ML)	Avg. Loadings (PC)	Cronbach's Alpha
Flexibility	.716	.796	.805
Perc. Avail.	.632	.740	.718
Interdependence	.778	.855	.818

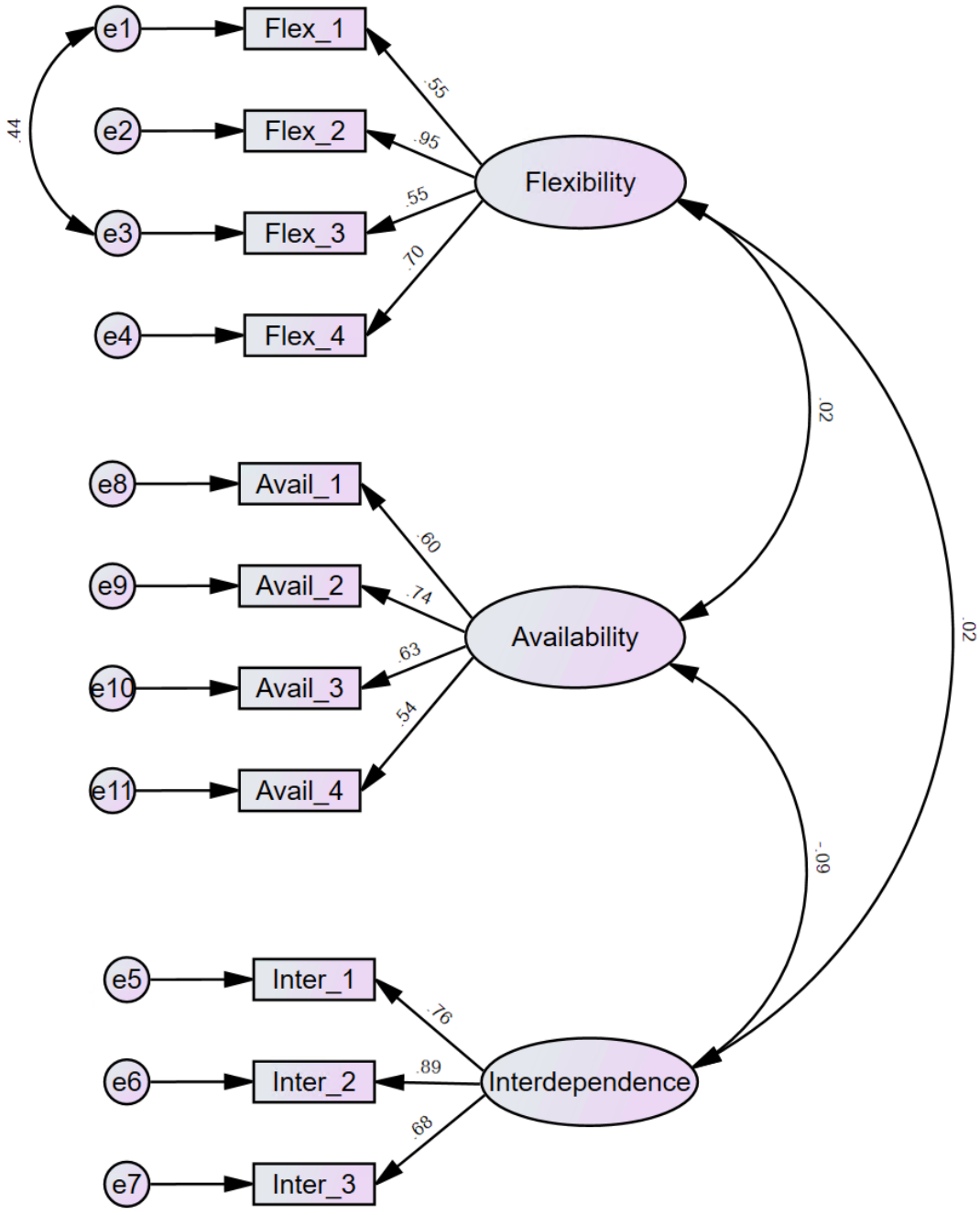
The Exploratory Factor Analysis (EFA) confirmed my assumption that the four items for temporal and spatial flexibility can be grouped to calculate a single scale, the same

applies for the four perceived availability and three interdependence items. In the next step, I performed a Confirmatory Factor Analysis (CFA) based on the results.

3.4.2 Confirmatory Factor Analysis

While the EFA is meant to validate my assumptions on the number of variables to work with, the Confirmatory Factor Analysis (CFA) is used to bring certainty by confirming the factor structure statistically. By loading the results of the pattern matrix into AMOS, I generated a graph allowing me to compute the CFA. Figure 3.1 depicts the graph after calculating the estimates. One can see that the three factors (Flexibility, Perceived Availability and Interdependence) are composed through the respective survey items. For better results I allowed the two items for flexibility in time to correlate (Flex_1: „I change the beginning and the end of my working hours according to my personal preferences and needs.“, Flex_3: „I vary my work schedule“). This was not required for the two items concerning flexibility in place, as the results were already satisfactory.

Figure 3.1: CFA diagram based on pattern matrix of EFA results, standardized estimates



The first step after computing the CFA is to determine model fit based on the calculated estimates. Table 3.3 represents the measures with their estimates and threshold for fit.

Table 3.3: CFA Model fit

CMIN	105.582		
DF	40.000		
CMIN/DF	2.640	Between 1 and 3	Good
CFI	0.963	>0.95	Good
SRMR	0.046	<0.08	Good
RMSEA	0.056	<0.06	Good
PClose	0.2117	>0.05	Good

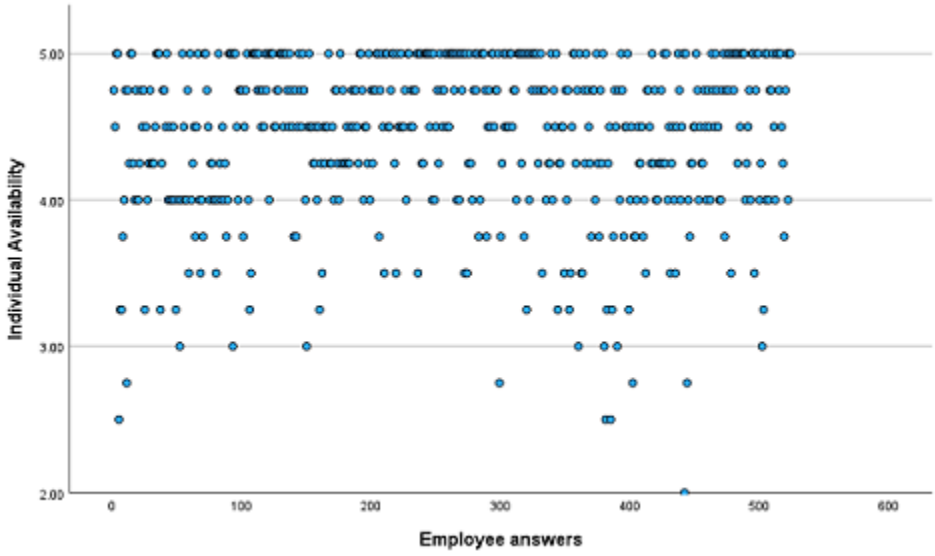
Overall, the results indicate a good model fit confirming the assumptions. Hence, I can proceed using three scales for Flexibility, Perceived Availability and Interdependence for further analysis.

3.4.3 Means, standard deviations and correlations

The first part of the results as part of the regression and actual analysis is to calculate descriptive statistics, meaning the means (M), standard deviations (SD) and correlations. As part of this step, I also calculated the Z-scores for standardization. Table 3.5 shows the descriptive values for individual and group level for all variables, including demographics (control variables), Perceived Availability, Flexibility and Remote Percent. The latter was included as it represents flexible work in place through an additional independent variable, which I use to validate my hypothesis H2. According to my hypothesis H3 I also included Interdependence and its product with my Flexibility variables (Flex X Inter, Remote X Inter), as required in MMR.

Looking at the means and standard deviations on individual level, it is noticeable right away, that the data for Flexibility ($M = 3.44$) and Interdependence ($M = 3.13$) seem to be fairly evenly distributed, having means at the centre of the scale (5-point likert scale). Remote Percent ($M = .47$) is equally at the centre of the scale (between 0 and 1). Perceived Availability however has an apparent high value ($M = 4.43$), indicating that a large part of the participants answered comparably positively. Plotting the distribution (see figure 3.2), a ceiling effect is noticeable. A quick analysis shows that 89.6% (individuals) and 90.8% (group level) of responses were averaging between 4 and 5.

Figure 3.2: Scatter plot of Perceived Availability for each survey answer (individuals) showing a ceiling effect



Examining the correlations, nothing particularly unexpected is apparent. High correlations can be observed between Flexibility and Remote Percent, which is not surprising as they are measuring similar information. The correlations with Perceived Availability seem generally low, as significant results manifest only towards Gender (-.180) and Remote Percent (.113), as well as its product with Interdependence (.009). The majority of the observed correlations indicate however a weak relationship.

Equally to the individual results, I calculated the mean (M), standard deviation (SD) and correlations for group level (see table 3.5). The outcome is similar to the individual results, in this case also without significance for the correlation between Remote Hours and Availability.

As a last test before performing the regression, I computed the Intraclass Correlations (ICC), which is a way to estimate the reliability of my measures for quantitative data. Table 3.4 shows the ICC(1) and ICC(2) for average measures, indicating good reliability (>.7) of all three variables Perceived Availability, Flexibility and Interdependence. All results were highly significant.

Table 3.4: Intraclass correlations for individual and group level

	Individual level		Group level	
	ICC(1)	ICC(2)	ICC(1)	ICC(2)
Perceived Availability	.712	.715	.779	.786
Flexibility	.798	.800	.833	.836
Interdependence	.768	.779	.733	.768

Table 3.5: Means, standard deviations and correlations

Individual level, N=524	M	SD	1	2	3	4	5	6	7	8	9
1. Availability	4.43	.56	1								
2. Age	37.67	10.97	-.033	1							
3. Gender	1.61	.57	-.180***	-.050	1						
4. Tenure	9.73	12.11	-.041	.480***	.079*	1					
5. Team size	6.78	3.78	.004	.085*	-.032	-.014	1				
6. Flexibility	3.44	.96	.033	-.086*	.108**	-.093*	-.119**	1			
7. Remote Percent	.47	.34	.113**	-.074*	.051	-.123**	.011	.171***	1		
8. Interdependence	3.13	.91	-.040	-.066	-.010	-.088*	-.024	.012	-.015	1	
9. Flex X Inter	.01	1.04	.010	-.033	-.061	-.011	.001	-.082*	-.082*	.070	1
10. Remote X Inter	-.02	1.01	.009**	-.046	.038**	-.010	.037	-.084*	.034	.051	.206***

Group level, N=92	M	SD	1	2	3	4	5	6	7	8	9
1. Availability	4.43	.31	1								
2. Age	37.43	5.93	-.034	1							
3. Gender	1.61	.34	-.259**	-.150	1						
4. Tenure	9.74	7.17	-.132	.588***	.138	1					
5. Team size	5.70	2.50	.046	.093	.018	-.005	1				
6. Flexibility	3.45	.61	.082	-.240*	.221*	-.204*	-.018	1			
7. Remote Percent	.47	.22	.112	-.141	.039	-.231*	.027	.345***	1		
8. Interdependence	3.13	.51	-.092	-.165	.010	-.292**	-.008	.125	.053	1	
9. Flex X Inter.	.12	1.14	-.008	.044	.120	.044	.078	-.125	-.143	.114	
10. Remote X Inter.	.05	.81	-.192*	.039	.168	.204*	-.010	-.203*	.069	.152	.323**

*$p<.05$, **$p<.01$, ***$p<.001$

3.5 Analysis results

While the previous steps were aimed at validating my approach, the hypotheses can be tested using Moderated Multiple Regression (MMR). This will allow me to test the influence of flexible work (independent variable) on perceived availability (dependent variable), moderated through the interdependence (moderator variable). I will perform the analysis once for the entire data of employees (individuals) and once aggregated to group level.

The regression itself was calculated in six steps (scales), calculating the control variables (demographics) in model 1, then adding the independent variables Flexibility (model 2), Remote Percent (model 3) and the moderator variable Interdependence (model 4). The last two models include the product of the independent variables with the moderator to test for potential interaction effects, Flexibility X Interdependence (model 5) and Remote Percent X Interdependence (model 6).

Individual level results
Table 3.6 shows the individual results distributed into the 6 scales, showing Beta (β) values and Standard Error (SE) followed by the model summary. The interactions with Interdependence (H3) are calculated in step 5 and 6, visible in the table through the X (Flex. X Inter. and Remote X Inter.). Contrary to my expectations, only model 1 (control variables) and 3 (Remote Percent) produce significant results, hence I have to reject my hypotheses H1a (flexibility is positively related to perceived availability on individual level) and H3b (the relationship is moderated by interdependence). Model 3 is indicating that 4.9% of the variance can be explained through Remote Percent (R Square .049), leading to a 1.3% increase of Perceived Availability (R Square Change = .013), confirming that remote work and perceived availability are positively related on individual level (H2a). As a result, my hypothesis H2 is partially supported.

Group level results
Analog to the individual results, table 3.7 shows the outcome of the regression on group level. Contrary to my expectations, no significant relationships or interactions where found in any step, hence I have to reject each of the three group level hypotheses, H1b being the positive relationship between flexibility and perceived availability, H2b being the positive relationship between remote work and perceived availability and H3a the interaction with interdependence.

Table 3.6: Individual results

	Step 1		Step 2		Step 3		Step 4		Step 5		Step 6	
Variables	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*
Age	-.039	.050	-.037	.050	-.036	.049	-.037	.049	-.037	.050	-.036	.050
Gender	-.181***	.044	-.186***	.044	-.191***	.044	-.192***	.044	-.191***	.044	-.192***	.044
Tenure	-.008	.050	-.003	.050	.009	.050	.006	.050	.006	.050	.005	.050
Team size	.001	.043	.007	.044	.003	.043	.002	.043	.002	.043	.002	.044
Flexibility			.050	.044	.032	.044	.032	.044	.033	.044	.034	.045
Remote Percent					.116**	.044	.115**	.044	.116**	.044	.115*	.044
Interdependence							-.042	.043	-.043	.043	-.044	.043
Flex. X Inter.									.013	.042	.010	.043
Remote X Inter.											.014	.044
R	.185		.191		.222		.226		.226		.227	
R Square	.034		.037		.049		.051		.051		.051	
Adj. R Square	.027		.027		.038		.038		.037		.035	
R Square Change	.034		.002		.013		.002		.000		.000	
F Change	4.582		1.310		6.971		.966		.085		.095	
p	.001		.253		.009		.326		.771		.758	

*$p<.05$
**$p<.01$
***$p<.001$

Table 3.7: group level results

	Step 1		Step 2		Step 3		Step 4		Step 5		Step 6	
Variables	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*
Age	-.015	.134	-.002	.134	-.005	.135	.000	.134	-.004	.135	-.024	.135
Gender	-.248*	.109	-.278*	.111	-.278*	.112	-.272*	.111	-.284*	.113	-.266*	.114
Tenure	-.090	.133	-.067	.134	-.052	.136	-.095	.140	-.094	.140	-.046	.145
Team size	-.041	.104	-.039	.104	-.041	.104	-.043	.104	-.049	.104	-.053	.104
Flexibility			.128	.109	.105	.115	-.115	.115	.125	.116	.084	.120
Remote Percent					.075	.112	.069	.111	.078	.112	.114	.116
Interdependence							-.135	.108	-.145	.109	-.114	.112
Flex. X Inter.									.078	.094	.119	.098
Remote X Inter.											-.150	.150
R	.280		.305		.313		.338		.346		.369	
R Square	.079		.093		.098		.114		.120		.136	
Adj. R Square	.036		.040		.034		.041		.035		.042	
R Square Change	.079		.015		.005		.016		.006		.016	
F Change	1.855		1.388		.451		1.562		.527		1.547	
p	.126		.242		.504		.245		.470		.217	

*$p<.05$
**$p<.01$
***$p<.001$

To summarise, my hypothesis aimed to predict on individual and group level, whether flexibility / remote work, and perceived availability are positively related and moderated by interdependence. Based on the non-significant results of my analysis, I can have to reject most of my hypotheses. Only H2a produced significant results, finding a positive relation between remote work and perceived availability on individual level. I will elaborate on possible factors for the non-significance in the Discussion. All analyses were done with and without control variables in different scales, providing similar results in either case.

CHAPTER 4

Discussion

The goal of this thesis was to provide insights into the very relevant topic of flexible work, while specifically elaborating on the context of work teams and how the usage of temporal and spatial flexibility is related to team member interdependence and availability. Although I could not find specific support for the majority of my hypotheses, I was able to find a positive relationship between remote work and perceived availability. There are several points that I want to discuss in this section, together with potential reasons for the outcome of the analysis.

4.1 Summary and results

With FWAs becoming an integrated part of our workplace, it is important to explore new topics that have not been researched extensively, but which potentially have a significant impact on our daily lives. One of these topics, which I discuss in this work, is (perceived) availability.

Flexible work, and especially remote work, significantly changes the way that we interact with co-workers. Research suggests it changes the relationship with colleagues (T. Golden, 2007) and the resulting isolation can have a negative impact on work (T. D. Golden et al., 2008), but can also have positive sides as it allows for uninterrupted working (Fonner & Roloff, 2010) and more intimate relationships (Halford, 2005). It also impacts the way we connect with colleagues, as workers shift to ICT for communication.

Availability describes whether my colleagues and team members are reachable, while we work flexibly in time and space (Bergman & Gardiner, 2007), and if I can get the assistance that I need (Morgeson & Humphrey, 2006). It has been heavily influenced through ICT and more specifically mobile device use, which can lead to a state where everyone is available all the time (Berkowsky, 2013; Middleton, 2007).

Technology can play an essential role. Which technology is available to you and how it is used will have an impact on how your communication and how your availability is perceived by your co-workers (see 2.1.2 The rise of ICT and constant connectivity). In turn, the quality of communication matters and can also have an impact on whether co-workers are perceived as being available. If someone is changing communication patterns and seems more distant, they will most likely also seem less available to colleagues, which is why it is important to maintain a good relationship no matter how, when and where you work (see 2.2.4 Work relations and communications). In my first hypothesis, I tested the assumptions that flexible work (temporal and spatial) is positively related to perceived availability on individual and group level, however without resulting in significant results contrary to my expectations.

Why did I not get significant results in my analysis? While there can be numerous reasons, a potential factual one is the distribution of the availability responses in the survey results. With a mean of 4.43 for both individual and group level (individual SD = .56, group SD = .31), most of the answers are at the high end of the 5-point likert scale, pointing towards a ceiling effect (see also figure 3.2). This results in the variability of my perceived availability measure being very low, as most values are very similar, making it increasingly difficult to find relations to my independent variable and moderating effects.

And why did the ceiling effect manifest? One answer could be that the survey participants simply felt they could easily reach other team members (for example „I can reach my team members easily if I need something spontaneously“) and get support when in need (for example „I have access to team members who can give me necessary information or advice“), which could again have diverse causes. For one, the majority of the data was collected during the first year of the COVID-19 pandemic, meaning it might have affected the expectations towards availability. As it might have included participants who were not used to flexible working, their expectations towards availability would have been influenced and potentially different, compared to what they were used to in the office. When it comes to the use of ICT, employees might adapt their work style based on what they see others do (Derks et al., 2015; Mazmanian et al., 2006), therefore resulting in similar expectations and survey results.

Since the COVID-19 pandemic and most organisations being forced into remote working at least for a period of time, the phenomenon of increased use of ICT beyond regular working hours and extended availability surfaced on global scale. For many employees, work and personal life merged completely and constant connectivity became normality. Employees who were not used to flexible working, were suddenly involuntarily moved into remote work which means that more people were exposed to its consequences, both positive and negative, and the existing workplace system was impacted (Graham et al., 2023). This permanently influenced and changed flexible work and led to hybrid work. First studies in that context suggest that employees accept these changes as mostly positive, leading to a helping and caring environment (Beno, 2021). This could have contributed to the mostly positive perception of team member availability.

Specific technology features such as an „availability status“ can have an important impact

on expectations. While on the one hand they make it easy to see if someone is available (for example when their status is „green“), they could also be used to influence whether someone wants to be perceived as available or not, by purposefully changing it (Cobb et al., 2020).

Effects and consequences of ICT use have been widely recognised, with the European Parliament even passing a resolution in an attempt to regulate increasing availability demands, namely the right to disconnect (European Parliament, 2021). With multiple new technologies emerging every year, organisations nowadays face the challenge of selecting the right collaboration tools, while making sure that they are properly implemented and used. Further regulations and technical solutions to separate work and personal life will likely be increasingly important in the years to come, which might have a significant impact on flexible work.

Another factor to consider when looking at the non-significant results, is that the impact of flexible work on the perceived availability of co-workers is a topic, that has not yet been researched extensively. While the survey was largely adapted from existing, proven measures (Wageman et al., 2005), some additional variables might have been needed to capture additional nuances in availability. Specifically for the group level data, considering the specifics of the data and the ceiling effect, the sample size (N=92 for group level) probably also had an impact.

While the first hypothesis tested if flexible work in general (both temporal and spatial) is positively related to perceived availability, the second hypothesis tested if there is a relationship with remote work specifically. In line with my assumptions, a small yet significant effect was found on individual level (H2a). The effect accounted for a small variance (4.9%) with minimal increase in availability (1.3%). While the effect is weak, it does indicate that a relation could be determined, despite the uniform distribution of the availability measure. A possible explanation could be that remote work requires an increased use of ICT for communication, enabling employees to be constantly reachable and leading to extended availability.

It could also be that due to the COVID-19 situation, the effects of remote work were more prominent compared to flextime. Differences between the two have been indicated before (T. Allen & Shockley, 2009) and some positive effects such as improved interactions and transparency have been attributed specifically to spatial flexibility (Fogarty et al., 2011; Halford, 2005). In the context of virtual teams, it has been suggested that people are quick to adapt to new working circumstances (Onete et al., 2021).

The group level results were however non-significant (H2b), meaning hypothesis H2 was only partially supported. From a statistical point of view, this could be traced back to the fact that group level perceived availability had a smaller standard deviation and sample size, leaving little room for variance. The initial assumption was that employees would adapt their working behaviour based on their colleagues behaviour (and social norms) to improve collaboration (Schepers & Wetzels, 2007), hence working at similar times and standardizing the time when they need to be reachable. However, it could also

be argued that missing face-to-face interactions and socialisation had negative effects on the team (Konradt et al., 2000), leading to reduced support.

Work-family conflict could also play a role, as employees have only a finite amount of energy to spend between work and family (T. D. Allen et al., 2013). Flexible work leads to blurred boundaries between the two, which was especially true during the pandemic and could have impacted the responsiveness for work. While this can also be true on individual level, it would be more likely to surface on group level as the impacted employee will not be available to others, however, not have the same expectations to their co-workers (at this moment in time).

Going further and looking at the control variables, a significant correlation between Gender and availability can be observed at individual (-.180) and group level (-.259). For individuals it is highly significantly with the dependent variable and a negative relationship can be observed, indicating that responses from female employees can be associated with higher perceived availability. This is in line with other studies which note that gender has an influence on flexible work patterns and consequences (Chung & Lippe, 2020). For example, it was suggested that FWAs were historically used to allow women to participate more in the labour market despite family commitments, and that they were more frequently accessed by women (Laundon & Williams, 2018).

Similarly, as for the Flexible Work measure, the results for interdependence indicate minimal variance. Contrary to my expectations, no significant impact on the relationship could be identified on either individual or group level. This could once more be due to the missing variance in Perceived availability, again due to the ceiling effect. Another rational could be that since everyone worked at least partially flexibly and got used to the adjusted situation due to the pandemic, interdependence with team members had less of an influence. Golden and Gajendran (2019) also investigate interdependence and argue that employees could adapt to the communication demands by efficiently using ICT. Another reason could be that if teams do not work remotely all of the time, they could adjust accordingly and find time to meet face-to-face. Communication and coordination are highly interconnected with interdependence (Vidyarthi et al., 2016), finding the right tools and methods to handle it could therefore help offset the requirements of the latter, making it less influential on the relationship between flexible work and perceived availability.

4.2 Limitations

I based my analysis on a survey that targeted multiple aspects of flexible work and team collaboration. Although the selected measures were developed specifically to research perceived availability of co-workers, a more targeted survey framed only in the context of availability with the proper framing could have delivered more detailed results. For example, a more targeted study with additional measures on perception of availability and others that measure whether there is a difference in whether you are working at the same location (usually the office), one person remote or both remote. This can be relevant, as there can be differences between the two (Collins et al., 2016; T. Golden, 2007; van der Lippe & Lippényi, 2020). It could also be interesting to measure if the survey participant remains available outside of their regular working hours and differentiate between the two, which could provide more insights whether the perception is linked to extended availability and its consequences (Mazmanian & Erickson, 2014).

Availability was also only surveyed from a single perspective, meaning if others are perceived as available. The aspect whether someone perceives themselves as available to others could also have been interesting, as Bergman and Gardiner (2007) specifically mention that it can be applied in both directions. The view of the supervisor is equally interesting, as it is frequently observed in the literature and could also add an interesting outside opinion on the availability of individuals as well as the entire team.

Lastly, nowadays ICT can take different forms (e-mail, chat, mobile devices, collaborative software, etc.) which could also have an impact on availability perception. Categorizing and distinguishing between these types would offer further insights. Equally important would be the question whether employees purposefully change the availability status (Cobb et al., 2020), which modern tools usually provide.

Some of the information is however also difficult to collect in a questionnaire. It might have been appropriate to do a qualitative analysis through interviews, which would have allowed to collect detailed information about why the participants answered a survey question in a specific way. For example, what influences whether someone perceives another person as available or not? Personal characteristics play an important role when it comes to availability (Dettmers et al., 2016; Pangert & Schuepbach, 2013), which also suggests that the perception might be different for everyone. How important is it for someone that they get a fast response? And what does *fast* mean for each individual? This is also relevant, as the dataset includes a very broad set of people with different backgrounds, education, and origins. There are also different degrees of flexible working, including part-time workers. While this can be a positive aspect in terms of diversity, a survey based of a specific company with similar working behaviour and backgrounds might lead to different results.

Regarding the sample size, although for individual level (N=524) and group level (N=92) it can be considered sufficient, the latter might have been too limiting for the type of data that was analysed. Based on the literature summarised in the theory and derived hypotheses, comparing group and individual level data is especially relevant in the context

of team work and interdependence, however this also limited the options in terms of survey participation. As it was needed to have group level data with a minimum of three team members (plus team leader), the process of finding participating teams for the survey was challenging and resulted in targeting groups within the immediate environment of the survey contributors. This lead on the one hand to a very diverse group of companies and teams, on the other hand they might have very different ways of working. Some studies around flexible work specifically collect data from a single or limited amounts of organisations to make sure that these kind of differences are reduced (T. D. Golden & Gajendran, 2019), which might also have led to different results in this study.

Finally, the timing of the study could have had an impact on the results. As a large part of the survey responses was collected during COVID-19 time, almost everyone worked flexibly and was potentially in similar situations. This might have impacted availability expectations and perception, and lead to employees adapting their behaviour due to social norms and self-regulation (Green, 2001; Schepers & Wetzels, 2007). More information to why someone was available or not would be helpful to understand the results in this context.

4.3 Conclusion and implications

This thesis discussed the consequences of FWAs in teams, and more specifically the effects that it would have on the perceived availability of co-workers and the role of interdependence on that relationship. Providing a review of existing literature in the space of flexible work, team member interdependence and availability, I highlight common concepts, how they relate to each other and why these topics are more relevant than ever in an increasingly hybrid workplace. Using the data of a quantitative study amongst 92 flexible working teams, I tested my hypotheses that flexible work is positively related to perceived availability, moderated by the interdependence between co-workers, on individual and group level. Contrary to my expectations, most results were not significant, except for H2a, stating that remote work is positively related to increased perceived availability on individual level. The finding suggests there are effects between FWAs and availability perception, which should be explored in further studies.

Although the effects were not very strong, the finding suggests that more spatial flexibility leads to increased perception of availability on individual level. This means that from an employee perspective, remote work can make it easier to reach colleagues and get support when needed. The same was not conclusive when combining flexible work in space and time, hinting it might be different when having diverse schedules. Group level results were likewise inconclusive. Putting the smaller sample size and other data related aspects aside, this could mean that despite the evolving capabilities of ICT, face-to-face meetings and interactions might still play an important role.

As described in the limitations, many aspects of this work could be investigated in more detailed, targeted, and controlled studies. The finding that there is a relationship between remote work and perceived availability, strengthens the idea that there is a relation between flexibility and availability, as also mentioned by Bergman and Gardiner (2007), who write that the former requires the latter.

My work contributes to the wider flexible work literature and explains why availability and its perception is essential to successful collaboration and communication in FWAs. Further studies are required, building on my findings to further validate this relationship. Additional angles could include the different perspectives of availability (how do I perceive others vs. how do I perceive myself), different uses of ICT and further differentiation on flexible work practices. An interesting angle could also be how companies regulate extended availability for work to control and limit the impact on well-being and work intensification. This will be an increasingly important aspect as ICT tools develop further and get adopted at higher rates, as FWA become ubiquitous.

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Glossary

autonomy paradox The autonomy paradox (Mazmanian et al., 2013) is a concept describing how working professional would voluntarily reduce the autonomy they gain by working flexibly to remain available through the use of mobile devices.. 5, 6, 19, 27

availability The concept of availability is defined by Bergman and Gardiner as the accessibility in time and space and responsiveness of the needs and wants of others, including employers and family (Bergman & Gardiner, 2007).. 1–3, 6, 12–14, 16, 19–23, 25–27, 31, 45–51

coaching availability As introduced by Wagerman and colleagues (2005) in their TDS study (Wageman et al., 2005), it is a measure consisting of three items to assess whether someone is available for coaching.. 31

constant connectivity Constant connectivity, also known as total availability, describes the situation in which workers are permanently reachable and connected for work purposes, thanks to ICT devices.. 5, 6, 13, 15, 19, 22, 25, 46

extended availability Extended availability as introduced by Dettmers and colleagues (2016) and is defined as „a condition during off-job time in which employees are flexibly accessible to supervisors, coworkers, or customers and are required either explicitly or implicitly to respond to work requests“ (Dettmers et al., 2016, p. 5).. 13–15, 19, 22, 23, 26, 46, 47, 49

flexible work Used as synonym for Flexible Work Arrangements.. 3–5, 7, 8, 10–13, 16, 18, 19, 23–25, 27, 46–48, 58

Flexible Work Arrangements Flexible Work Arrangements (FWA) as referred to by Bal and Izak (2021), are „organizational practices that help employees to decide when and where work is conducted“ (T. D. Allen et al., 2013; Jeffrey Hill et al., 2008). While the terms can be used in different context, they act as an umbrella term for remote work and flextime.. 7, 57

flextime Flextime or temporal flexibility, refers to the option to chose when work is completed, hence not having a fixed schedule.. 7, 11, 47, 57

hybrid work Hybrid work is a new manifestation of flexible work with the aim to make it available more broadly and offer standardization. It can be defined as combining „the physical work arrangement and the remote work system“ (Cook et al., 2020, p. 29).. 3–5, 25, 46

interdependence Interdependence refers to the concept of *task interdependence*, which can be defined as the extent to which interaction and coordination are required to complete tasks in teams (Guzzo & Shea, 1992).. 2, 6, 16–18, 20, 25, 27, 28, 45, 48, 50, 51

perceived availability I define Perceived Availability, as to perceive (someone) or to be perceived (by someone) as being accessible and responsive to the need of others in a timely manner, while working flexibly. In accordance with Bergman and Gardiner (2007), it can be observed in two directions, either as how an employee is viewed by their colleagues or the other way around, as how someone perceives their colleagues.. 2, 4, 20, 25–28, 45–48, 51

remote work Remote work is used as a synonym for Telecommuting or spatial flexibility and is a work arrangement in which employees perform tasks elsewhere, that are normally done in a primary or central workplace, for at least some portion of their work schedule, using electronic media to interact with others inside and outside the organization (Gajendran & Harrison, 2007, p.1525). Other synonyms include telework, virtual work, or distributed work.. 3, 4, 7–13, 15, 18, 21, 22, 26, 28, 45–47, 51, 57

social support In the context of flexible work, it can be defined as „the availability of helping relationships and the quality of those relationships“ (Leavy, 1983, p. 5) and that it „reflects the degree to which a job provides opportunities for advice and assistance from others“ (Morgeson & Humphrey, 2006, p. 1324).. 20–23, 25

Acronyms

CFA Confirmatory Factor Analysis. 32, 33, 35–37

EAW Excessive Availability for Work. 15, 26

EFA Exploratory Factor Analysis. 32, 35, 36

FWA Flexible Work Arrangements. 1, 2, 7–11, 13, 16, 19, 21, 22, 25, 45, 48, 51

ICC Intraclass Correlations. 39

ICT Information and Communication Technology. 1, 2, 5, 7, 13–18, 21–23, 25–27, 45–49, 51, 57

KMO Kaiser-Meyer-Olkin Measure of Sampling Adequacy. 35

MMR Moderated Multiple Regression. 32, 33, 38, 41

SEM Structural Equation Modelling. 32

TDS Team Diagnostic Survey. 31, 57

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