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Enhancing Leadership effectiveness in Virtual Teams: The Moderating Role of Transformational Leadership on Exhaustion and Job Satisfaction

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Master's thesis in Psychology (PSY-3900) – May 2023

Preface

What do you want to be when you grow up, for me, this is a very difficult question. Regarding the process of choosing a topic for my master's thesis, I can say the same. The only thing I knew, was that I wanted to learn about something new. We spend an enormous amount of time in work environments, with colleagues, and often with the help of digital tools. The COVID-19 pandemic changed the way we communicate and collaborate with each other, which I found interesting. I have this idea, who could possibly help me? This idea came to life with the help and well-apricated guidance from my supervisor Dr. Dana Unger. The process has been hard and filled with laughter and tears, but mostly laughter. Thank you, Dana, for your patience and the good times.

A special thanks to Tove Irene Dahl and Mikolaj Hernik, the master course coordinators over the past two years for providing practical knowledge, and for pushing us to be the best that we can be. I would also like to thank Lenita Rødfjell, two peas in a pod, this experience would not be the same without you. Also, thank you to my fellow office peers and colleagues, we have been in this together as a team. To my family and friends, "I did it" and could not have succeeded without your support. Lastly, I have learned so much over the last two years, and a bit closer to answering the difficult question of what I want to be when I grow up.

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Sammendrag

Fremveksten av virtuelt arbeid og bruken av virtuelle teams i organisasjoner, ble intensivert av den nylige globale COVID-19-pandemien, og derved også behovet for å forstå hvordan en leders effektivitet kan bli påvirket i virtuelle arbeids kontekster. Denne studien undersøker den potensielt modererende rollen til transformasjonsledelse på forholdet mellom virtuelle teams og leder effektivitet, gjennom linsen til de medierende rollene av utmattelse og arbeidstilfredshet. For å undersøke dette gjennomførte vi en spørreundersøkelse blant 90 ansatte som utfører arbeid i virtuelle arbeidsmiljøer. Data som ble samlet inn ble analysert gjennom Process analyser fra enkle regresjons analyser til moderert mediering. Resultatene viser at arbeidstilfredshet er positivt relatert til leder effektivitet, men studien fant ikke støtte for den modererende rollen til transformasjonelt lederskap. For bedre å forstå utfordringer ved å lede virtuelle teams, bør fremtidig forskning se på de komplekse aspektene ved virtuelle arbeidsmiljøer, med mål om å lage strategier som reduserer utmattelse, øker arbeidstilfredshet og forbedrer leder effektivitet.

Nøkkelord: virtuelle teams, leder effektivitet, utmattelse, arbeidstilfredshet, transformasjonsledelse.

Abstract

The amount of virtual work and the use of virtual teams in organizations increased dramatically during the recent COVID-19 pandemic. We need to understand how leadership effectiveness in virtual work contexts are impacted. The aim of the study was to investigate how transformational leadership can moderate the relationship between virtual teams and leadership effectiveness, taking into consideration the mediating factors of exhaustion and job satisfaction. To examine this, we conducted a questionnaire study on 90 employed individuals that conducted work in virtual settings. The data were analyzed through Process to explore the different relationships, from simple regressions to moderated mediation. The findings of the study reveal that job satisfaction is positively related to leadership effectiveness, while not supporting the moderating role of transformational leadership. To better understand the challenges of leading virtual teams, the present study suggests that future research should explore the complex aspects of virtual work environments, with the goal of creating strategies that reduce exhaustion, increase job satisfaction, and improve leadership effectiveness.

Keywords: virtuality, leadership effectiveness, exhaustion, job satisfaction, transformational leadership.

Enhancing Leadership Effectiveness in Virtual Teams: The Moderating Influence of Transformational Leadership on Exhaustion and Job Satisfaction

In recent years working in virtual teams has become increasingly popular (Bell & Kozlowski, 2002). Digitalization of society has made it possible to collaborate more effectively and has facilitated the adoption of virtual teams in organizations, and the COVID-19 pandemic has further accelerated their use (Byrd, 2021). Virtuality in work settings is often associated with *"…coworkers assembled using a combination of telecommunications and information technology to accomplish an organizational task"* (Townsend et al., 1998, p. 18). Working in virtual teams has several advantages for both employers and employees (Arnison & Miller, 2002). However, virtual teams also present unique challenges (Nordbäck & Espinosa, 2019), that could have an impact on employee well-being.

Exhaustion is a challenge that virtual team members may encounter, as a result of prolonged exposure to stressors in the work environment (Chamakiotis et al., 2021). Exhaustion can have a negative effect on individuals working in virtual teams, as it can lead to decreased motivation and effectiveness within the team (van Dierendonck et al., 2014). Additionally, virtual team members often report lower levels of job satisfaction (Smith et al., 2018), which can contribute to a negative work environment and impact the leadership effectiveness.

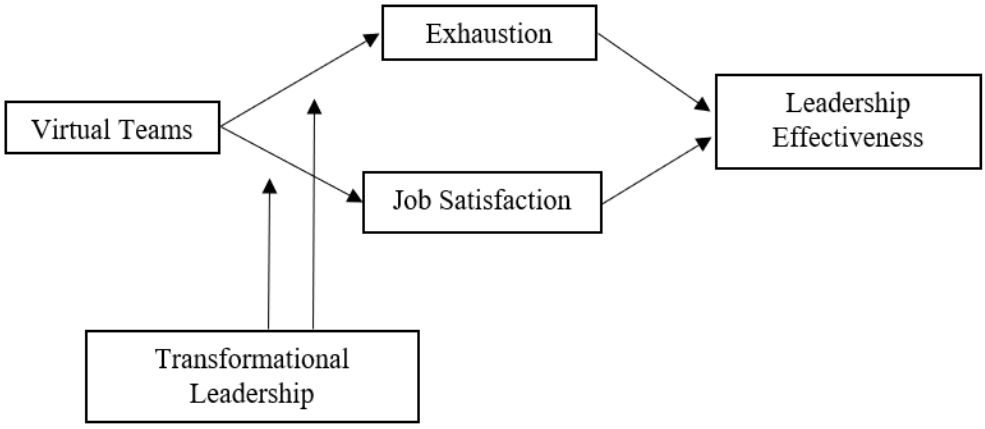
In addition, the moderating effect of leadership on the impact of virtuality on exhaustion and job satisfaction has been of interest. Research has shown that transformational leadership, in particular, can effectively mitigate the negative effects of virtuality on these variables, thus enhancing overall leadership effectiveness (Judge & Piccolo, 2004), Transformational leadership focuses on building relationships with team members, by inspiring and motivate, and by providing a clear vison and purpose (Bass & Riggio, 2013). Higher levels of job satisfaction have been linked to transformational leadership (Chen et al.,

2021) and lower levels of exhaustion (Stein et al., 2021), and has also been found to be an effective leadership style in virtual team settings (Purvanova & Bono, 2009).

Nevertheless, there is lack of empirical research on virtual teams and leadership effectiveness. Given the growing usage of technology and virtual teams in modern organizations, it is crucial to examine factors that contribute to job satisfaction and employee well-being within these work settings. Additionally, it is assumed that exhaustion and job satisfaction will serve as mediators in this study. There is a need for further investigation within the research area, and therefore the present study aims to investigate the relationship between virtual teams and leadership effectiveness, with focus on the mediating factors of exhaustion and job satisfaction and the moderating role of transformational leadership (see, Figure 1). Furthermore, the study pursues to explore whether transformational leadership can be a potential moderator which reduce the negative effects of exhaustion in virtual teams and enhance job satisfaction, which results in effective leadership in virtual teams.

Figure 1

Moderated mediation model



The present study contributes to the literature on leadership in virtual teams in several way. First, it highlights the need to acknowledge the negative impact of exhaustion on virtual teams, as well as factors that contribute to lower levels of job satisfaction, and how

transformational leadership may have a positive effect on these factors. This is in contrast to existing research that focus mainly on face-to-face teams. Secondly, the study looks at potential mediating factors, such as exhaustion and job satisfaction, when investigating leadership in virtual teams. Overall, the study provides an understanding that virtual teams differ from co-located face-to-face teams and highlights the need to recognize this difference when researching leadership in virtual teams.

Theoretical Background and Hypotheses Development

In this section, the present study will review relevant theoretical frameworks and concepts that inform out research on virtual teams, leadership effectiveness, exhaustion, job satisfaction and transformational leadership. We will also discuss the justification behind our hypotheses based on the theoretical foundations and research, which will guide our empirical analysis in later sections.

Virtual Teams: Advantages and Challenges

Virtuality in work settings are often referred to as a group of workers who are geographically dispersed, working towards a common goal, enabled by digital communication as the primary medium (Kaur Bagga et al., 2022). Also, from another perspective, Stratone and Vătămănescu (2019) define a virtual team as a group of people who are independently working together with a shared purpose across space and time, and organizational boundaries with the help of technology. However, there has been little consensus regarding the definition of a virtual team (Bell & Kozlowski, 2002; Maznevski & Chudoba, 2000). What most definitions and descriptions of virtual teams have in common is that virtual teams use information and communication technologies among themselves in order to achieve their goals (Stratone & Vătămănescu, 2019). There are many definitions of virtual teams, but for the purpose of the present study, the definition provided by Hertel et al. (2005) is applied:

"Virtual teams are defined as "(I) two or more people who (II) collaborate interactively to achieve common goals, while (III) at least one of the team members works at a different location, organization, or at a different time so that (IV) communication and coordination are predominantly based on electronic communication media (e.g., mail, phone, video conference, et c.)" (Hertel et al., 2005, p. 71).

The authors note that the last two aspects of the definition are viewed as dimensions rather than dividing criteria that distinguish virtual teams from traditional face-to-face teams (Hertel et al., 2005). This definition implies that efficiencies are possible when operating in this manner, though not without challenges (Horwitz et al., 2006). While early discussions of how to manage virtual teams focused on the differences between face-to-face teams and virtual teams (Serban et al., 2015; Wilson et al., 2021), current authors place teams on a continuum ranging from entirely virtual to entirely face-to-face (Fiol & O'Connor, 2005; Griffith & Neale, 2001). While extreme cases of virtual teams can be imagined in which all members work in different locations and communicate solely through electronic means, the majority of existing virtual teams have some face-to-face contact (Hertel et al., 2005). Some researchers prefer to distinguish such teams from virtual teams by referring to them as hybrid teams (Staples & Webster, 2008). However, no such distinction is made in our research study, and the term virtual team will also be used for teams in which parts of the virtual team are co-located and/or have face-to-face contact.

Virtual teams are beneficial to both employers and employees. For the employees, these benefits stem from the fact that they can work from anywhere, thus giving them the flexibility, which in turn enhances employee job satisfaction (Arnison & Miller, 2002; Davidaviciene et al., 2020). Moreover, employers may benefit from direct cost savings through lower power consumption, and employees also benefit from direct cost reductions associated with travel costs. Virtuality in work context also allow for higher levels of

availability and, Newman et al. (2020) suggest that this round the clock availability is especially beneficial for organization, that do not have to rely on physical presence. Furthermore, the employer benefit from having access to numerous experts across different geographical areas, empowered by technology (Davidaviciene et al., 2020). This access suggests that the employers can easily acquire intellectual resources at the click of a button. Virtual teams provide organizations with a way of integrating skills, talent and resources from people in the near community and across the world to enhance quality (Davidaviciene et al., 2020; Powell et al., 2004).

On the other hand, Nordbäck and Espinosa (2019) state that the growing dependency on virtual teams in organizations has resulted in a range of leadership challenges. The challenges do not arise as a consequence of the trend itself, but rather from the unique circumstances of virtual work. Furthermore, leaders have a reduced ability to use direct influence on team members due to reduced communication opportunities because of increased virtuality (Nordbäck & Espinosa, 2019). In agreement with the above views, Stratone and Vătămănescu (2019) noted that virtual teams are often more challenging to manage and coordinate because they lack many communication advantages of a traditional face-to-face team. Due to the fact that electronic dependency is one of the key features of virtual teams, these teams are likely to face challenges arising from technological and electronic issues (Stratone & Vătămănescu, 2019). In addition to the challenges highlighted by Nordbäck and Espinosa (2019) and Stratone and Vătămănescu (2019), Sarker et al. (2011) suggest that virtual teams are particularly vulnerable to communication and trust issues. The decrease of face-to-face interactions and non-verbal cues in some virtual teams may lead to lack of social interactions, which in turn can negatively impact both communication and trust among team members. Furthermore, this highlights the need for leaders in virtual teams to develop effective strategies for building trust and promoting communication among team

members, despite the lack of physical proximity. Differences in team members skill sets, competencies, and experiences can also pose a challenge to virtual team, given that some members may be less skilled in matters of technology (Ahuja et al., 2003), which in turn may require extra training, thus implying more costs to the organization.

Generally, teams are often considered a choice when organizations are confronted with complex and difficult tasks (Salas et al., 2008), but virtual teams are often more complex compared to traditional face-to-face teams. Given the advantages and disadvantages that are present in virtual teams, it is important to understand how these processes may impact virtual team members well-being and their motivation.

Virtual Teams and the Relationship to Exhaustion

Exhaustion is considered to be a significant characteristic of burnout (Sonnentag et al., 2014). Burnout can be defined *"as a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding."* (Schaufeli & Greenglass, 2001, p. 501). Emotional exhaustion is one of three core components of burnout (Bakker et al., 2004) and is a condition where an individual feels both physically and emotionally drained due to excessive job demands and ongoing stressors (Cordes & Dougherty, 1993). The other two components of burnout are depersonalization from work and reduced personal accomplishment (Maslach & Jackson, 1981; Maslach & Leiter, 2008). Emotional exhaustion is a significant topic for organizational researchers as it affects both the quality of life at work and the overall functioning of the organization (Wright & Cropanzano, 1998). Research shows that emotional exhaustion is damaging to physical and mental health (Huang et al., 2011), and work outcomes (Karatepe, 2013). Our research study we will focus specifically on the exhaustion dimension of burnout, which is considered as the core and the most harmful aspect of burnout (Bakker et al., 2004).

Despite the vast benefits to both employers and employees from virtual teams, certain adverse effects, such as fatigue and exhaustion, may arise. Chamakiotis et al. (2021) argued that not all information communication technologies are equally good for all types of tasks. This is because some technologies may lead to high levels of fatigue that may negatively influence employee's well-being (Chamakiotis et al., 2021). Virtual team members are more often exposed to technostress, stress associated with information communication technologies, than non-virtual teams (Ragu-Nathan et al., 2008). Further, Epstein (2020) outlined that after attending a virtual meeting or listening and participating in online webinars, and even being a presenter in such meetings, one often get a feeling of fatigue or exhaustion. This is considered to be virtual fatigue, and can be caused by delays between speakers' actions and participants' seeing them, particularly with frequent videoconferencing (Epstein, 2020). Moreover, a study conducted by Shockley et al. (2021) showed that the use of cameras during virtual meetings are linked to daily feelings of fatigue and its negative impact on meeting outcomes. Hence, it can be argued that virtual meeting fatigue is a critical issue that organizations must address to improve the effectiveness of their virtual teams. In line with the above statements, Riedl (2022) highlighted that virtual fatigue arises from the depletion of psychological and cognitive resources as a consequence of prolonged an inappropriate use of videoconferencing tools.

In a another study, Dolce et al. (2020) argued that remote or virtual workspaces have exposed employees to higher risks of work related stress. This is because the increased use of information communication technologies produced higher expectations about individuals always being connected, responsive and working better and faster than in the past (Dolce et al., 2020). This creates a higher job demand for employees, making then vulnerable to exhaustion. Nesher- Shoshan and Wehrt (2022) investigated the concept of zoom fatigue and its effects on virtual teams. The research findings indicate that zoom fatigue, which refers to

tiredness, worry, and burnout associated with the overuse of virtual communication platforms, exist. An article by Bailenson (2021), specifically focusing on the phenomenon of zoom fatigue, argues that nonverbal overload caused by excessive amounts of close-up eye gaze, cognitive load, increased self-evaluation from staring at a video of oneself, as well as constraint of physical mobility could all be potential causes for fatigue. Bailenson (2021) concluded in the article that videoconferencing tools, such as Zoom, may lead to psychological consequences such as fatigue, but further experimentation is needed to confirm.

Building on a theoretical framework and empirical research, we introduce the first hypothesis to examine this relationship:

H1: Virtuality is positively related to exhaustion.

Exhaustion and the Relationship to Leadership Effectiveness

Employees are considered the most critical component in an organization (Jawaad et al., 2019), and thus their well-being is paramount. Further, leaders are required to be mindful of their follower's well-being, which encompasses ensuring that they do not suffer from exhaustion in their line of work. A fundamental responsibility of a leader is to guide and direct a team towards a common objective. Furthermore, it can be argued that the success, failure, and behavior of a leader are shaped by the contributions of their followers (Uhl-Bien et al., 2014). To comprehend the role of a leader, it is necessary to acknowledge the relationship between the leader and the followers (Fairhurst & Uhl-Bien, 2012).

Leadership effectiveness is essential for virtual team success (Bell & Kozlowski, 2002). The concept of leadership effectiveness is complex and difficult to grasp (Madanchian et al., 2017). There are several factors that can contribute to leadership effectiveness: skills and qualities of the leader, leadership style, team composition and dynamics, and the organizational context. Thus, effective leadership is not static, but rather a dynamic and

ongoing process that requires ongoing learning, development, and adaption (Schweiger et al., 2020). Several researchers have examined the consequences of leader actions and have utilized this to evaluate leader effectiveness. Effective leaders can influence their organizations in such a way that positive outcome is achieved (Bass, 1985; Dhar & Mishra, 2001; Shamir et al., 1993). It is important for leaders to prioritize effective leadership strategies in virtual teams to promote both individual well-being and overall team success (Hill et al., 2022).

However, if leaders fail to recognize and address the signs of exhaustion in their employees it can lead to negative work outcomes (Tarafdar et al., 2007). Based on the findings of Tarafdar et al. (2007), it can be argued that exhausted virtual team members lead to decreased effectivity due to the effects of technostress (i.e., negative psychological link between people and the introduction of new technologies). This suggests that team members who experience technostress may struggle to complete their work effectively, which can impact leadership effectiveness. A leader who cannot address such issues may struggle to maintain a positive work environment and achieve organizational goals. Furthermore, a consequence of exhausted employees can result in higher turnover rates. Findings from a study by Moore (2000), argue that work exhaustion is a critical factor for turnover intentions among technology professionals, which suggest that exhausted employees are more likely to leave their jobs. This can impact leadership effectiveness by leading to loss of expertise, disrupted cohesion and increased cost for the organization.

According to research by van Dierendonck et al. (2004), when followers are well taken care of, they are more likely to be motivated and engaged, which can enhance the effectiveness of the leadership. On the other hand, when followers are exhausted and well-being is neglected, it can lead to reduction in positive outcomes, which in turn can negatively influence leadership effectiveness. In line with the above, Yavas et al. (2013) argue that

exhaustion and burnout can within the organization, and exhausted employees frequently become more negative about their job. Yavas et al. (2013) describe that this negative energy can have a more negative outlook on other employees.

In a study by Charoensukmongkol and Phungsoonthorn (2021), the researchers examined the role of leader support in explaining the degree of perceived uncertainties and emotional exhaustion experienced by employees. The results suggest that when employees perceive low levels of support from their leaders, they are more likely to experience higher levels of perceived uncertainties, which in turn can lead to emotional exhaustion. The study also suggests that leaders who fail to support their followers may contribute to increased levels of exhaustion, ultimately reducing the effectiveness of their leadership.

Research suggests that leaders who often support their followers in achieving their work goals could contribute to their well-being and, better organizational outcomes (Dhar & Mishra, 2001; Nielsen & Taris, 2019). Thus, our second hypothesis is as follows:

H2: Exhaustion is negatively related to leadership effectiveness.

Furthermore, by integrating our previous hypotheses we propose that exhaustion could act as mediator in the relationship between virtual teams and leadership effectiveness. Specifically, virtual teams, co-located or not, have been found to experience increased levels of exhaustion as a result of their reliance on information and communication technologies, which ultimately have a negative impact on the effectiveness of leadership within virtual teams. This leads to the third hypothesis of our study:

H3: Exhaustion mediates the relationship between virtuality and leadership effectiveness.

Transformational Leadership Moderates Virtuality's Positive Effect on Exhaustion

Transformational leadership is a leadership style that helps individuals to redefine their vison and mission, which contribute to dedication to achieve their organizational goals (Maduka et al., 2018). Transformational leadership consists of four factors; idealized influence, inspirational motivation, intellectual stimulation and individual consideration (Dvir et al., 2002). Breevaart et al. (2014) have described these factors as; idealized influence, also known as charisma, refers to leaders' ability to be a role model and inspire followers to match their behavior. Inspirational motivation refers to leaders' ability to inspire and motivate their followers by articulating a compelling vison and creating a sense of shared purpose. Intellectual stimulation refers to leaders' ability to challenge their followers to think critically and creatively. Lastly, individual consideration refers to leaders' ability to demonstrate empathy and provide individualized support and guidance to their followers (Breevaart et al., 2014, p. 140).

Chamakiotis et al. (2021) argued that a transformational leadership style is essential in virtual teams, since it has a strong effect on the teams' organizational outcomes when used in a virtual setting. Transformational supervision has a main effect on employees' well-being, leading to increased happiness, psychological well-being, and physical health (Hildenbrand et al., 2018). In a study by Holstad et al. (2014) a model of moderated mediation between transformational leadership and followers stress levels was tested, and they found that providing social support can decrease follower stress levels. This suggest that transformational leaders have the ability to decrease the exhaustion experienced by their followers by providing them with the necessary social support. Thus, perhaps transformational leaders in virtual work environments can mitigate the experience of exhaustion among virtual team members.

A number of studies (Chamakiotis et al., 2021; Holstad et al., 2014; Stein et al., 2021) show that transformational leadership help to mitigate exhaustion among employees. By

providing a clear and compelling vision, empowering followers to take ownership of their work and provide support (Breevaart et al., 2014), transformational leaders may help to create a positive work environment that could reduce the risk of exhaustion. Put in a virtual work context, when virtual team leaders provide regular updates and constructive feedback regarding virtual team members progress, they create close relationships using collaborative technologies (Dias-Oliveira et al., 2023). By doing so, the leader can identify any emerging problems and act upon them while also recognizing the efforts of team members.

The above-reviewed studies mainly focus on transformational leadership in more traditional workspaces, thus there is a need to explore the aspect of transformational leadership and exhaustion among virtual teams. Thus, the below hypothesis is developed:

H4: Transformational leadership moderates the indirect positive relationship between virtuality and exhaustion.

Bringing together our hypotheses; virtual teams, is expected to lead to higher levels of exhaustion among team members. In turn, this can decrease the effectiveness of leadership. Transformational leadership, which is characterized by motivating and inspiring the team members to reach their full potential, may reduce the negative influence on exhaustion. We predict that transformational leadership will moderate the positive indirect effect relationship between virtuality and leadership effectiveness by buffering the effect of virtuality on exhaustion. Furthermore, we present the fifth hypothesis of our study:

H5: Virtuality has a negative indirect effect on leadership effectiveness via exhaustion and this relationship is moderated by transformational leadership.

Virtual Teams and the Relationship to Job Satisfaction

Traditionally, job satisfaction refers to the emotional state of an individual when something pleasant and beneficial has occurred due to job outcomes, appraisal, or experience (Irawanto et al., 2021). According to Judge et al. (2017), job satisfaction is primarily

characterized as individuals' general evaluative assessment of their jobs, reflecting on the degree of positivity or negativity with which they view their work. The assessment usually exists on a continuum from favorable to unfavorable perceptions of the job and work they do (Judge et al., 2017). The ongoing process of maintaining employee job satisfaction can be a challenging (Judge et al., 2002). Given that virtual teams rely on technology and electronic devices most of the time, in order to perform their work, this may contribute to challenges, which can also impact the employees job satisfaction negatively.

McDaniel et al. (2021) examined the impact of work-related technology use at home on the well-being of employees, feeling of overload, life satisfaction and, job satisfaction. Results from the study show that technoference, which describes how personal electronic devices can interrupt or disrupt interpersonal communication (McDaniel et al., 2018), related to work can negatively impact job satisfaction (McDaniel et al., 2021). Virtual team members working from home, may be more exposed to technoference, which in turn could negatively impact job satisfaction due to work-related technology use at home.

During the COVID-19 pandemic many employers and employees solely had to rely on technological and digital tools to do their work. A study by Ludivine et al. (2022) suggests that the usage of digital tools may have a negative impact job satisfaction in virtual workplaces. The study examined the use of digital tools both before and during the pandemic lockdown, and results indicate that using digital tools on a daily basis increased job productivity, but on the expense of job satisfaction. Reduced job satisfaction can be a result of increased stress due to information overload (Ludivine et al., 2022). Virtual teams and information and communication technologies can be useful, at the same time they may contribute to negative consequences for job satisfaction.

Based on the above research and studies, it seems job satisfaction is an important factor for achieving organizational goals, and virtual teams may have lower levels of job satisfaction compared to traditional face-to-face teams. We present our sixth hypothesis:

H6: *Job satisfaction is negatively related to virtuality.*

Job Satisfaction and the Relationship to Leadership Effectiveness

Leadership is a crucial component for positive organizational outcomes and leadership has been established to be a universally important aspect across different countries, companies, and team structures on employee motivation, innovation, and general positive organizational outcomes (Newman et al., 2020). Furthermore, in some studies (Madlock, 2008; Podsakoff et al., 1996) effective leadership is recognized as a good predictor for higher or lower levels of job satisfaction among employees.

The creation of a positive work environment is central for achieving high levels of job satisfaction, and one possible factor in achieving this great leadership. A study by Tsai (2011) found that organizational culture, leadership behavior, and job satisfaction were all significantly correlated. This could suggest that poor leadership behavior and negative organizational culture can lead to decreased job satisfaction. Furthermore, An article by Piccolo et al. (2012) presented evidence for a positive relationship between job satisfaction and leadership effectiveness, and argued for effective leadership in promoting employee well-being and organizational success. Findings from the study indicates that consideration and transformational leadership are the most important predictors of job satisfaction and perception of leadership effectiveness (Piccolo et al., 2012). These results suggest that effective leadership with focus on employee well-being and empowerment can lead to higher level of job satisfaction, ultimately leading to organizational success.

Leadership effectiveness is essential for creating positive work environment that again fosters support, recognition, and opportunities for growth. Therefore, we present the seventh

hypothesis to further explore the positive relationship between job satisfaction and leadership effectiveness:

H7: Job satisfaction is positively related to leadership effectiveness.

Moreover, job satisfaction could play a crucial role in the relationship between virtual teams and leadership effectiveness. Virtual teams with low levels of job satisfaction might exhibit lower levels of collaboration and commitment towards achieving organizational goals. This, in turn, could have a negative impact on leadership effectiveness. Contrary to this, virtual teams that are dissatisfied with their work may experience decreased motivation and have a negative impact on achieving organizational goals, which could lead to lower levels of leadership effectiveness. Hence, by integrating our previous hypotheses we propose to investigate the role of job satisfaction as a mediator in the relationship between virtuality and leadership effectiveness. We present hypothesis eight of the present study:

H8: Job satisfaction mediates the relationship between virtuality and leadership effectiveness.

Transformational Leadership Moderates Virtuality's Negative Effects on Job Satisfaction

According to Edgar and Geare (2005) a significant factor affecting job satisfaction is the interaction between the employee and their leader. A study by Barling et al. (1996) showed that there is a positive relationship between job satisfaction and transformational leadership. Employees with leaders who underwent transformational leadership training displayed greater effectiveness than those with leaders lacking such training. Implementation of training focusing on solutions rather than problems creates a forward vison, which in turn enhances job satisfaction.

Kelloway et al. (2003) argue that adopting transformational leadership style in virtual context, can enhance job satisfaction. The evidence from the studies shows that

transformational leadership leads to higher levels of motivation, which can contribute to increased job satisfaction (Kelloway et al., 2003). Also, transformational leaders give their attention to each individual, and by using supportive gestures they motivate and encourage them to present their preferred self when working on tasks (Lai et al., 2020). This suggests that adopting a transformational leadership style in virtual teams and offering virtual team members significant and stimulating tasks, may enhance job satisfaction. Along the lines of Kelloway et al. (2003), Mysirlaki and Paraskeva (2020) examined the effects of transformational leadership on virtual team effectiveness, specifically focusing on team members job satisfaction. Findings in this study indicated that the emotional intelligence of the leader had a significant impact on team effectiveness, which was mediated by transformational leadership behavior (Mysirlaki & Paraskeva, 2020). These findings suggest that transformational leadership can play a moderating role in the relationship between virtual teams and job satisfaction. By fostering a team environment that is focused on individual growth, shared goals, and a positive work environment, transformational leaders can help mitigate the challenges that may arise in virtual teams. The ability of a leader to effectively communicate his or her feelings and thoughts has an impact on employee mood, performance, and level of job satisfaction (Fisk & Friesen, 2012), which is important in virtual work contexts where communication is mediated by technology.

Based on the above research and studies, it seems job satisfaction is an important factor for achieving organizational goals, and virtual teams may experience lower levels of job satisfaction. Transformational leadership could be a potential moderating factor in enhancing job satisfaction in virtual teams. Hence, we present hypothesis nine of the present study:

> ***H9:*** Transformational leadership moderates the indirect negative relationship between virtuality and job satisfaction.

Bringing together our hypotheses; virtual teams, and the continuous use of information and communication technologies, is expected to lead to lower levels of job satisfaction amongst team members, which further decreases the effectiveness of leadership. Thus, transformational leadership, which is a positive influenced leadership style can intervene as a motivating and inspiring factor and may help mitigate the negative impact of low job satisfaction in virtual teams. Therefore, we hypothesize that transformational leadership moderates the relationship between virtuality and leadership effectiveness by the negative mediation effect of job satisfaction. Thus, our last hypothesis is introduced:

H10: The indirect effect of virtuality on leadership effectiveness via job satisfaction is moderated by transformational leadership.

Method

Sample and Procedure

The questionnaire (see, Appendix A) used in this study was designed in collaboration with a fellow master's student using SoSciSurvey (www.soscisurvey.de). Convenience sampling was used to gather participants, based on the assumption that it easy to get in contact with groups of individuals that are relevant for the study. The questionnaire was online, and the distribution was via email, flyers with QR code, and social media platforms such as Facebook, LinkedIn, and Instagram. Participants were able to access the questionnaire through any of these channels and complete it at their convenience. Lastly, as a token of appreciation for their time, participants were offered the chance to win one of four gift cards (DittGavekort) with the value of NOK 500 through a lottery system.

Prior to data collection, an application to the relevant ethical committee (i.e., Research Ethics Committee at IPS, UiT) was completed and approved. The questionnaire did not collect any sensitive data, so no further approvals were needed. We administered a screening test to identify participants who possessed the necessary qualifications for participating in the

study and to ensure their consent was given. The informed consent form included explanation about the study, and the rights of the participants. The participants were also assured that their responses would remain anonymous and that they could withdraw from the study at any time. The participants that agreed to the informed consent form and were within the inclusion criteria invited to participate in the study via email. The data collection started on 26.10.2022 and ended on 20.01.2023 (e.g., 88 days). If participants failed to complete the questionnaire, friendly reminders to complete the questionnaire were sent via email.

Participants

Invited participants were working individuals aged between 18-65, resided in Norway, and with an employment percentage of 50% or higher. A total of 90 professionals responded with demographics such as; age ranged from 22-65 years (mean= 38.89, *SD*=11.98), and gender was identified to be 60 females (66.7 %), 29 males (32.2%) and 1 transgender male (1,1%). There were identified three industries that the majority of the sample worked in, (I) health (24.4%), (II) education (20%) and (III) manufacturing (14.4%). There were also differences in occupational tenure, from a minimum of 0 years working to a maximum of 47 years (mean=18.7, *SD*=11.49) and, how long they had been working in their current organization, from a minimum of 0 years to a maximum of 40 years (mean=8.04, *SD*=9.66).

Measures

The questionnaire was distributed in Norwegian for the purpose of the targeted population, and the scales used in the questionnaire was translated from English to Norwegian, and back translated to English by the researchers (Brislin, 1970). These scales were later reviewed by the supervisor of this master thesis. Also, in order to reduce the chance of recall bias, participants were instructed to base their answers on the experience within the past seven days for all statements in the measurement tools.

Virtuality

To measure virtuality, we modified the scale or procedure developed by Rapp et al. (2010) to capture virtuality in our specific context. The original scale included four communication methods (i.e., face-to-face meetings, telephone meetings, email and, other), and participants were asked to indicate the percentage of time spent using each method to conduct work (Rapp et al., 2010). We modified this scale by asking team members to indicate how many times a week (0 days-7 days) they used each communication method to conduct work, as this is more appropriate for our context. Example of one item, *"Generally, when you are at work and communicate with team members and/or colleges, leaders, how many times a week do you use telephone meetings".* The scale demonstrated an acceptable reliability, with a Cronbach's α coefficient of .70.

Exhaustion

Exhaustion was measured with the Oldenburg Burnout Inventory (OBLI) (Demerouti et al., 2010). The instrument includes sixteen items, which eight of them measures exhaustion aspects. Example, such as, *"There are days when I feel tired before I arrive at work."*. The two sub-scales include four positively worded items and four negatively worded items (Demerouti et al., 2010). Participants responded in a 5-point Likert scale ranging from 1= strongly agree, to 5= strongly disagree. For the purposes of this study, only the eight items measuring exhaustion were used, and the eight items measuring disengagement were excluded. The calculated Cronbach's α coefficient for this scale was .88.

Transformational Leadership

Transformational leadership was measured using the Global Transformational Leadership Scale (GLT), which is developed by Carless et al. (2000). The instrument consists of seven items measuring underlying dimensions of transformational leadership which includes vision, staff development, supportive leadership, empowerment, innovation

thinking, led by example, and charisma (Carless et al., 2000). Example of one item is, *"My leader treats staff as individuals, support and encourage their development."*. The participants responded on a 5-point Likert scale ranging from 1= to a very small extent, to 5= to a very large extent. The calculated Cronbach's α coefficient in the present study, was .94.

Job Satisfaction

Job satisfaction was measured using the Faces scale proposed by Kunin (1998). This scale is a single-item scale that comprises drawings of seven facial expressions ('smileys') ranging from a broad smile (e.g., very satisfied) to a deep scowl (e.g., very dissatisfied). The participants were asked to choose the face expression that best reflects their general and overall current feelings about their job.

Leadership Effectiveness

Leadership effectiveness was measured using the Essential Behavioral Leadership Qualities (EBLQ), created by Oyinlade (2006). The instrument includes eighteen behavioral leadership items, which consist of items such as, good listening skills, good communication skills, and motivating. An example of one item is *"My leader has ability to listen carefully, without prejudgment, empathize with the speaker and honestly try to understand the speaker's point of view."*. The participants responded on a 7-point Likert scale ranging from 1= least essential to, 7= most essential. The calculated Cronbach's α coefficient in the present study, was .95.

Analytic Approach

The data analysis was conducted using the statistical software IBM SPSS 29. Firstly, the collected data was checked for errors and cleaned before further analysis. To construct validity a factor analysis was performed, and reliability test each of the scales used in the study was conducted. Furthermore, preliminary analyses were performed. These analyses were performed to gain insight into the data and identify any trend or patterns. The present

study used the Process 4.2 add-on program for SPSS developed by Hayes (Hayes, 2022) for the hypothesized moderated mediation model (see, Figure 1). This program was used to investigate the effects of regression, mediation, moderation and moderated mediation by using Model 7 in the Process program.

Construct Validity

Construct of validity refers to the extent to which a measure assesses the theoretical construct it was designed to measure (Wehner et al., 2020). In the present study an exploratory factor analysis (EFA) on the sample of 90 participants was performed. Principal axis factoring with promax rotation (cutoff at .3) was used to explore the underlying factor structure of a set of items related to transformational leadership, leadership effectiveness, virtuality, exhaustion, and job satisfaction. Kaiser-Meyer-Olkin (KMO= .856) y Bartlett's test of sphericity x^2 = 1917.908 p < .000, this demonstrated that the dataset is suitable for a factor analysis.

Factor loadings were assessed to identify the items that loaded significantly on each factor. Table 1 presents the factor loadings for each item and labels for the five factors extracted. Factor 1, which is labeled transformational leadership, included seven items that measures leadership behaviors consistent with the leadership style, and factor loadings ranging from .689 to .898. Factor 2, which is labeled as leadership effectiveness, had eight out of 18 items removed due to cross-loadings and poor factor loadings, but the ten remaining items had factor loadings ranging from .418 to .893 measuring effective leadership strategies. Factor 3, labeled as virtuality included four items that measured the degree to which work was performed using different communication methods, and factor loadings ranging from .399 to 756. Factor 4, which is labeled as exhaustion had two out of eight items removed, due to poor factor loadings. The six items remaining measured exhaustion related symptoms and with factor loadings ranging from .329 to 879. Lastly, Factor 5, labeled as job satisfaction had

only one item that measured overall satisfaction with an individual's job with a factor loading at .459. The total variance explained by the five factors was 61.6%. Despite some items being excluded from Factor 2 and 4 (i.e., excluded items will not be used in further analysis), the remining items had sufficient factor loadings and contribute to the overall construct validity of the five factors. These results show that the five factors are valid measures of their constructs and could be used to asses transformational leadership, leadership effectiveness, virtuality, exhaustion and job satisfaction.

Table 1

Results of Exploratory Factor Analysis

Items	TL	LE	VT	EX	JS
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
TL1	.742				
TL2	.689				
TL3	.898				
TL4	.766				
TL5	.842				
TL6	.778				
TL7	.782				
EX2 (R)				.486	
EX4 (R)				.371	
EX8 (R)				.561	
EX12 (R)				.771	
EX14				.329	
EX16				.879	
JS1					.459
VT1			.756		
VT2			.697		
VT3			.745		
VT4			.399		
LE4		.574			
LE10		.632			
LE11		.418			
LE12		.893			
LE13		.698			
LE14		.808			
LE15		.754			
LE16		.858			
LE17		.676			
LE18		.819			
Eigenvalue	10.262	3.260	1.540	1.144	1.052
Cumulative variance	36.6%	48.3%	53.8%	57.9%	61.6%

Note. TL= Transformational Leadership, EX= Exhaustion (EX5 and EX10 removed), JS= Job Satisfaction, VT= Virtuality, and LE= Leadership Effectiveness (LE1 to LE10 removed, except LE4). (R)= Reversed coding.

Results

As shown in Table 2, descriptive analyses were performed for each one of the measures to determine the mean, standard deviations and correlations. A positive significative correlation was found between transformational leadership and job satisfaction (r = .525, p < .001) as well between transformational leadership and leadership effectiveness (r = .769, p < .001). Finally, job satisfaction correlated positively with leadership effectiveness (r = 504, p < .001). No other correlation was found between the variables proposed.

Table 2

Descriptive statistics and correlation analysis for virtuality, exhaustion, job satisfaction, leadership effectiveness and, transformational leadership.

Variable	M	*SD*	α	1	2	3	4	5
1. Virtuality	3.90	1.35	.70	-				
2. Exhaustion	3.28	.62	.88	-.034	-			
3. Job Satisfaction	5.48	1.30	-	.013	.103	-		
4. Leadership Effectiveness	3.95	.97	.95	-.037	.118	504**	-	
5. Transformational Leadership	3.70	1.02	.94	.054	.110	.525**	.769**	-

Note. ** p < .001, n= 90

Hypothesis Testing

The first hypothesis (H1) predicts that virtuality is positively related to exhaustion. The results from the simple regression analysis (b= -.009 SE= .015, p= .546, 95% CI [-.038, .020]) showed that H1 was not supported by the data. The second hypothesis (H2) predicts that exhaustion is negatively related to leadership effectiveness. The results from the simple

regression analysis showed (*b*= -4.728, *SE*= 2.468, *p*= .059, 95% CI [-9.633, .179]) that H2 was rejected, but that there was a marginally significant relationship between exhaustion and leadership effectiveness. Furthermore, hypothesis six (H6) predicts that virtuality is negatively related to job satisfaction. The result from the simple regression analysis (*b*= -.006 *SE*= .026, *p*= .817, 95% CI [-.058, .046]) showed a non-significant relationship between virtuality and job satisfaction. Thus, the data reject H6. Hypothesis seven (H7) predicts that job satisfaction is positively related to leadership effectiveness. Results from the simple regression (*b*= 6.870 *SE*= 1.175, *p*= .000, 95% CI [4.534, 9.205]) showed that there is a significant relationship between job satisfaction and leadership effectiveness. Hence, the data support H7. A significant effect of transformational leadership on job satisfaction was (*b*= .097 *SE*= .017, *p*= .000, 95% CI [.063, .131]) was also discovered. Table 3 present the results of H1, H2, H6, and H7.

Table 3

Simple Regression Analysis Results: Testing Hypotheses H1, H2, H6, and H7

Predictor	*b*	*SE*	*p*	95% CI	
				LLCI	ULCI
VT→EX	-.009	.015	.546	-.038	.020
EX→LE	-4.728	2.468	.059	-9.633	.179
VT→JS	-.006	.026	.817	-.058	.046
JS→LE	6.870	1.175	.000	4.534	9.205
TL→JS	.097	.017	.000	.063	.131

Note. CI: confidence interval; LLCI= lower-level confidence interval; ULCI= upper-level confidence interval. VT= virtuality, EX= exhaustion, LE= leadership effectiveness, JS= job satisfaction, and TL= transformational leadership.

The third hypothesis (H3) predicts that exhaustion mediates the relationship between virtuality and leadership effectiveness. Results from the mediation analysis show that exhaustion does not seem to mediate the relationship between virtuality and leadership

effectiveness. These results indicate the indirect effect is non-significant (*estimate*= .042, *SE*= .093 [-.186, .208]), H3 is therefore rejected. Hypothesis eight (H8) predicts that job satisfaction mediates the relationship between virtuality and leadership effectiveness. The results indicate that the indirect effect is non-significant (*estimate*= -.042, *SE*= .222 [-.448, .443]), H8 was not supported by the data. Table 4 presents the results of H3 and H8.

Table 4

Mediation Analysis Results: Testing Hypotheses H3 and H8

Predictor	*Estimate*	*SE*	95% CI	
			LLCI	ULCI
VT→ EX→LE	.042	.093	-.186	.208
VT→JS→LE	-.042	.222	-.448	.443

Note. CI: confidence interval; LLCI= lower-level confidence interval; ULCI= upper-level confidence interval. VT= virtuality, EX= exhaustion, LE= leadership effectiveness, and JS= job satisfaction.

The fourth hypothesis (H4) predicts that transformational leadership moderates the positive relationship between virtuality and exhaustion. A simple moderation analysis was conducted to test this hypothesis, which involved examine the interaction effect between virtuality and transformational leadership on exhaustion. The analysis results showed the interaction term between virtuality and transformational leadership (*b*= .003, *SE* =.002, *p*= .129, 95% CI [-.001, .007]), thus, transformational leadership did not significantly moderate the positive relationship between virtuality and exhaustion. Therefore, the results do not support H4. The ninth hypothesis (H9) predicts that transformational leadership moderated the indirect negative relationship between virtuality and job satisfaction. A simple moderation analysis was conducted to test this hypothesis, which involved examine the interaction effect between virtuality and transformational leadership on job satisfaction. The

results of the analysis showed the interaction term between virtuality and transformational leadership (*b*= .002, *SE* =.004, *p*= .661, 95% CI [-.006, 008.]), thus, transformational leadership did not significantly moderate the negative relationship between virtuality and job satisfaction. Thus, H9 is not supported by the data. Results are presented in Table 5 for H4 and H9.

Table 5

Moderation Analysis Results: Testing Hypotheses H4 and H9

Predictor	*b*	*SE*	*p*	95% CI	
				LLCI	ULCI
VT x TL→EX	.003	.002	.129	-.001	.007
VT x TL→JS	.002	.004	.661	-.006	.008

Note. CI: confidence interval; LLCI= lower-level confidence interval; ULCI= upper-level confidence interval. VT= virtuality, EX= exhaustion, JS= job satisfaction, and TL= transformational leadership.

Hypothesis five (H5) predicts that virtuality has a negative indirect effect on leadership effectiveness via exhaustion and this relationship is moderated by transformational leadership. The index of moderated mediation was non-significant (*index*= .014, *SE* =.017, 95 % CI [-.048, .021]). Specifically, the effects sizes of virtuality on exhaustion were not significantly different at high level of transformational leadership (1 SD above mean; *estimate*= .057, *SE*=.101 [-.309, .100]), at medium level of transformational leadership (mean; *estimate*= .042, *SE*= .093 [-.186, .208]), or at low level of transformational leadership (1 SD below mean; *estimate*= .140, *SE*=.188 [-.286, .486]). A zero was also detected within the CI, indicating a non-significant moderation effect on the indirect effect of exhaustion on virtuality. Therefore, H5 is not supported. Lastly, the tenth hypothesis (H10) predicts that transformational leadership moderates the indirect negative relationship between virtuality and job satisfaction. The index of moderated mediation was non-significant (*index*= .011, *SE*

=.044, 95 % CI [-.092, .077]). Moreover, the effects sizes of virtuality on job satisfaction were not significantly different at high levels of transformational leadership (1 SD above mean; *estimate*= .032, *SE*=.248 [-.461, .513]), at middle levels of transformational leadership (mean; *estimate*= .042, *SE*= .222 [-.448, .443]), or at low levels of transformational leadership (1 SD below mean; *estimate*=-.116, *SE*=.483 [-.844, 1.001]). A zero was also detected within the CI, indicating a non-significant moderation effect on the indirect effect of job satisfaction on virtuality. H10 is not supported by the data. Table 6 present results for H5 and H10.

Table 6

Moderation Mediation Analysis Results: Testing Hypotheses H5 and H10

Predictor	*Index*	*SE*	95% CI	
			LLCI	ULCI
VT x TL→EX	.014	.017	-.048	.021
VT x TL→JS	.011	.044	-.092	.077
Conditional Indirect Effects				
Level of TL	*Effect*	*BootSE*	95% CI	
			BootLLCI	BootULCI
VT x TL→EX				
High	-.057	.101	-.309	.100
Medium	.042	.093	-.186	.208
Low	.140	.188	-.286	.486
VT x TL→JS				
High	.032	.248	-.461	.513
Medium	-.042	.222	-.448	.443
Low	-.116	.483	-.844	1.001

Note. CI: confidence interval; LLCI= lower-level confidence interval; ULCI= upper-level confidence interval. VT= virtuality, EX= exhaustion, JS= job satisfaction, and TL= transformational leadership.

Discussion

Virtuality, Leadership Effectiveness, and Exhaustion: A Mediation Approach

While some studies suggest that virtuality is positively related to exhaustion (Chamakiotis et al., 2021; Nesher- Shoshan & Wehrt, 2022; Ragu-Nathan et al., 2008), this study did not find a significant positive relationship between virtuality and exhaustion. Therefore, there is not supporting evidence for this hypothesis. Prior research, such as a study by Chamakiotis et al. (2021) has showed that virtuality in the workplace could lead to work over-engagement, leading to higher levels of fatigue. On the other hand, Gajendran and Harrison (2007) found that virtual teams were associated with lower levels of work-family conflict and improved work-life balance, which could potentially reduce exhaustion levels. Furthermore, a study by Bentley et al. (2016) found that virtuality in work contexts was associated with higher levels of stress, but that this could be reduced with social support from leaders and colleagues. These findings highlight the relationship between virtuality and exhaustion could be complex and may include several factors such as, how the virtual team is structured and managed, as well as individual factors.

However, a possible explanation for our insignificant finding could be that our approach differs from previous research. This may be due to the focus on measuring the general feeling of exhaustion in virtual settings, rather than specific stressors related to virtual work, such as, zoom fatigue (Nesher- Shoshan & Wehrt, 2022) or technostress (Ragu-Nathan et al., 2008). Our study took a more holistic approach to understand how virtual teams may impact employee well-being. By measuring the general feeling of emotional exhaustion (Demerouti et al., 2010), we aimed to capture a broader range of factors that could contribute to an employee feeling drained after engaging in virtual work. While this approach may have limited our findings due to lack of specificity, inability to distinguish between causes of exhaustion, such as work demands and personal factors, and since our approach differs from prior research, our findings may be less directly comparable to previous research. However, we hoped that our findings would provide a new perspective on this topic, but to our surprise

it did not. Furthermore, another possible explanation to the findings could be the small sample size of the study, in contrast to prior studies (Dolce et al., 2020; Ragu-Nathan et al., 2008). A small sample size may not provide enough information to detect significant differences or relationships between variables. This could lead to inclusive results, false conclusions or missed opportunities to identify important findings. Overall, our study contributes to the ongoing discussion on the effects of virtuality in work environments on employee well-being and highlights the complexity of this relationship.

Furthermore, we found a marginally significant negative relationship between exhaustion and leadership effectiveness. Thus, the hypothesis was not supported, although the statistically significant ($p < .05$) of the relationship was not given, the direction of it was consistent with prior research. Other studies have observed the negative relationship between exhaustion and other factor that may impact leadership effectiveness, such as negative work environments (Yavas et al., 2013), increased turnover rates (Moore, 2000), and decreased productivity (Tarafdar et al., 2007). Nonetheless, it is crucial to identify and address exhaustion in the workplace virtual or face-to-face since it could have an impact on leadership effectiveness. Findings by other scholars, such as Uhl-Bien et al. (2014), indicate that leadership effectiveness hinges on the contributions of followers. Thus, exhausted followers could be seen as ineffective contributors as their motivation is likely decreased, and may have an impact on the productivity and engagement (van Dierendonck et al., 2004). Therefore, several studies report that exhaustion may negatively affect a leader's effectiveness.

A possible explanation for our seemingly contradictory findings, may be due to the fact that a majority of our small sample size, was found to be connected to health, education or manufacturing occupation. It is a possibility that the demands and stressors present in these

industries could differing effects on leadership effectiveness, which may indicate that the relationship between exhaustion and leadership may vary depending on the type of organization (Day et al., 2014). This could indicate that it is important to consider specific context and industry, as findings may not be applicable to others, and larger sample sizes that are more representative of different industries and organization may provide a more accurate understanding of this relationship. While prior research has suggested that there is a negative relationship between exhaustion and leadership effectiveness. Therefore, by continuing to examine this relationship in larger sample sizes across industries it could provide a more comprehensive understanding, which may offer organizations with valuable insight and recommendations to achieve organizational goals while creating healthy work environments.

Furthermore, the study examined if exhaustion mediates the relationship between virtuality and leadership effectiveness. The study did not find supporting evidence for this hypothesis. However, it is important to note that the relationship between virtuality and leadership effectiveness is multifaceted, and may be influenced by several factors beyond exhaustion (Bell & Kozlowski, 2002). Such as, Dhar and Mishra (2001) contend that virtual team's reliance on information and communication technologies leads to increased exhaustion and decreased leadership effectiveness in virtual teams. Therefore, this study could indicate that exhaustion mediates this relationship. Even so, our study's result does not correlate with the previous findings and there may be some possible explanations for the conflicting findings. The relationship between virtuality, exhaustion and leadership effectiveness may depend on other additional factors that were not measures in our study. For instance, job demands and resources (Sardeshmukh et al., 2012) or individual characteristics (Dima et al., 2019), and future research could explore these factors in more detail to better understand the relationship between virtuality, exhaustion and leadership effectiveness.

Despite the lack of evidence in our study, it is still important for organizations to consider the impact virtuality has on leadership effectiveness, due to the increased application. Virtuality in work context may pose unique challenges for leadership, such as reduced physical interaction and difficulties in collaboration (Nordbäck & Espinosa, 2019). Further, exhaustion could have a negative impact on leadership effectiveness due to unmotivated employees (van Dierendonck et al., 2004) as well as other work negative outcomes. Our study contributes to the ongoing discussion on the challenges of leadership in virtual teams, although exhaustion may not mediate the relationship between virtuality and leadership effectiveness, organizations should still consider unique challenges of virtual teams and take measures to promote effective leadership (Hill et al., 2022).

Interplay Between Transformational Leadership and its Moderated Mediation

The present study aimed to investigate the moderation effect of transformational leadership on the indirect positive relationship between virtuality and exhaustion. While prior research has suggested that transformational leadership could potentially reduce the negative effects of virtuality on exhaustion, our study found no evidence in supporting the above mentioned. Chamakiotis et al. (2021) suggests that transformational leadership could help mitigate exhaustion among employees, as this leadership style promotes a positive work environment. Similarly, Breevaart et al. (2014) argue that transformational leadership reduce the risk of exhaustion by creating a supportive work climate. On the other hand, Stein et al. (2021) suggest that the direct effects of transformational leadership on exhaustion are not the same for everyone and depend on factors such as psychological detachment (e.g., ability to mentally disconnect work), which could indicate that the relationship between leadership and employee well-being is intricate. Previous research indicates that transformational leadership

may moderate the indirect positive relationship between exhaustion and virtuality. However, it should be noted that the precise nature of this may not be entirely clear-cut.

Despite the lack of evidence of support for this hypothesis, one possible explanation is that transformational leadership as a construct has potential limitations. Yukl (1999) has pointed out several weaknesses in this leadership style which may have contributed to the lack of evidence. One of the main criticisms is the ambiguity of the concept it uses. For example, the term transformational is often used without a clear definition of what the concept entail. This could lead to confusion and make it difficult to operationalize and measure and the study used self-report measures which can limit the accuracy of the data. Nonetheless, the study underscores the need future research thoroughly investigate these factors and explore alternative leadership styles in the context of the relationship between virtuality, exhaustion, and leadership effectiveness. Further, it suggests that studies should be conducted in workplaces that experience adverse outcomes from virtual work to determine whether transformational leadership could have any impact in such settings.

Moreover, the study investigated if virtuality had a negative indirect effect on leadership effectiveness via exhaustion, and that this relationship is moderated by transformational leadership. This study developed this hypothesis by analyzing and combining information from various scholarly sources. According to Dias-Oliveira et al. (2023), transformational leadership may reduce exhaustion by establishing healthy work environments through motivation and inspiration. Therefore, from prior research findings, one would presume that virtuality negatively and indirectly impacts leadership effectiveness through the lens of exhaustion and with the moderation of transformational leadership. However, the study outcomes were not statistically significant. Thus, this study maintains that there is not enough evidence to contend for virtuality’s negative and indirect impact on

leadership effectiveness through exhaustion while under transformational leadership's moderation, and our study suggests that there may be other factors at play in the relationship between virtuality and leadership effectiveness. Thus, organizations should consider the unique challenges and advantages presented in virtual work and develop strategies to facilitate effective leadership in this context.

Virtuality, Leadership Effectiveness, and Job Satisfaction: A Mediation Approach

Although, research suggest that virtuality is negatively related to job satisfaction. This study did not find support for this hypothesis. Prior research, such as Ludivine et al. (2022) report that virtuality may lead to an overload of information, which in turn, can lead to reduced job satisfaction following increased stress from this experience. Furthermore, McDaniel et al. (2021) reveled that virtuality, or the usage of digital tools disrupt interpersonal communication, leading to lower levels of job satisfaction. On the other hand, there are studies arguing the contrary and suggest a positive relationship between virtuality and job satisfaction. Working in virtual settings may provide flexibility, which may affect job satisfaction (Townsend et al., 1998) and increase employees networks in the organization, which may provide more opportunities (Martins et al., 2004). These contradicting studies do imply that there may be several factors that can have an impact on the relationship between virtuality and job satisfaction.

However, a possible explanation for our insignificant finding could be our measurement tool for job satisfaction. Our study used a one-item scale to measure job satisfaction (Kunin, 1998). Using a single-item measure of job satisfaction may limit the understanding of the construct. Contrary, to other studies that as used multi-item scales to measure complex constructs like job satisfaction (Côté et al., 2021; Golden & Veiga, 2008). In addition, to the small sample size, our methodology differs in that we examined the overall

feelings of job satisfaction, which may allow a more comprehensive understanding of relationship between virtuality and job satisfaction. Overall, the study highlights the importance of considering the impact of virtuality and job satisfaction and the need to further research to understand the densities of this relationship.

We found a significant positive relationship between job satisfaction and leadership effectiveness. This was the only hypothesis supported by the findings and in line with previous studies. Scholars (Madlock, 2008; Podsakoff et al., 1996) state that effective leadership determine the low or high level of job satisfaction among employees. The study developed a hypothesis based on relevant literature within the research field. However, to strengthen the findings, further primary research is necessary as the study is faced certain limitations related to methodology and sample size. The acceptance of this hypothesis is consistent with prior studies and may add to the existing literature on the topic.

Furthermore, our study did not find supporting evidence that job satisfaction mediates the relationship between virtuality and leadership effectiveness. The hypothesis follows the argument by Piccolo et al. (2012) that job satisfaction have a crucial impact on leadership effectiveness, and could have a mediating role on the relationship between virtuality and leadership effectiveness. Furthermore, it should be noted that achieving employee job satisfaction can be a simple task, but sustaining it can be more challenging (Judge et al., 2017), this may especially, be true in a virtual work context, where there is less open communication and/or trust issues (Sarker et al., 2011). It is also important to note, that job satisfaction can be looked upon as a continuum (Judge et al., 2017) and that job satisfaction can vary depending on the situation or individual, which in turn could make it more difficult to measure.

Despite the lack of evidence for the mediating role of job satisfaction, on the relationship between virtuality and leadership effectiveness, there could be several limitations that may have altered the results. Firstly, as mentioned there is still a debate concerning the definition of virtual teams (Bell & Kozlowski, 2002; Maznevski & Chudoba, 2000) and the measurement of virtuality in work context can vary across studies. This may have an impact on generalizability of the findings and the relatively small sample size could also contribute to the results. In our study, virtuality was measured how many times a week the participants used different digital tools to communicate and collaborate (Rapp et al., 2010), and this differs from other studies (Miglioretti et al., 2021). This could make it more difficult to achieve consistent findings due to the differences in methodology, and future research could investigate different ways to measure virtuality to see if it affects the results in larger sample sizes. Despite the fact that our study found no evidence to support the mediating role of job satisfaction in the relationship between virtuality and leadership effectiveness, it is still important to address the unique challenges of virtuality in work contexts and how it may impact leadership effectiveness (Hill et al., 2022; Nordbäck & Espinosa, 2019).

Moderating effect of Transformational Leadership and Moderated Mediation

The present study aimed to investigate the moderation effect of transformational leadership on the indirect positive relationship between virtuality and job satisfaction. While prior research has suggested that transformational leadership could potentially reduce the negative effects of virtuality on exhaustion, this study found no evidence in supporting this. Prior research, such as, Kelloway et al. (2003) report that transformational leadership in virtual settings may have a direct effect on job satisfaction. In virtual teams where challenges may emerge due to coordination issues and lack of constructive feedback to each individual (Stratone & Vătămănescu, 2019), transformational leaders often provide attention to each

individual to optimize opportunities to achieve organizational goals (Lai et al., 2020). Furthermore, Fisk and Friesen (2012) a leaders articulate communication on their feelings affects employee mood and job satisfaction. Therefore, transformational leadership dynamics appear to have a moderating effect on the indirect negative relationship between job satisfaction and virtuality. However, contradicting to prior research, the study found no moderation effect of transformational leadership on the negative relationship between job satisfaction and virtuality. There may be some limitations so which the results were not supported. There could be a possibility that the present study did not adequately control for other factors that may influence the relationship between virtuality and job satisfaction. Furthermore, As mentioned previously in the study Yukl (1999) have argued that transformational leadership and its constructs could be difficult to grasp. Overall, the present study highlights the importance of to consider and investigate several leadership styles that could enhance job satisfaction among employees in virtual work settings, which in turn may have a positive effect on leadership effectiveness.

Finally, the study investigated if virtuality had a negative indirect effect on leadership effectiveness via job satisfaction, and that this relationship is moderated by transformational leadership. This study developed this hypothesis by analyzing and combining information from various scholarly sources. Mysirlaki and Paraskeva (2020) showed that a leader's emotional intelligence, mediated by transformational leadership qualities, such as, idealized influence, inspirational motivation, intellectual stimulation, and individual consideration (Breevaart et al., 2014), had a direct effect on teams' motivation and effectiveness. This suggest that transformational leadership may be a critical and more specific aspect of leadership relating to practicality and virtuality. Therefore, from prior research findings, one would presume that virtuality negatively and indirectly impacts leadership effectiveness through the lens of job satisfaction and with the moderation of transformational leadership.

The study returned findings from the moderated mediation analysis did not find supporting evidence for the hypothesis. Thus, this study maintains that there is not enough evidence to contend for virtuality's negative and indirect impact on leadership effectiveness through exhaustion while under transformational leadership's moderation, and our study suggests that there may be other factors at play in the relationship between virtuality and leadership effectiveness, and that there is a need for further research.

Limitations and Future Directions

Our study, has several limitations that should be acknowledged. Firstly, a more suitable methodological approach for examining our research model may have been a longitudinal study. Such research method allows for a more contextual and nuanced understanding of patterns over time. They are however more time costly and demand a high level of continued effort from the participants that is hard to insure is maintained. Initially, we had planned to conduct a three-wave questionnaire study where participants would answer three questionnaires over a period of two weeks. However, due to a low response rate among the targeted population, the response rates significantly weakened with each wave. Consequently, we ended up with a relatively small sample size of 90 participants, which may have reduced our ability to correctly reject the null hypothesis and find true effects. This suggests that true effects could gone undetected in our study. Additionally, our small sample size makes it difficult to draw any generalized conclusions about the employed population.

Secondly, it is important to note that in this study, virtual teams were viewed as existing on a continuum, which means that participants could work in a physical environment some days of the week and in a virtual environment on others. It is possible that the results of the study may have been different if the focus had been solely on individuals working in a fully virtual environment, rather than individuals who can choose when to work virtual.

Though, a work force that consistent of this was not obtainable by us for this study. Therefore, future research could investigate this potential limitation and consider it as an inclusion criterion when exploring the complex relationship between virtual teams and leadership effectiveness. By doing so, a more nuanced understanding of the impact of virtuality on leadership effectiveness could be achieved.

Thirdly, the measurement tools used in the study had limitations that should be addressed in future research. Exhaustion was measured with a modified version of the OLBI scale (Demerouti et al., 2010), where two items were excluded from further analysis due to poor factor loading results from the exploratory factor analysis. Furthermore, leadership effectiveness was measured with the EBLQ scale (Oyinlade, 2006), where eight items were excluded due to poor factor loadings and cross-loadings. Future research may explore alternative measurement tools or refine existing ones to address these limitations.

Fourthly, our study may have a limitation due to reverse causality between leadership effectiveness, exhaustion, and job satisfaction. It is possible that employees who are experiencing high levels of exhaustion or low levels of job satisfaction may perceive their leaders as less effective than they would if they were not experiencing these negative outcomes. This could lead to reverse-causal relationship between leadership effectiveness and the outcomes we measured. Future research could address this limitation by collecting longitudinal data. Additionally, researchers could consider including measures of other relevant factors that may influence the relationship between leadership effectiveness, exhaustion, and job satisfaction.

Finally, the questionnaire is based solely based on self-report and could be subject to potential bias. Common method bias often occurs when the same method is used to measure both the independent and dependent variables (Podsakoff et al., 2012). All variables of

interest in this study were measured in the same questionnaire, so it could be that the common method variance as inflated the relationship between measured variables and provided our study with less reliable and valid results. Future research could explore these limitations using multiple methods of data collection and exploring alternative measurement tools to further explore the complex relationship between virtuality and leadership effectiveness.

Practical implications

The modern workplace is in constant development, and the practical implication that should follow is that this study may provide valuable insight into the relationship between virtual teams and leadership effectiveness, highlighting the importance of considering mediating and moderating factors in virtual team environments, which could help identifying potential strategies and interventions for enhancing leadership effectiveness in virtual teams. Overall, there is still a need to prioritize the well-being and job satisfaction in organizations to ensure and uphold organizational goals.

Conclusion

This study aimed to explore the impact of virtual teams on leadership effectiveness by investigating the mediating factors of exhaustion and job satisfaction, as well as the moderating influence of transformational leadership. The primary objective was to assess whether transformational leadership could alleviate the negative effects of exhaustion, improve job satisfaction, and ultimately lead to more effective leadership in virtual teams. Despite previous research suggesting a relationship between virtuality and leadership effectiveness through exhaustion and job satisfaction, our findings did not support these hypotheses. As a result, transformational leadership also did not play a moderating role in

these relationships. However, our results did confirm the positive correlation between job satisfaction and leadership effectiveness. Although our study had some limitations, it offers valuable insights into the complex dynamics of virtual teams and the need for further exploration of this area. As the modern workplace continues to evolve, future research should prioritize investigating the effects of virtuality on leadership effectiveness, including the role of different leadership styles and strategies. This will help organizations to develop more effective leadership practices and optimize the organizational outcomes of virtual teams.

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Appendix A- Questionnaire

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Velkommen til prosjektet "Hvordan Arbeidsforhold Påvirker Arbeidstakere"

Takk for at du deltar!

Prosjektets mål
Dette forskningsprosjektet ønsker å undersøke hvordan arbeidstakere påvirkes av de arbeidsforholdene de opplever.

Hvem er ansvarlig for forskningsprosjektet?
Førsteamanuensis Dr. Dana Unger fra Institutt for Psykologi ved UiT Norges arktiske universitet leder prosjektet. Lenita Rødfjell og Thea Victoria Moe går masterstudiet i psykologi og skriver sin masteroppgave om temaet.

Hvorfor er du blitt bedt om å delta?
Du er invitert til å delta i denne undersøkelsen fordi du er i 50-100 % jobb, er mellom 18 og 65 år, og bor i Norge. Prosjektet retter seg mot denne gruppen, i Norge.

Hva betyr deltakelse for deg?
Dersom du velger å delta i dette prosjektet betyr det at du godtar å fylle ut 3 spørreskjemaer på nett. Det første spørreskjemaet vil ta rundt 10-15 minutter og vil samle demografisk informasjon om deg. I løpet av de neste to ukene vil du motta to korte spørreskjemaer (med én ukers mellomrom) via e-post. Du vil bli stilt spørsmål angående din opplevelse knyttet til arbeidsforhold, din arbeidsdag, velvære, og om andre hverdagsfaktorer. Svarene dine vil bli registrert via nettplattformen SoSciSurvey som beskytter dataene dine i tråd med GDPR og via fullstendig SSL-kryptert dataoverføring. Datainnsamlingen vil bli analysert av prosjekt-teamet. Etter at analyse er fullført, vil all data bli slettet fra SoSciSurvey.

Hvordan drar du nytte av denne forskningen?
Om du ønsker vil du motta resultatene av studien og dersom du fullfører alle 3 spørreskjemaene vil du være med i trekningen på 4 gavekort (DittGavekort) med en verdi på 500 kr. per stykk.

Deltagelsen er frivillig og anonym
Deltagelsen i dette prosjektet er fullstendig frivillig og anonym. Hvis du bestemmer deg for å delta og fylle ut skjemaet, så har du alltid rett til å stoppe. Ingen personopplysninger (for eksempel navn, telefonnummer) vil bli samlet inn med spørreskjemaet eller tilordnet dine spørreskjemadata. Leder av prosjektet vil være den eneste i forskningsteamet som har tilgang til demografiske data. Du er anonym dersom du deltar i denne studien. Anonymiserte data vil bli gjort tilgjengelig for andre forskere.

Hvor kan jeg finne ut mer?
Hvis du har spørsmål knyttet til prosjektet, vennligst kontakt:

Dr. Dana Unger
Førsteamanuensis
Institutt for Psykologi
UiT Norges Arktiske Universitet
dana.unger@uit.no

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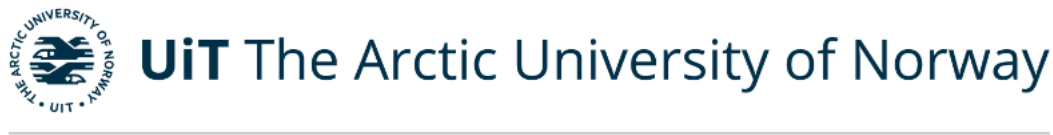
Vil du delta i studien ¨hvordan arbeidstakere påvirkes av arbeidsforhold¨?

	Ja	Nei
Jeg bekrefter at jeg har mottatt og forstått informasjonen om dette forskningsprosjektet om "hvordan arbeidstakere påvirkes av arbeidsforhold"", og har hatt anledning til å stille spørsmål.	○	○
Jeg bekrefter at jeg deltar frivillig i denne studien og kan trekke meg fra studien når som helst uten å oppgi årsak.	○	○
Jeg godtar at dataene mine blir samlet inn som en del av denne studien og vil bli registrert, lagret og behandlet anonymt.	○	○
Jeg godtar at anonymiserte data vil bli gjort tilgjengelig for andre forskere.	○	○
Jeg godtar at e-posten min blir lagret, slik at jeg skal kunne bli kontaktet (f.eks. bli tilsendt lenkene til spørreskjemaene) som en del av studien.	○	○
Jeg vil gjerne delta i studien "hvordan arbeidstakere påvirkes av arbeidsforhold".	○	○

1. Er du mellom 18 og 65 år?

- ○ Ja
- ○ Nei



Hvor bor du?

- ○ Norge
- ○ I et annet land, det er

Hva er din status?

Kun ett svar mulig.

- ○ Øverste leder
- ○ Ansatt med lederansvar
- ○ Ansatt uten lederansvar
- ○ Selvstendig næringsdrivende
- ○ Lærling
- ○ Student
- ○ Arbeidsledig
- ○ Annet, det er:

Hvilken stillingsprosent har du?

- ○ Heltid (100%)
- ○ Deltid (75-99%)
- ○ Deltid (50-74%)
- ○ Deltid (<50%)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Takk for at du deltar! Du er kvalifisert til å delta i studien. Vennligst oppgi din e-postadresse nedenfor. Hvis du ikke finner en e-post fra oss i innboksen din, sjekk søppelpostmappen din.

Vennligst oppgi e-postadressen din.

E-postadressen din:	
E-post CC:	


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Takk for at du fylte ut dette spørreskjemaet!

Svarene dine ble overført.

Hvis du møter problemer, ikke nøl med å kontakte oss: dana.unger@uit.no

Ha en fin dag!

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Velkommen!

Tusen takk for at du deltar.

Prosjektets mål
Dette forskningsprosjektet ønsker å undersøke hvordan arbeidstakere påvirkes av de arbeidsforholdene de opplever.

Hvem er ansvarlig for forskningsprosjektet?
Førsteamanuensis Dr. Dana Unger fra Institutt for psykologi ved UIT Norges arktiske universitet leder prosjektet. Lenita Benedicte Rødfjell og Thea Victoria Moe skriver sin masteroppgave under deres veiledning.

Hva skjer nå?

Denne spørreundersøkelsen vil ta om lag 10 minutter å gjennomføre. Spørsmålene vil omhandle dine arbeidsforhold, samt hvordan du opplever hverdagen din. Denne spørreundersøkelser har tre deler, der du nå besvarer første del av spørreundersøkelsen og vil ved et senere tidspunkt få tilsendt en link til den andre delen av spørreundersøkelsen. Dette gjelder også for den tredje og siste delen spørreundersøkelsen.

Deltagelsen er 100% frivillig og anonym
Deltagelsen i dette prosjektet er fullstendig frivillig og anonym. Hvis du bestemmer deg for å delta og fylle ut skjemaet, så har du alltid rett til å trekke deg. Ingen personlig informasjon som kan identifisere deg vil bli samlet inn. Du er fullstendig anonym dersom du deltar i denne studien. Anonymiserte data vil bli gjort åpent tilgjengelig for andre forskere.

Hvor kan du finne ut mer?
Hvis du har spørsmål knyttet til prosjektet, vennligst kontakt:

Førsteamanuensis Dr. Dana Unger,
Prosjektleder

Institutt for Psykologi
UiT Norges arktiske universitet
Email: dana.unger@uit.no
Telefon: +47 77646557
Kontor (Campus Tromsø): TEO-H5 5.660

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Vil du delta i studien "hvordan arbeidstakere påvirkes av arbeidsforhold"?

	Ja	Nei
Jeg bekrefter at jeg har mottatt og forstått informasjonen om dette forskningsprosjektet om "hvordan arbeidstakere påvirkes av arbeidsforhold"", og har hatt anledning til å stille spørsmål.	○	○
Jeg bekrefter at jeg deltar frivillig i denne studien og kan trekke meg fra studien når som helst uten å oppgi årsak.	○	○
Jeg godtar at dataene mine blir samlet inn som en del av denne studien og vil bli registrert, lagret og behandlet anonymt.	○	○
Jeg godtar at anonymiserte data vil bli gjort tilgjengelig for andre forskere.	○	○
Jeg godtar at e-posten min blir lagret, slik at jeg skal kunne bli kontaktet (f.eks. bli tilsendt lenkene til spørreskjemaene) som en del av studien.	○	○
Jeg vil gjerne delta i studien "hvordan arbeidstakere påvirkes av arbeidsforhold".	○	○

Du vil nå få spørsmål som handler om arbeidet ditt.

Om du har noen spørsmål, vennligst kontakt oss: dana.unger@uit.no

Hvor mange år har du jobbet? Hvor mange år har du jobbet i din nåværende organisasjon? (i år)

Totalt har jeg jobbet i	____ år	☐ ingen svar
Jeg har jobbet i min nåværende organisasjon i	____ år	☐ ingen svar

Indiker hvilken sektor du jobber i.

- ○ Finans/forsikring
- ○ Konstruksjon
- ○ Salg og engroshandel
- ○ Energi og vannforsyning
- ○ Utdanning og undervisning
- ○ Hotel og restaurant
- ○ Helse
- ○ Håndverk
- ○ IT og kommunikasjon
- ○ Kunst og underholdning
- ○ Jordbruk og skogbruk
- ○ Offentlig administrasjon
- ○ Industri og produksjon
- ○ Trafikk
- ○ Forskning
- ○ Annet: _____

- ○ ingen svar

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Hvor mange timer i uken jobber du i gjennomsnitt?

_____ *timer* ☐ ingen svar

Jobber du skiftarbeid?

○ Ja
○ Nei

○ ingen svar

Har du selv mulighet til å bestemme når du jobber?

○ Ja
○ Nei

○ ingen svar

Har du selv mulighet til å bestemme når du avslutter arbeidsdagen din?

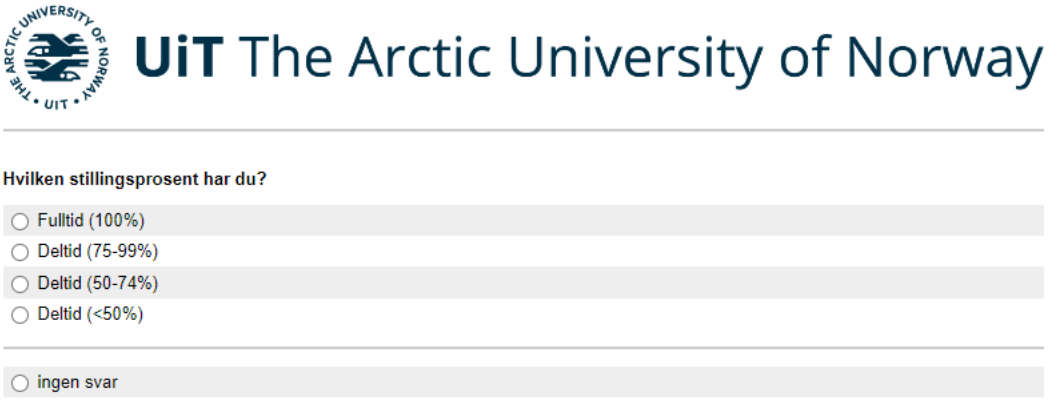
○ Ja
○ Nei

○ ingen svar

Har du selv mulighet til å bestemme når du skal ha pauser i arbeidsdagen?

○ Ja
◉ Nei

○ ingen svar



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Hvilken stillingsprosent har du?

○ Fulltid (100%)
○ Deltid (75-99%)
○ Deltid (50-74%)
○ Deltid (<50%)

○ ingen svar

Hva er din status?

Kun ett svar mulig.

- ○ Øverste leder
- ○ Ansatt med lederansvar
- ○ Ansatt uten lederansvar
- ○ Selvstendig næringsdrivende
- ○ Lærling
- ○ Student
- ○ Arbeidsledig
- ○ Annet, det er: _____

Hvor mange ansatte rapporterer til deg direkte?

Vennligst før inn antall ansatte som rapporterer til deg. Har du ikke en lederrolle, vennligst sett inn tallet 0.

_____ ansatt/e | ☐ ingen svar

Nå vil det følge en rekke spørsmål som omhandler dine arbeidsforhold og lederskap ved din arbeidsplass.

Om du har noen spørsmål, vennligst kontakt oss: dana.unger@uit.no

Generelt, når du er på jobb og kommuniserer med ansatte, ledere, medarbeidere og/eller team medlemmer, hvor mange ganger i uker bruker du:

	0 dager	1	2	3	4	5	6	7 dager	Ingen svar
... fysiske kontakt (f.eks. være tilstede i samme bygg, samtaler osv.)	○	○	○	○	○	○	○	○	○
... møter via telefon (f.eks. telefon konferanse)	○	○	○	○	○	○	○	○	○
... e-mail	○	○	○	○	○	○	○	○	○
... andre digitale verktøy (f.eks. videokonferanse)	○	○	○	○	○	○	○	○	○
... andre, det er: _____	○	○	○	○	○	○	○	○	○

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Videre følger en rekke utsagn om din leder. Vennligst les oppgi hvor godt hvert utsagn passer for din leder.

Lederen min ...	Veldig uenig				Veldig enig	ingen svar
... kommuniserer klart og har en positiv innstilling for fremtiden.	○	○	○	○	○	○
... behandler personale som individer, støtter og oppfordrer til utvikling.	○	○	○	○	○	○
... oppmuntrer og anerkjenner personale.	○	○	○	○	○	○
... fremmer tillit, engasjement og samarbeid mellom gruppe/team medlemmer.	○	○	○	○	○	○
... oppfordrer til å tenke på problemer på en ny måte og stille spørsmål ved antagelser.	○	○	○	○	○	○
... er tydelig på sine verdier og praktiserer det han/hun tror på.	○	○	○	○	○	○
... skaper stolthet og respekt hos andre og inspirerer meg ved å være svært kompetent	○	○	○	○	○	○

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Videre følger en rekke utsagn om din leder. Vennligst les hvert utsagn og bestem hvor godt hvert utsagn passer for lederen din.

Lederen min...	Veldig uenig			Veldig enig	ingen svar
... har evnen til å lytte, uten fordommer, og prøver å forstå andres synspunkt.	○	○	○	○	○	○
... har evnen til å kommunisere ideer og intensjoner til andre tydelig.	○	○	○	○	○	○
... ber om og bruker andres innspill i beslutningsprosesser.	○	○	○	○	○	○
... er motiverende og bidrar til å skape et arbeidsmiljø der folk er glade og ivrige etter å jobbe for å oppnå nødvendige mål.	○	○	○	○	○	○
... er ærlig, pålitelig og overholder en høy standard for rett og galt.	○	○	○	○	○	○
... har god kunnskap om organisasjonen.	○	○	○	○	○	○
... er humoristisk, vennlig, høflig og behandler mennesker med respekt og verdighet.	○	○	○	○	○	○
... har evnen til å forbedre gode økonomiske budsjetter og ha et klokt forbruk.	○	○	○	○	○	○
... har kunnskap om lokale og statlige lover.	○	○	○	○	○	○

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Videre følger en rekke utsagn om din leder. Vennligst les hvert utsagn og bestem hvor godt hvert utsagn passer for din leder.

Lederen min ...	Veldig uenig				Veldig enig	ingen svar
... har ideer og mål for fremtiden og har evnen til å lage langsiktige planer for å nå mål.	○	○	○	○	○	○
... har evnen til å dele ansvar og gi tilstrekkelig autoritet til ansatte til å utføre oppgaver.	○	○	○	○	○	○
... har evnen til å veilede og støtte aktiviteter til ansatte og for å hjelpe ansatte til å utvikle seg og lykkes med sine mål.	○	○	○	○	○	○
... behandler mennesker likt og fordeler ressurser jevnt mellom ulike valgkretser uten favorisering.	○	○	○	○	○	○
... har viljen til å ta tøffe og upopulære valg, men nødvendige beslutninger og står i det.	○	○	○	○	○	○
... er åpen for nye måter å gjøre ting på.	○	○	○	○	○	○
... har en forpliktelse til å til å tilbringe lange timer og utholdenhet til å oppnå mål effektivt.	○	○	○	○	○	○
... har evnen til å etablere prioriteringer mellom oppgaver og sørge for at de viktigste oppgavene utføres først.	○	○	○	○	○	○
... er interessert og har evnen til å løse en rekke problemer og flink til å hjelpe andre å løse problemer.	○	○	○	○	○	○

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For de siste 7 dagene, hvor godt stemmer de følgende utsagnene med arbeidet ditt?

	Veldig uenig						Veldig enig	ingen svar
Jeg synes jobben min er kompleks/avansert	○	○	○	○	○	○	○	○
Jobben min er mentalt krevende	○	○	○	○	○	○	○	○
Jobben min krever mye tankearbeid og problemløsning	○	○	○	○	○	○	○	○
Jobben min er krevende	○	○	○	○	○	○	○	○

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Vennligst ranger følgende spørsmål på en skala fra 1 = svært sjelden eller aldri til 5 = svært ofte eller alltid.

	Svært sjelden				Svært ofte eller alltid	ingen svar
Hodet mitt er fullt av innovative ideer relatert til mitt arbeid.	○	○	○	○	○	○
Jeg kommer med kreative løsninger på arbeidsproblemer.	○	○	○	○	○	○
Jeg foreslår nye måter å utføre arbeidsoppgaver.	○	○	○	○	○	○

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Hvor fornøyd er du generelt med jobben din?

ingen svar

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Videre vil du bli spurt om du har et romantisk forhold eller barn, samt hvordan din livskvalitet er.

Om du har noen spørsmål, vennligst kontakt oss: dana.unger@uit.no

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Har du en romantisk partner?

- Ja
- Nei

- ingen svar

Hvor mange barn bor i husstanden deres?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- >8

- Ingen svar

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Om du har en romantisk partner, deler dere bolig?

- ○ Ja
- ○ Nei

- ○ Ingen svar

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Videre følger en rekke utsagn om deg. Vennligst les hvert utsagn nøye og oppgi hvor godt de beskriver det romantiske forholdet ditt de siste 7 dagene.

	Veldig uenig						Veldig enig	ingen svar
Vi har et bra forhold	○	○	○	○	○	○	○	○
Forholdet med min partner er veldig stabilt	○	○	○	○	○	○	○	○
Forholdet vårt er sterkt	○	○	○	○	○	○	○	○
Forholdet med min partner gjør meg glad	○	○	○	○	○	○	○	○
Jeg føler meg virkelig som en del av et «team» med min partner	○	○	○	○	○	○	○	○

Hvor lykkelig er du i ditt forhold?

	Ekstremt ulykkelig									Ekstremt lykkelig	ingen svar
Alt i alt, hvor lykkelig er du i ditt forhold?	○	○	○	○	○	○	○	○	○	○	○

UiT The Arctic University of Norway

Videre følger en rekke utsagn om deg. For de siste 7 dagene, hvor godt passer de følgende utsagnene for deg?

	Veldig uenig						Veldig enig	ingen svar
På de fleste måter er livet mitt nær idealet mitt	○	○	○	○	○	○	○	○
Mine livsforhold er utmerkede	○	○	○	○	○	○	○	○
Jeg er tilfreds med livet mitt	○	○	○	○	○	○	○	○
Så langt har jeg fått de viktige tingene jeg ønsker i livet	○	○	○	○	○	○	○	○
Hvis jeg kunne leve livet på nytt, ville jeg nesten ikke forandret på noe	○	○	○	○	○	○	○	○

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I denne delen av spørreundersøkelsen vil du bli spurt om spørsmål knyttet til deg som person og hvordan du har det.

Om du har noen spørsmål, vennligst kontakt oss: dana.unger@uit.no

UiT The Arctic University of Norway

Videre følger en rekke utsagn om deg. Vennligst les hvert utsagn og bestem hvor godt hvert utsagn passer for deg.

	Veldig uenig				Veldig enig	ingen svar
Jeg foretrekker avanserte over enkle oppgaver	○	○	○	○	○	○
Jeg liker å ha ansvar for å håndtere oppgaver som krever mye tankearbeid	○	○	○	○	○	○
Tankearbeid er ikke min oppfatning av moro	○	○	○	○	○	○
Jeg vil heller gjøre noe som krever lite tenking over noe som vil utfordre mine tenkeevner	○	○	○	○	○	○
Jeg nyter oppgaver som involverer det å komme opp med nye løsninger til problemer	○	○	○	○	○	○
Jeg foretrekker oppgaver som er intellektuelle, vanskelige, og viktige over oppgaver som er noe viktig, men som ikke krever mye tenking	○	○	○	○	○	○

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For de siste 7 dagene, hvor godt stemmer de følgende utsagnene overens med hvordan du har følt deg?

	Veldig uenig						Veldig enig	ingen svar
Jeg har nesten alltid følt meg alert og våken	○	○	○	○	○	○	○	○
Jeg har følt meg full av energi	○	○	○	○	○	○	○	○
Jeg har følt meg pigg og full av liv	○	○	○	○	○	○	○	○
Jeg har hatt energi og ånd	○	○	○	○	○	○	○	○
Noen ganger har jeg følt meg så i live at jeg vil sprekke	○	○	○	○	○	○	○	○
Jeg har sett frem mot hver eneste dag	○	○	○	○	○	○	○	○
Jeg har ikke følt meg så energisk	○	○	○	○	○	○	○	○

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Denne skalaen består av ord som beskriver ulike følelser. Vennligst les hvert ord nøye og oppgi hvordan du har følt deg de siste 7 dagene.

De siste 7 dagene har jeg følt meg ...	Svært lite eller ikke i det hele tatt				Ekstremt	ingen svar
Aktiv	○	○	○	○	○	○
Interessert	○	○	○	○	○	○
Begeistret	○	○	○	○	○	○
Sterk	○	○	○	○	○	○
Inspirert	○	○	○	○	○	○
Årvåken	○	○	○	○	○	○
Opprørt	○	○	○	○	○	○
Nedtrykt	○	○	○	○	○	○
Irritabel	○	○	○	○	○	○
Nervøs	○	○	○	○	○	○
Skvetten	○	○	○	○	○	○
Redd	○	○	○	○	○	○

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Videre følger en rekke utsagn. Vennligst les hvert utsagn nøye og oppgi hvorvidt hvert utsagn stemmer for deg og ditt arbeid.

	Veldig uenig				Veldig enig	ingen svar
Jeg finner alltid nye og interessante aspekter ved arbeidet mitt.	○	○	○	○	○	○
Av og til føler jeg meg trøtt og sliten før jeg kommer på jobb.	○	○	○	○	○	○
Det skjer oftere og oftere at jeg snakker om jobben min på en negativ måte.	○	○	○	○	○	○
Etter jobb trenger jeg mer tid på å slappe av og føle meg bedre enn det jeg trengte før.	○	○	○	○	○	○
Jeg tolerer jobbpress veldig godt.	○	○	○	○	○	○
I det siste har jeg brukt mindre energi på å tenke på jobb, og gjør jobben min nesten mekanisk/tankeløst.	○	○	○	○	○	○
Jeg tenker på jobben min som en positiv utfordring.	○	○	○	○	○	○
I løpet av arbeidsdagen føler jeg meg emosjonelt utmattet.	○	○	○	○	○	○

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Videre følger en rekke utsagn. Vennligst les hvert utsagn nøye og oppgi hvorvidt hvert utsagn stemmer for deg og ditt arbeid.

	Veldig uenig				Veldig enig	ingen svar
Med tiden kan man bli distansert fra denne type arbeid.	○	○	○	○	○	○
Jeg har nok energi til fritidsaktiviteter etter jobb.	○	○	○	○	○	○
Av og til føler jeg avsmak over arbeidsoppgavene mine.	○	○	○	○	○	○
Jeg føler meg ofte sliten og utslitt etter jobb.	○	○	○	○	○	○
Dette er den eneste typen jobb jeg kan se for meg å gjøre.	○	○	○	○	○	○
Som oftest klarer jeg å håndtere arbeidsmengden min bra.	○	○	○	○	○	○
Jeg føler meg mer og mer engasjert i arbeidet mitt.	○	○	○	○	○	○
Jeg føler meg ofte full av energi når jeg jobber.	○	○	○	○	○	○

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Vennligst ranger følgende spørsmål på en skala fra 1 = svært sjelden eller aldri til 5 = svært ofte eller alltid.

Familie refererer til forholdet med dine barn og/eller din romantiske partner.

	Svært sjelden				Svært ofte eller alltid	ingen svar
Blir du anspent når du tenker på familierelaterte problemer i arbeidstiden?	○	○	○	○	○	○
Blir du irritert når du tenker på familierelaterte problemer når du ikke er hjemme?	○	○	○	○	○	○
Blir du irritert over familieproblemer når du ikke er hjemme?	○	○	○	○	○	○
Tenker du på oppgaver som må gjøres hjemme etter jobb?	○	○	○	○	○	○
Opplever du at det å tenke på familien i arbeidstiden hjelper deg til å være kreativ?	○	○	○	○	○	○
Finner du løsninger på familierelaterte problemer i arbeidstiden?	○	○	○	○	○	○

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For å svare på de kommende spørsmålene, oppgi i hvilken grad du er enig i hele utsagnet i de neste setningene. Med andre ord, for å være «veldig enig» i et utsagn, må du være enig i begge delene av utsagnet.

Familie refererer til forholdet med dine barn og/eller din romantiske partner.

Min involvering i familien ...	Veldig uenig				Veldig enig	ingen svar
... hjelper meg til å tilegne meg kunnskap og dette hjelper meg med å bli en bedre ansatt	○	○	○	○	○	○
... hjelper meg til å tilegne meg ferdigheter og dette hjelper meg med å bli en bedre ansatt	○	○	○	○	○	○
... hjelper meg til å utvide min kunnskap på nye områder og dette hjelper meg med å bli en bedre ansatt	○	○	○	○	○	○
... får meg i godt humør og dette hjelper meg med å bli en bedre ansatt	○	○	○	○	○	○
... gjør meg glad og dette hjelper meg med å bli en bedre ansatt	○	○	○	○	○	○
... gjør meg munter og dette hjelper meg med å bli en bedre ansatt	○	○	○	○	○	○
... krever at jeg unngår å sløse vekk tid på jobb og dette hjelper meg med å bli en bedre ansatt	○	○	○	○	○	○
... oppmuntrer meg til å bruke arbeidstiden på en fokusert måte og dette hjelper meg med å bli en bedre ansatt	○	○	○	○	○	○
... får meg til å bli mer fokusert på jobb og dette hjelper meg med å bli en bedre ansatt	○	○	○	○	○	○

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Du er nesten ferdig!

For statistiske årsaker trenger vi å spørre deg noen få demografiske spørsmål. Vi behandler dataen din med konfidensialitet og garanterer din anonymitet.

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Kjønn

- ○ Mann
- ○ Kvinne
- ○ Ikke-binær
- ○ Annet: _____

- ○ ingen svar

Hvilket år er du født?

[Vennligst velg]

Hvilken utdanning har du?

- ○ Har ingen
- ○ Grunnskole
- ○ Videregående skole
- ○ Bachelorgrad
- ○ Mastergrad
- ○ Doktorgrad
- ○ Jeg studerer for øyeblikket
- ○ Annet:

- ○ ingen svar

Tusen takk for at du tar deg tid til å delta i vår undersøkelse! Du vil ved et senere tidspunkt få tilsendt en link til den andre delen av spørreundersøkelsen.

Om du har noen spørsmål, ta gjerne kontakt med oss: dana.unger@uit.no

Har du noen forslag eller bemerkninger?

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Takk for at du fylte ut dette spørreskjemaet!

Svarene dine ble overført.

Hvis du møter problemer, ikke nøl med å kontakte oss: dana.unger@uit.no

Ha en fin dag!