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A study of Adaptive Performance: Facilitating for adaptive behavior through Transformational Leadership and Psychological Safety during Covid-19

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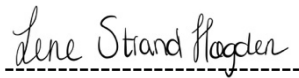
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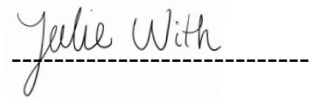Master of Science in Leadership and Organizational Psychology

Acknowledgements

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Abstract

In order to better understand the promotion of adaptive behavior during Covid-19, the following research investigates the relationship between transformational leadership and subscales of adaptive performance, as well as the moderating effect of psychological safety. A quantitative study of 146 respondents divided into four companies within a business group was conducted to test our hypothesis. Results postulated that transformational leadership indeed significantly related to each subscale examined of adaptive performance. Further, the analysis yields no support for the moderating effect of psychological safety. Yet, other interesting findings were presented from our analysis, indicating that transformational leadership can develop a psychologically safe environment. Accordingly, our analysis reveals that employees perceiving their leaders as more transformational are more adaptable to change in demonstrating interpersonal adaptability, handling uncertainty and unpredictability, and handling work stress.

1.0   Introduction

This study emphasizes considerations for an increased unpredictability, making it difficult to strategically plan for change and adaptation processes. As a consequence of the Covid-19 pandemic, employees with the opportunity have been encouraged and even required to limit their interaction and convert to virtual working. The circumstances have required rapid and drastic changes on many organizations. The uncertainty has forced various restrictions on us, changing our nature of work. Our new everyday is characterized by digital tools being implemented and developed, using such as zoom and teams to communicate. The pressure on individuals to adapt change-oriented behaviors and understand dynamic environments thereby increases. A major obstacle for leaders during organizational change entails their ability to convert attitudes and behaviors as rapidly as required by the organization. Moreover, the change process provides threats to employees' status quo, often accommodating resilient behaviors amongst workers. Thereupon, as few organizational change efforts tend to fail utterly, few tend to be significantly successful (Kotter & Schlesinger, 2008). Still, change has become inevitable due to the high-paced global, economic, and technological developments. Only embracing the necessity of continuous change can lead to business success (Cummings & Worley, 2014). Previous studies have emphasized the importance of strategic decision-making processes complementing autonomous action, leading to enhanced performance (Andersen, 2000).

Adaptive performance (AP) entails essential behaviors in order to understand and adapt to a developing workplace (Pulakos et al., 2000). Most organizations now seek to identify employees with adaptive abilities, as it enforces a number of positive organizational outcomes (Niessen et al., 2010). As extensive research examines internal predictors of adaptive behavior, such as personality (Hueang et al., 2014) and cognitive abilities (Stasielowicz, 2020), the investigation of external predictors calls for further analysis. The abrupt transition to home office changes the work environment, which potentially presents negative consequences on an individual, team- and organizational level. Indeed, leadership is likely to have an essential part in facilitating successful change processes (Kotter, 2007; Herold et al., 2008; in Bass & Riggio, 2006). Transformational leadership (TL) has been

shown to foster positive emotions and attitudes towards change in the organization (Bass & Riggio, 2006), influencing several individual factors concerning organizational behavior (Charbonnier-Voirin et al., 2010). However, research on the role of TL in facilitating adaptive behavior has been neglected. We acknowledge the importance of exploring this relationship as dimensions of adaptive performance entail valuable capabilities aligning with behavior TL aims to foster (Pulakos et al., 2000).

"It is not the strongest of the species that survives, nor the most intelligent. It is the one that is most adaptable to change." - Charles Darwin

Moreover, notable indicators of adaptability include performance, innovation, and engagement, which further can be advanced through perceived psychological safety (PS) (Nembhard & Edmondson, 2006). PS ensures team members they are protected to take interpersonal risks, important in change processes, as times put demands on employees to be more innovative and adaptive to thrive (Edmondson, 1999). Through the outbreak of Covid-19, employees have been exposed to unusual degrees of change and unpredictability, leading to consequences such as stress and dissatisfaction. Nevertheless, PS entails several benefits, such as enhanced confidence, creativity, trust, and productivity, potentially diminishing non-adaptive behavior (Wang et al., 2018).

Our research utilizes virtual teams as a frame for our research based on the assumption that most employees are part of or circulate among teams to complete projects and reach organizational goals. Organizational change transitions require commitment from all parts of the organization in order to succeed in the process. Change needs to be an implemented part of the strategy to assure employees' behavior and mindset align with continuous development (Worley & Mohrman, 2014). Facilitation for change is often influenced by leaders, where their effect might increase positive emotions concerning change (Agote et al., 2016). The pandemic placed extraordinary demands on both organizational leaders and employees. Hence, the theory of TL has been argued to appreciate the critical role of employee's attitudes and values towards partaking and supporting change initiatives at organizational levels (Bass & Riggio, 2006).

1.1   Research question and conceptual model

The purpose of this study entails two measures. Firstly, the study examines whether transformational leadership positively relates to an employee's adaptive performance when facing challenges such as Covid-19. Secondly, the study seeks to explore whether psychological safety moderates the relationship between transformational leadership and relevant subscales of adaptive performance. Therefore, our research question is:

"How does transformational leader behaviors affect followers' ability to adapt to changing work conditions?"
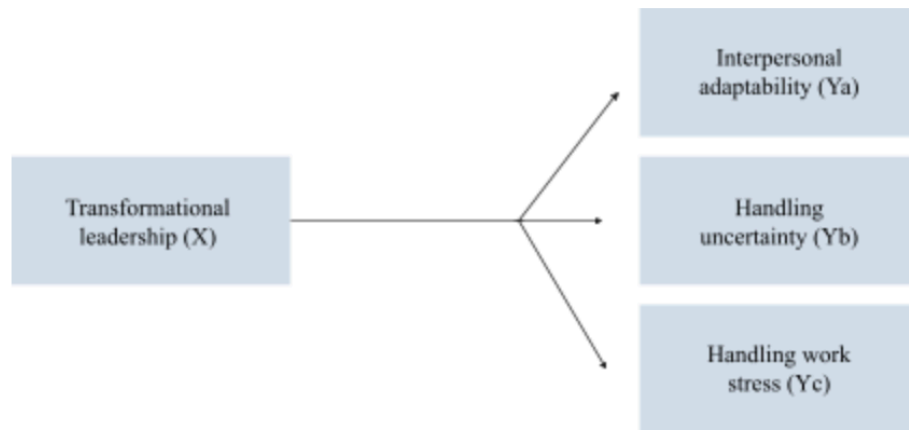
Figure 1: Conceptual model

1.2   Preview of method and findings

In order to test our hypotheses and answer our research question, we conducted a quantitative study of 146 participants through a cross-sectional design. The companies engaged in our study are IT consultancy units operating within the same business group, making our sample relatively homogeneous. Due to a large sample from the given population, we aimed to provide sufficient data to explore specific relationships generalizable for the area in the business unit.

Evidently, analysis propose a positive relationship between transformational leader behaviors and follower's ability to adapt to changing work conditions. Further, we found no evidence for the effect of psychological safety on the relationship between leadership and adaptive performance. However, the results

revealed other relevant findings worth exploring for future research. The aim of this research was to contribute to the field with a quantitative investigation of how organizations can facilitate for adaptive behavior during a crisis such as Covid-19. Our thesis contributes to the change literature by providing an increased understanding of how perceived leadership and safety influences ability to adapt during Covid-19, thus introducing suggestions for how the business group can implement specific actions for future strategies when facing uncertain and complex challenges.

1.3   Thesis outline

To increase our knowledge on the subject before conducting the data collection, literature regarding adaptive performance, change processes, leadership and psychological safety has been reviewed. Hence, the second chapter entails the theoretical framework we based our analysis on. This part of the thesis presents essential research on how to facilitate for adaptive behavior, providing guidance for further development of our postulated hypotheses. Furthermore, the third chapter presents chosen methodology including research design, sampling and procedure, measurement scales, and ethical considerations. Fourth, the analysis of the data we gathered from the population was reviewed, measuring individuals' perceptions of leadership, safety and adaptability. Finally, results from our analysis were discussed across theoretical aspects, providing us with relevant contributions for limitations, future research, and practical implications.

2.0   Theoretical framework

2.1   Adaptive Performance

First, we review the theoretical aspect of adaptive performance, in order to evaluate how external factors can positively influence such behaviors during Covid-19. In literature, job performance has been defined as synonymous with behavior. More specifically, described as an individual's proficiency and level of contribution, which one can observe and measure (Campbell et al., 1993). Due to the emerged pandemic changing existing work structures, a new research field

should be acknowledged, aiming to understand, predict, and provide training concerning the importance of adaptive behaviors in the workplace. With new technologies, restructuring of jobs, and other factors requiring change, employees need to understand and develop a new tolerance for managing and adapting in uncertain work environments. Despite its number of different definitions, adaptive performance in organizations has been referred to as the individual's ability to understand and adjust to changes in the workplace (Pulakos et al., 2000). Adaptive performance includes change-oriented behaviors, whereas individuals proactively act towards unexpected challenges. As anticipating change is difficult, so is formalizing task requirements. Hence, roles in an organization must function as a dynamic response to changing demands (Griffin et al., 2010). Consequently, employees with a high degree of adaptability are presumed to experience positive outcomes such as the ability to regulate distress, attitudes and beliefs, and higher performance (Niessen et al., 2010).

Covid-19 has changed the dynamics of organizations and teamwork, debating if we can apply what we know about operating in virtual teams. Despite previous research on challenges in virtual settings, there has been added an additional layer of complexity. It calls for implementation of more flexible structures, whereas those who succeed in fluid environments are the ones able to adapt and facilitate flexibility (Feitosa & Salas, 2021). The increase in virtual teamwork aligns with several opportunities and advantages related to efficiency and team composition regardless of their distance. However, factors that potentially impact team performance negatively concern disadvantages related to lower levels of trust, cohesion, and commitment (Hoch & Kozlowski, 2014). Researching individuals' ability to demonstrate interpersonal adaptability, handle uncertainty and unpredictability, and handle work stress when converting to virtual teams, and factors influencing these dimensions becomes vital in order to analyze and enhance overall organizational performance.

Pulakos et al. (2000) focused on defining the different dimensions of AP. He proposes eight dimensions, including handling emergencies and crisis situations, handling stress in the workforce, creative problem solving, dealing with unpredictability and uncertain job situations, learning and manipulating new

technologies, tasks and procedures, demonstrating interpersonal adaptability, cultural adaptability and physically oriented adaptability. Although we consider all dimensions to be of interest, the essence of the paper regards radical changes in the workplace. As a result, we based our research on the aspects that concern the cooperation we are investigating and the recent abrupt transition they have experienced. In this particular context, the dimensions of interest are demonstrating interpersonal adaptability, handling uncertainty and unpredictability, and handling work stress. The Covid-19 situation has forced upon several challenges for most organizations, including limited work interaction, temporarily layoffs, and changed work structures. Examining how individuals cope with stress and uncertainty in a situation characterized by ambiguity, and how well they manage to adapt to other team structures, such as other team members, becomes interesting to examine. Furthermore, individual adaptive performance in relation to TL and PS can help explain how team-based aspects might influence group dynamics as well. Accordingly, we distinguish between individual- and team-level dimensions, whereas the employee's ability to handle work stress and deal with uncertain situations takes place on an individual level, and demonstrating interpersonal adaptability occurs on a team level (Han & Williams, 2008).

2.1.1 Demonstrating interpersonal adaptability

The employee's ability to adjust interpersonal capabilities is crucial to maintain sufficient group dynamic, contemplating an individual's ability to modify behaviors or work methods when interacting with new teams or coworkers (Pulakos et al., 2002). This type of adaptive performance has become prominent as work environments are becoming more fluid and often characterized by teamwork or temporary projects. To work effectively with a wide range of personalities and competencies, employees are likely to benefit from adjusting their behaviors. Aspects of interpersonal adaptability that have been studied in research literature include an individual's flexibility to make adjustments for reaching a goal, working more effectively with coworkers and customers, and providing responsive solutions to fulfill the needs of superiors or customers (Bowen & Waldman, 1999). This dimension is especially important for our

research as the Covid-19 pandemic forced a drastic switch in methods of cooperating and communicating for many organizations.

2.1.2   Dealing with uncertainty and unpredictability

The year 2020 was characterized by an unpredictability that impacted our private and working lives. In the matter of a short period, people were transferred to home offices and had to adjust to a new everyday life along with the rest of their families or simply in their own company. Therefore, we regarded the individual's ability to deal with uncertainty and unpredictability to be crucial when coping in this transition. This dimension refers to the ability to adjust and deal with unpredictability, shift focus, and take reasonable action (Pulakos et al., 2002), thus, stay productive despite the occurrence of unknown situations. Further, it entails the ability to take effective action without having all the facts at hand and easily respond to sudden changes (Pulakos et al., 2000). Hence, being an asset when dealing with unpredictable situations such as Covid-19. Furthermore, successful adaptive performance implies that employees are able to deal with such situations, for example, by adjusting priorities or effective distribution of tasks (Charbonnier-Voirin et al., 2010).

2.1.3   Handling work stress

Lastly, we identified the dimension of handling work stress as crucial to examine due to the abrupt changes and consequences the pandemic has left behind. We assume that temporary layoffs, reorganized structures and limited interaction with co-workers have a noticeable influence on employees' ability to handle work stress. Work stress is considered to be a significant predictor for several organizational outcomes, such as performance, nonproductive behavior, and turnover (Ongori & Agolla, 2008). Keeping calm and focused when dealing with high-demand tasks, managing frustration, as well as influencing collective stress levels may decrease pressure and dissatisfaction (Pulakos et al., 2000). The importance of managing stress associated with the rapid and unpredictable nature of change in new working conditions is increasing, affecting overall organizational performance. Employees who are unequipped to handle stress are unable to focus on the changes affecting the organization, negatively affecting job

performance (Folkman et al., 1986). Further, we find particular interest in this dimension when evaluating the influence of external factors on individual performance.

2.2   Transformational leadership

Leadership has been argued to represent the most significant contextual factors to impact employees' motivation on an individual and team level (Chen & Kanfer, 2006). Rapid and ambiguous transitions put high demands on organizations, employees, and leaders, where leaders play a central role in facilitating successful change processes (Bass & Riggio, 2006). Recent research has focused on leadership at multiple levels, including top managers, mid-level managers, and even influential employees, as they serve as change agents and role models for employees during uncertain circumstances (Stouten et al., 2018). This requires an environment fostering proactive and innovative behavior. Stouten et al. (2018) further proposes that trustworthy, supportive, honest, and transparent leaders, open about the process of change, are more likely to create a psychologically safe environment where there is room for mistakes, risks, and learning. Accordingly, successful change management can be fostered through transformational leadership as employees becomes motivated and engaged in supporting the change and seems to notice the positive consequences of the specific transition (Faupel & Süß, 2019). In addition, transformational leaders have been found to transform values and priorities in teams, facilitate self-management and interpersonal norms, hence, challenge the status quo and lead to proactive performance (Williams et al., 2010). TL also increase positive attitudes towards organizational changes (Seo et al., 2012; in Agote et al., 2016), as well as creative problem solving and performance (Mahmood et al., 2019), inducing an interest to examine its effect on different dimensions of individual AP.

The theory of TL was initially developed by Burns (1978), emphasizing the importance of meeting follower needs and desires through behavioral patterns creating new solutions, and a good organizational climate (Ghasabeh et al., 2015). A globalized business environment in constant change puts pressure on leaders' roles to create a shared and inspiring vision for the organization in line with

developing environments. Leadership has for a long time been characterized as a social exchange relationship between leaders and followers, recognizing a need to include followers' affective involvement. A study presented by Ghasabeh et al. (2015), argues how TL recognizes the critical role of employees' attitudes and values towards participating and supporting change at organizational levels. The leaders support individual development and inspire them to wish for challenges, leading to greater self-management (Williams et al., 2010). TL has shown to obtain followers who go beyond expectations and are characterized by high commitment, satisfaction, and performance (Bass & Riggio, 2006). Employees of transformational leaders showed to be less resistant to change, whereas leadership behaviors facilitate employees' acceptance. They inspire and motivate followers towards what becomes a shared goal, creating a vision of the future, potentially decreasing employees' perceptions and uncertainty surrounding change (Oreg & Berson, 2011). Leadership that manages to change attitudes and assumptions is likely to foster proactive behavior, innovation, and creativity. Previous research proposes that employee creativity can be nurtured through TL, as the leaders possess the necessary skills to encourage followers to drive changes and find creative solutions with a vision for the future (Mittal & Dhar, 2015).

Carless (2000) proposes that the following behaviors encompass the concept of TL: communicates a vision, develops staff, provides support, empowers staff, is innovative, leads by example, and is charismatic. Firstly, influential leaders communicate visions or ideal goals, conveying a set of values guiding and motivating subordinates. Second, staff development refers to leaders who facilitate and encourage the individual development of employees. Consequently, subordinates' increased confidence in their ability to perform might generate a more effective staff (Bass & Avolio, 1990). Third, supportive leadership includes giving positive feedback and acknowledging individual achievements, providing the staff with the resources necessary for achieving challenging goals. Further, the role of empowerment entails effective leaders involving team members in decision-making. Innovative leaders who often use unconventional strategies to achieve goals tend to be more effective. These leaders are willing to take risks to achieve a particular goal and enjoy challenging opportunities. Next, transformational leaders lead by example by displaying consistency across the

views they articulate and their behavior, whereas an effective leader communicates their values to subordinates. Lastly, Bass & Avolio (1990) propose that transformational leaders' most essential quality is charisma. Charismatic leaders are perceived as trustworthy, competent, and worthy of respect, inspiring followers to increase their level of motivation and performance to reach a common goal. Thus, these items were used to measure the construct TL in our research.

When evaluating the relationship between TL and AP, research suggests that TL allows followers to become more creative across situations, resulting in higher performance (Griffin et al., 2010). We found leadership particularly relevant to examine, as Kanten et al., (2015) argues that external predictors are likely to change employees' behaviors and attitudes. Transformational leaders tend to motivate employees in a way that increases performance and adaptability through presenting new ideas and possible outcomes in the given situation (Charbonnier-Voirin et al., 2010). Considering the dimensions identified as especially relevant in this context, we assume the behaviors characterizing TL positively impacts AP. We suppose the employee's interpersonal adaptability can be positively affected by providing them with feedback on achievement, enabling them to adapt and improve, facilitating individual development. Further, we acknowledge that the ability to deal with uncertainty can be enhanced by being included in decision-making, leaders communicating clear visions, and being provided with sufficient resources to achieve challenging goals. Lastly, the employee's ability to handle work stress might benefit from having trustworthy leaders who lead by example and communicate consistent visions. TL has also shown to be adequate in unstable and dynamic environments, characterizing the current work conditions (Bass & Riggio, 2006). As the variable "work stress" only entails negatively loaded questions, this refers to low ability to handle work stress in the hypothesis.

Hence, we propose that:

Hypothesis 1a: *There is a positive relationship between perceived transformational leadership and employee's interpersonal adaptability*

Hypothesis 1b: *There is a positive relationship between perceived transformational leadership and employee's ability to handle uncertain and unpredictable situations*

Hypothesis 1c: *There is a negative relationship between perceived transformational leadership and employee's work stress*

2.3   The moderating role of psychological safety

The significant growth of team- and project-based work in business forces individuals to collaborate, requiring trust and support from coworkers to thrive (Edmondson, 1999). Accordingly, the ability to foster innovation is critical in order to succeed in a changing world. However, activities supporting innovation often involve risk, uncertainty, and sometimes failing in order to learn and eventually succeed. For example, members of a team may find it distressing to offer valuable contributions or ideas in fear of being held responsible for mistakes or creating frustration for the rest of the team (Ford & Sullivan, 2004, in Edmondson & Mogelof, 2006). Further, unexpected situations may lead to shocks or ambivalence through consequences such as temporary or permanent layoffs (Lee et al., 2018). Thus, we acknowledge the value of studying psychological safety in teams in a time demanding change in order to survive.

PS entails the belief that one will not be punished when making any mistakes. Khan (1990) defined psychological safety as an employee's "sense of being able to show and employ one's self without fear of negative consequences to self-image, status, or career" (Baer & Frese, 2003). Studies present that PS moderates risk-taking, speaking your mind, creativity, and sticking your neck out without fear of having it cut off (Delizonna, 2017). PS allows people to focus on collective goals and prevents defensiveness or learning anxiety when facing data not aligned with their expectations or knowledge (Edmondson & Lei, 2014). It is suggested that it moderates perceptions of fear, obstacles, guilt, and retaliation during change. Further, activating reflective and cognitive abilities within groups that

lead to increased performance and learning (Zaman & Abbasi, 2020). While most studies focus on employee performance, extensive research points to PS's relationship to speaking up or; voice. It entails promotive communication, such as providing challenging assumptions or new ideas for improvement, an important aspect of organizational learning (Siemsen et al., 2009).

In volatile and uncertain environments, leadership becomes critical to cultivate employees to solve complex challenges in such a way that prompts innovation and competitiveness. The leadership behaviors of transformational leaders inspire and motivate followers to embrace and realize their ambitious visions. They encourage followers to challenge the status quo and pursue new ways. Given the risks of pursuing new solutions, the leaders are required to provide support in order to receive desired outcomes (Carmeli et al., 2014). Transformational leaders create a culture where taking interpersonal risks and expressing themselves are encouraged and supported. TL helps create a psychologically safe environment that fosters reflexivity; an information-processing activity in reflecting upon work tasks and adjusting behaviors and actions accordingly to improve performance (Carmeli et al., 2014). Various studies have used PS as a mediator of relationships between antecedents such as organizational context and team leadership and outcomes of innovation, performance, and learning in teams. A study examining the impact of TL on individual learning under the mediating condition of PS provides results supporting the claim (Zaman & Abbasi, 2020). Organizations today succeed through developmental advancements, relying on innovation, learning, improvements, and effective leadership.

PS fundamentally reduces interpersonal risk, which accompanies uncertainty and change (Edmondson & Lei, 2014). Schein and Bennis (1965) argued that it was essential for making people feel secure and capable of changing their behavior in response to shifting organizational challenges. Due to the rapid changes and uncertainty characterizing people's everyday life during the Covid-19 situation, the effect of PS is particularly interesting to review. Delizonna (2017) suggests several ways in which PS can be enhanced; as confronting conflicts as collaborators, speaking human to human, being able to anticipate reactions and plan countermoves, replace blame with curiosity, ask for feedback on delivery,

and try to measure PS. In addition, increasing PS on a team level can potentially lead to higher levels of engagement, motivation to tackle problems, enhanced learning and development, and overall better performance (Delizonna, 2017).

As converting to virtual teams has characterized the way we work, employees are required to adapt to new conditions. In terms of adaptive performance in such environments, we believe an important factor for determining success is trust. As situational factors intensify the need for virtual team usage and simultaneously requiring limited physical interaction, trust and cohesion must be fostered through incentives like communication and information management (Gilson et al., 2015). We assume that the effectiveness of fostering trust in such teams depends on team members' experience of PS. As it enhances the feeling of security within the group, members' ability to handle uncertainty and adapt to unpredictable situations might increase.

In addition, perceived PS might increase ability to handle work stress by moderating risk-taking and feeling safe speaking your mind (Edmondson, 1999). Further, reducing the fear of negative feedback from other group members can also impact handling work stress. By reducing the fear of speaking up and interpersonal risk-taking, employees might increase their willingness to give and receive feedback from others and adapt to these viewpoints (Delizonna, 2017). Thus, interpersonal adaptability might be positively affected. Accordingly, psychological safety pursues many of the same aspirations as transformational leadership, making it interesting to evaluate it as an independent variable on dimensions of adaptive performance. Although we use PS as a moderator, we also assume that this variable independently affects adaptive performance, thus we propose:

Hypothesis 2a: *There is a positive relationship between perceived psychological safety and employee's interpersonal adaptability*
Hypothesis 2b: *There is a positive relationship between perceived psychological safety and employee's ability to handle uncertain and unpredictable situations*
Hypothesis 2c: *There is a negative relationship between perceived psychological safety and employee's work stress*

As a result of Covid-19, work has become increasingly interdependent, requiring asking for feedback and information from others (Carmeli & Gittell, 2009). Therefore, we suppose that the presence of PS might moderate the effect of leadership on AP, as factors within this construct can be strongly related to AP's dimensions. Therefore, if PS is high, we suggest that the role for transformational leaders might not be crucial in order to enhance adaptive performance. Conversely, if PS is low, we assume that the role of transformational leaders becomes stronger in affecting adaptive performance. We aim to investigate the potential moderating effect of PS between TL and AP to evaluate if the need for TL increases in teams experiencing lower degrees of safety.

Hence, we propose that:

Hypothesis 3a: *The relationship between perceived transformational leadership and employee's interpersonal adaptability is negatively moderated by perceived psychological safety.*

Hypothesis 3b: *The relationship between perceived transformational leadership and employee's ability to handle uncertainty is negatively moderated by perceived psychological safety.*

Hypothesis 3c: *The relationship between perceived transformational leadership and employee's work stress is positively moderated by perceived psychological safety.*
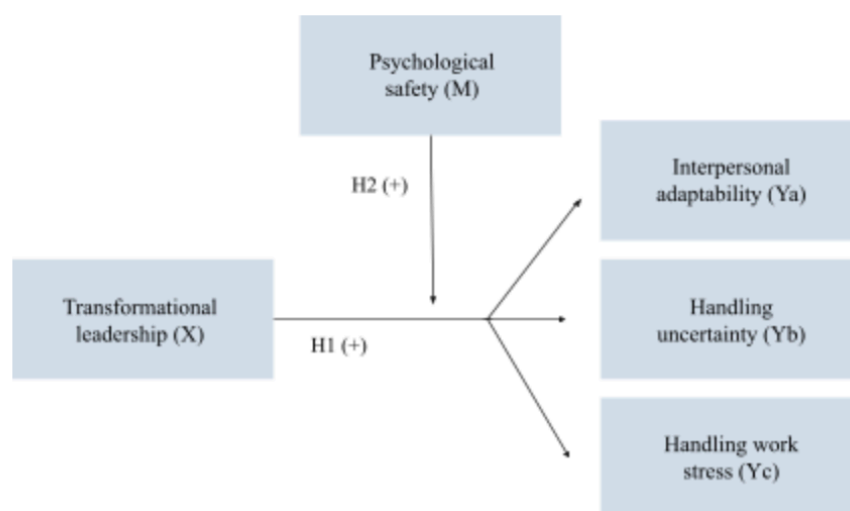

Figure 2: Research model

3.0   Methodology

3.1   Research Design

When conducting this study, we applied a quantitative method with a cross-sectional research design. Cross-sectional designs are often preferred in such studies and entails data collection on several cases at a single point in time, allowing to obtain a body of quantitative data in connection to our proposed variables and investigate for patterns of association (Bell et al., 2018). Further, quantitative methods are objective statistics or measurements, collected through surveys, polls or existing data, providing a collection of numerical data. We applied self-completion questionnaires for data collection, as it is cheaper to administer, more convenient for respondents and company, and reduces interviewer characteristics bias (Bell et al., 2018). The data were electronically collected by a self-assessment form developed through the service "Nettskjema.no", ensuring anonymous responses following guidelines of GDPR. As the purpose of gathering data entails generalizing results for different groups or explaining a phenomenon, we found the quantitative method to be most appropriate for our research question and hypotheses (Babbie, 2020).

3.2   Research setting

For data collection we gathered information from four different companies within one business group. Common characteristics for these companies were their previously shared experience in work practices in terms of team-and project structure, in that all operated in the IT consultancy industry. Further, all of the four companies have been required to convert to virtual work and have experienced a low degree of layoffs, making the population relatively homogeneous for comparison. Thus, our target group in the collection process included employees from different companies within a large international business group that were currently/ or earlier have been working remotely, and reporting to a team leader. Noteworthy, it was interesting to conduct a cross-sectional study, as the degree of home-office and temporarily layoffs differed in the business group. Companies with customers and projects in private sectors were more exposed to the risk of being temporary laid off, however, companies operating with

customers and projects in public sector continued business are relatively usual. Hence, examining the differences in adaptability, perceived leadership, and safety across groups becomes fascinating.

3.3 Sampling and procedure

We gathered a sample of 146 respondents, which satisfied a sample size of the population (approximately 210 people) with a 95% confidence interval (Bonett, 2002). The respondents are from four different companies within the same area of a business group, sharing the same goals, but working separately and with different projects. More specifically, respondents in the survey includes consultants in different levels of seniority reporting to a team leader, whereas members of one team share the same superior. The survey specified that the responses were to be based on the team composition / project they were part of during Covid-19.

As we were fortunate to have great access to a business group through personal connections, our procedure for data collection was planned in collaboration with our main contact person, who also engaged the leader-group. Further, the purpose of the thesis and specific plan for collecting data were presented to the directors of each company, providing transparency throughout the process. Thus, surveys were conveyed by them in an email, anticipating an increased number of respondents. As mentioned, we applied self-assessment forms for data collection, developed through the service "Nettskjema.no", as we found stronger arguments in terms of GDPR using this tool compared to others. Anonymity was ensured both in terms of company and respondents, as recommended to reduce biased responses (Podsakoff et al., 2003).

3.4 Measurement

3.4.1 Transformational leadership

In the search for a brief, reliable and valid scale for measuring TL, we apply seven items converged to represent a global measurement, referred to as the Global Transformational Leadership scale (GTL). Compared to other measure scales (e.g

Kouzes & Posner, 1990; Conger & Kanungo, 1994; in Avolio & Bass, 1995), the GTL is regarded as a shorter and less time-consuming alternative for measuring TL (Van Beveren et al., 2017). The dimensions consist of the following items: (1) Vision, (2) Staff Development, (3) Supportive leadership, (4) Empowerment, (5) Innovative thinking, (6) Lead by Example, and (7) Charisma. The scale format incorporates a 5-point Likert scale from 1= rarely or never to 5= Very frequently or always, and provides specific measures related to job performance. Previous research has benefited from the GTL containing measures of their immediate or direct supervisor, noting that TL often emphasizes top leaders (Carless et al., 2000).

The GTL provides helpful measures to capture leaders' behaviors and how they might explain individual's ability to adapt to changing conditions and new forms of virtual work. It is important to note that as the GTL dimensions are valid to assess the 4 I's dimensions of TL, the MLQ is regarded as a more accurate measure due to GTL's limitations in assessing specific behaviors in correlation with specific influences. The 4 I's – Idealized influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration – are considered to be one of the most common approaches measuring transformational leader behaviors (Antonakis et al., 2003). However, as well as being both cost-and time efficient, the GTL has shown to have both high validity and reliability (Ghadi et al., 2013). The article presented by Carless et al. (2000) shows strong correlations between the GTL and sub-scales in both the LPI and MLQ, providing evidence of a strong convergent validity. Consequently, the GTL possesses high discriminant validity and reliability in assessing a global construct of TL, and with a Cronbach's Alpha > 0.90, indicating very good internal consistency (Carless, 2000). Later, this have been validated and confirmed by Van Beveren et al. (2017).

3.4.2 Adaptive Performance

Measuring AP, we have applied the I-ADAPT-M measurement system integrating Pulakos et al. (2000) eight dimensions of adaptive performance (Ployhart & Bliese, 2006). Although the construct consists of eight dimensions, researching the concept does not require integration of all dimensions. Hence, we limit the

number of dimensions, acknowledging those relevant for our research question and setting. Considering subscales relevant for this particular context, we aim to focus on three of the identified dimensions; demonstrating interpersonal adaptability, handling uncertainty and unpredictability, and handling work stress (Pulakos et al., 2000).

One of the original scales measuring adaptive performance is called the I-ADAPT theory consisting of 132 items divided on the eight dimensions. However, Ployhart and Bliese (2006) adjusted this measure and created the I-ADAPT-M measure with the intention of developing a comprehensive self-report measure assessing the dimensions identified by Pulakos et al. (2000), while at the same time being a shorter measure that could be completed quickly and easily for research. This development was based on a thorough review of literature relevant for individual adaptability, with a focus on understanding the eight dimensions of AP. The 40-item measure found strong support for convergent and discriminant validity. During this development Ployhart and Bliese (2006) also refined some items and added new items to several of the dimensions, resulting in a 55-item measure found to be particularly useful for research purposes.

Several studies have applied the I-ADAPT-M framework. Hamtiaux et al. (2013) examined the discriminant and convergent validity of the measure by relating it to cognitive flexibility, rigidity, and individual need for structure. Their results argued in favor of the eight-dimensional structure and provided evidence of convergent validity. Hence, they concluded that the scale provided by Ployhart and Bliese (2006) appears to be a valid measure of individuals' perceived ability to adapt to changing conditions (Hamtiaux et al., 2013). Furthermore, some researchers have also only examined subscales when using the I-ADAPT-M. Wessel et al. (2008) examined the subscales learning and uncertainty using this measurement, as they deemed relevant in their particular research context. In addition, Wang et al. (2011) used the dimensions of the I-ADAPT-M such as cultural, stress, learning, interpersonal adaptability, and uncertainty to test the effect of individual adaptability on perceived person-environment fit for newcomers at work, also excluding dimensions less relevant for the context. Based on existing literature, we find the I-ADAPT-M to have a strong theoretical

foundation with increased empirical support for measuring both the whole construct and subscales of individual adaptive performance.

3.4.3   Psychological Safety

When measuring perceived team PS on an individual level, we applied Edmondson's (1999) seven-item scale for PS. Team PS in this measure is defined as the shared belief that the team is safe for interpersonal risk-taking. The purpose of using this measure is reviewing the group dynamic and perceived PS. By measuring team PS, we aim to examine whether the team climate is characterized by trust and mutual respect in which people are comfortable being themselves (Edmondson, 1999). The construct of team PS developed by Edmondson (1999) had all items in the scale loaded on a single factor with an eigenvalue=2.23, with factor loadings ranging from 0.78 to 0.90, and reliability of the scale = 0.81, indicating that this scale poses as an accurate measure for its construct (Kessel et al., 2012). Further, preliminary analysis assessed internal consistency, reliability and validity of the scale, supporting the adequacy of the measurement.

3.5   Control variables

The study collected various demographic data, namely educational level, organizational tenure, company within the business group, if/ how long the employees have been laid off, and degree of virtual work. These were included on the premise of being found to correlate with individual adaptive performance (Pulakos et al., 2000), and to control sociodemographic differences potentially influencing results. As the business group consists of several companies, we transformed into dummy variables to control for company affiliation in the analysis. As the purpose of this study is to examine individuals' adaptive performance in changing work conditions, we found it relevant to include a variable confirming their degree of virtual work, measured from 0-100%, with 20% intervals. Another significant variable included in the questionnaire is if, and for how long the employee might have been temporarily laid off. It is important for managers to acknowledge its potential effect on employee attitudes and feelings regarding job security and career progress. Such events might lead to unwanted turnover and loss of valuable workforce (Lee et al., 2018). Further,

organizational tenure as a control variable aims to map employees' years spent in the organization, as how many years spent with the leader/leaders might affect results. Years of experience in the organization were measured through time frames such as "0-2 years", "3-5 years", 5-10 years", or "10+ years". Lastly, we included a variable to identify whether the employees perceived a feeling of changing working conditions during the last year. When measuring TL's effect on AP, we found it important to map out if employees actually feel affected by a situation that might change their environment or methods of work.

Variable	Category	Items	Question/framework	Measure
TL		7 items	Global Transformational Leadership Scale (GTL)	5-point Likert scale
AP	AdaptI	6 items	I-ADAPT-M	5-point Likert scale
	AdaptU	7 items		
	AdaptS	4 items		
PS		7 items	Team Psychological Safety	7-point Likert scale
Control variables	Company		A - D	Nominal
	Educational level		High School - Master's Degree	Nominal
	Organizational tenure		Under 2 - Over 10 years	Nominal
	Perception of change		Strongly disagree-strongly agree	Nominal
	Degree of virtual working		1-100%	Nominal
	Temporary layoff		Under 1 month - Over 6 months	Ordinal

Table 1: Measurement variables

3.6   Ethical considerations

Ethical concerns arise at several degrees in business and management research. Diener and Crandall (1978) distinguishes between four areas concerning ethical standards: harm to participants, lack of informed consent, invasion of privacy and deception. Thus, the research's compliance with these concerns were assessed. Firstly, harm can entail a number of facets, such as physical harm, harm to participants' development or self-esteem, stress, harm to career prospects for future employment, and induce respondents to conduct reprehensible acts (Bell et al., 2018). Relevant for this study, physical and mental harm can be assumed to not arise. However, we still aim to collect information in a convenient way for the participant in order to avoid such issues - suited for their language preferences, calendar and schedule. Further, future career opportunities will not be harmed, as participation in the project is anonymous and voluntary.

Furthermore, lack of informed consent concerns whether the respondents are provided with the information required to make factual decisions on whether they should participate (Bell et al., 2018). Consequently, providing leaders of the company, and respondents with accurate and relevant instructions of the purpose in advance was emphasized. Invasion of privacy is an important aspect when conducting such studies (Bell et al., 2018). We designed the collection process in a way which respects the individual's privacy, and only collected information relevant for the study. This dimension was especially important due to our close relation to the company; thus, our contact person allocated the surveys to keep information regarding company (A, B, C or D) anonymous for us as well. Lastly, the fourth ethical principle defined considers deception, which tends to occur when researchers represent their research as something it is not (Bell et al., 2018). Consequently, we aimed to conduct thorough interpretations of the data in our analysis and further controlled the findings to prevent misinterpretations. As mentioned, we conducted our data collection through "Nettskjema.no", ensuring anonymous responses following guidelines of GDPR. The platform provides secure solutions for online data sampling for researchers and institutions, whereas it fulfills the strict demands and guidelines for treating and storing sensitive data. According to the privacy act, data including any form of sensitive information, requires a higher degree of security and limited access (Uio.no, 2021).

4.0   Statistical Analysis

Statistical analysis is a fundamental stage aiming to reduce the scope of information gathered, enabling sensemaking of the data. Thus, SPSS version 27 was used to conduct analysis and test our proposed hypotheses. Before gathering information from our analysis, we had to prepare the data. After confirming sufficient results in the initial stages, we prepared to test our suggested hypotheses. The preparation and analysis concern the control variables, subscales of AP such as interpersonal adaptability (AdaptI), ability to handle uncertainty (AdaptU) and ability to handle work stress (AdaptS), as well as transformational leadership (TL), and psychological safety (PS).

4.1   Exploratory factor analysis

The analyses were conducted in several stages, whereas we first performed an exploratory factor analysis with Promax rotation on all items to evaluate factor structure and which items to retain. We used an oblique rotation as it tends to give more specific and accurate results compared to an orthogonal rotation. The oblique rotation allows the factors to correlate, rather than lose valuable information (Costello & Osborne, 2005). This initial stage is crucial to identify potential outliers and define factors, especially as all of our items were translated from English to Norwegian (Hinkin, 1998). We operated with an inclusion criterion of minimum .30 (Field, 2009), and found that four items in our study had factor loadings lower than the inclusion criteria (.30). These items all concern interpersonal adaptability, namely, "I am an open-minded person in dealing with others' ', "I try to be flexible in dealing with others", and "I adapt my behavior to get along with others". Despite the low factor loadings, we concluded to retain the items due to the fear of missing important data for further analysis. However, we further evaluated this through a reliability test of each subscale.

4.2   Descriptive statistics, correlation and scale reliability

Descriptive statistics analysis was performed in SPSS in order to describe and summarize potential patterns in the data and examine for normal distribution. In this analysis we aimed to describe the main constructs of our research. When exploring the results, we found that for most variables, the standard deviation was

relatively small, indicating most respondents are close to the mean value with low variability. The highest standard deviation is found in the AdaptS (=0.658). As mentioned, the term "work stress" refers to low ability to handle stress, indicating higher variability in terms of ability to handle job related stress. In addition, PS had a somewhat higher standard deviation (=0.519) due to a larger scale (1-7). However, as all of the standard deviations were < 1, they are considered as relatively small (Wan et al., 2014). After calculating mean scores, we tested internal consistency reliability using Cronbach's alpha, which is the most commonly accepted measure in field studies (Price & Muller, 1986; Hinkin, 1998). As illustrated in table 3, Cronbach's alpha test was performed to provide information about the extent to which all the items in a test measure the same concept or construct. Hence, we could make decisions of whether to form a scale and determine if the scale is reliable. A Cronbach's alpha of greater than 0.60 was reported for all groups, which indicated an acceptable level of internal consistency for our variables (Cronbach, 1951).

Further, we conducted tests to uncover normality, multicollinearity, and potential outliers. There were no extreme cases from this analysis. We investigate multicollinearity to uncover if we have any problems with high correlations between predictors. Our results demonstrate all VIF values to be admissible, indicating no problems related to multicollinearity (Myers & Myers, 1990). Further, we applied a Shapiro-wilk test investigating univariate non-normality. The test indicated non-normality as all values significantly deviated from a normal distribution (<0.05) apart from AdaptU (George & Mallery, 2010). Due to lack of normality in our data, we used a Spearman correlation test to investigate the relationship between the variables. From the results, there was a significant positive correlation between perceived TL and AdaptI (r=0.36). Further, there was a significant positive correlation between perceived TL and AdaptU (r=0.21). Lastly, we found a insignificant negative correlation between perceived TL and AdaptS (r=-0.13). However, we further tested the strength of these relationships in a regression analysis.

Variable	Mean	SD	Cronbach's Alpha	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Company A	.34			1													
1. Company B	.20			-.36**	1												
3. Company C	.16			-.32**	-.22**	1											
4. Company D	.29			-.47**	-.32**	-.29**	1										
5. Seniority	2.26	1.05		-.10	-.07	.00	.16**	1									
6. Educational level	3.64	.72		.12	-.43**	.02	.23**	.08	1								
7. Perceived change	3.90	.85		.09	-.24**	.07	.06	.10	.174*	1							
8. Home office degree	5.14	1.30		.03	-.58**	.25**	.28**	.10	.30**	.29**	1						
9. Degree of layoff	1.12	.49		-.01	.23**	-.11	-.10	-.20*	-.03	-.12	-.26**	1					
10. Interpersonal adaptability	4.07	.45	.67	.03	.05	.08	-.14	-.15	-.15	.11	-.05	.09	1				
11. Uncertainty	3.56	.37	.66	.03	.10	-.12	-.02	-0.20	.03	-.09	-.09	.08	.32**	1			
12. Work Stress	2.36	.81	.78	-.08	.19*	.01	-.09	-.16*	-.17*	-.03	-.14	.29**	.06	-.12	1		
13. Transformational leadership	4.07	.60	.89	.13	.58	-.02	-.08	-.09	.00	.01	.04	.12	.36**	.21*	-1.33	1	
14. Psychological safety	5.89	.72	.74	-.07	.01	-.04	.10	.04	-.04	-.09	-.12	.05	.26**	.25**	-.24**	.41**	1

Table 2: Descriptive statistics, correlation and scale reliability

5.0   Results

5.1   Hierarchical regression analysis

To test our proposed hypotheses, we performed a hierarchical regression analysis, which is a type of multiple regression analysis allowing more variables to be added into the model in separate stages or "blocks". This was done in order to control if adding certain variables statistically improves the model (de Jong, 1999).

5.1.1   Model 1

To test our first hypothesis, we conducted three separate linear regression analyses (model 1) in order to examine the effect transformational leadership has on each of the dependent variables. The results from the correlation matrix already uncovered a significant relationship between transformational leadership and demonstrating interpersonal adaptability, and transformational leadership and ability to handle uncertainty. However, we conducted a linear regression analysis to examine the strength of the relationships between TL and the dimensions of AP. The regression analysis postulates significant results of all tested relationships in H1, thus criterion-related validity is provided.

Hypothesis 1 a) assumed that there is a positive relationship between perceived TL and individual AdaptI. When examining H1 a), we found the relationship between TL and AdaptI to be significantly positive (B=.276), meaning that if TL increases with one unit, AdaptI will increase by 27,6%. Furthermore, R-Square was 0.226, indicating that 22.6 % of the variance in AdaptI can be explained by TL. H1 a) was accepted at a 95% confidence interval, indicating we can confirm that TL positively relates to AdaptI.

Hypothesis 1 b) suggests there is a positive relationship between perceived TL and individual AdaptU. When examining H1 b), we see that the relationship between TL and AdaptU yielded a weak significant positive value (B=.146), meaning that if TL increases with one unit, AdaptU increases by 14,6%. Furthermore, R-Square = 0.121, indicating that 12.1 % of the variance in AdaptU

can be explained by TL. H1 b) was accepted at a 95% confidence interval, indicating TL has a weak, but positive relation to AdaptU.

Hypothesis 1 c) suggests there is a negative relationship between perceived TL and AdaptS. When examining H1 c), we found that the relationship between TL and AdaptS was significantly negative (B=-.279), meaning that if TL increases with one unit, AdaptS will decrease by 27,9%. Furthermore, R-Square = 0.155, indicating that 15.5 % of the variance in AdaptS can be explained by TL. H1 c) was accepted at a 95% confidence interval, indicating TL negatively relates to AdaptS.

5.1.2   Model 2

Moreover, we added a new block in the regression analysis including psychological safety (model 2) as an independent variable in order to test the effect psychological safety had on the three dependent variables of adaptive performance. Thus, we could test our second hypothesis (H2 a, b, and c) reviewing the second model.

Hypothesis 2 a) assumed that there is a positive relationship between perceived PS and individual AdaptI. When examining H2 a), we found that the relationship between PS and AdaptI was significantly positive (B=.143), meaning that if PS increases with one unit, AdaptI will increase by 14,3%. Furthermore, R-Square was 0.264, indicating that 26,4 % of the variance in AdaptI can be explained by PS. H2 a) was accepted at a 95% confidence interval, indicating we can confirm that PS is significantly related to AdaptI.

Hypothesis 2 b) suggest that there is a positive relationship between perceived PS and individual AdaptU. When examining H2 b), we found that the relationship between PS and AdaptU to be weak but positive (B=.047, $P < 0.01$), meaning that if PS increases with one unit, AdaptU will increase by 4,7%. Furthermore, R-Square was 0.182, indicating that 18,2 % of the variance in AdaptU can be explained by PS. H2 b) was accepted at a 95% confidence interval, indicating we can confirm that PS is significantly related to AdaptU.

Hypothesis 2 c) proposed that there is a negative relationship between perceived PS and individual AdaptS. Examining H2 c), we found that the relationship between PS and AdaptS to be negative (B=-.317, P < 0.01), meaning that if PS increases with one unit, AdaptS will decrease by 31,7%. Furthermore, R-Square was 0.213, indicating that 21,3 % of the variance in AdaptS can be explained by PS. H2 c) was accepted at a 95% confidence interval, indicating we can confirm that PS is significantly related to AdaptS.

5.2   Moderation analysis

To examine the third hypothesis of whether perceived PS moderates the relationship between perceived TL and subscales of AP (H3) we conducted a moderation analysis (model 3), hence, added a third block to each of the hierarchical regression analyses by adding an interaction term.

First, we examined H3 a) suggesting perceived PS moderates the positive relationship between perceived TL and AdaptI. In the first step, two variables were included: TL and PS. This model accounted for a significant amount of variance in interpersonal adaptability, $R2 = 0.264$, $F (2, 143) = 16.25$, $p <0.001$ (Model 2). To avoid potentially problematic high multicollinearity with the interaction term, the variables were centered and an interaction term between TL and PS was created (Aiken & West, 1991). Next, the interaction term between TL and PS was added (TL_x_PS) to the regression model, which accounted for a non-significant proportion of the variance in AdaptI, $\Delta R2 = 0.001$, $\Delta F (1, 142) = 0.321$, $p = 0.732$, $B = 0.024$, with $p >0 .05$ (Model 3). Complete moderation occurred. Based on the results, the hypothesis was not accepted at a 95% confidence interval, thus we have no evidence that PS moderates the positive relationship between perceived TL and AdaptI.

Second, we examined H3 b) suggesting perceived PS moderates the positive relationship between perceived TL and AdaptU. These variables accounted for a significant amount of variance in handling uncertainty, $R2=0.182$, $F(2, 143) =10.467$, $p<0.001$ (Model 2). Adding the interaction term between TL and PS to the regression model, it accounted for a non-significant proportion of the variance

in AdaptU, ΔR2 =0.000, ΔF (1, 142) = 0.208, p = 0.885, B = 0.009, with p >0 .05 (Model 3). Complete moderation occurred. Based on the results, the hypothesis was not accepted at a 95% interval, thus have no evidence that PS moderates the positive relationship between perceived TL and AdaptU.

Lastly, we examined H3 c) suggesting perceived PS moderates the positive relationship between perceived TL and AdaptS. These variables accounted for a significant amount of variance in (ability handling) work stress, R2 = 0.213, F(2, 143) = 6.106, p= 0.003 (Model 2). Adding the interaction term between TL and PS to the regression model, it accounted for a non-significant proportion of the variance in AdaptS, ΔR2 = 0.001, ΔF (1, 142) = 0.048, p = 0.733, B = -.046, with p >0 .05 (Model 3). Complete moderation occurred. Based on the results, the hypothesis was not accepted at a 95% interval, thus we have no evidence that PS moderates the negative relationship between perceived TL and AdaptS.

Model	Variables	AdaptI	AdaptU	AdaptS
Model 1 (Linear regression analysis)	Company B (B)	-.048	.092	.195
	Company C (B)	.088	-.087	.132
	Company D (B)	-.003	-.009	-.014
	Seniority (B)	-.049	.020	-.073
	Educational level (B)	-.105*	.028	-.140
	Perceived change (B)	.049	-.062	.051
	Degree of home office (B)	-.011	-.006	-.012
	Degree of layoff (B)	.089	.082	.440**
	TL (B)	.276**	.146**	-.279*
	R^2	*.226*	*.121*	*.155*
Model 2 (Multiple regression analysis)	Company B (B)	-.074	.065	.253
	Company C (B)	.093	-.082	.123
	Company D (B)	-.036	-.043	.058
	Seniority (B)	-.058	.010	-.052
	Educational level (B)	-.093	.040	-.167

	Perceived change (B)	.069	-.041	.007
	Degree of home office (B)	-.031	-.016	.057
	Degree of layoff (B)	.076	.068	.469**
	TL (B)	.198**	.056	-.108
	PS (B)	.143**	.047**	-.317**
	R², p-value	*.264, (<.001)*	*.182, (<.001)*	*.213, (<.001)*
Model 3 (Moderated regression analysis)	Company B (B)	-.079	.063	.262
	Company C (B)	.097	-.081	.115
	Company D (B)	-.032	-.042	.052
	Seniority (B)	-.059	.010	-.051
	Educational level (B)	-.093	.040	-.166*
	Perceived change (B)	.067	-.042	.011
	Degree of home office (B)	-.032	-.016	.058
	Degree of layoff (B)	.074	.067	.472**
	TL (B)	.056	.012	.159
	PS (B)	.048	.115	-.139
	TL_x_PS (B)	.024	.009	-.046
	R²	*.264*	*.182*	*.213*
	ΔR², p-value	*.001, (.732)*	*.000, (.885)*	*.001, (.733)*

**. Relationship is significant at the 0.01 level.

*. Relationship is significant at the 0.05 level.

(B) = Unstandardized beta value

Note: If the predictor and moderator are not significant with the interaction term added, then complete moderation has occurred. If the predictor and moderator are significant with the interaction term added, then moderation has occurred, however the main effects are also significant

Table 3: Hierarchical regression analysis

6.0   Discussion

This study had the purpose of examining the effect TL has on three dimensions of AP during the changing work conditions due to Covid-19. We investigated the potential moderating effect of PS between these variables to evaluate if the need for TL increases in teams experiencing lower degrees of safety. Our ambition throughout this research was to understand and identify underlying factors that can help us adopt change-oriented behaviors by facilitating adaptation in an unpredictable context. Earlier research has examined the effect of TL on some dimensions of AP (Charbonnier-Voirin et al., 2010), however, we acknowledge the need for investigating relevant dimensions in a context characterized by high-speed changes. Additionally, our study contributes to the change literature by evaluating the moderating effect of PS during changes forcing employees to convert to virtual working. Recent research on AP has mainly emphasized examining internal factors, such as personality and cognitive ability (Hueang et al., 2014; Stasielowicz, 2020). Thus, the call for examining how external factors, such as leadership and safety, might impact AP increases. As a result, we aim to provide valuable insight for future strategies to businesses by exploring how external factors can impact how well the employees adapt to new ways of virtual working.

Behaviors encompassing TL are interesting to examine in relation to the dimensions of adaptive performance deliberated in this study. One can assume that how adaptable employees are to the changes forced upon them can and will be influenced by how leaders manage to communicate a clear vision, contribute to the development of individuals, provide sufficient support, empower employees and foster innovative environments (Carless, 2000). Hence, TL behaviors may not only influence staff to be less resistant to change (Bass & Riggio, 2006) but also strengthen overall job performance by appealing to subscales of AP. According to Charbonnier-Voirin (2010), research findings are consistent in that perceptions of TL enhance the effect on AP due to their ability to appeal to ideals and values, enforcing adaptive behaviors. Although positive relationships between TL and AP have been confirmed previously, we acknowledge the importance of evaluating how these concepts act when change is rapid and forced, such as Covid-19. Moss et al. (2009) argue that although focus, to some extent, has been placed on leaders

generating AP in dynamic environments, research on the topic is limited. Hence, investigating how well employees respond and the role TL plays in this context becomes essential for future studies. In this specific research, we regarded three subscales of AP to be especially relevant when examining the effect of TL. Thus, hypothesis 1 proposes that there is a positive relationship between TL and dimensions of AP.

For our first hypothesis, the research confirms that TL has a significantly positive effect on both individual's ability to (a) demonstrate interpersonal adaptability and (b) handle uncertain and unpredictable situations. Further, our analysis indicates a significantly negative relationship between TL and (c) work stress. The core aspect of adaptability concerns the ability to remain optimistic in changing, stressful, and uncertain contexts (Moss et al., 2009). TL has shown to be adequate in unstable and dynamic environments, characterizing the current work conditions (Bass & Riggio, 2006). Further, TL promotes a psychological state where individuals view work activities as aligned with personally held values and act accordingly, performing above what is expected (Charbonnier-Voirin, 2010). This also substantiates the idea that TL increases positive attitudes towards organizational changes, fostering adaptive behavior among employees (Seo et al., 2012; in Agote et al., 2016). Thus, earlier research provides a great amount of support for our findings of hypotheses 1 a, b, and c.

When testing our second hypothesis, we found a significantly positive relationship between PS and interpersonal adaptability, aligning with our assumption. This seems meaningful, as our sample, to a large degree, works in different teams and projects, requiring them to collaborate, trust and support each other across contexts (Edmondson, 1999). Building strong relationships can increase willingness to adapt their ways of working due to higher degrees of trust and communication among employees (Edmonson & Mogelof, 2006). PS also had a significant positive relationship to employee's ability to handle uncertainty. Accordingly, PS is essential in times of uncertainty, as it reduces interpersonal risk (Edmondson & Lei, 2014). As PS aims to create a safe environment among team members, employees are more willing to go beyond what is expected with the certainty of it being accepted by the group. Thus, confirming the results of our

analysis. Lastly, the analysis postulates a strong significant negative relationship between PS and work stress, indicating that PS is valuable for handling stress among employees in this specific context. As PS enhances employees' willingness to speak up, take interpersonal risks, and reduce fears of negative feedback, this seems to significantly impact employees' stress, aligning with our results. Consequently, results from the analysis align with the theoretical aspects of psychological safety. Furthermore, one interesting finding in model 2 is that the significant relation of TL on AP withdrew, although the effect of PS on AP yielded all significant relationships. As both PS and TL have a direct effect on the dimensions of AP, one can argue that the presence of PS might substitute the role of TL for some individuals. Studies have revealed that PS has been identified as the number one characteristic of successful high-performing teams (Bergmann & Schaeppi, 2016; in Newman et al., 2017). Although we cannot draw any universal conclusion of PS substituting leadership, we can assume that PS acts like an essential component during change and that the presence of PS might have a more considerable impact on AP during this specific context. Notably, some teams might not have leaders capable of coordinating complex change processes; thus, the state of PS becomes especially important.

Moreover, we wanted to examine the moderating effect of PS on the relationship between TL and AP. PS is crucial for making people feel secure to change behaviors in response to organizational change (Schein & Bennis, 1965). Particularly, an environment with a low threshold to speak up, confront conflicts, ask for feedback and take interpersonal risks (Delizonna, 2017) may be necessary for increasing ability to handle work stress, feel safe to perform during uncertainty, and empower individual's ability to adapt to others during unpredictable changes. Further, we found it interesting to look into the contextual relationship of transformational leadership and psychological safety, as they pursue some of the same aspirations. TL has been shown to inspire employees to realize their ambitious visions and encourage them to chase innovative ways of working (Carmeli et al., 2014). Similar to TL, PS aims to provide employees with a safe environment to receive desired outcomes and challenge existing practices. Accordingly, TL may develop a psychologically safe environment, which

increased our interest to examine if the moderating effect of PS could reduce the effect of TL when fostering dimensions of AP.

Therefore, the third hypothesis proposes that the relationship between TL and AP becomes weaker when PS increases. The study yielded nonsignificant results when investigating the interaction term for all three dimensions, indicating no evidence that the moderator affects the relationship between TL and AP but lacks sufficient data to evaluate the effect in the population. Hence, one may assume that the presence of both TL and PS are more beneficial than one being replaced by the other. The function of TL can provide teams with a safe environment if team members are not already inherited with this. We assumed that PS could replace TL in this specific context, as they both aim to provide a safe environment to receive desired outcomes, be innovative and challenge the status quo (Carmeli et al., 2014; Delizonna, 2017). Therefore, if PS managed to promote AP in the same way as TL, the role of leadership would be less influential. However, the basis of the nonsignificant results may be logical, as PS and TL operate in different ways. While PS focuses on promoting a safe environment with transparency among team members to increase performance, transformational leaders act as agents aiming to increase performance through specific actions on an individual level. Thus, the constructs are fundamentally divergent and influence different mechanisms in individuals to foster AP.

The reasons for our nonsignificant results in the moderation analysis may have several causes. Firstly, nonsignificant results could occur due to our sample size being too small to say anything about the effect or that the effect is too small to evaluate the population. Further, Stokes et al. (2010) highlight the difference between objective and subjective interpretations of adaptability. Hence, employees' inaccurate perceptions of how adaptable they are to changes may help explain why hypotheses 2 a, b, and c yielded nonsignificant results. Consequently, leaders and other team members might rate their co-workers differently than respondents' own perceptions. Indeed, our results suggest high mean values of the three dimensions of AP, indicating respondents have rated themselves as very adaptable. Noteworthy, TL and PS have a high correlation, although there are no problems with multicollinearity. One can assume that the nonsignificant results

can occur because the joint effect of TL and PS are more influential when explaining the differences in subscales of AP rather than the main effect of TL or PS. Hence, the presence of both TL and PS might decrease the individual effect of each variable.

In addition to our proposed hypothesis, the analysis provided us with several interesting findings. First, we conducted an additional regression analysis as we were intrigued to examine the effect TL has on PS. Accordingly, TL has a strong, significant positive effect on PS (.526), meaning that the presence of transformational leaders provides team members with higher degrees of safety. Research suggests that transformational leaders can increase PS among employees by providing coaching, motivational care, and creating behavioral norms of intellectual stimulation as role models (Kim et al., 2019). In addition, Stouten et al. (2018) highlights the importance of leaders' role during change and propose that trustworthy, supportive, and honest leaders who are transparent about the nature of the change are likely to effectively create a psychologically safe environment where there is room for voice, mistakes, and learning. Thus, supporting our findings emphasizing the importance of perceived TL during change, unpredictability, and uncertainty.

Secondly, as expected, our analysis suggested that temporary layoff significantly impacts employees' work stress (.472). Employees who experienced layoffs found it harder to cope with stressful situations than other employees. The role of TL, therefore, becomes especially important in organizations experiencing temporary layoffs as it generally reduces stress and uncertainty during unpredictable circumstances. Temporary layoffs cause stress and uncertainty for the ones being suspended but might also impact job insecurity among all employees in the organization (Shoss, 2017). Therefore, implementing specific actions increasing adaptive behavior in situations similar to Covid-19 is crucial to maintain commitment and high performance. For example, by focusing on creating psychologically safe environments or developing transformational leader behaviors, organizations can potentially increase employee willingness to change without threatening job security.

6.1   Limitations and future research

Several limitations must be acknowledged, both related to our data collection, analysis, and study design. Accounting for such limitations provides valuable information for potential research in this field for the future (Bell et al., 2018). Firstly, one limitation concerns a modest sample size, which preferably could entail a more extensive scope to increase validity and identify stronger patterns within the business group. When evaluating the population size, using a 95% confidence interval accounted for an acceptable sample size. However, the study exclusively investigates respondents from the same group holding relatively similar backgrounds. Therefore, our segment appears to be a homogenous group, representing a threat to the external validity and generalization of our findings to other sectors and organizations (Bell et al., 2018). Nevertheless, as our sample includes respondents with different seniority and educational backgrounds, the findings may be representative of other IT consultancy businesses. The strength of such a homogeneous sample in the organizational context is that it excludes alternative explanations of the results and increases the probability of exploring accurate relationships in the sample (Kuvaas et al., 2012). Thus, future studies could examine whether the results of our research can be generalized to other businesses and contexts (Bell et al., 2018).

Second, self-report questionnaires are at risk of causing common method variance, affecting the validity of the results (Podsakoff et al., 2003). In organizational behavior research, self-reporting bias is particularly more likely to happen if the employees believe there is a chance of the responses being identified (Donaldson & Grant-Vallone, 2002). Respondents will, therefore, set themselves in a favorable light regardless of actual opinions, referred to as social desirability (Podsakoff et al., 2003). One cannot guarantee that participants correctly rate themselves in terms of being cooperative, flexible, or adaptive to new team compositions and working methods. To decrease method bias, we ensured the respondents that all answers would be anonymous without tracing it back to them. We also limited control variables, removing variables such as gender and age due to a smaller scope within the companies, assuring higher levels of anonymity. Further, we cannot be confident that respondents understand the questions correctly, nor have taken time to ensure highly accurate data (Rowley, 2014).

Consequently, we have attempted to use the questionnaires as easily as possible to answer, regardless of their knowledge of the specific topic.

Third, previous research notes that the employees' individual experiences can impact how they respond to related situations. Thus, if employees have positive experiences adapting to new ways of working, they are also more likely to be positive to future adaptation and change (Buch et al., 2014). Accordingly, other variables could be measured to provide other insights to the study, such as measuring experience with adapting to new work situations as a control variable. It should be mentioned that all of our respondents work as consultants, indicating they generally have more experience adapting to new projects, new work situations, and new teams. However, the consultants still have different experiences with such work regarding seniority and complexity of projects.

Moreover, our study lacks the measure of causality as we only collected data once and not by using a longitudinal design collecting data over time. Hence, we cannot draw any universal conclusions from our results due to a study design with only one data source (Podsakoff et al., 2003). Therefore, future research should include data collection over time from several sources to improve the causality and validity of the relationship between TL and dimensions of AP. Further, it would be interesting to conduct the analysis on team-level, examining if members of the same group have similar perceptions of team PS and team leaders. The leader of the different teams could also be of interest to investigate, as we assume that it might reveal different perceptions regarding psychological safety and leadership. Applying a qualitative method with in-depth interviews could gain more detailed information and explanations about team members' perceptions. In addition, future research should also evaluate other moderators or mediators on the relationship between TL and subscales of AP. Alternatively, investigate the effect of other leadership styles and whether this might contribute to stronger explanations of the ability to demonstrate interpersonal adaptability, handle uncertainty, and handle work stress.

Furthermore, future research could include other or extensive control variables providing more definite results. For example, including more sociodemographic control variables such as age and gender and their impact on the ability to adapt could be insightful to provide other explanations to the findings. Studies propose significant differences in the relationship between leaders and employees regarding gender and age (Dysvik & Kuvaas, 2011). Further, a control variable investigating the size of the team could be interesting, as we assume that the effect of leadership and perceived safety will vary depending on team size. Leadership effectiveness has been suggested to decrease with group size, whereas employees are less likely to follow their leaders (Komai & Grossman., 2009). Lastly, we acknowledge the value of exploring the mediating role of psychological safety after reviewing the results from this research. As mentioned, studies suggest transformational leadership may manage to foster a psychologically safe environment (Stouten et al., 2018). Therefore, investigating the underlying mechanisms of how transformational leadership might affect how psychological safety influences adaptive performance would be engaging for future research. This could contribute to broadening the understanding between these variables and the nature of their relationship (Cohen et al., 2013).

6.2   Practical implications

This study provides the organizations, leaders, and employees involved in this transition with practical implications for practice despite the limitations identified. Based on the findings and additional empirical support, this study provides information about a topic that, to our knowledge, has not been examined in a context characterized by a global crisis requiring such a rapid and comprehensive change. Further, examining how external factors such as leadership and PS can impact adaption in the workplace is crucial to maintain performance in the organization, compete in a rapidly changing market, and embrace and learn from changes. In addition, the transition to virtual solutions is constantly increasing, changing the nature of work. Considering the Covid-19 situation, most companies had to adapt their routines to follow the government's guidelines, thus implementing solutions for home office and new employee follow-up terms. Consequently, investigating and becoming aware of how leadership and safety

within the teams affect the employee's ability to adapt will become crucial to form new strategies and take advantage of the potential benefits of change.

Our results present that the role of leadership is not only crucial for enhancing AP among employees but aims to foster psychologically safe environments within teams as well. Based on these results, practical implications should include leadership development enhancing important aspects of TL. Thus, activities encompassing an increase in behaviors, including the ability to communicate a clear vision, encourage individual development of staff, provide support, empower staff, foster innovation, lead by example, and charisma (Carless, 2000), becomes vital for future success implications. Further, we recognize the need to foster PS among team members. Our analysis provided information indicating that PS has a significant positive impact on AP. Even though TL facilitates PS, it is not given that all teams possess a transformational leader. Therefore, the enhancement of PS among team members becomes an important matter, as AP can increase without placing a critical responsibility on the leader. There are several implications in which PS can increase. Delizonna (2017) proposes that fostering PS in a team can be done by; confronting conflicts as collaborators and not adversaries, speaking human to human, being able to anticipate reactions and plan countermoves, replace blame with curiosity, ask for feedback on delivery, and try to measure PS. Consequently, team PS can take place without the need for a definite role model.

7.0   Conclusion

Covid-19 has led to undetermined changes, and organizations are imposed to adapt their previous work conditions to fit the new normal. Simultaneously, employees are expected to deliver at a high level and develop skills and knowledge accordingly. In these contexts, leaders often serve as change agents, highlighting the value of leadership skills when facilitating proper adaptation. Further, team psychological safety supplements several remedies vital for reinforcing adaptive behavior, acting as a salient component if strong leadership is neglected. Our study contributes to change literature by examining leadership and adaptation in a complex environment requiring expeditious adjustments, such as the ongoing pandemic. Additionally, today's businesses are immensely shaped by high-speed markets and sustained innovation, researching how organizations can

facilitate adaptive behavior in virtual and unpredictable conditions necessary for future studies. While previous research has stressed the critical role of leadership, we found the topic of research to be of substance from a divergent standpoint. What we refer to as the "new normal" abine unforeseen and agile changes that might challenge both our knowledge and even daily habits.

Concerning our research question, the results yield significant evidence that transformational leadership positively relates to followers' ability to adjust to changing structures during Covid-19. However, the assumption that psychological safety acts as a moderator on the relationship between transformational leadership and adaptive performance postulated nonsignificant results, making it an exciting variable to examine in the future. Nonetheless, the analysis revealed transformational leaderships' effect on psychological safety to be significantly positive, which can be beneficial for subscales of adaptive performance as well. Inevitably, to foster adaptive behavior during unpredictable change, appropriate leadership skills substantially improves psychological safety in teams and assures successful adaptation.

8.0   References

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9.0   Appendix

9.1   *Exploratory Factor Analysis*

Item	1	2	3	4	5
AdaptI_1					.838
AdaptI_2					.833
AdaptI_3					
AdaptI_4					.740
AdaptI_5					
AdaptI_6					
AdaptU_1					
AdaptU_2				.352	
AdaptU_3				.328	
AdaptU_4				.634	
AdaptU_5				.727	
AdaptU_6				.761	
AdaptU_7				.646	
AdaptS_1			.653		
AdaptS_2			.708		
AdaptS_3			.781		
AdaptS_4			.694		
TL_1	.662				
TL_2	.851				
TL_4	.776				
TL_5	.718				
TL_6	.753				
TL_7	.883				
PS_1		.854			
PS_2		.604			
PS_3		.786			
PS_4		.620			
PS_5		.608			
PS_6		.495			
PS_7		.311			
Inclusion criteria = 0.3					

9.2   Questionnaire survey

Selskap *

- ○ Selskap A
- ○ Selskap B
- ○ Selskap C
- ○ Selskap D

Antall års erfaring i selskapet *

- ○ 0-2 år
- ○ 2-5 år
- ○ 5-10 år
- ○ 10 + år

Utdanningsnivå *

- ○ Videregående
- ○ Årsstudium
- ○ Bachelorgrad
- ○ Mastergrad
- ○ Annet

Jeg opplever det har vært en stor endring i måten å arbeide på det siste året *

- ○ Veldig uenig
- ○ Uenig
- ○ Nøytral
- ○ Enig
- ○ Veldig enig

I hvor stor grad har du jobbet hjemmefra det siste året? *

- ○ Under 10%
- ○ 10-30 %
- ○ 30-50 %
- ○ 50-70 %
- ○ 70 - 90 %
- ○ Over 90 %

Har du/ Hvor lenge har du vært permittert sammenlagt det siste året? *

- ○ Jeg har ikke vært permittert
- ○ Under 1 måned
- ○ 1-3 måneder
- ○ 3-6 måneder
- ○ Over 6 måneder

Adaptive Performance

Individuell tilpasningsevne

	Veldig uenig	Uenig	Nøytral	Enig	Veldig enig
Jeg er vanligvis i stand til å lese andre og forstå hvordan de har det til enhver tid *	○	○	○	○	○
Min innsikt hjelper meg med å jobbe mer effektivt med andre *	○	○	○	○	○
Jeg er fordomsfri i relasjon med andre *	○	○	○	○	○
Jeg er oppmerksom på andres atferd og bruker denne informasjonen i samspill med andre *	○	○	○	○	○
Jeg prøver å være fleksibel når jeg jobber med andre *	○	○	○	○	○
Jeg tilpasser atferden min for å komme overens med andre *	○	○	○	○	○

Usikkerhet og uforutsigbarhet

	Veldig uenig	Uenig	Nøytral	Enig	Veldig enig
Jeg har et behov for at ting er svart/hvitt *	○	○	○	○	○
Jeg blir frustrert når ting er uforutsigbare *	○	○	○	○	○
Jeg er i stand til å ta effektive beslutninger uten all relevant informasjon *	○	○	○	○	○
Jeg tilpasser meg endrede situasjoner *	○	○	○	○	○
Jeg presterer bra i usikre situasjoner *	○	○	○	○	○
Jeg responderer lett til endrede situasjoner *	○	○	○	○	○
Jeg tilpasser planene mine til endrede forhold *	○	○	○	○	○

Stress

	Veldig uenig	Uenig	Nøytral	Enig	Veldig enig
Jeg overreagerer vanligvis på stressende nyheter *	○	○	○	○	○
Jeg føler meg ikke rustet til å takle mye stress *	○	○	○	○	○
Jeg blir vanligvis stresset ved store arbeidsmengder *	○	○	○	○	○
Jeg blir ofte sint eller gråter når jeg opplever mye stress *	○	○	○	○	○

Ledelse

Min nærmeste leder...

	Aldri	Sjelden	Nøytral	Ofte	Alltid
Kommuniserer en klar og positiv visjon om fremtiden *	○	○	○	○	○
Behandler ansatte som enkeltpersoner, samt støtter og oppmuntrer deres utvikling *	○	○	○	○	○
Oppmuntrer og anerkjenner personalet *	○	○	○	○	○
Fremmer tillit, involvering og samarbeid blant medlemmene i gruppen *	○	○	○	○	○
Oppfordrer til å vurdere problemer på nye måter og stiller spørsmål til antagelser *	○	○	○	○	○
Er tydelig på sine verdier og praktiserer det han/hun verdsetter *	○	○	○	○	○
Gir ansatte stolthet og respekt, samt inspirer ansatte gjennom sin kompetanse *	○	○	○	○	○

Teamet

Teamer jeg jobber i...

	Veldig uenig	Uenig	Litt uenig	Nøytral	Litt enig	Enig	Veldig enig
Hvis du gjør en feil i dette teamet brukes det ofte mot deg *	○	○	○	○	○	○	○
Medlemmer av dette teamet evner å ta opp vanskeligheter og problemer *	○	○	○	○	○	○	○
Medlemmer av teamet avviser noen ganger andre fordi de er forskjellige fra dem *	○	○	○	○	○	○	○
Det er trygt å ta en risiko i dette teamet *	○	○	○	○	○	○	○
Det er vanskelig å be andre medlemmer av teamet om hjelp *	○	○	○	○	○	○	○
Ingen medlemmer i teamet vil bevisst handle på en måte som undergraver innsatsen til hele teamet *	○	○	○	○	○	○	○
Når jeg jobber med dette teamet evner jeg å utnytte ferdighetene og talentene mine *	○	○	○	○	○	○	○

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