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Camilla Kvalvær Hansen



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## Summary

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The contemporary workforce places a high demand on employees to exhibit Adaptive Performance (AP) in response to change. As a result, there has been a growing interest among professionals in understanding the determinants of AP. This thesis aspires to fill a current void in research by providing a more comprehensive understanding of the nomological network of AP, with a specific focus on the pivotal role played by mastery climates in fostering employee AP. By delving into the intricacies of *when* and *how* mastery climates exert their influence on AP, this thesis aims to examine the mediating role of *psychological safety* and *self-efficacy*, as well as the moderating role of *team tenure*. Using a cross-sectional survey design, 117 individuals were purposively criterion sampled from nine different IT companies in Norway. The findings demonstrate a positive relationship between perceived mastery climate and AP, wherein self-efficacy partially mediates this relationship. However, no evidence was found supporting the mediating role of psychological safety or the moderating role of team tenure. These findings emphasize the importance of cultivating a mastery climate within organizations and fostering employees' belief in their abilities to effectively perform tasks and adapt to changing circumstances. Overall, this thesis contributes to the existing body of knowledge on the determinants of AP, addresses existing uncertainties, and provides suggestions for future research endeavors.

## 1.0. Introduction

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Today's business environment has become increasingly volatile and unpredictable, due to various factors like globalization, technological advancements, demographic shifts, and crisis situations (Solberg et al., 2022). Given these challenges, the ability to learn and adapt to changing circumstances is a crucial component of organizational survival and prosperity. Adaptive performance (AP) refers to the ability of an individual to effectively respond to new or changing situations (Neal & Hesketh, 1999), and it is thought to entail capacities of problem-solving, dealing with uncertainty, learning, and interpersonal, cultural, and physical adaptability (Pulakos et al., 2000). Research shows that individuals who exhibit elevated levels of AP demonstrate a fundamental inclination to sustain successful job performance. In particular, AP is found to generate favorable organizational outcomes such as enabling effective management of change, facilitating organizational learning, and ensuring that organizations keep up with evolving customer expectations (Dorsey et al., 2010; Shoss et al., 2012). These findings emphasize the criticality of fostering AP in individuals. Therefore, developing a comprehensive understanding of the AP construct and its determinants is indispensable for designing effective interventions that can foster individual AP within organizational contexts.

An increasing number of studies have investigated the construct of AP with a focus on identifying the factors that contribute to its development and cultivation (e.g., Griffin & Hesketh, 2003; Pulakos et al., 2000; Shoss et al., 2012). While existing research mostly has explored individual-level determinants of AP, such as personality traits and self-efficacy, contextual factors like job characteristics, organizational climate, and leadership have been relatively underexamined (Park & Park, 2019). To address this gap in the literature, scholars, including Jundt et al., (2015), have emphasized the need for a more comprehensive understanding of the nomological network of AP, including an increasing focus on contextual factors. Addressing this research gap is critical to advancing both the theoretical and practical understanding of AP and to guiding interventions and policies aimed at fostering individual AP in modern workplaces.

Recent studies suggest that employees' perceptions of a mastery climate could promote AP (e.g., Černe et al., 2017; Nerstad et al., 2018; Solberg et al., 2022). Notably, the concept of mastery climate is one of the central sub-branches within the research on motivational climate, which refers to how employees

perceive success and job performance within their work environment, as opposed to their personal definitions of success based on goal-orientation (Ames, 1992). A *mastery climate* is associated with adaptive cognitive and affective patterns, including increased perceived competence, self-efficacy, task goal orientation, enjoyment, and effort, while a *performance climate* emphasizes normative criteria for success and is linked with less adaptive motivational patterns, such as increased worry, an ego-goal-orientation, and a focus on individual ability (Ntoumanis & Biddle, 1999). This underscores the critical role that the mastery climate could play in influencing AP among employees. Nonetheless, more research is needed to conceptually affirm its significance. In particular, Solberg et al., (2022) advocate for future research to investigate *when* or under *what* conditions this relationship is most viable or relevant.

To address this call for research, our study aims to investigate how different mediators and moderators can help us understand what may enhance or hinder the effect of mastery climate on AP. Specifically, this study examines the mediating role of *psychological safety* and *self-efficacy*. Psychological safety refers to the shared beliefs within a team that it is a safe environment for individuals to engage in interpersonal risk-taking (Edmondson, 1999) and self-efficacy refers to individuals' belief in their cognitive abilities to complete a given activity or achieve a certain degree of performance (Bandura, 1986). Additionally, we will examine the moderating effect of *team tenure*, which refers to the duration of time individuals or team members have worked together (Gonzalez-Mulé et al., 2020; Katz, 1982), to assess whether the relationship is more pronounced among teams with greater tenure. By investigating these mechanisms, our study aims to enhance a more comprehensive understanding of the underlying mechanisms that explain *how* and *when* mastery climates lead to improved AP. In doing so, our research extends the current body of knowledge on AP by discerning and elucidating some pertinent processes that may play a role in producing AP.

### **1.1. The Relevance of Studying AP in the IT Sector**

The information technology (IT) sector is a rapidly expanding and dynamic industry that encompasses a broad range of businesses, ranging from software development to network infrastructure management. It plays a pivotal role in driving technological advancements, including hardware innovation, software development, and network architecture (Law Insider, n.d). Given the industry's fast-paced nature, the ability



to adapt to keep pace with technological change is critically important in the industry as it enables constant innovation and adaptation to remain competitive. Consequently, IT professionals must be adaptive to frequent changes in job roles, skill sets, and work conditions to perform effectively. The industry's global operation also makes collaboration across teams and departments an essential element of success, further strengthening the vitality of AP.

While Solberg et al., (2022) highlighted the importance of AP and employee flexibility in the accounting industry, further research is necessary to establish the generalizability of these findings across industries. Given the scarcity of research on AP within the IT industry, the need for this study is further accentuated. Consequently, this study seeks to investigate the role of AP within the IT sector, to improve the industry's competitiveness and sustainability.

## 2.0. Conceptual research framework and hypotheses

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This section provides a comprehensive elaboration of the formulation of our hypotheses and conceptual model, drawing upon the existing literature about the selected constructs. First, we will commence by presenting the theoretical framework that encompasses individual AP and mastery climate, followed by an examination of the potential moderating and mediating factors that may impact the relationship between these constructs. To visually represent our research framework, Figure 1 depicts all variables used in the study. Subsequent sections will expound upon our six hypotheses in detail.

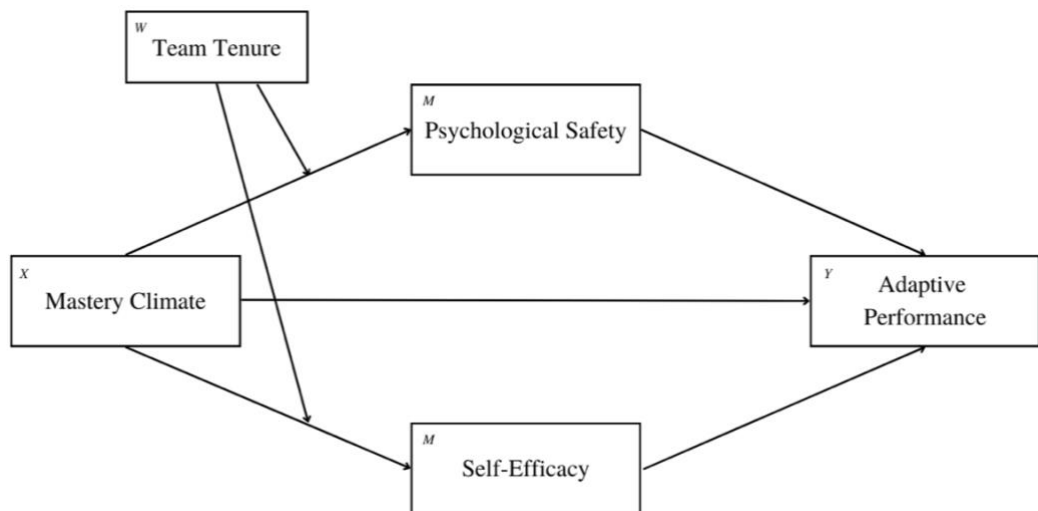


Figure 1. The conceptual model

### 2.1. Adaptive Performance

Adaptive performance (AP) has been the subject of significant scholarly attention since its introduction to the research field in the late 1990s. One of the first definitions of AP characterized it as employees' ability to navigate and cope with rapidly changing work situations (Neal & Hesketh, 1999). However, despite extensive research on AP, no widely accepted definition exists, and multiple interpretations and divergent terminology are still used to describe the concept. For example, terms such as flexibility, proactivity, resilience, role flexibility, and workforce agility have been used to denote AP (Park & Park, 2019). The interchangeable use of these terms has caused significant conceptual ambiguity

regarding whether they represent identical, partially overlapping, or distinct constructs (Jundt et al., 2015).

Furthermore, some define AP as an individual's *willingness* or *ability* to adapt to change (e.g., Cronshaw & Jethmalani, 2005; Pulakos et al., 2000), while others restrict the term to enacted *behaviors* that align with an organization's goals (e.g., Campbell et al., 1993). To address this issue, Jundt et al., (2015) proposed a more precise definition of AP. Specifically, as "task-performance-directed behaviors individuals enact in response to or anticipation of changes relevant to job-related tasks" (p. 54-55). This definition situates AP within the broader framework of job performance, as defined by Campbell et al., (1993), and distinguishes it from individual predispositions towards such behaviors.

Given the importance of performance in dynamic and ambiguous situations, researchers have argued that modifying one's behavior when facing a changing task environment is a requirement of most existing and future jobs (Griffin et al., 2007). Particularly, organizational changes can result in a misalignment between employees' skills and the requirements of their jobs. This emphasizes the importance of assessing not only an individual's task performance but also their ability to adapt to changes and perform effectively in diverse contexts, ultimately contributing to overall job performance. As such, evaluating an employee's job performance without considering their adaptability may overlook a crucial aspect of their effectiveness (Pulakos et al., 2000).

Despite the consensus among scholars regarding the necessity of situating AP within the broader construct of job performance, the extant literature is characterized by a fragmented understanding of AP due to the varied approaches and levels of analysis adopted. For instance, antecedents of employee AP have been investigated on individual, job, contextual, and organizational levels (Jundt et al., 2015). At the individual level, factors such as personality traits, cognitive abilities, and prior experience have been found to impact an individual's ability to adapt to new situations (Griffin & Hesketh, 2003; Pulakos et al., 2002). Similarly, at the job level, decision-making autonomy and role change have been linked to AP (Goštautaitė & Bučiūnienė, 2015). However, the influence of contextual factors has received less attention, despite their potential impact on AP. For instance, an environment that supports learning and development, encourages risk-taking and experimentation and fosters a mastery climate can facilitate AP, thus merits further exploration in future studies (Nerstad et al., 2018; Solberg et al., 2022).

## **2.2. Mastery Climate and AP**

The term “mastery climate” originates from the literature on goal orientation and refers to a work climate that prioritizes employee learning and mastery through individual effort and cooperation with coworkers (Černe et al., 2017; Nerstad et al., 2013; Solberg et al., 2022). Conceptually, a work climate is regarded as a factor that reflects how employees perceive and interpret contextual information, evaluate their performance, and ultimately shape the “why” of their achievement striving (Nerstad et al., 2013). According to Ames (1992), employees’ perceptions of their climate relate to their understanding of the criteria for success and failure, as emphasized through the policies, practices, and procedures of the work environment (Nerstad et al., 2013). Considering the pervasive reliance on collaborative work in the IT industry, which entails engagement in both temporary and enduring projects involving diverse teams and frequent alterations, the present study seeks to investigate the nuances of team climates. Team climate represents the collective norms, attitudes, and expectations that individuals perceive to operate within a team (Park & Park, 2019), with mastery climates serving as an expression of the broader organizational context in which individuals work.

A mastery climate emphasizes personal growth and self-referenced criteria for success, eschewing social comparison and competition with peers, unlike a performance climate that prioritizes the attainment of outcomes indicative of superior ability (Ames, 1992). Previous studies have found that individuals’ perceptions of a mastery climate significantly influence their task approach, pursued goals, and subsequent performance evaluations (Ames & Ames, 1984). Specifically, a mastery climate has been linked with several favorable outcomes, such as increased job satisfaction, perceived competence, and reduced intention to leave the organization (Steindórsdóttir et al., 2021).

Therefore, as a mastery climate can create a work atmosphere that values growth, learning, and continuous improvement, scholars have emphasized its capacity to enhance AP. This is attributed to the facilitation of knowledge sharing with colleagues and a willingness to experiment with new work practices (Nerstad et al., 2013). This proposal is further confirmed by Solberg et al., (2022), who found that cultivating a mastery climate has the potential to enhance employees’ behavioral flexibility, contributing to their adaptability. Therefore, examining the mastery climate within a team working environment offers valuable insights into how employees’ perceptions of their workplace inform their behaviors.

In line with this, a mastery climate is thought to foster adaptive behaviors, including high performance, work engagement, motivation, and persistence in the face of challenges (Nerstad et al., 2013), which conceptually aligns with the construct of AP. Building on prior research linking employees' perceptions of the mastery climate with AP, our study proposes the following hypothesis as its initial premise (see Figure 2):

H1: Employees' perception of a mastery climate is positively related to AP.



Figure 2. *Mastery Climate and AP (H1)*

### 2.3. Psychological Safety, Mastery Climate, and AP

Psychological safety refers to employees' beliefs that they can engage with people without anxiety or fear that this can negatively affect their self-image, status, or career (Kahn, 1990). In contemporary organizations, the ability to learn continuously, adapt to change, and innovate is critical for staying competitive. As such, employees must undertake a more proactive role in their workplace, prompting researchers to explore factors that encourage employees to take interpersonal risks and invest in their work (Edmondson & Lei, 2014). Despite common perceptions that individuals may be hesitant to stand out, make mistakes, or offend others, a psychologically safe work environment fosters a culture where individuals feel comfortable sharing their knowledge, concerns, questions, mistakes, and half-formed ideas, promoting knowledge work (Edmondson, 1999).

Psychological safety has been identified as a vital component of high-performing teams and has been linked to positive effects on team dynamics and performance in numerous studies (Frazier et al., 2017). Empirical research consistently highlights the importance of psychological safety in enabling employees "to feel safe at work and, thus, to grow, learn, contribute, and perform effectively in a rapidly changing world" (Edmondson & Lei, 2014, p. 41). In practice, this means that a work environment characterized by psychological safety seems to facilitate an atmosphere that encourages honesty and challenges, leading

to a more effective work environment (Edmondson, 2018). The significance of fostering a psychologically safe work environment in IT companies is further underscored by the findings of the Google Aristoteles research project, which found that even employees with high levels of intelligence and achievement require a psychologically safe environment to fully leverage their talents and effectively contribute to the organization (Edmondson, 2018).

Prior research has established a positive relationship between psychological safety and adaptive learning behaviors, such as seeking feedback and experimenting with new ideas (Newman et al., 2017). Also, specifically within the context of IT, Edmondson et al., (2001) found that psychological safety played a vital role in facilitating the successful implementation of new technologies within organizations. As the implementation of new technology necessitates employees' ability to adapt to unfamiliar systems, processes, and work approaches, it is plausible to hypothesize that psychological safety contributes to improved AP, as it cultivates an environment conducive to change acceptance.

Moreover, theoretical frameworks encompassing the concept of mastery climate implicitly propose a robust association with psychological safety (Baer & Frese, 2003; Men et al., 2020), implying that mastery climates play an important role in fostering psychological safety among individuals. The underlying mechanism driving this can be attributed to the deliberate emphasis placed by mastery climates on cultivating a safe learning-oriented environment that consciously prioritizes individual growth, advancement, and skill acquisition over evaluative judgment. By emphasizing these aspects, mastery climates foster an environment that encourages individuals to experiment and explore novel approaches (Ashauer & Macan, 2013). Consequently, it is reasonable to assume that employees perceiving a higher degree of mastery climate are more inclined to exhibit heightened levels of openness in expressing ideas, actively seek clarifications and feedback, and embrace diverse perspectives, all of which collectively contribute to an enhanced propensity for AP. Considering these premises, we hypothesize that psychological safety mediates the positive relationship between mastery climate and AP. A visual representation of the proposed relationship can be found in Figure 3.

H2: The positive relation between mastery climate and AP will be mediated by psychological safety.

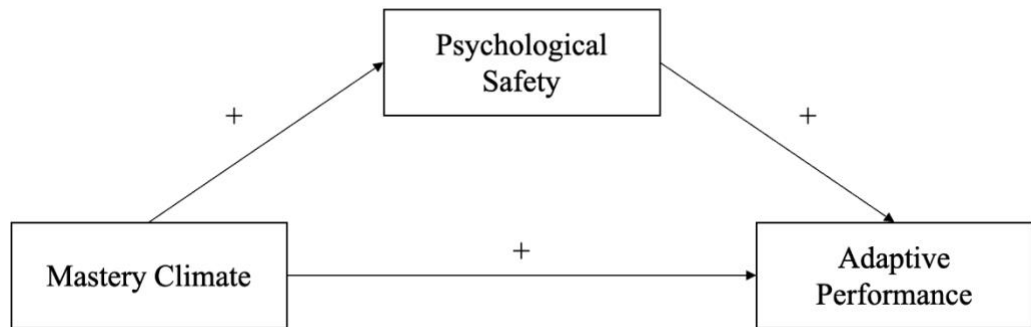


Figure 3. The Mediating Role of Psychological Safety (H2)

#### 2.4. Self-Efficacy, Mastery Climate, and AP

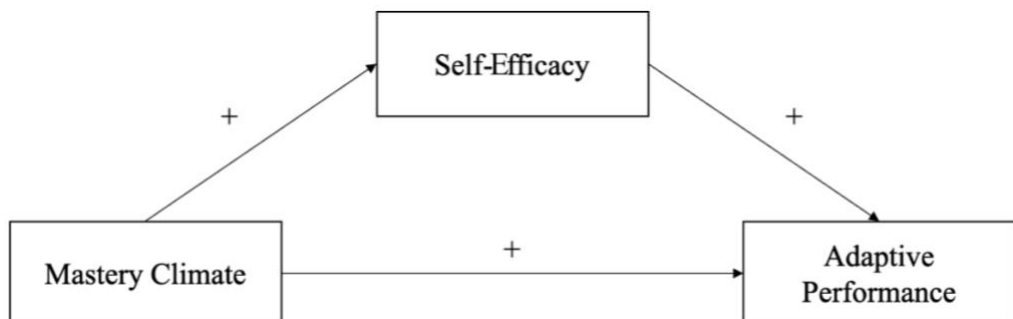
Self-efficacy is an internal factor that pertains to an individual's belief in their cognitive capacity to achieve a designated task or achieve a specific level of performance (Bandura, 1986; Speier & Frese, 1997). Extensive research has consistently indicated that the dynamic interplay between an individual's internal thoughts and the contextual demands of the task at hand exerts a substantial influence on their behavioral patterns and overall success (Bandura, 1986, 1997). This notion is further supported by studies highlighting the pivotal role of self-efficacy in predicting a diverse range of behaviors (Diefendorff & Chandler, 2011). Notably, research posits that individuals with heightened levels of self-efficacy are more likely to exhibit increased effort and achieve better outcomes, whereas those with lower self-efficacy tend to demonstrate less effort and a greater tendency to give up more quickly (Bandura, 1986).

The recognition of the crucial role of self-efficacy in facilitating adaptive behaviors has prompted its identification as a fundamental constituent of adaptability (Griffin & Hesketh, 2003). Particularly in the context of confronting environmental changes and challenges, high levels of self-efficacy are believed to empower individuals to effectively manage situations and persistently adapt to change (Park & Park, 2019). Nevertheless, existing research has demonstrated a more robust relationship between *generalized* self-efficacy and AP (Chen et al., 2001). Unlike task-specific self-efficacy, which pertains to an individual's confidence in performing a specific task, generalized self-efficacy encompasses an

individual's belief in their overall competence to successfully achieve desired outcomes across diverse situational contexts (Chen et al., 2001). Given the rapidly changing nature of the IT industry, it is deemed essential to investigate the mediating role of self-efficacy as a generalized form, as it is considered broader in scope, more stable, and more predictive of various outcomes (i.e., compared to specific self-efficacy). For example, in dynamic work settings, employees frequently encounter diverse tasks of varying complexity and novelty, necessitating a constant need to acquire new skills and adapt to fluctuating market conditions to maintain a competitive advantage.

Considering that self-efficacy has been commonly studied confirming its positive relationship with AP (e.g., Griffin & Hesketh, 2003; Park & Park, 2019), implementing self-efficacy as a mediating factor offers an opportunity to gain a more comprehensive understanding of the relationship between mastery climate and AP. In light of this, we suggest that a mastery climate foster higher levels of self-efficacy among employees. Specifically, individuals experiencing a mastery climate might be more likely to perceive themselves as self-efficient, which ultimately leads to higher AP. Contrarily, employees who do not perceive a mastery climate to the same degree may view themselves as less self-efficient, resulting in lower AP. Therefore, we hypothesize that self-efficacy mediates the positive relationship between mastery climate and AP, see Figure 4 below.

H3: The positive relation between mastery climate and AP will be mediated by self-efficacy.



*Figure 4. The Mediating Role of Self-Efficacy (H3)*



## 2.5. Team tenure as moderator

The efficacy of organizations greatly relies on teams, and utilizing this form of work to accomplish goals and objectives has become increasingly popular in response to the complexity of modern workplaces. A team refers to an interdependent group of two or more individuals who contribute to the performance of the parent organization (Salas et al., 1992). Compositional factors play a crucial role in predicting team outcomes, where *team tenure*, referring to the duration of time individuals or team members have worked together, is one such factor (Gonzalez-Mulé et al., 2020; Katz, 1982). Researchers have long acknowledged that team tenure is integral in predicting team outcomes, and classic theories of group development and effectiveness either explicitly or implicitly highlight its critical relevance (Gonzalez-Mulé et al., 2020). However, despite the common assumption that teams with longer tenure are higher performers due to superior cohesiveness, the concept is complicated by the varying theoretical conceptualizations on what constitutes team tenure, which results in mixed findings regarding its impact on performance (Koopmann et al., 2016).

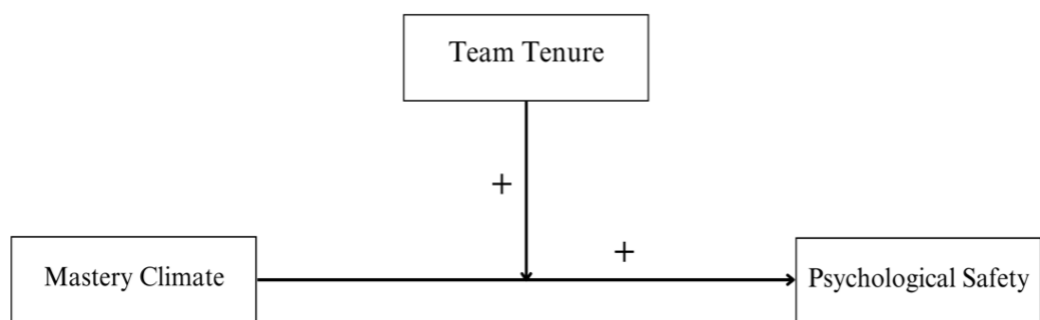
The impact of personnel changes on team dynamics is frequently disregarded, leading to a tendency to perceive teams as static entities. Nevertheless, personnel changes, such as the addition or withdrawal of members, are commonplace and can significantly affect team dynamics (Hirst, 2009). As it is crucial to consider a team's ability to adapt to such changes in adjusting to new structures and working methods, Gonzalez-Mulé et al., (2020) proposed two conceptualizations of team tenure: additive and collective. Additive tenure refers to the average amount of time an individual has spent in a respective team, reflecting upon their relevant expertise in the team, whereas collective tenure refers to the amount of time team members have spent working together, regardless of individual tenure (Gonzalez-Mulé et al., 2020). These conceptualizations possess unique theoretical propositions that can indirectly influence performance through different processes and emergent states (DeRUE et al., 2010). Therefore, it is crucial to consider both types of tenure when investigating team performance as failure to do so may result in suboptimal performance outcomes.

Given the substantial impact of team tenure, it is valuable to investigate whether team tenure moderates the relationship between mastery climates and psychological safety and/or self-efficacy. Expanding upon this research, Koopmann et al., (2016) found elevated levels of team psychological safety climate in longer-

tenured teams, as compared to moderately tenured teams. For instance, it is plausible that teams spending an increased amount of time together will have a deeper comprehension of one another, leading to increased comfort in expressing opinions and sharing concerns without fear of judgment or retribution. This well-fostered familiarity cultivates a conducive environment characterized by support and trust, both of which are indispensable for psychological safety (Edmondson, 2018). Furthermore, as individuals spend more time working within a team, they are also likely to develop a deeper understanding of the team’s established methods and procedures. The accumulated experience can enhance their sense of value and confidence as valued contributors, thus contributing to fostering an environment where also other team members feel more secure to express their thoughts and opinions. Consequently, based on these considerations, we hypothesize that the relationship between mastery climate and psychological safety will be stronger with longer team tenure – both collective and additive. See Figure 5 below.

H4a: The relationship between mastery climate and psychological safety will be stronger with longer collective team tenure.

H4b: The relationship between perceived mastery climate and psychological safety will be stronger with longer additive team tenure.



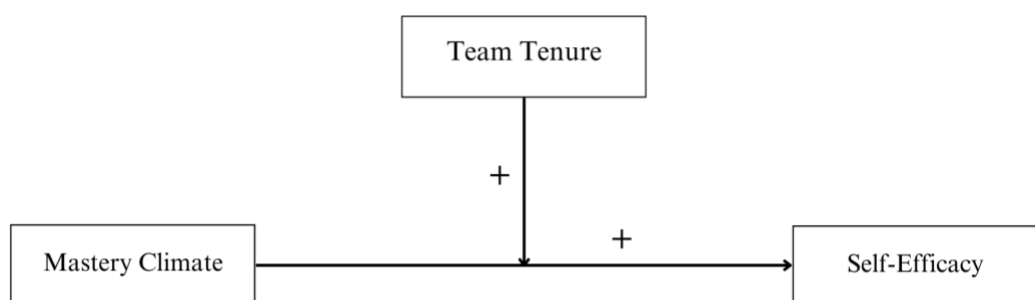
*Figure 5. The moderating role of Team Tenure on the relationship between mastery climate and psychological safety (H4)*

Considering self-efficacy, empirical evidence suggests that extended team tenure provides team members with prolonged opportunities to acquire expertise, refine skills, and cultivate a profound sense of mastery. This, in turn, is believed to

contribute to a mastery orientation, fostering team members' perception of competence and ultimately enhancing their self-efficacy (Stajkovic & Luthans, 1998). Moreover, through teamwork and shared accomplishments over time, the collective belief in the team's capabilities and past achievements is likely to increase, positively influencing the self-efficacy of individual team members as they perceive themselves as integral contributors to the team's success. As a result, it is reasonable to postulate that individuals in longer-tenured teams are more likely to exhibit higher levels of self-efficacy, enabling them to invest greater effort in adapting to challenges and demonstrating heightened resilience in the face of setbacks (Huang et al., 2018). Building on these theoretical foundations, we advance the proposition that also the relationship between mastery climate and self-efficacy will vary depending on the length of team tenure. Particularly, we hypothesize that it will moderate the relationship to be stronger among longer-tenured teams – both additive and collective. See Figure 6 below.

H5a: The relationship between mastery climate and self-efficacy will be stronger with longer collective team tenure.

H5b: The relationship between mastery climate and self-efficacy will be stronger with longer additive team tenure.



*Figure 6. The moderating role of Team Tenure on the relationship between mastery climate and self-efficacy (H5)*

## 2.6. Full moderated mediation

To gain a deeper understanding of the complex relationships, we propose a fully moderated mediation model with collective team tenure and additive team tenure as moderators. See Figure 7. This model goes beyond conventional mediation testing by examining the moderating effects of team tenure on the indirect relationship between perceived mastery climate and AP, mediated by psychological safety and self-efficacy. As above, we hypothesize that higher levels of *collective* and *additive* team tenure will strengthen the indirect effect, resulting in a more pronounced relationship between perceived mastery climate and AP through psychological safety and self-efficacy. This fully moderated mediation model aims to provide a comprehensive understanding of how team tenure influences the dynamics and outcomes of the mastery climate in the workplace, shedding light on the mechanisms through which team tenure operates as a crucial contextual factor.

H6a: Collective team tenure moderates the positive indirect effect of perceived mastery climate on AP, mediated by psychological safety and self-efficacy. The relationship is more positive with longer collective tenure.

H6b: Additive team tenure moderates the positive indirect effect of perceived mastery climate on AP, mediated by psychological safety and self-efficacy. The relationship is more positive with longer additive tenure.

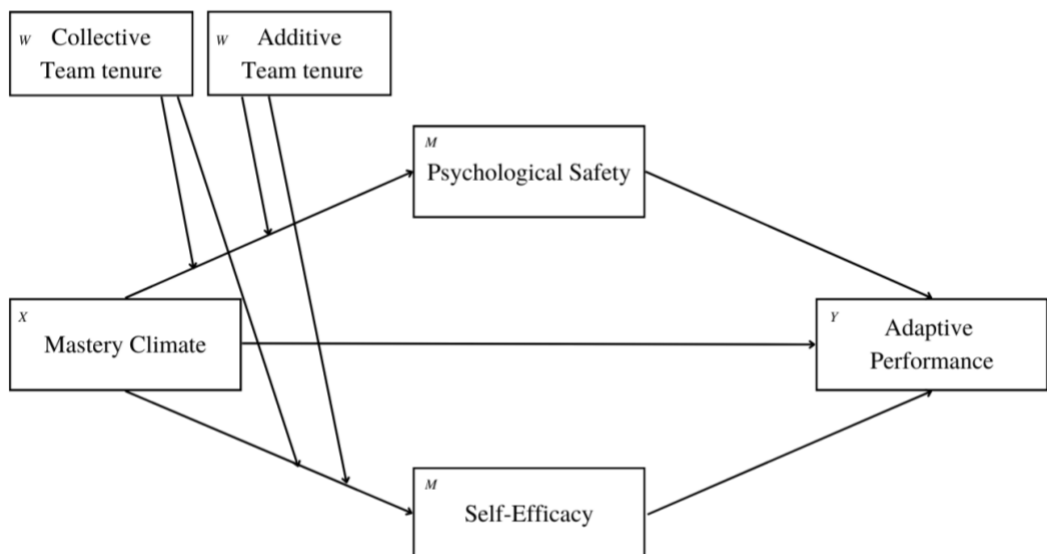


Figure 7. Full moderated mediation model

### **3.0. Research methodology**

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In this section, the methodological choices of the study will be explained concerning the research design, approach, data collection, and measures, grounded in the theoretical framework presented earlier. Subsequently, the methodology will be evaluated in terms of its validity, reliability, and ethical considerations.

#### **3.1. Research design**

The selection of an appropriate research approach is contingent on various factors, including the nature of the research and the extent of pre-existing theoretical knowledge regarding the phenomena under investigation (Saunders et al., 2019). In line with our objective of examining the relationships between variables within a specific context, we adopted an explanatory research design, which seeks to clarify associations between variables by scrutinizing a particular issue or situation, thereby facilitating a deeper understanding of the phenomena (Saunders et al., 2019). Given our focus on determining the significance of the relationship between perceived mastery climate and AP while concurrently exploring potential determinants that underlie this relationship, we contend that an explanatory research design is highly suited to this investigation.

Moreover, by applying established theories to formulate research goals and objectives, our study utilizes a deductive research approach. Specifically, we employ a quantitative research method, which entails the formulation of hypotheses and testing of theories through the quantification of attitudes, opinions, and behaviors (Bell et al., 2019). To reach our research objectives, we selected a cross-sectional design, a quantitative method that aims to explore the relationships between the constructs outlined in our conceptual model. This method involves gathering data from a sample of participants that is representative of a larger population. This approach facilitates the collection of a substantial amount of quantitative data and the identification of patterns of association (Bell et al., 2019).

#### **3.2. Data collection**

In terms of data collection, surveys were utilized as a primary method. This decision was based on the cost-effectiveness and efficiency of surveys, which allow for the collection of large amounts of data within a short timeframe. Surveys are known to

generate research findings that are generalizable to a certain extent (Bell et al., 2019), thereby facilitating the identification of relationships between concepts. Hence, to implement this approach, we utilized self-reported questionnaires administered via Qualtrics (<https://www.qualtrics.com>), a web-based tool provided by BI Norwegian Business School. This approach granted us insights into participants' perceptions, thoughts, and attitudes, which conformed to our research objectives (Johnson & Christensen, 2014). As highlighted by Saunders et al., (2019), self-completion questionnaires are a common data collection method when employing a quantitative strategy. The choice is further strengthened by the fact that self-reported surveys are less expensive to administer, more convenient, and reduces interviewer bias (Bell et al., 2019).

To ensure the validity and dependability of our findings, we implemented a two-part survey approach, involving the distribution of two surveys with a time interval between the measurement of predictor and criterion variables. The first survey (T1) measured demographical variables, team tenure, and mastery climate, while the second survey (T2) measured AP, self-efficacy, and psychological safety. Based on recommended practices, we opted for a four-week interval between the two survey administrations. By using this approach, we aimed to minimize the occurrence of *common method variance*, which can arise when respondents provide similar responses to items that are not directly related to the construct being measured (Podsakoff et al., 2003). To ensure the accurate identification and matching of participants' responses between the two surveys, we obtained their email addresses. In T1, participants were asked to provide their email addresses for follow-up after four weeks. Similarly, in T2, participants were prompted to provide the same email addresses again. This systematic approach ensured a reliable and consistent linkage of individual participants' responses across both survey administrations.

### **3.3. Procedure and precautions**

The identification and screening of companies were expedited by utilizing an official registry, Proff (<https://proff.no/>), which aided in limiting our sample to organizations operating within the "IT consultancy and advisory" sector in Norway. The criteria employed in our search were refined to include only independent firms with a workforce comprising a minimum of 21 employees, thereby representing the inclusion of medium to large-scale enterprises based on the classification provided

by NHO (2023). Among the 273 eligible firms that met our search criteria, 50 firms were contacted through email. Upon receiving interest from these companies, further interactions were conducted through video chats, phone conversations, and/or in-person meetings. During these interactions, we effectively conveyed the potential benefits of participating in the project. Ultimately, a total of nine companies agreed to take part in the study and consented to primarily distribute our surveys through internal communication platforms such as email, Slack, and/or Teams. Alternatively, some companies also chose to display posters in both English and Norwegian, containing a QR code, at prominent locations such as near the coffee machine, enabling employees to conveniently scan the code and access the survey. See Appendix A.

In addition to presenting the project's merits, we also offered the firms physical incentives to encourage participation, including feedback documents containing benchmark analyses, firm-specific results, and practical recommendations that would be provided upon completion of the research. Moreover, some firms also expressed interest in having us physically present our findings and elucidate how their company could benefit and acquire knowledge from the study. It is worth noting that throughout these interactions, we placed a high priority on protecting the confidentiality of firms' sensitive information and adhering to ethical considerations. For instance, we created information letters that the companies could share with their employees so that they would understand the purpose and practical value of participation.

To ensure the reliability and validity of the survey instrument, a pilot study was conducted on a small sample of 10 respondents before the official launch of both surveys. The pilot testing aimed to identify potential shortcomings or ambiguities in the survey questions and instructions, allowing necessary revisions to be made. This step was also taken to ensure that the survey could be completed in a time-efficient manner, which could improve response rates. Furthermore, given the high prevalence of mobile device use in survey completion, the survey was optimized for mobile compatibility. Also, we added a progress bar to make it transparent how long the survey was. We received constructive feedback on the survey wording of both surveys during the pilot testing, which we incorporated before their official launch. The survey completion time and design received positive feedback, indicating that both surveys were well-constructed.

In terms of language, the questionnaires were exclusively distributed in English, aligning with the prevailing practice in the IT industry where English serves as the primary language of communication (Neeley, 2012). This decision was reinforced by the fact that using a global language facilitated a broader range of potential participants from various nationalities, thereby enhancing the generalizability of our study's findings. Additionally, due to the unavailability of validated Norwegian versions for several of the measures used, we opted to employ the original English scales.

### **3.4. Sampling**

#### **3.4.1. Sampling Strategy**

To substantiate our research hypotheses, a targeted approach was employed for data collection by directly contacting IT firms and inviting them to participate in our study. Given our context-specific investigation, exclusively reaching out to companies guaranteed that our sample consisted solely of individuals working within the targeted segment. Thus, we utilized a *criterion sampling* technique, which involves selecting cases that meet some predetermined criterion of importance (Patton, 2001). This method allowed us to reach respondents more likely to provide relevant and accurate information for our research objective. However, our sample is considered a non-probability sample since it is rarely possible to draw a completely random sample from the IT industry. Thus, the external validity and possibility to generalize from this sample to the population is a significant drawback of this sampling method (Bell et al., 2019). Although we recognize this constraint, the optimal sampling method would not be achievable due to the time and financial restrictions of the research project.

Recognizing the importance of the sample size in empirical studies aiming to draw inferences about a population from a sample, we invested a considerable amount of time and work to obtain a sufficiently large sample. Increasing the sample size holds the potential to heighten the precision of the sample, thereby reducing sampling error and amplifying the statistical power of the study (Bell et al., 2019). To elucidate this point, the majority of our collaborative companies willingly adopted reminder strategies to stimulate employee participation in T1 precisely one week after its initial distribution. Additionally, for T2, a reminder emphasizing the importance of completing both surveys to ensure a comprehensive



understanding was sent. These concerted endeavors aimed at expanding the sample size yielded favorable outcomes.

### **3.4.2. Sample**

Regarding the sample, T1 yielded 160 complete responses. Subsequently, T2 was provided to these participants four weeks later, with 135 individuals completing both surveys, resulting in a response rate of 84% between T1 and T2. Due to incomplete or missing data, 18 responses were excluded from the final analysis. Therefore, 117 respondents provided complete responses that were included in the analysis. The sample was drawn from a pool of nine distinct companies, all of which operated exclusively in the IT industry. Specifically, these companies were engaged in software development or consultancy services, emphasizing their focus on technological innovation and expertise. Consequently, the final sample comprised solely of individuals who met the inclusion criteria, specifically by being employed by an IT company, thereby working in the IT industry. Based on general sample recommendations, the sample size was deemed sufficient for the analysis.

In the final sample, the average age was 35 years ( $SD = 9.84$ ), and the preponderance of respondents, amounting to 62% ( $SD = .48$ ), were male. Regarding job positions, most of the participants were external consultants, representing 61% of the sample, followed by internal (i.e., in-house) consultants (30%), and internal staff (9%) (i.e., working with marketing, finance, HR, etc.). In terms of relevant work experience, the majority (44%) reported having 11 or more years of job experience, followed by 26% with 3-5 years of work experience, 15% with 0-2 years of experience, and 15% with 6-10 years of experience. Approximately 46% held a master's degree, followed by 37% with a bachelor's degree. The remaining 17% reported completing only high school or a certificate of apprenticeship.

For the variable of additive team tenure, respondents have been part of their team for under 6 months (21%), between 6-12 months (24%), between 1-2 years (35%), between 3-4 years (8%), between 4-5 (2%), and more than 5 years (10%). For collective team duration, all colleagues have worked together for under 6 months (46%), between 6-12 months (21%), between 1-2 years (20%), between 3-4 years (3%), between 4-5 (3%), and more than 5 years (6%).

### **3.5. Ethical considerations**

The ethical considerations that underpinned this study were of paramount importance. To this end, we adopted the ethical principles articulated by Diener & Crandall (1978), which advocate for avoiding harm to participants, obtaining informed consent, respecting privacy, and avoiding deception.

To ensure adherence to privacy legislation and research ethics, we obtained approval for our research project from The Norwegian Agency for Shared Services in Education and Research (SIKT). See Appendix B for documentation. To promote transparency, we took proactive steps to communicate the purpose of the research to the participants (i.e., leaders and employees) and clarify how their data would be handled. The aim was to ensure that participation was voluntary (Jacobsen, 2015) and prevent any deception, thereby reducing the risk of social desirability bias (Podsakoff et al., 2003). For this purpose, we included a participation agreement at the start of the surveys. See Appendix C.

Throughout the data analysis process, we exercised great care to avoid any misinterpretation, and we treated all personal data with complete confidentiality and anonymity to safeguard the participants' well-being. By adhering to ethical principles, we ensured that our research was conducted responsibly and reliably, without causing any harm to the participants in any way.

### **3.6. Data credibility and measurements**

Ensuring credibility is crucial for conducting a successful and valuable study. According to Saunders et al., (2019), data credibility is determined by reliability and validity. Reliability pertains to the consistency, stability, or repeatability of study results, while validity concerns the accuracy or truthfulness of inferences made from the results (Johnson & Christensen, 2014). To increase the credibility of our data, the provisional measures outlined in this section are carefully chosen to provide a comprehensive understanding of the research question at hand. They are based on established and validated measures with high-reliability coefficients, which have been shown to be reliable indicators in similar studies. As recommended by Cortina (1993), we targeted measures with a Cronbach alpha ( $\alpha$ ) coefficient greater than .70, which is generally considered acceptable. Detailed measurements for all constructs in our study can be found in Appendix D.

### **3.6.1. Adaptive Performance**

Marques-Quinteiro et al., (2015) proposed a measurement scale that can be used to collect data at both individual and team levels, thereby contributing to the advancement of the current understanding of the dynamics of AP in the workplace. The scale consists of eight items and assesses behaviors related to four subdimensions of individual AP, including *creative problem-solving*, *managing uncertainty*, *learning new tasks and procedures*, and *stress management*. The authors posit that these dimensions encompass essential behaviors within knowledge work job families (e.g., accounting, engineering, marketing), thus rendering them applicable and pertinent to the IT industry as well. The scale uses a Likert-type response format, with a range of 1 to 5 (1 = strongly disagree, and 5 = strongly agree). Examples of questions include “I adjust and deal with unpredictable situations by shifting focus and taking reasonable action” and “I search and develop new competencies to deal with difficult situations”.

### **3.6.2. Mastery Climate**

To assess employees’ perceptions of mastery climate, we utilized the Motivational Climate at Work Questionnaire (MCWQ). The MCWQ is a six-item scale developed by Nerstad et al., (2013) that has been established as a reliable and valid measure in assessing mastery climate within the workplace. Respondents are asked to rate each statement on a Likert scale, ranging from 1 to 5 (1 = strongly disagree, 5 = strongly agree). Examples of questions include “In my team, employees are encouraged to try new solutions methods throughout the work process” and “In my team, everybody has an important and clear task throughout the work process”.

### **3.6.3. Psychological Safety**

The perceived psychological safety of employees within their immediate work setting is evaluated using Edmondson’s (1999) psychological safety scale. The measure has proven to be robust and indicates necessary statistical properties such as inter-item reliability and predictive validity. Responses are made on a five-point Likert scale ranging from 1 to 5 (1 = strongly disagree, 5 = strongly agree). Examples of questions include: “If you make a mistake on this team, it is often held against you”, and “No one on this team would deliberately act in a way that undermines my efforts”. Three of the seven items are expressed reversed, and therefore, reversed upon analysis to ensure consistency in interpretation.

#### **3.6.4. Self-Efficacy**

The new general self-efficacy scale (NGSE) developed by Chen et al., (2001) is applied to measure employees' general self-efficacy. The NGSE scale has been found to predict specific self-efficacy for a variety of tasks and contexts, and to moderate the influence of prior performance on subsequent specific self-efficacy formation. These characteristics make the NGSE an appropriate measure of general self-efficacy as a motivational state, rather than a trait, across various environments and contexts. The scale comprises eight items, rated on a five-point Likert scale ranging from 1 to 5 (1 = strongly disagree, 5 = strongly agree). Examples of questions include: "When facing difficult tasks, I am certain that I will accomplish them" and "I will be able to successfully overcome many challenges".

#### **3.6.5. Team Tenure**

Team tenure was operationalized using self-reported data, capturing both additive and collective aspects of team tenure. Consistent with previous research, respondents were queried about *additive* tenure indicating the average duration of their individual team membership (Stachowski et al., 2009), and *collective* tenure by inquiring about the time elapsed since the most recent addition of a team member (Bresman, 2010). Six categories were created, ranging from "under 6 months" up to "more than 5 years" for both additive and collective tenure to minimize response errors and provide a common frame of reference.

#### **3.6.6. Control Variables**

To mitigate potential confounding effects arising from extraneous variables that are not the primary focus of our study but could impact our results, we incorporated several control variables. These variables included demographic data such as which company they work for, gender, age, educational level, and years of experience. By controlling for these, we can more effectively isolate the effects of the independent variables under investigation, thereby offering stronger empirical support for our research hypotheses. Consequently, this enhances the validity of our findings and reduces the likelihood that any observed disparities in AP can be ascribed to factors unrelated to the perceived mastery climate and the influence of psychological safety, self-efficacy, and/or team tenure.

## 4.0. Data Analysis

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The analytical procedure commenced with performing a principal component analysis (PCA) to unveil the latent factor structure, followed by a confirmatory factor analysis (CFA). The CFA aimed to assess the psychometric properties and model fit of our measurement model, ensuring that the ascertained factor structure accurately represented the underlying constructs under investigation. By conducting the CFA, we ensured the suitability and adequacy of the measurement model, thereby establishing a robust footing for subsequent analyses, and assuring the integrity, validity, and reliability of the acquired data. The CFA was conducted in R-Studio.

The subsequent phase of data analysis entailed data exploration, description, and analysis of the collected questionnaires. This was utilized in the 29<sup>th</sup> version of SPSS. As we aimed to investigate factors that could influence the relationship between perceived mastery climate and AP, we adopted a moderated mediation analysis approach. The rationale behind this was to empirically substantiate the boundary conditions of mastery climate's effect on AP, and the mechanisms through which this effect operates (Hayes, 2015). Mediation analyses are particularly effective in such cases, as they facilitate the examination and understanding of the intricate relationships and processes among variables.

### 4.1. Hypothesis testing

Hypothesis testing in our study was conducted using Hayes' PROCESS macro, a widely used tool for mediation, moderation, and conditional process analyses in SPSS. By conducting these analyses, we aimed to gain a comprehensive understanding of the interplay between our variables under investigation. This analytical approach allowed us to simultaneously test all five hypotheses and shed light on the mechanisms through which perceived mastery climate affects AP.

#### **H1: Mastery climate and AP**

Hypothesis 1 states that employees' perception of a mastery climate is positively related to higher levels of AP. To test this hypothesis, we ran a linear regression analysis with perceived mastery climate as the independent variable (X) and AP as the dependent variable (Y).

**H2 and H3: Mastery climate and psychological safety and self-efficacy**

Hypotheses 2 and 3 explore the potential mediating roles of psychological safety and self-efficacy. Hypothesis 2 posits that psychological safety mediates the positive relationship between mastery climate and AP, while hypothesis 3 posits that self-efficacy mediates the positive relationship between mastery climate and AP. To test these hypotheses, we employed PROCESS Model 4 in SPSS, conducting a simultaneous mediation analysis to examine the indirect effects of perceived mastery climate on AP through psychological safety and self-efficacy. Significant indirect effects and a reduction or nullification of the direct effect would indicate psychological safety and/or self-efficacy as a mediator between mastery climate and AP.

**H4 and H5: Mastery climate and psychological safety and self-efficacy among longer-tenured teams**

Hypotheses 4 and 5 both relate to the moderating role of team tenure. Hypothesis 4 states that the positive relationship between perceived mastery climate and psychological safety will be stronger among employees in longer-tenured teams. Hypothesis 5 states that the positive relationship between mastery climate and self-efficacy will be stronger among employees in longer-tenured teams. To test this, we ran PROCESS Model 1 in SPSS with psychological safety and self-efficacy as the dependent variable, mastery climate as the independent variable, and additive/collective team tenure as moderators. By examining the significance of the interaction term, we can determine whether team tenure moderates the relationship between mastery climate and the respective mediators in predicting AP. If the interaction term is significant, it indicates that the strength or direction of the relationship between mastery climate and the mediators differs across different levels of team tenure. This finding would support the hypotheses that team tenure plays a moderating role in shaping the effects of mastery climate on psychological safety and self-efficacy, ultimately influencing AP.

**H6: Full moderated mediation**

Hypothesis 6 relate to the full moderated mediation model. Specifically, H6a posits that collective team tenure moderates the positive indirect effect of perceived mastery climate on AP, mediated by psychological safety and self-efficacy – and H6b posits that additive team tenure moderates the positive indirect effect of perceived mastery climate on AP, mediated by psychological safety and self-efficacy. To test the fully moderated mediation model, we ran a PROCESS Model 7 in SPSS with AP as the dependent variable, mastery climate as the independent variable, psychological safety/self-efficacy as mediators, and additive/collective team tenure as moderators.

## 5.0. Results

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### 5.1. Measurement Model Validation | PCA and CFA

To assess the unidimensionality of the four multi-item constructs in our research model (AP, mastery climate, self-efficacy, and psychological safety), a PCA was conducted using the Promax rotation method in SPSS. The PCA revealed the presence of eight components with eigenvalues exceeding the threshold of 1.0, collectively accounting for approximately 66% of the total variance. This finding deviated from our initial expectation, as we had anticipated a one-to-one correspondence with the four constructs under investigation. Furthermore, noteworthy findings were found regarding some of the SE items (SE\_6, SE\_7, and SE\_8), which exhibited strong loadings on the AP factor. This indicates some interrelatedness between these constructs. For detailed information on the loading patterns and factor structure, please see Appendix E.

To further examine the factor structure identified in the PCA, we performed a CFA. Unlike the PCA, CFA requires the observed variables to load exclusively on their respective factors, and thus are a priori specified in the model (Pan et al., 2017). Following the methodological guidelines proposed by Harrington (2009), latent variables representing the four constructs were established. The CFA yielded the following fit statistics:  $\chi^2$  (371, N=117) = 600, p-value = .00, RMSEA = .073, SRMR = .083, CFI = .80, TLI = .78. The RMSEA was slightly below the commonly accepted threshold of .08, indicating a reasonably good fit, and the SRMR value of .083 was below the accepted threshold of >.10, suggesting an acceptable fit (Hu & Bentler, 1999). However, the CFI and TLI were below the desired threshold of 0.99 (Xia & Yang, 2019).

Moreover, most items displayed satisfactory factor loadings above 0.50, indicating a strong association with their respective factors (Hair et al., 2010). See Appendix F. However, some items exhibited relatively low loadings below the recommended threshold of 0.05. While these loadings are below the conventional cutoff, alternative perspectives do suggest that factor loadings above 0.30 can still be deemed acceptable (Tavakol & Wetzel, 2020).



**5.1.1. Improving model fit: Variable Impact and Modification Analysis**

To address the suboptimal fit, additional analyses were conducted to ascertain whether alterations could improve the model fit. This resulted in the following examination of three alternative and comparative models.

The first alternative model 1 (AM1) excluded items with factor loadings below 0.5 (MC6, AP5, AP6, PS5). The second alternative model 2 (AM2) excluded three self-efficacy items that appeared to have cross-loadings on the AP construct. Lastly, the third alternative model 3 (AM3) excluded both the items with low factor loadings and the self-efficacy-items with cross-loadings. This comparative analysis aimed to evaluate the combined impact of eliminating both types of variables on the model’s fit. The fit indices for the initial CFA model with all items, and the alternative models, are provided in Table 1. As is shown, model fit exhibits lower RMSEA (except for AM1) and  $\chi^2$ , and improved CFI and TLI for all.

Furthermore, to improve the model fit, we examined recommended modification indices (MI’s). The MI’s indicated the inclusion of paths between MC\_1 and MC\_3, as well as MC\_2 and MC\_5, to optimize the model fit. These suggested paths showed potential for substantial improvement, as evidenced by the reduction in the chi-square by -12.128 (MC\_1 and MC\_3) and -14.018 (MC\_2 and MC\_5).

Given that AM2 exhibited the closest proximity to a satisfactory fit based on the RMSEA < .07, we proceeded to examine an Alternative Model 4 (AM4) that encompassed both the exclusion of SE-item modifications and the recommended MI’s. Consequently, AM4 yielded a satisfactory fit.

Table 1: Comparison of Alternative Factor Structures for Model Fit Improvement

	$\chi^2$	df	p-value	RMSEA	SRMR	CFI	TLI
<b>Initial CFA with no modifications</b>	600	371	.00	.073	.083	.80	.78
<b>AM1</b>	451	269	.00	.076	.083	.83	.81
<b>AM2</b>	467	293	.00	.071	.081	.82	.80
<b>AM3</b>	325	203	.00	.072	.079	.85	.83
<b>AM4</b>	<b>448</b>	<b>291</b>	<b>.00</b>	<b>.068</b>	<b>.080</b>	<b>.84</b>	<b>.82</b>

Notes. AM = “Alternative Model”. ~ = variable interaction term.

AM1 = exclusion of MC\_6, AP\_5, AP\_6, PS\_4.

AM2 = exclusion of SE\_6, SE\_7, and SE\_8.

AM3 = exclusion of MC\_6, AP\_5, AP\_6, PS\_4, SE\_6, SE\_7, and SE\_8.

AM4 = exclusion of SE\_6, SE\_7, and SE\_8 and MC\_1~MC\_3, MC\_2 ~MC\_5.

### 5.1.2. Concluding remarks

In short, the initial CFA with no modifications exhibited a reasonably good fit to the data. However, the fit indices fell below the desired thresholds, particularly in relation to the Chi-square, CFI, and TLI. To improve the model fit, we compared the initial model with four alternative model configurations. The results indicated that AM4 yielded the best fit. Subsequently, further analyses were conducted using a self-efficacy scale consisting exclusively of items 1-5.

### 5.2. Assessing the discriminant validity of the four-factor model fit

To evaluate the discriminant validity of the four constructs included in our study, a factor structure comparison was conducted of AM4. These alternative models comprised a three-factor model, which involved assigning items measuring AP and self-efficacy to one single factor, while mastery climate and psychological safety were independent factors. Additionally, a two-factor model was considered, entailing the grouping of items measuring AP and self-efficacy, as well as items measuring psychological safety and mastery climate, into two distinct factors. Finally, a one-factor model was proposed, whereby all measurement items for the four variables were combined into a single factor. As seen in Table 2, the fit indices consistently supported the superiority of the four-factor model over alternative nested models, thereby reinforcing the discriminant validity of the measures employed.

Table 2: Results of the confirmatory factor analyses

Model	$\chi^2$	df	p	CFI	TLI	RMSEA	AIC	BIC
<b>Four factor model<sup>a</sup></b>	<b>448</b>	<b>291</b>	<b>.00</b>	<b>.84</b>	<b>.82</b>	<b>.068</b>	<b>6893</b>	<b>7059</b>
Three factor model <sup>b</sup>	480	294	.00	.80	.78	.074	6919	7077
Two factor model <sup>c</sup>	555	296	.0	.73	.70	.087	6990	7142
One factor model <sup>d</sup>	710	297	.000	.57	.53	.109	7143	7292

Notes. <sup>a</sup>Model specified such that items measuring AP, self-efficacy, mastery climate, and psychological safety were assigned to four respective factors.

<sup>b</sup>Model specified such that items measuring AP and self-efficacy were assigned to a single factor.

<sup>c</sup>Model specified such that items measuring AP and self-efficacy and psychological safety and mastery climate were assigned to two single factors, respectively.

<sup>d</sup>Model specified such that items measuring all four variables were assigned to a single factor.

### 5.3. Descriptive statistics and correlations of study variables

Table 3 presents the results of the descriptive statistics, including the means, standard deviations, and correlation coefficients among the variables. Becker et al., (2016) advise excluding control variables when unsure of their impact on the dependent variable (i.e., “when in doubt, leave them out”). In line with this recommendation, we aimed to only include control variables that had a significant correlation with AP. As seen in Table 3 below, the descriptive statistics revealed that none of the control variables (i.e., gender, level of education, work experience, position, or age) were significant. As their impact on the AP is uncertain, we have chosen to exclude them from further analysis. All measurement variables demonstrate a Cronbach alpha ( $\alpha$ ) coefficient greater than .70, indicating reliable measures.

Table 3: Mean, SD’s, and correlations.

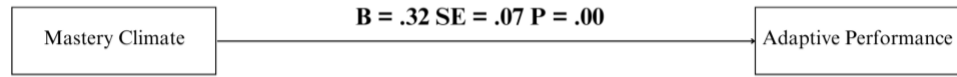
	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Age	35,40	9,84	-										
2. Gender	1,38	0,49	-.34**	-									
3. Education	2,46	0,87	.14	-.03	-								
4. Work Experience	2,87	1,14	.68**	-.43**	.10	-							
5. Position	1,80	0,62	-.03	-.30**	.01	.05	-						
6. Additive Team tenure	2,75	1,46	.32**	-.11	-.07	.37**	-.12	-					
7. Collective Team tenure	2,15	1,43	.19*	-.13	-.07	.25**	-.07	.54**	-				
8. Mastery Climate	4,12	0,64	.01	.09	-.09	-.07	.02	.06	.03	(.81)			
9. Adaptive Performance	3,90	0,52	-.04	-.15	-.01	.11	-.07	.01	.03	.32**	(.76)		
10. Psychological Safety	4,11	0,61	.11	.08	.09	.09	.01	.04	-.15	.38**	.12	(.78)	
11. Self-Efficacy	4,05	0,55	-.09	.03	.04	.01	-.13	.13	.02	.27**	.56**	.24**	(.81)

Note. N=117. Cronbach’s alpha values are reported in parentheses. \*  $p < .05$ , \*\*  $p < .01$ .

Of note, moderately high correlations are found between AP and self-efficacy.

### 5.4. Hypotheses testing

**Testing hypothesis 1** (mastery climate is positively related to employees’ AP), the direct effect of mastery climate on AP was found to be positive and significant ( $B = .32$ ,  $SE = .07$ ,  $p = .00$ ), thereby confirming hypothesis 1. See Figure 8. Specifically, the regression coefficient indicates that for every one-unit increase in perceived mastery climate, there is a .32 unit increase in AP, while holding other variables constant. The small standard error (SE) of .07 suggests a reasonable precision in the estimate, while the p-value of less than .00 indicates the robustness of the findings. Overall, this finding provides evidence for our hypothesis that perceived mastery climate has a positive impact on employees’ AP.



*Figure 8. Linear Regression Analysis of the Relationship between Mastery Climate and AP*

**Testing hypothesis 2** (the positive relationship between mastery climate and employee's AP is mediated by psychological safety), the results showed that the path from mastery climate to psychological safety (path a) was positive and statistically significant ( $B = .36$ ,  $SE = .08$ ,  $p = .00$ ). However, the path from psychological safety to AP (path b) was negative and not significant ( $B = -.07$ ,  $SE = .07$ ,  $p = .26$ ). The indirect effect from mastery climate to AP through psychological safety ( $IE = -.01$ ,  $SE = .06$ ,  $p > .05$  as the confidence interval does include zero), was smaller than the direct path between mastery climate and AP ( $E = .17$ ,  $SE = .07$ ,  $p = .01$ ) and not significant (i.e., the confidence interval includes zero). As these results do not provide support for hypothesis 2, it is rejected.

**Testing hypothesis 3** (the positive relationship between mastery climate and employee's AP is mediated by self-efficacy), the results showed that the path from perceived mastery climate to self-efficacy (path a) was positive and statistically significant ( $B = .23$ ,  $SE = .08$ ,  $p = .00$ ). Additionally, path b from self-efficacy to AP showed a positive and significant relationship ( $B = .49$ ,  $SE = .07$ ,  $p = .00$ ). However, the indirect effect, representing the mediated effect from perceived mastery climate to AP through self-efficacy ( $IE = .12$ ,  $SE = .06$ ,  $p \leq .05$  as the confidence interval does not include zero), was smaller than the direct effect ( $E = .17$ ,  $SE = .07$ ,  $p = .01$ ) but still significant. This indicates the presence of both direct and indirect pathways in the relationship, and therefore, partial mediation. Consequently, hypothesis 3 is partially confirmed. Findings eliciting to H2-H3 are summarized in Figure 9.

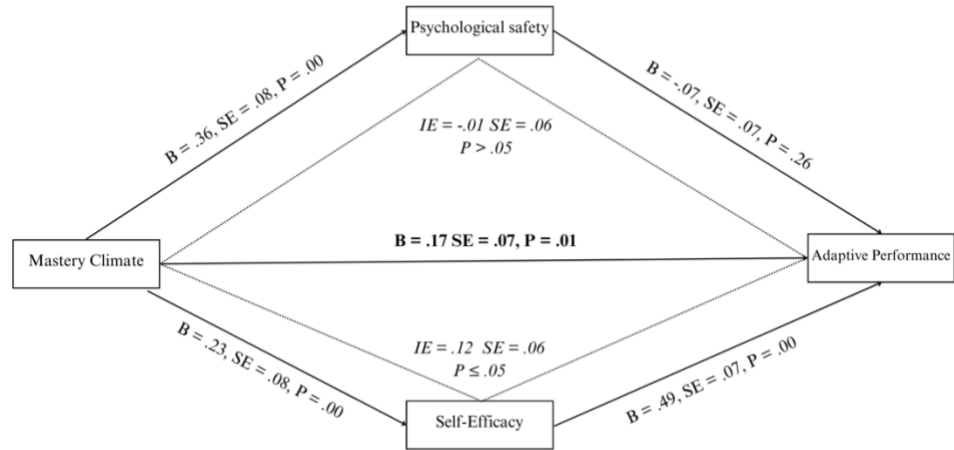


Figure 9. Mediation Analysis with Psychological Safety and Self-Efficacy

**Hypothesis 4** predicted that the positive relationship between mastery climate and psychological safety would be stronger for employees in longer collective and additive-tenured teams. Testing H4a, the interaction term ( $B = -.16, SE = 0.06, p = .09$ ) indicated that as collective team tenure increases, the relationship between mastery climate and psychological safety weakens. However, the moderation effect of collective team tenure was not statistically significant at the significance level of .05. Therefore, H4a was rejected. Similarly, in testing for H4b, the interaction term ( $B = -.05, SE = 0.06, p = 0.37$ ) for the modified model that included additive team tenure was not statistically significant either. H4b is rejected.

**Hypothesis 5** predicted that the positive relationship between mastery climate and self-efficacy would be stronger for employees in longer collective and additive-tenured teams. Testing H5a, the interaction term ( $B = .07, SE = .06, p = .22$ ) indicated that as additive team tenure increases, the relationship between mastery climate and psychological safety increases. However, the moderation effect was not statistically significant, indicating that the relationship between mastery climate and psychological safety does not significantly increase with higher levels of additive team tenure. Hence, H5a was rejected. Likewise, in testing for H5b, the interaction term ( $B = -.08, SE = .05, p = 0.15$ ) was also non-significant for collective team tenure, thereby also rejecting hypothesis 5b.

**Hypothesis 6** predicted that team tenure (both collective and additive) moderates the positive indirect effect of perceived mastery climate on AP, mediated by psychological safety and self-efficacy.

*Testing hypothesis 6a.* First, the full moderated mediation model with *collective* team tenure, did not yield statistical significance for interaction term in the a-path from perceived mastery climate to psychological safety ( $B = -.10$ ,  $p = .09$ ,  $\Delta R^2 = .02$ ). Similarly, the b-path from psychological safety to AP was not significant ( $B = -.08$ ,  $p = .26$ ). Furthermore, the overall index of moderated mediation was not significant ( $B = .01$ , 95% CI  $[-.01, .03]$ ), indicating a lack of evidence for moderated mediation.

Moreover, the interaction term in the a-path from perceived mastery climate to self-efficacy yielded non-significant results ( $b = .06$ ,  $p = .22$ ,  $\Delta R^2 = .01$ ). On the other hand, the b-path from self-efficacy to AP was significant ( $B = .49$ ,  $p = .00$ ). However, the overall index of moderated mediation was not significant ( $B = .03$ , 95% CI  $[-.01, .09]$ ). Therefore, no further comments are made regarding the conditional effects of the focal predictor at different levels of the collective team tenure moderation. Consequently, there is no evidence to support a moderated mediation when controlling for collective team tenure. Hypothesis 6a is rejected. Findings eliciting to H6a are summarized in Figure 10.

*Testing hypothesis 6b.* The analysis of the full moderated mediation model with *additive* team tenure did not yield statistical significance for the a-path from perceived mastery climate to psychological safety ( $B = -.05$ ,  $p = .37$ ,  $\Delta R^2 = .01$ ). Similarly, the b-path from psychological safety to AP was not significant ( $b = -.08$ ,  $p = .26$ ). Furthermore, the overall index of moderated mediation was not significant ( $b = .01$ , 95% CI  $[-.01, .03]$ ), indicating a lack of evidence for moderated mediation.

Moreover, the interaction term in the a-path from perceived mastery climate to self-efficacy yielded non-significant results ( $b = -.08$ ,  $p = .15$ ,  $\Delta R^2 = .02$ ). However, the b path from self-efficacy to AP was significant ( $B = .49$ ,  $p = .00$ ). The overall index of moderated mediation was not significant ( $B = -.03$ , 95% CI  $[-.10, .02]$ ). Thus, there is no evidence to support a moderated mediation by controlling for collective team tenure. Hypothesis 6b is rejected. Findings eliciting to H6b are summarized in Figure 11.

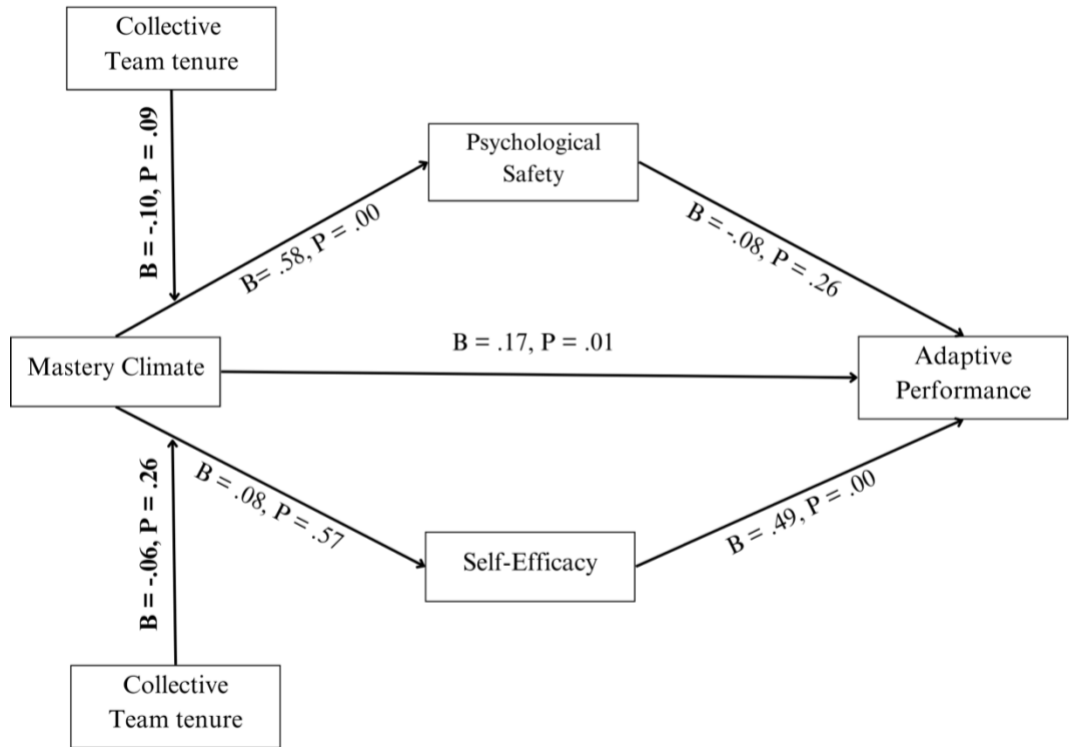


Figure 10. Full moderated mediation model with Collective Team Tenure

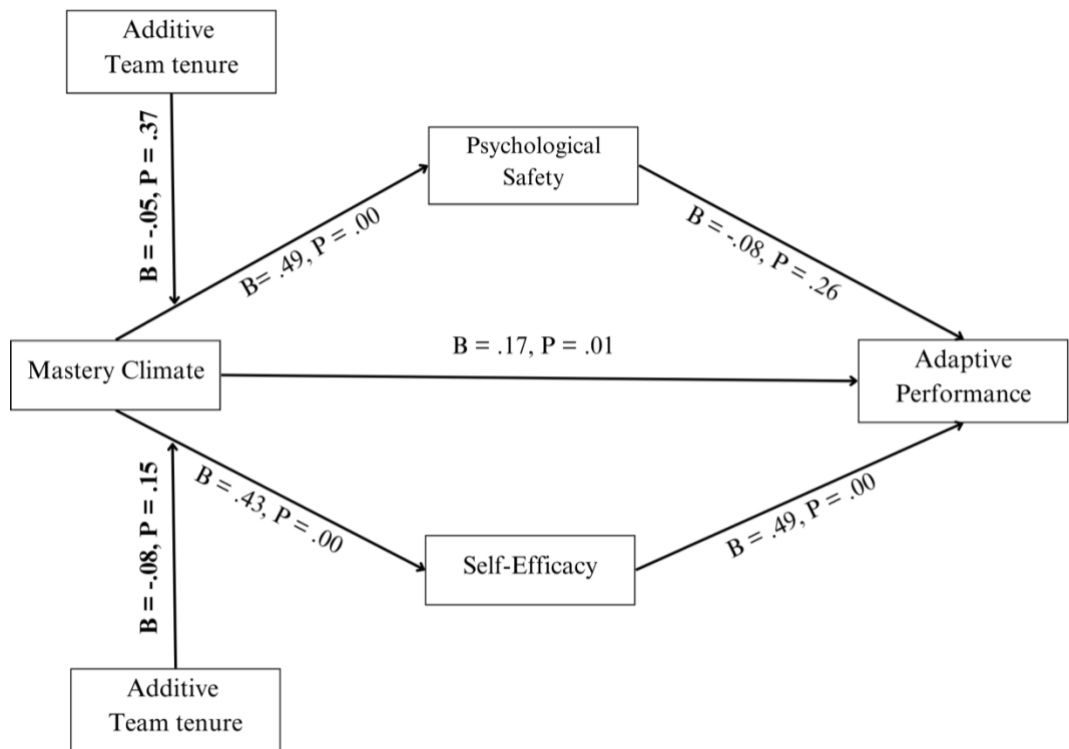


Figure 11. Full moderated mediation model with Additive Team Tenure

## 6.0. Discussion

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The present study aims to provide a comprehensive exploration of the nomological network surrounding AP, with a particular emphasis on contextual factors that have received relatively limited scrutiny, such as organizational climate (Park & Park, 2019). Of particular interest in this study is the concept of mastery climate, which is recognized as a pivotal aspect within the broader construct of motivational climate. Recognizing the significance of the perceived mastery climate on AP, we embark on a thorough investigation of the mediating role of psychological safety and self-efficacy, and the moderating role of team tenure. Through examining these complex relationships, our study endeavored to deepen our understanding of how and when these factors shape employees' AP within the distinctive context of IT.

As anticipated, the findings pertaining to hypothesis 1 lend support to our initial prediction, as the direct relationship between mastery climate and AP was found to be statistically significant. These results align with the conclusions drawn from Solberg et al.'s (2022) study. Nevertheless, while the observed effect is statistically significant, the observed correlation (.32) implies the presence of additional factors beyond perceived mastery climate in exerting an influence on AP. This reinforces the pertinence of our study, which aims to unravel the underlying mechanisms between various explanatory variables. By doing so, our research opens avenues for further research and exploration into these potential additional factors.

### *The Mediating Role of Psychological Safety*

The investigation of the mediating role of psychological safety in hypothesis 2 aimed to uncover one potential underlying mechanism that could shed light on the relationship between mastery climate and AP. Contrary to our expectations, our study found that psychological safety does *not* mediate the relationship between mastery climate and AP. These findings deviate from much of the literature on psychological safety, where existing literature suggests that psychological safety acts as a critical precursor to adaptive and innovative performance, particularly in the context of rapidly evolving environments (Edmondson, 2018). The unexpected nature of these results is particularly striking, considering the dynamic and innovative nature of the IT industry. Notably, Ashauer & Macan (2013) found that



team psychological safety mediated the relationship between mastery and performance goal instructions and learning behavior, thus supporting the notion that psychological safety indeed might be a catalyst for AP. Although our conceptual model slightly differs from the one employed by the authors, the similarities between the underlying concepts prompt us to consider the discrepancy in the findings.

A possible explanation for the non-significance of the mediating effect may lie in the unique attributes inherent in the IT industry, characterized by its project-centric nature and frequent team formation. These unique challenges and demands specific to this sector may necessitate alternative mechanisms or pathways to effectively facilitate adaptive behaviors. Notably, our sample prominently comprised external consultants (63%) with relatively short collective team durations (i.e., the majority with a tenure of one year or less). This composition adds an additional layer of complexity, as individuals in this milieu may attribute varying degrees of importance to psychological safety due to the distinctive nature of their work and the specific demands inherent in the industry. Likewise, it is reasonable to assume that individuals who choose to pursue a career as consultants may possess certain personality traits and motivations that differentiate them from those who opt for traditional employment within organizations. For instance, such individuals might exhibit a higher level of self-reliance, autonomy, and/or competence, which may result in a reduced need for psychological safety compared to individuals in other organizational roles or settings. Therefore, the specific composition of our sample, consisting predominantly of external consultants, may have contributed to our results.

It is also possible that the observed absence of a significant mediating role of psychological safety, in this case, can be attributed, at least in part, to the ongoing nature of team formation within this context. The early stages of team development, involving the establishment of relationships and the cultivation of trust, are recognized as crucial and evolving processes. Consequently, the gradual progression of psychological safety, which necessitates dedicated time and effort (Edmondson, 2018), offers a cogent explanation for the findings obtained. For instance, in organizations that frequently establish new project teams, team members may lack familiarity and established relationships, posing challenges to the development of team psychological safety. Moreover, the constant formation of new teams limits the available time for team members to foster and consolidate

psychological safety. As a result, the mediating effect of psychological safety on AP may not attain statistical significance within the timeframe of our study. This example highlights the influence of team formation dynamics in the IT industry and their impact on the manifestation and effects of psychological safety on AP outcomes.

### ***The Mediating Role of Self-Efficacy***

The investigation of the mediating role of self-efficacy represents the second potential explanatory mechanism in our study. Hypothesis 3 posited a mediation model, whereby perceived mastery climate was expected to have a positive relationship with self-efficacy, subsequently leading to higher levels of AP. Our findings provide support for the presence of partial mediation. Specifically, while the indirect effect of perceived mastery climate on AP through self-efficacy is smaller in magnitude compared to the direct effect, it still highlights the significance of self-efficacy as a mediator. This proposes that when employees perceive a supportive and mastery-oriented climate, their beliefs in their capabilities and competence are likely to increase, thereby fostering AP.

These findings both complement and diverge from prior research. Specifically, our findings challenge the established conclusions drawn by Griffin & Hesketh (2003) who reported a non-significant positive relationship between self-efficacy and adaptive behavior within an IT organization. However, interestingly, they identified a significant positive association between self-efficacy and adaptive behavior in a public service organization. These differing outcomes underscore the complex and multifaceted influence exerted by organizational factors on self-efficacy. By recognizing the contextual nuances, we can deepen our understanding of the interplay between self-efficacy and AP. This insight emphasizes the significance of adopting a context-specific approach in future research endeavors, ultimately contributing to a more comprehensive theoretical framework in this field.

Likewise, while our findings support the notion of partial mediation, other studies have revealed more robust mediating effects of self-efficacy. For instance, Bell & Kozlowski (2008) identified that factors such as exploratory learning, error framing, and emotion-control strategies exerted a positive influence on self-efficacy, subsequently leading to positive outcomes in *adaptive transfer* – which “involves using one’s existing knowledge to change a learned procedure, or to generate a solution to a completely new problem” (Ivancic & Hesketh, 2000, p.

1968). The concepts of exploratory learning, error framing, and emotional-control strategies can be perceived as congruent with the fundamental principles of a mastery climate, which is characterized by an environment that fosters learning, growth, and mastery. Henceforth, it is reasonable to speculate whether an increasing focus on implementing such factors may foster an environment conducive to self-efficacy development and ultimately promote adaptive behavior.

Therefore, while our study found evidence of partial mediation, a more thorough investigation of specific components *within* a mastery climate can potentially reveal stronger mediating effects of self-efficacy. To advance the knowledge in this area, future research should prioritize investigating the mechanisms through which these factors operate within organizational climates, aiming to gain a deeper understanding of the underlying processes that promote adaptive behavior. Such research endeavors can contribute to enhancing the understanding of how organizations can effectively foster mastery climates to promote self-efficacy and facilitate optimal AP among individuals.

#### ***The Moderating Role of Team Tenure***

Hypothesis 4 and 5 hypothesized that team tenure (both collective and additive) moderates the relationship between perceived mastery climate and psychological safety (H4) and self-efficacy (H5). Our results did not support the proposed moderation effects of team tenure, neither additive nor collective. These non-significant findings prompt a reflection on potential explanatory mechanisms, with one plausible explanation being the restricted variability of team tenure within our sample. The homogeneity of team tenure durations (i.e., characterized by mainly relatively short durations) may have limited the detection of significant moderation effects. This aligns with prior literature highlighting the significance of range restriction. Notably, even a minor degree of range restriction can have a substantial impact on statistical power and threaten the validity of conclusions related to moderating effects (Ivancic & Hesketh, 2000). Thus, in our case, the restricted range of team tenure may have constrained the accumulation of shared experiences and expertise typically associated with longer tenures, thereby limiting the influence of team tenure moderation effects.

Another plausible explanation for the lack of statistical significance observed could be attributed to the specific operationalization and measurement employed. Consistent with previous research conducted by Gonzalez-Mulé et al.,

(2020), we incorporated both additive and collective measures of team tenure. However, we acknowledge the ambiguity inherent to the concept of “team” and the potential for divergent interpretations. Despite our conscientious efforts to provide explicit instructions and clear distinctions between additive and collective measures in the survey, some may have misunderstood the intended meaning of the construct. Instead, some may have relied on their individual conceptualizations, hence potentially compromising the accuracy and reliability of the collected data. This could be influenced by various factors, such as inherent cognitive biases, varying levels of comprehension, or interpretations of the instructions (Bell et al., 2019).

Furthermore, the multifaceted nature of the team-construct, encompassing various organizational units such as departments, projects, or working groups, contributes to the complexity involved in its interpretation. For instance, the unique characteristics of project teams, such as their limited duration and focused objectives, can influence the observed associations and potentially diminish the statistical significance of the results. In contrast to long-established departmental teams that benefit from continuous collaboration and shared experiences, project teams often have a shorter timeframe to establish strong team dynamics and cohesion. As a result, the strength and significance of the relationships between team variables and performance outcomes may vary across different team types, highlighting the need for careful consideration and contextual understanding when interpreting findings related to teams.

### ***Exploring the Full Moderated Mediation Model: A Complementary Discussion***

The final hypothesis aimed to investigate the full moderated mediation model, specifically examining the role of team tenure (both collective and additive) as a moderator in the indirect effect of perceived mastery climate on AP, mediated by psychological safety and self-efficacy. The objective was to explore the intricate interplay among these variables and understand how the mediator variables operate under different levels (i.e., low, moderate, high) of team tenure, thus studying the potential moderation on all paths in the mediation model. However, the overall index of moderated mediation did not yield significant evidence to support the presence of moderated mediation.

One potential explanation for the lack of significant findings can be attributed to the limitations of the study, including the relatively small sample size

and possible measurement constraints. These limitations may have constrained the statistical power and precision of the findings, making it challenging to identify significant relationships. Moreover, the existence of unexplored variables, including emotional, cognitive, motivational, and situational factors, might have confounded the moderating role of team tenure in relation to the mediator variables. For instance, within team contexts, the intricate dynamics among team members could have introduced unexplored boundary conditions that shaped the examined relationships. A particular example pertains to the level of trust among team members, which holds the potential to exert a significant impact on team dynamics and outcomes. Additionally, regarding cognitive factors, problem-solving abilities demonstrated by individual team members could have also contributed to variations observed within the investigated relationships. Future research endeavors should address these limitations by replicating the model in diverse contexts, exploring other pertinent factors, and striving to advance the comprehension of the intricate interplay among team tenure, perceived mastery climate, psychological safety, self-efficacy, and AP.

### **6.1. Theoretical contribution**

The present study endeavors to address several research gaps by providing valuable insights and making meaningful contributions to the existing body of knowledge.

First, the study extends the limited research on the relationship between mastery climate and AP by delving deeper into the understanding of how or under what conditions mastery climates influences AP.

Secondly, this research offers direct insight into the mediating role of psychological safety and self-efficacy in the relationship between mastery climate and AP. By examining these mediating factors, the study enhances our understanding of the underlying processes through which mastery climates impact AP.

Thirdly, our study makes a notable contribution to the literature by expanding our understanding of these relationships beyond the confines of small accounting firms and into the domain of the IT industry, where empirical investigations of such nature have been lacking.

Lastly, this study represents a significant advancement in our comprehension of the relationship between mastery climate and AP by employing and rigorously testing a moderated mediation model. By investigating the potential

moderating role of team tenure, the study systematically examines whether the strength and directionality of the relationship between mastery climates and AP vary across different levels of team tenure, thereby enhancing our understanding of the nuanced dynamics at play.

## **6.2. Practical and Managerial Implications**

Based on the discussion above, the findings of our study have significant practical and managerial implications for IT leaders and organizations aiming to enhance employee AP in the ever-changing technological landscape. It is imperative for IT companies to prioritize the cultivation of mastery climates within their organizational culture. Our research highlights that fostering a supportive and encouraging environment that values growth and mastery positively influences employee AP. By emphasizing continuous learning and improvement, organizations can nurture employee engagement and motivation, thereby leading to improved AP outcomes. Given the continuous technological advancements and dynamic nature of business landscapes, it is crucial to prioritize the implementation of mastery climate practices to optimize their workforce's AP and drive organizational success.

To foster mastery climates effectively, organizations should integrate exemplary practices such as providing employees with challenging and meaningful tasks to promote skill development and mastery. Extensive research in various domains, including children's education, highlights the significance of approaches centered around authority/involvement, recognition, and evaluation (Ames, 1992). For example, involving employees in decision-making processes and offering leadership opportunities can enhance their self-leadership skills and empower them to take ownership of their work (Neck et al., 2013). This active involvement and empowerment create an environment that promotes autonomy, accountability, and a sense of control over one's work. Recognizing and acknowledging employees' efforts, progress, and self-improvement is also crucial for creating a mastery climate (Ames, 1992). Additionally, allocating time and providing opportunities for personal growth and development, while emphasizing cooperation and fostering a collaborative culture, are key factors in achieving shared goals (Ames, 1992; Nerstad et al., 2018). By adopting such strategies, IT firms can create an

environment that nurtures mastery climates and supports employee AP, ultimately contributing to the overall success and competitiveness of the organization.

Moreover, the implications of our findings also emphasize the critical role of leaders in cultivating employees' self-efficacy beliefs, which enable individuals to adapt to changing circumstances and drive their performance improvement. Practically, leaders can foster self-efficacy by providing clear expectations, comprehensive training, and ongoing support, facilitating the development of necessary skills and competence (Gist, 1987). Timely and sufficient performance feedback is essential, and leaders should establish arenas and organized opportunities for feedback provision (Beattie et al., 2016). Creating challenging tasks and offering positive reinforcement can further strengthen employees' self-efficacy (Beattie et al., 2014). Additionally, promoting job autonomy is positively associated with self-efficacy, suggesting that managers can enhance self-efficacy beliefs by involving team members in job-crafting programs, encouraging goal setting, strategy development, and sharing success stories (Wang & Netemeyer, 2002). Moreover, considering personality ratings as part of recruitment selection criteria, specifically focusing on traits such as openness to experience and extraversion, can be beneficial as these factors impact self-efficacy development (Judge et al., 2007). By incorporating these strategies, IT leaders can effectively enhance self-efficacy beliefs among their employees, facilitating AP and overall organizational success.

Finally, it is vital to mention the potential benefits of fostering a psychologically safe work environment within IT companies. Although our study did not yield significant findings regarding the mediating role of psychological safety, existing theory, and previous research support its potential significance in facilitating AP. For practical application, Edmondson et al., (2014) emphasize the significance of congruent communication and intentional intervention by leaders to foster psychological safety in the workplace. In this regard, leaders should clearly communicate their appreciation for employees who speak up and identify errors or potential improvements. This implies that leaders must also learn to value employees who engage in such behaviors. In practice, individual executives can hone skills such as perspective-taking and inquiry, which facilitate open discussions of ideas and concerns throughout the work week. Scheduling generative dialogues with colleagues can provide a platform for the candid sharing of thoughts and viewpoints.

### **6.3. Limitations and future research**

In acknowledging the limitations of our study and recognizing the need for further investigation, we highlight several aspects that warrant consideration for future research endeavors in this field (Bell et al., 2019).

One notable limitation of our study pertains to the relatively modest sample size. While our sample size met acceptable standards, a larger and more diverse sample would have strengthened the validity of our findings and enabled the identification of more robust patterns within the realm of IT firms. Additionally, the homogeneity of our sample, consisting of individuals from the same group with similar backgrounds, presents a challenge in terms of external validity and the generalizability of our findings to other sectors and organizations (Bell et al., 2019).

However, it is worth noting that our sample encompassed individuals with diverse levels of seniority and educational backgrounds, potentially enhancing the representativeness of our findings for other IT firms. The benefit of examining a homogeneous sample inside an organizational setting is that alternative explanations for the data are minimized, and the possibility of uncovering correct relationships within the sample is enhanced (Kuvaas et al., 2012). Nonetheless, future studies should endeavor to examine the extent to which the findings of our research can be extended to diverse business contexts (Bell et al., 2019).

An additional critical consideration pertains to the utilization of self-report questionnaires, which inherently carry the risk of common method variance, thereby introducing potential bias into the study findings (Podsakoff et al., 2003). This concern assumes particular salience within the realm of organizational behavior research, where respondents may strategically modify their responses to portray themselves in a more favorable light, especially when they perceive their answers to be identifiable (Donaldson & Grant-Vallone, 2002). As we employed a procedure whereby participants were requested to provide their email addresses and workplace information to ensure the continuity of data collection, it also introduced potential limitations, as it granted us the ability to trace the identities of the respondents. Consequently, it is conceivable that some may have deliberately provided responses that they believed aligned with our expectations, thereby influenced by the presence of social desirability bias (Podsakoff et al., 2003). However, it is likely that the implementation of a two-time-point survey design, with the deliberate spacing of data collection and a four-week interval between data



collection periods, mitigated some potential biases introduced with self-report measures, thereby minimizing its impact. Nevertheless, it is important to acknowledge that the possibility of bias still exists, and future research could explore alternative methods or additional controls to further address this concern.

Another limitation of self-report data is the inherent subjectivity and potential for individuals to rate themselves differently from their actual abilities or behaviors (Brenner & DeLamater, 2016). This variation can be influenced by individual differences. For instance, some display a propensity for an extreme response style—the tendency, using the extreme ends of response scales (e.g., strongly agree, strongly disagree) while others are more likely to use the middle values (e.g., mostly agree, mostly disagree) (Hamilton, 1968). Hence, future research could benefit from examining how leaders evaluate their employees' adaptability and comparing these assessments with the employees' self-assessments, as this comparative analysis can yield additional insights. Exploring leaders' perspectives on employee adaptability assumes particular significance due to their unique vantage point, which encompasses a broader organizational view and access to information that may not be readily available to employees. Consequently, leaders' evaluations of employee adaptability hold the potential to offer greater accuracy and relevance to the organization's overall success.

In line with this, our study encountered a constraint imposed by a cross-sectional approach due to the time frame of the thesis. It is important to note that a cross-sectional design cannot inherently establish causal relationships (Rindfleisch et al., 2008). Thus, adopting a longitudinal design could also have provided more intriguing and valuable insights for both research and practical implications. Specifically, a longitudinal study would enable researchers to capture the dynamic evolution and variability of perceived mastery climate, psychological safety, self-efficacy, and AP within individuals and teams over an extended period. For instance, a study could be conducted before, during, and after a concrete change project, as it could yield valuable information on the potential impact on self-efficacy beliefs, as it is likely to have far-reaching implications (Jundt et al., 2015).

This comprehensive understanding of the interplay among these variables, as observed longitudinally, holds significant potential for advancing research and informing business strategies. By examining how these factors unfold and interact over time, researchers can gain deeper insights into the complex dynamics at play and uncover valuable knowledge to enhance organizational performance.

Moreover, it is imperative to acknowledge the potential limitations associated with the modifications implemented in the research model to ensure discriminant validity and satisfactory fit statistics. Although the alterations resulted in improved fit indices and reduced correlation between the self-efficacy and AP constructs, caution should be exercised regarding the potential consequences of these modifications, such as information loss, the introduction of bias, or a compromise in result validity. To address these concerns, a comprehensive explanation of the modifications made to the model is provided, accompanied by detailed documentation of the methodology, aiming to enhance transparency and facilitate replication of the study by other researchers. Nevertheless, it is important to recognize that further investigation of the research model is warranted to comprehensively address its limitations and establish the generalizability of the findings to diverse populations or contexts.

In our pursuit of exploring potential avenues for future research, our study represents the first endeavor to investigate this specific relationship – at least as far as we are aware. However, to enhance our understanding further, future research should explore additional contextual mechanisms that have been found to influence AP positively. For instance, investigating the role of job autonomy, organizational support, or transformational leadership could provide valuable insights into this relationship (Park & Park, 2019). Examining the moderating effects of factors such as task complexity or job autonomy may shed light on the circumstances in which the relationship between mastery climate and AP is strongest (Jundt et al., 2015). Alternatively, to attain a more comprehensive understanding of the phenomenon, it would be interesting to investigate the potential moderating roles of psychological safety and self-efficacy. Analyzing these factors as moderators can unveil their interactions with other variables, thereby providing a nuanced understanding of the complex dynamics at play. Particularly noteworthy is the robust association identified for self-efficacy and AP, warranting further examination of factors that moderate its influence. By undertaking such investigations, future researchers can gain deeper insights into the conditions that amplify the impact of self-efficacy on AP, thereby informing organizational practices and interventions geared towards enhancing employee effectiveness and adaptability.

## 7.0. Conclusion

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Our study strengthens and complements previous literature and research on *how* and under *what* conditions the relationship between perceived mastery climate and AP is attained. Specifically, this study investigates the relationship between mastery climate and AP, with a particular focus on investigating the mediating role of psychological safety and self-efficacy, as well as the moderating role of team tenure.

Referring to our research question “What is the relationship between perceived mastery climate and AP, and how do psychological safety, self-efficacy, and team tenure affect this relationship?”, we found that mastery climate has a significant impact on AP. We also found that self-efficacy partially mediates the relationship between mastery climate and AP. Yet, we did not find support for the mediating role of psychological safety, or the moderating role of team tenure (neither additive nor collective).

Our findings implicate that organizations should prioritize the cultivation of a mastery climate, emphasizing continuous learning, growth, and skill development to enhance AP among employees. Additionally, efforts should be directed towards boosting employees’ belief in their own capabilities to effectively perform tasks and adapt to changing circumstances. Implementing these practical implications can empower employees to navigate dynamic environments, improve their performance, and contribute to the overall success and competitiveness of the organization.

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## Appendix A

### Heisann 😊

Vi heter Camilla og Lina, og gjennomfører nå vår avsluttende masteroppgave i Ledelse og Organisasjonspsykologi ved Handelshøyskolen BI, hvor vi forsker på ansattes tilpasningsdyktighet i IT-selskaper.

**██████████ har valgt å delta i studien for å bidra til ny forskning på feltet, og fordi de er opptatt av at DU har en best mulig arbeidshverdag - det er veldig kult!**

Nå trenger vi din hjelp for å ferdigstille prosjektet, og gi ██████████ innsikt som kan bidra til at du trives best mulig på jobb og kan tilpasse deg i en endringsdyktig bransje.

Trykk [her](#), eller scan QR koden for å komme til undersøkelsen.



#### Praktisk info!

Innsamling av data vil skje i to omganger.

- **Del 1:** Ligger ved her. Tar omtrent 2-3 min å gjennomføre.
- **Del 2:** Vil bli sendt til deg på mail om fire uker. Tar omtrent 3-5 min å gjennomføre.

Totalt vil du bruke mindre enn 10 minutter på å delta i studien. Alt om anonymitet og GDPR finner du når du trykker deg inn på lenken!

Med vennlig hilsen Camilla og Lina



Spørsmål? Kontakt [lina-nilsson@hotmail.com](mailto:lina-nilsson@hotmail.com)

## Appendix B


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### Sikt Approval

#### Assessment of processing of personal data

 Print

01.02.2023 ▾

**Reference number**  
406796**Assessment type**  
Automatic **Date**  
01.02.2023**Project title**

Master thesis: Perceived mastery climate and adaptive performance: The role of psychological safety, self-efficacy, and team tenure

**Data controller (institution responsible for the project)**

Handelshøyskolen BI / BI Oslo / Institutt for ledelse og organisasjon

**Project leader**

Elizabeth Solberg

**Student**

Lina Nilsson

**Project period**

02.01.2023 - 01.07.2023

**Categories of personal data**

General

**Legal basis**

Consent (General Data Protection Regulation art. 6 nr. 1 a)

The processing of personal data is lawful, so long as it is carried out as stated in the notification form. The legal basis is valid until 01.07.2023.

## Appendix C

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### **Thank you very much for choosing to participate!**

Thank you very much for choosing to participate in our study on **adaptive performance**, which we are conducting as a final project for a MSc in Leadership and Organizational Psychology at BI Norwegian Business School.

In light of the rapidly evolving business environment, the ability to adapt to new and challenging circumstances has become increasingly critical for employees' and organizational success. The objective of our study is to gain an understanding of the variables that facilitate adaptive performance and to provide companies with valuable insights on how they can aid their employees in this regard.

Your contribution is valuable for this purpose and we are grateful for your involvement.

Participating in this study requires answering two questionnaires. This is the first questionnaire. We expect it will take you roughly 3 minutes to complete. The second questionnaire will be sent in a few weeks, to an email address that you will be requested to provide to us. Your email address will be used to match your responses from the two surveys.

#### **Before continuing to the survey, please know that:**

- Your participation is voluntary and that you are free to withdraw at any time without any reason and without there being any negative consequences.
- Your responses will be kept strictly confidential.
- Your name will not be linked with the research materials, and you will not be identified or identifiable in the report or reports that result from the research.

As you can be identified in the collected data, you have the right to:

- Access the personal data that is being processed about you
- Request that your personal data is deleted
- Request that incorrect personal data about you is corrected/rectified
- Receive a copy of your personal data (data portability), and
- Send a complaint to the Norwegian Data Protection Authority regarding the processing of your personal data

Based on an agreement with BI Norwegian Business School, The Data Protection Services of Sikt – Norwegian Agency for Shared Services in Education and Research has assessed that the processing of personal data in this project meets requirements in data protection legislation.

If you have questions about the project, or want to exercise your rights, contact:

BI Norwegian Business School via Associate Professor Elizabeth Solberg who is supervising this research or BI's Data Protection Officer: (Vibeke Nesbakken, email: [personvernombud@bi.no](mailto:personvernombud@bi.no)).

If you have questions about how data protection has been assessed in this project by Sikt, contact: · email: [personverntjenester@sikt.no](mailto:personverntjenester@sikt.no) or by telephone: +47 73 98 40 40.

Yours sincerely,  
Camilla and Lina.

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Your consent is needed for us to process the data you provide in this survey. Therefore, before proceeding to the survey, please confirm that you:

- Have received and understood information about the study and have been given the opportunity to ask questions.
- Give consent to participate in this online survey and for your personal data to be processed until the end of the project.

**I agree to all of the above.**

Yes

## Appendix D

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### Adaptive Performance

- 1 I find innovative ways to deal with unexpected events
- 2 I use creative ideas to manage incoming events
- 3 I devise alternative plans in very short time, as a way to cope with new task demands
- 4 I adjust and deal with unpredictable situations by shifting focus and taking reasonable action
- 5 Periodically, I update technical and interpersonal competencies as a way to perform the tasks in which I am enrolled
- 6 I search and develop new competences to deal with difficult situations
- 7 I remain calm and behave positively under highly stressful events
- 8 I maintain focus when dealing with multiple situations and responsibilities

Marques-Quinteiro, P., Ramos-Villagrasa, P. J., Passos, A. M., & Curral, L. (2015). Measuring adaptive performance in individuals and teams. *Team Performance Management, 21*(7/8), 339–360. <https://doi.org/10.1108/TPM-03-2015-0014>

### Mastery Climate

- 1 In my team, one is encouraged to cooperate and exchange thoughts and ideas mutually
- 2 In my team, each individual's learning and development is emphasized
- 3 In my team, cooperation and mutual exchange of knowledge are encouraged
- 4 In my team, employees are encouraged to try new solution methods throughout the work process
- 5 In my team, one of the goals is to make each individual feel that he/she has an important role in the work process
- 6 In my team, everybody has an important and clear task throughout the work process

Nerstad, C. G. L., Roberts, G. C., & Richardsen, A. M. (2013). Achieving success at work: Development and validation of the Motivational Climate at Work Questionnaire (MCWQ): Development and validation of the MCWQ. *Journal of Applied Social Psychology, 43*(11), 2231–2250.

### Psychological Safety

- 1 If you make a mistake on this team, it is often held against you (R)
- 2 Members of this team are able to bring up problems and tough issues
- 3 People on this team sometimes reject others for being different (R)

- 4 It is safe to take a risk on this team
- 5 It is difficult to ask other members of this team for help (R)
- 6 No one on this team would deliberately act in a way that undermines my efforts
- 7 Working with members of this team, my unique skills and talents are valued and utilized

Edmondson, A. (1999). Psychological Safety and Learning Behavior in Work Teams. *Administrative Science Quarterly*, 44(2), 350–383.  
<https://doi.org/10.2307/2666999>

### **New General Self-Efficacy Scale**

- 1 I will be able to achieve most of the goals that I have set for myself
- 2 When facing difficult tasks, I am certain that I will accomplish them
- 3 In general, I think that I can obtain outcomes that are important to me
- 4 I believe I can succeed at most any endeavor to which I set my mind
- 5 I will be able to successfully overcome many challenges.
- 6 I am confident that I can perform effectively on many different tasks.
- 7 Compared to other people, I can do most tasks very well
- 8 Even when things are tough, I can perform quite well

Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a New General Self-Efficacy Scale. *Organizational Research Methods*, 4(1), 62–83.  
<https://doi.org/10.1177/109442810141004>

### **Control variables**

<b>Variable</b>	<b>Question</b>	<b>Scale</b>
Gender	What gender do you identify as?	Nominal
Age	What is your age?	Continuous
Company	What company do you work for?	Nominal
Educational level	What is the highest education you have attained?	Ordinal
Years of experience	In total, how many years of relevant experience do you have?	Continuous



## Appendix E

**Pattern Matrix<sup>a</sup>**

	Component							
	1	2	3	4	5	6	7	8
MC_1			.811					
MC_2			.326			.572		
MC_3			.828					
MC_4			.870					
MC_5			.326			.571		
MC_6						.858		
AP_1								.683
AP_2								.835
AP_3		.409						
AP_4		.482						
AP_5							.815	
AP_6							.845	
AP_7		.875						
AP_8		.920						
SE_1	.829							
SE_2	.691							
SE_3	.678		.342					
SE_4	.638							.340
SE_5	.663							
SE_6		.484						
SE_7	.461	.363						
SE_8		.512			-.326			
PS_1				.388	.586			
PS_2				.671				
PS_3					.677			
PS_4				.659				
PS_5					.788			
PS_6				.793				
PS_7				.676				

Extraction Method: Principal Component Analysis.  
 Rotation Method: Promax with Kaiser Normalization.  
a

a. Rotation converged in 13 iterations.

## Appendix F

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<b>Construct</b>	<b>Items</b>	<b>Factor Loading</b>
Mastery Climate (F1)	MC1	0.799
	MC2	0.663
	MC3	0.818
	MC4	0.639
	MC5	0.619
	MC6	0.376
Adaptive Performance (F2)	AP1	0.566
	AP2	0.504
	AP3	0.654
	AP4	0.609
	AP5	0.377
	AP6	0.390
	AP7	0.606
	AP8	0.551
Self-Efficacy (F3)	SE1	0.536
	SE2	0.593
	SE3	0.647
	SE4	0.663
	SE5	0.797
	SE6	0.720
	SE7	0.600
	SE8	0.685
Psychological Safety (F4)	PS1	0.766
	PS2	0.558
	PS3	0.652
	PS4	0.504
	PS5	0.420
	PS6	0.496
	PS7	0.585